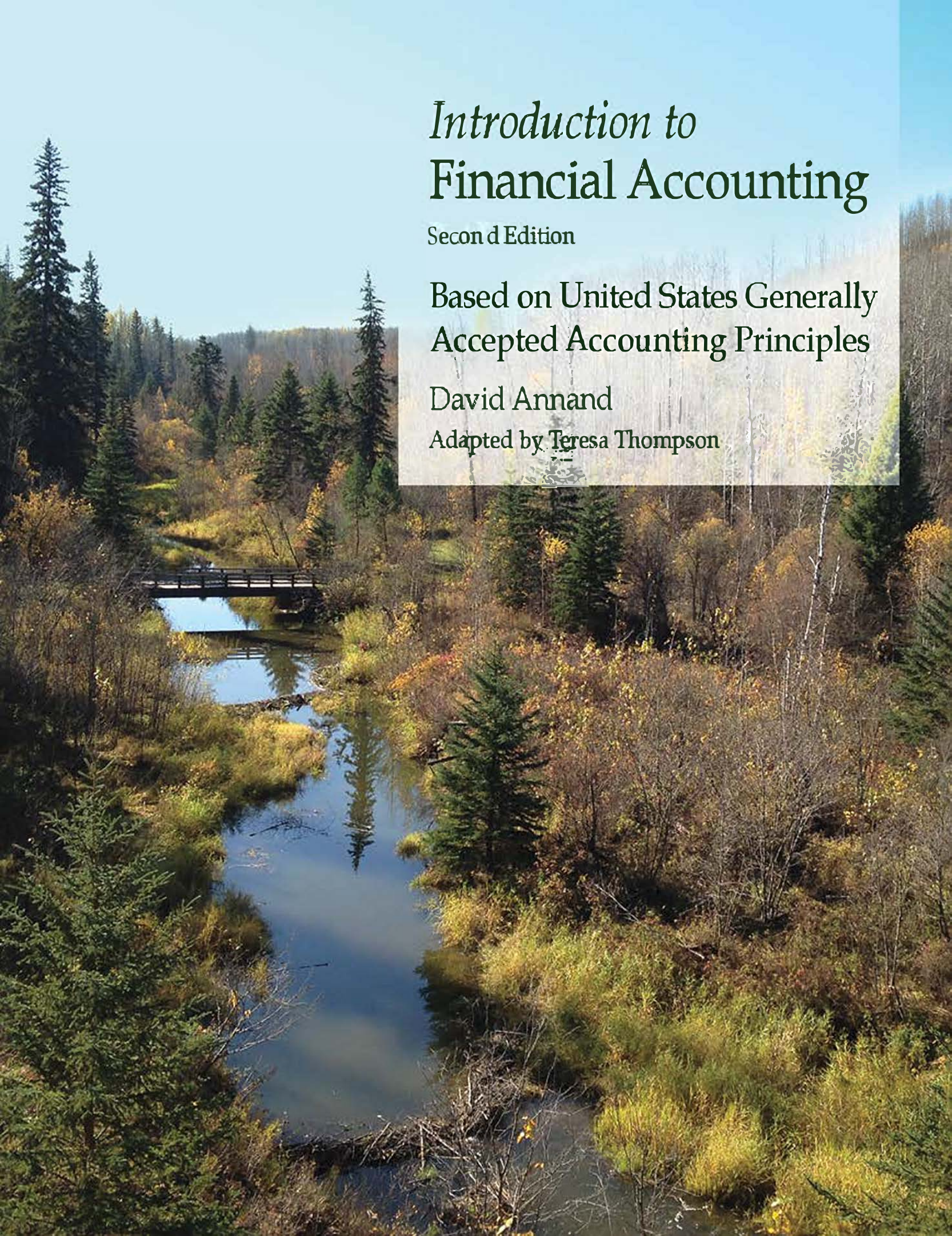

Introduction to Financial Accounting

Second Edition

Based on United States Generally Accepted Accounting Principles

David Annand

Adapted by Teresa Thompson

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CHAPTER ONE

Introduction to Financial Accounting

Chapter 1 Learning Objectives

LO1 – Define accounting.

LO2 – Identify and describe the forms of business organizations.

LO3 – Identify and explain generally accepted accounting principles (GAAP).

LO4 – Analyze transactions using the accounting equation.

LO5 – Identify and explain the uses of the four financial statements.

A. Accounting Defined

LO1 – Define accounting.

Accounting is often called the language of business because it uses a unique vocabulary to communicate information to decision makers. In this chapter, we will discuss what financial accounting is and briefly introduce how financial information is communicated through financial statements. Then we will study how financial transactions are analyzed and reported on financial statements.

Accounting is the process of *identifying, measuring, recording*, and *communicating* an organization's economic activities to users. Users need information for decision making. These users can be grouped into two categories, internal and external.

Internal users of accounting information work for the organization and are responsible for planning, organizing, and operating the entity. The accounting information they require differs from that of external users. These users depend on information that can improve the effectiveness of the company. Examples of internal users include the vice president of production, the controller, marketing manager, and president of the company. Each internal user may use accounting information in a different way. The area of accounting that serves the decision-making needs of internal users is known as **managerial accounting**.

External users are parties outside of the organization. They do not work for the entity. These users have limited access to a company's accounting information and will use it for a variety of purposes. Examples of external users include investors, lenders, regulators, and auditors. The area of accounting that presents financial information of interest to external users is known as **financial accounting**. This book deals with financial accounting.

B. Business Organizations

LO2 – Identify and describe the forms of business organizations.

An **organization** is a group of individuals who come together to pursue a common set of goals and objectives. There are typically two types of organizations: *business* and *non-business*. A **business organization** sells products or services for profit. A **non-business organization**, such as a charity or hospital, exists to meet various societal needs and does not have profit as a goal. All organizations record, report, and, most importantly, *use* accounting information for making decisions.

This book focuses on business organizations. There are three common forms of business organizations—a *proprietorship*, a *partnership*, and a *corporation*.

Proprietorship

A **proprietorship** is a business owned by one person. It is not a separate legal entity, which means that the business and the owner are considered to be the same. For example, the profits of a proprietorship are reported on the owner's personal income tax return. Since there is no separation between the owner and the business, the owner is personally responsible for the debts of the proprietorship –referred to as ***personal unlimited liability***. Meaning if the business cannot pay its debts, the owner is responsible for these even if the business' debts are greater than the owner's personal resources. A proprietorship has a ***limited life*** in which it can operate and will cease operations when its sole owner loses interest or dies.

Advantages of the proprietorship form of business include the ease of formation, no business income tax, and only one owner is required. Disadvantages of this type of business organization include unlimited personal liability, limited life, and reliance on one owner.

Partnership

A **partnership** is a business owned by two or more individuals. Like the proprietorship, it is not a separate legal entity. Therefore, the owners (or partners) are jointly liable[1] for any of the company's liabilities and report any of the company's profits or losses on their personal income tax returns. Partners should have a **partnership agreement** that stipulates how profits and losses are shared, the duties of each partner, and means to terminate the partnership.

Also like a proprietorship, a partnership has a limited life. For example, a partnership is dissolved when an existing partner withdraws, a new partner is admitted, or the partners agree to terminate the business.

Advantages of the partnership form include the relative ease of formation, no business income tax, and access to more capital and expertise from its partners. Disadvantages of this business organization include unlimited personal liability to the partners[1], limited life for the

[1] Limited liability partnerships (LLP) are permitted in certain jurisdictions. The details of this type of business organization are beyond the scope of this text.

business, and each partner's ability to make decisions that are legally binding for the entire partnership business.

Corporation

A **corporation** is a business owned by one or more owners[2]. The owners are known as *stockholders*. A **stockholder** owns shares of the corporation. **Shares** are units of ownership in a corporation. For example, if a corporation has 1,000 shares, there may be three stockholders who own 700 shares, 200 shares, and 100 shares respectively. The number of shares held by a stockholder represents how much of the corporation they own. The first stockholder who owns 700 shares owns 70% of the corporation (700/1,000 = 70%). A corporation's shares can be privately held or available for public sale. This topic is covered in a later chapter.

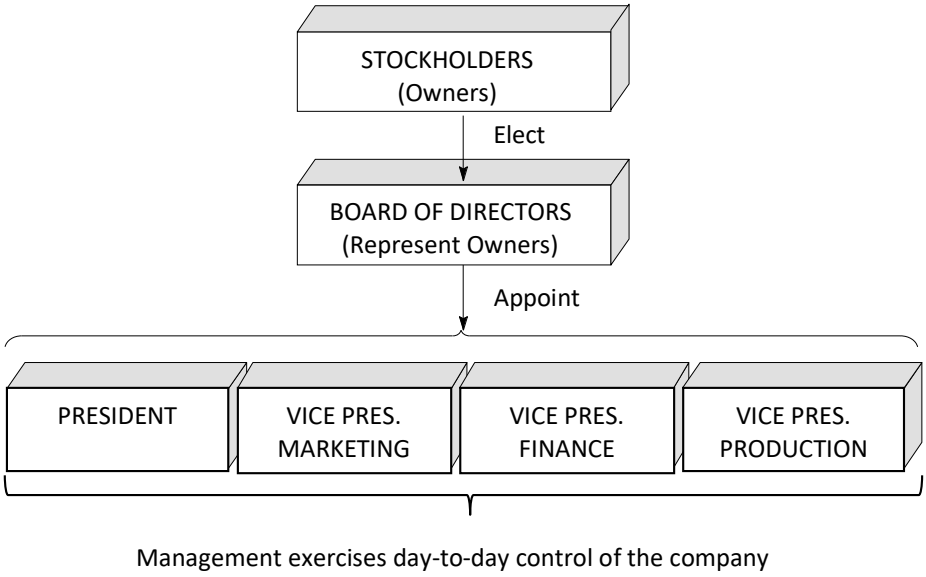
Unlike the proprietorship and partnership, a corporation is a separate legal entity. This means, for example, that from an income tax perspective, a corporation files its own tax return. The owners or stockholders of a corporation are not responsible for the corporation's debts so have **limited liability** meaning that the most they can lose is the amount they invested in the corporation. They are not responsible for all the debts of an organization. A corporation also enjoys a continuous life, meaning it may continue operations beyond its or original owners.

In larger corporations, there can be many stockholders. In these cases, stockholders do not manage a corporation but participate indirectly through the election of a **Board of Directors.** The Board of Directors does not participate in the day-to-day management of the corporation but delegates this responsibility to the officers of the corporation. An example of this delegation of responsibility is illustrated in Figure 1-1.

[2] Equivalent designations for a corporation are "Corp.", "Incorporated", "Inc.", "Limited", and "Ltd."

Figure 1-1 Generalized Form of a Corporate Organization

Stockholders usually meet annually to elect a Board of Directors. The Board of Directors meets regularly to review the corporation's operations and to set policies for future operations.



C. Generally Accepted Accounting Principles (GAAP)

LO3 – Identify and explain generally accepted accounting principles (GAAP).

The goal of accounting is to ensure information provided to decision makers is useful. To be useful, information must be relevant and faithfully represent a business's economic activities. This requires **ethics**, beliefs that help us differentiate right from wrong, in the application of underlying accounting concepts or principles. These underlying accounting concepts or principles are known as **generally accepted accounting principles (GAAP).**

The accounting principles used differs with the country. In the United States, public companies use **U.S. GAAP** when reporting their financial transactions. These accounting principles are established by the **Financial Accounting Standards Board (FASB)** which create both broad and specific accounting principles. The **Securities and Exchange Commission (SEC)** is the government agency tasked with overseeing capital markets, protecting investors, and ensuring public companies follow the established accounting standards. Companies violating

accounting principles may face sanctions, fines, and even jail time for certain individuals.

Many countries, other than the United States, report their financial information using **International Financial Reporting Standards (IFRS)**. These standards are issued by the **International Accounting Standards Board (IASB)**. The IASB's mandate is to promote the adoption of a single set of global accounting standards through a process of open and transparent discussions among corporations, financial institutions, and accounting firms around the world.

The two standard setting bodies are currently working toward a single set of standards through a process called *convergence.*

The focus in this book will be on U.S. GAAP with key International Financial Reporting Standards highlighted.

GAAP are undergirded by qualitative characteristics and principles that inform how and when financial information is presented. Financial information should possess characteristics of:

- **relevance** – the ability to make a difference in the decision-making process;
- **faithful representation** – provision of information that is complete, neutral, and free from error;
- **comparability** – reporting similar information across similar entities in a similar manner;
- **consistency -**requires that a business use the same accounting policies and procedures from period to period.
- **verifiability** – the ability of an independent observer to reproduce the same financial information given the same input data and assumptions;
- **timeliness** – the provision of new information to decision makers while it is still useful; and
- **understandability** – presentation of information in a manner that is clear and concise.

Figure 1–2 Conventions of Generally Accepted Accounting Principles

In practice, these characteristics are demonstrated through the following accounting conventions:

Accounting convention	*Explanation*
Business entity assumption	Requires that each economic entity maintain separate records. Example: An owner of an unincorporated business keeps one set of accounting records for business transactions and one for personal transactions.
Stable monetary unit assumption	Requires that financial information be communicated in unchanging units of money. Example: Goods are purchased for $10,000 in 2020 that will be sold to customers in 2020. In early 2020, the same amount and type of goods are purchased for $10,100. The cost has increased due to inflation. If the goods purchased in 2020 are still unsold, they are not revalued to reflect the inflationary effect.
Going concern assumption	Assumes that a business has the resources needed to continue to operate indefinitely into the future. Example: A bakery does not expense an item like a delivery truck in the year in which it is purchased. Rather, it writes-off the purchase price of the truck gradually over the estimated number of years it will provide useful service into the future.
Time period assumption	Assumes that the life of a business can be segmented into artificial time periods to ensure that useful and timely reports can be prepared.

Figure 1–2 Conventions of Generally Accepted Accounting Principles (cont.)

Accounting convention	*Explanation*
Historical cost principle	Requires that each economic transaction be based on original cost. Example: A business purchased a piece of land for $70,000 cash. The market value on the date of purchase was $75,000. Land will be recorded at $70,000 since that is the amount of cash paid.
Fair value principle	Requires that assets and liabilities be reported at their fair value. This applies for certain investment and other assets. This principle is discussed further in more advanced accounting classes. Most assets will fall under the guidelines of the cost principle.
Full disclosure principle	Requires that accounting information communicate sufficient information to allow users to make knowledgeable decisions. Example: A business is being sued for $20,000,000 and management is certain that it will lose. The financial statements must disclose the lawsuit even though no damages have been finalized.
Revenue recognition principle	Requires that sale of goods or provision of services should be recognized when the process is substantially complete. This is accomplished through accrual accounting. Example: A product is sold on March 5. The customer receives the product on March 5 but agrees to pay for it on April 5. The corporation recognizes the revenue from the sale on March 5 when the sale occurred even though the cash will not be received until a later date.
Matching (Expense Recognition) principle	Requires that expenses be reported in the period in which they are incurred or related revenues are earned, not when cash is paid. Example: Merchandise purchased for resale is not recorded as an expense until it is sold and the related sales revenue is recognized.

Figure 1–2 Conventions of Generally Accepted Accounting Principles (cont.)

Accounting convention	*Explanation*
Materiality constraint	Allows another accounting principle to be violated if the effect on the financial statements is so small that users will not be misled. Example: A business purchases a desk for $100 that will last ten years. Technically, cost of the desk should be written off gradually over ten years. However, for accounting convenience, the business will usually record the $100 as an expense in the current year instead of gradually reducing the "book value" of the desk each year. Expensing it immediately will not affect the financial results enough to mislead financial statement readers.

D. Transaction Analysis and Double-entry Accounting

LO4 – Analyze transactions using the accounting equation.

The **accounting equation** is foundational to accounting. It shows that the total assets of a business must always equal the total claims against those assets by creditors and owners. The equation is expressed as:

ASSETS	=	LIABILITIES	+	STOCKHOLDERS' EQUITY
(economic resources owned by an entity)		(creditors' claims on assets)		(owners' claims on assets)

When financial transactions are recorded, combined effects on assets, liabilities, and stockholders' equity are always exactly offsetting. This is the reason that the balance sheet always balances.

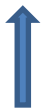
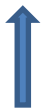
Each economic exchange is referred to as a **financial transaction**—for example, when an organization exchanges cash for land and buildings. Incurring a liability in return for an asset is also a financial transaction. Instead of paying cash for land and buildings, an organization may borrow money from a financial institution. The company must repay this with cash payments in the future. The accounting equation provides a system for processing and summarizing these sorts of transactions.

Accountants view financial transactions as economic events that change components within the accounting equation. These changes are usually triggered by information contained in **source documents** (such as sales invoices and bills from creditors) that can be verified for accuracy.

The accounting equation can be expanded to include all the items listed on the statement of balance sheet of Big Dog at January 31, 2017, as follows:

ASSETS					=	LIABILITIES			+	S/H EQUITY	
Cash	+ Accounts Receivable	+ Prepaid Insurance	+ Equipment	+ Truck	=	Bank Loan	+ Accounts Payable	+ Unearned Revenue	+	Common Stock	+ Retained Earnings

If one item within the accounting equation is changed, then another item must also be changed to balance it. In this way, the equality of the equation is maintained. For example, if there is an increase in an asset account, then there must be a decrease in another asset or a corresponding increase in a liability or stockholders' equity account. This equality is the essence of *double-entry accounting*. The equation itself always remains in balance after each transaction. The operation of double-entry accounting is illustrated in the following section, which shows 10 transactions of Big Dog Carworks Corp. for January 2017.

Transaction number	Date	Description of transaction	Effect on the accounting equation: ASSETS	=	LIABILITIES	+	S/H EQUITY
1	Jan. 1	Big Dog Carworks Corp. issued 1,000 shares to Bob Baldwin for $10,000 cash. The asset *Cash* is increased while the equity item *Common Stock* is also increased. The impact on the equation is: CASH COMMON STOCK Note that both sides of the equation are in balance.	 +10,000				 +10,000
2	Jan. 2	Big Dog Carworks Corp. borrowed $4,000 from the bank and deposited the cash into the business's bank account. The asset *Cash* is increased and the liability *Bank Loan* is also increased. The impact on the equation is: CASH BANK LOAN	 +4,000		 +4,000		
3	Jan. 2	The corporation purchased $3,000 of equipment for cash. There is an increase of the asset *Equipment* and a decrease to another asset, *Cash*. The impact on the equation is: EQUIPMENT CASH	 +3,000 -3,000				
4	Jan. 3	The corporation purchased a tow truck for $8,000, paying $1,000 cash and incurring an additional bank loan for the remaining $7,000. The asset *Cash* is decreased while the asset *Truck* is increased and the liability *Bank Loan* is also increased. The impact on the equation is: CASH TRUCK BANK LOAN	 -1,000 +8,000		 +7,000		

Transaction Number	Date	Description of transaction	Effect on the accounting equation: ASSETS	=	LIABILITIES	+	S/H EQUITY
5	Jan. 5	Big Dog Carworks Corp. paid $2,400 for a one-year insurance policy, effective January 1. Here the asset *Prepaid Insurance* is increased and the asset *Cash* is decreased. The impact on the equation is: PREPAID INSURANCE CASH Since the one-year period will not be fully used at January 31 when financial statements are prepared, the insurance cost is considered to be an asset at the payment date. The transaction does not affect liabilities or stockholders' equity.	 +2,400 -2,400				
6	Jan. 10	The corporation paid $2,000 cash to the bank to reduce the loan outstanding. The asset *Cash* is decreased and there is a decrease in the liability *Bank Loan*. The impact on the equation is: BANK LOAN CASH	 -2,000		 -2,000		
7	Jan. 15	The corporation received $400 as an advance payment from a customer for services to be performed over the next two months as follows: $300 for February, $100 for March. The asset *Cash* is increased by $400 and a liability, *Unearned Revenue*, is also increased since the revenue will not be earned by the end of January. It will be earned when the work is performed in later months. At January 31, these amounts are repayable to customers if the work is not done (and thus recorded as a liability). The impact on the equation is: CASH UNEARNED REVENUE	 +400		 +400		
8	Jan. 31	Automobile repairs of $10,000 were made for customers; $7,500 of repairs was paid in cash and $2,500 of repairs will be paid in the future by customers. *Cash* and *Accounts Receivable* assets of the corporation increase. The repairs are a revenue; revenue causes an increase in net income and an increase in net income causes an increase in stockholders' equity. The impact on the equation is: CASH ACCOUNTS RECEIVABLE REPAIR REVENUE This activity increases assets and net income.	 +7,500 +2,500				 +10,000

Transaction Number	Date	Description of transaction	Effect on the accounting equation: ASSETS	=	LIABILITIES	+	S/H EQUITY
9	Jan. 31	The corporation incurred operating expenses for the month as follows: $1,600 for rent; $4,000 for salaries; and $1,500 for supplies expense. These were paid in cash. $700 for truck operating expenses (e.g., oil, gas) was incurred. This will be paid in the future.					
		There is a $7,100 decrease in the asset *Cash*. There is a $700 increase in the liability *Accounts Payable*. Expenses cause net income to decrease. A decrease in net income causes retained earnings and stockholders' equity to decrease. The impact on the equation is:	↓		↑		↓
		RENT EXPENSE					-1,600
		SALARIES EXPENSE					- 4,000
		SUPPLIES EXPENSE					- 1,500
		TRUCK OPERATING EXPENSE					- 700
		CASH	-7,100				
		ACCOUNTS PAYABLE			+700		
10	Jan. 31	Dividends of $200 were paid in cash to the stockholder, Bob Baldwin.					
		Dividends are a distribution of net income. They cause retained earnings to decrease. A decrease in retained earnings will decrease stockholders' equity. The impact on the equation is:	↓				↓
		DIVIDENDS					-200
		CASH	-200				

These various transactions can be recorded in the expanded accounting equation as shown on the following page:

	ASSETS					=	LIABILITIES			+	S/H EQUITY	
Trans.	Cash	+ Acc. Rec.	+ Ppd. Insur.	+ Equip.	+ Truck	=	Bank Loan	+ Acc. Pay.	+ Un. Rev.	+	Common Stock	+ Retained Earnings
1.	+10,000										+10,000	
2.	+4,000						+4,000					
3.	-3,000			+3,000								
4.	-1,000				+8,000		+7,000					
5.	-2,400		+2,400									
6.	-2,000						-2,000					
7.	+400								+400			
8.	+7,500	+2,500										+10,000
9.	-7,100							+700				- 1,600
												- 4,000
												- 1,500
												- 700
10.	-200											- 200
	6,200	+ 2,500	+ 2,400	+ 3,000	+ 8,000	= 9,000	+ 700	+ 400	+	10,000	+ 2,000	

These numbers are used to prepare the Statement of Cash Flows.

These numbers are used to prepare the Income Statement

Transactions in these columns are used to prepare the Statement of Changes in Equity.

Column totals are used to prepare the Balance Sheet.

ASSETS = $22,100

LIABILITIES + EQUITY = $22,100

Figure 1-3a Transactions Worksheet for January 31, 2017

Transactions summary:

1. Issued common stock for $10,000 cash.
2. Assumed a bank loan for $4,000.
3. Purchased equipment for $3,000 cash.
4. Purchased a truck for $8,000; paid $1,000 cash and incurred a bank loan for $7,000.
5. Paid $2,400 for a comprehensive one-year insurance policy effective January 1.
6. Paid $2,000 cash to reduce the bank loan.
7. Received $400 as an advance payment for repair services to be provided over the next two months as follows:
   $300 for February,
   $100 for March.
8. Performed repairs for $7,500 cash and $2,500 to be paid by customers at a later date.
9. Paid a total of $7,100 for operating expenses incurred during the month; also incurred an expense on account for $700.

10. Dividends of $200 were paid in cash to the only stockholder, Bob Baldwin.

Accounting Time Periods

Financial statements are prepared at regular intervals—usually monthly or quarterly—and at the end of each 12-month period. This 12-month period is called the **fiscal year**. The timing of the financial statements is determined by the needs of management and other users of the financial statements. For instance, financial statements may also be required by outside parties, such as bankers and stockholders if there are many. However, accounting information must possess the qualitative characteristic of timeliness—it must be available to decision makers in time to be useful—which is typically a minimum of once every 12 months.

Accounting reports, called the *annual financial statements*, are prepared at the end of each 12-month period, which is known as the **year-end** of the entity. Most companies' year-ends are on December 31, though this may not always be the case.

E. Financial Statements

LO5 – Identify and explain the uses of the four financial statements.

Recall that financial accounting focuses on communicating information to external users. That information is communicated using **financial statements**. There are four financial statements: the income statement, statement of changes in equity, balance sheet, and statement of cash flows. Each of these is briefly introduced in the following sections using an example based on a fictitious corporate organization called Big Dog Carworks Corp. ("Corp." is the abbreviated form of "Corporation".)

The Income Statement

An **income statement** or **statement of profit and loss** communicates information about a business's financial performance by summarizing **revenues** less **expenses** over a period of time. **Revenues** are created when a business provides products or services to a customer in exchange for assets. Assets are resources resulting from past events and from which future economic benefits are expected to result. Examples of assets include cash, equipment, and supplies. Assets will be discussed in more detail later in this chapter. **Expenses** are the assets that have been used up or the obligations incurred in the course of earning revenues.

When revenues are greater than expenses, the difference is called **net income** or **profit**. When expenses are greater than revenue, a **net loss** results.

Consider the following income statement of Big Dog Carworks Corp. (BDCC). This business was started on January 1, 2017 by Bob "Big Dog" Baldwin in order to repair automobiles. All the shares of the corporation are owned by Bob.

At January 31, the income statement shows total revenues of $10,000 and various expenses totalling $7,800. Net income, the difference between $10,000 of revenues and $7,800 of expenses, equals $2,200.

Big Dog Carworks Corp.
Income Statement
For the Month Ended January 31, 2017

The heading shows the name of the entity, the type of financial statement, and in this case, the *period-in-time* date.

Revenues		
Repairs revenue		$10,000
Expenses		
Rent expense	$1,600	
Salaries expense	4,000	
Supplies expense	1,500	
Truck operating expense	700	
Total expenses		7,800
Net income		$2,200

The net income is transferred to the statement of changes in equity.

The Statement of Changes in Equity

The **statement of changes in equity** provides information about how the balances in Common Stock and Retained earnings changed during the period. **Common stock** is a heading in the stockholders' equity section of the balance sheet and represents how much stockholders have invested. When stockholders buy shares, they are investing in the business. The number of shares they purchase will determine how much of the corporation they own. Each share purchased represents a unit of ownership in the corporation. For now, the focus will be on common stock, other types of shares will be discussed in a later chapter. When a corporation sells its shares to stockholders, the corporation is said to be *issuing shares* to stockholders.

In the statement of changes in equity shown below, common stock and retained earnings balances at January 1 are zero because the corporation started the business on that date. During January, common stock of $10,000 was issued to stockholders so the January 31 balance is $10,000.

Retained earnings is the sum of all net incomes earned by a corporation over its life, less any distributions of these net incomes to stockholders. Distributions of net income to stockholders are called **dividends**. Stockholders generally have the right to share in dividends according to the percentage of their ownership interest. To demonstrate the concept of retained earnings, recall that Big Dog has been in business for one month in which $2,200 of net income was reported. If dividends of $200 are distributed, these are subtracted from retained earnings. Big Dog's retained earnings are therefore $2,000 at January 31, 2017 as shown in the statement of changes in equity below.

The heading shows the name of the entity, the type of financial statement, and in this case, the *period-in-time* date.

Big Dog Carworks Corp.
Statement of Changes in Equity
For the Month Ended January 31, 2017

	Common stock	*Retained earnings*	*Total equity*
Opening balance	$ -0-	$ -0-	$ -0-
Shares issued	10,000		10,000
Net income		2,200	2,200
Dividends		(200)	(200)
Ending balance	$10,000	$2,000	$12,000

These totals are transferred to the balance sheet at January 31, 2017.

To demonstrate how retained earnings would appear in the next accounting period, let's assume that Big Dog reported a net income of $5,000 for February, 2017 and dividends of $1,000 were paid to the stockholder. Based on this information, retained earnings at the end of February would be $6,000, calculated as the $2,000 January 31 balance plus the $5,000 February net income less the $1,000 February dividend. The balance in retained earnings continues to change over time because of additional net incomes/losses and dividends.

The Balance Sheet

The **balance sheet or statement of financial position** shows a business's assets, liabilities, and equity at a point in time. The balance sheet of Big Dog Carworks Corp. at January 31, 2017 is shown below.

The heading shows the name of the entity, the type of financial statement and the *point-in-time* date.

Big Dog Carworks Corp.
Balance Sheet
At January 31, 2017

Assets		*Liabilities*		
Cash	$ 6,200	Bank loan	$ 9,000	
Accounts receivable	2,500	Accounts payable	700	
Prepaid insurance	2,400	Unearned revenue	400	
Equipment	3,000	Total liabilities		$10,100
Truck	8,000			
		Stockholders' Equity		
		Common stock	$10,000	
		Retained earnings	2,000	12,000
Total assets	$22,100	Total liabilities and equity		$22,100

Total assets ($22,100) always equal total liabilities ($10,100) plus stockholders' equity ($12,000).

What Is an Asset?

Assets are economic resources that provide future benefits to the business. Examples include cash, accounts receivable, prepaid expenses, equipment, and trucks. **Cash** is coins and currency, usually held in a bank account, and is a financial resource with future benefit because of its purchasing power. **Accounts receivable** represent amounts to be collected in cash in the future for goods sold or services provided to customers on credit. **Prepaid expenses** are assets that are paid in cash in advance and have benefits that apply over future periods. For example, a one-year insurance policy purchased for cash on January 1, 2017 will provide a benefit until December 31, 2017 so this a prepaid asset when purchased. The equipment and truck were purchased on January 1, 2017 and will provide benefits for 2017 and beyond so these are assets.

What Is a Liability?

A **liability** is an obligation to pay an asset in the future. It is also known as **debt.** For example, Big Dog's bank loan represents an obligation to repay cash in the future to the bank. **Accounts payable** are obligations to pay a creditor for goods purchased or services rendered. A **creditor** owns the right to receive payment from an individual or business. **Unearned revenue** represents an advance payment of cash from a customer for Big Dog's services or products to be provided in the future. For example, Big Dog collected cash from a customer in advance for a repair to be done in the future.

What Is Stockholders' Equity?

Stockholders' equity represents the net assets owned by the owners (the stockholders). **Net assets** are assets minus liabilities. For example, in Big Dog's January 31 statement of balance sheet, net assets are $12,000, calculated as total assets of $22,100 minus total liabilities of $10,100. This means that although there are $22,100 of assets, only $12,000 are owned by the stockholders and the balance, $10,100, are financed by debt. Notice that net assets and total stockholders' equity are the same value; both are $12,000.

Stockholders' equity consists of common stock and retained earnings.

Common stock represents how much the stockholders have invested in the business.

Retained earnings are the sum of all net incomes earned by a corporation over its life, less any dividends distributed to stockholders.

In summary, the statement of balance sheet is represented by the equation:

Assets = Liabilities + Stockholders' equity

The Statement of Cash Flows

The fourth financial statement is the **statement of cash flows (SCF)**. The SCF explains the sources (inflows) and uses (outflows) of cash over a period of time. The preparation and interpretation of the SCF will be covered in a later chapter.

Notes to the Financial Statements

An essential part of financial statements are the notes that accompany them. These notes are generally located at the end of a set of financial

statements. The notes provide greater detail about various amounts shown in the financial statements, or provide non-quantitative information that is useful to users. For example, a note may indicate the estimated useful lives of long-lived assets, or loan repayment terms. Examples of note disclosures will be provided in later chapters.

Summary of Chapter 1 Learning Objectives

LO1 – Define accounting.

Accounting is the process of identifying, measuring, recording, and communicating an organization's economic activities to users for decision making. Internal users work for the organization while external users do not. Managerial accounting serves the decision-making needs of internal users like managers. Financial accounting reports financial information useful for users external to the organization, like stockholders.

LO2 – Identify and describe the forms of business organizations.

There are two types of organizations. A business organization sells products or services for profit. A non-business organization such as a charity or hospital, exists to meet various societal needs and does not have profit as a goal. Three types of business organizations are a proprietorship, partnership, and corporation. A corporation is different because it is considered a separate legal entity from stockholders, and these stockholders have limited liability for the debts of the corporation.

LO3 – Identify and explain generally accepted accounting principles (GAAP).

GAAP are the guidelines that shape the way financial information is reported in financial statements prepared for external users. GAAP have qualitative characteristics of relevance, faithful representation, comparability, verifiability, timeliness, and understandability. Development of GAAP is guided by the principles of the business entity, consistency, historical cost, full disclosure, going concern, matching, materiality, a stable monetary unit, and revenue recognition.

Summary of Chapter 1 Learning Objectives (continued)

LO4 – Analyze transactions by using the accounting equation.

The accounting equation (Assets equals liabilities plus stockholders' equity, or A = L + E), describes the asset investments (the left side of the equation) and the liabilities and stockholders' equity that financed the assets (the right side of the equation). The accounting equation provides a system for processing and summarizing financial transactions resulting from a business's activities. A financial transaction is an economic exchange between two parties that impacts the accounting equation. The equation must always balance.

LO5 – Identify, explain, and prepare the financial statements.

The four financial statements are: income statement, statement of changes in equity, balance sheet, and statement of cash flows. The income statement reports financial performance by detailing revenues less expenses to arrive at net income for the period. The statement of changes in equity shows the changes during the period to common stock and retained earnings. The balance sheet identifies the financial position at a point in time by listing assets, liabilities, and stockholders' equity. Finally, the statement of cash flows details the sources and uses of cash during the period.

E N D O F C H A P T E R M A T E R I A L S

Multiple-Choice Review

1. Which of the following is not a part of the accounting process?
   a.) Communicating
   b.) Recording
   c.) Verifying
   d.) Measuring

2. Which business formation generally involves unlimited personal liability for its owner(s)?
   a.) Sole proprietorship
   b.) Partnership
   c.) Corporation
   d.) Items a and b are correct.

3. Identify an advantage of the corporate business formation:
   a.) Double taxation
   b.) Limited life
   c.) Unlimited liability
   d.) Unlimited life

4. Generally accepted accounting principles (GAAP) are created by the:
   a.) International Accounting Standards Board (IASB)
   b.) Securities and Exchange Committee (SEC)
   c.) Financial Accounting Standards Board (FASB)
   d.) American Institute of Certified Public Accountants (AICPA)

5. The accounting convention that states the activities of an organization should be kept separate from its owner(s) is the:
   a.) Business entity assumption
   b.) Stable monetary unit assumption
   c.) Going concern assumption
   d.) Full disclosure principle

6. On the last day of the period, Ever Company purchases computer equipment on account. This transaction will affect the:
   a.) income statement only
   b.) balance sheet only
   c.) income statement and balance sheet
   d.) none of the above

Multiple-Choice Review (continued)

7. Knitty Bear Company is a provider of instructional knitting classes. In November, they provide $8,000 of classes. The company collects its class fees at the time the class is completed. How does this effect the company's basic accounting equation?
   a.) increase assets and increase liabilities
   b.) increase assets and decrease stockholders' equity
   c.) decrease liabilities and increase stockholders' equity
   d.) increase assets and increase stockholders' equity

8. Assume now that Knitty Bear bills its customers for the classes provided (instead of receiving cash at the time the class is completed). How does this effect the company's basic accounting equation?
   a.) increase assets and increase liabilities
   b.) increase assets and decrease stockholders' equity
   c.) decrease liabilities and increase stockholders' equity
   d.) increase assets and increase stockholders' equity

9. Net income results when:
   a.) assets exceed liabilities
   b.) revenues exceed expenses
   c.) liabilities exceed assets
   d.) expenses exceed revenues

10. The balance sheet:
    a.) presents a company's assets, liabilities and stockholders' equity
    b.) reports the company's financial position on a specific date
    c.) should show the sum of the company's assets equal to the sum of the company's liabilities and stockholders' equity
    d.) all of the above are correct

11. How would the accounting equation be impacted by the payment of an account payable?
    a.) increase assets and increase liabilities
    b.) decrease assets and decrease liabilities
    c.) decrease liabilities and increase stockholders' equity
    d.) increase assets and increase stockholders' equity

Answers on the following page

Answers to Multiple-Choice Review

1. c
2. d
3. d
4. c
5. a
6. b
   The equipment and accounts payable account would be impacted in this transaction. Equipment is an asset and accounts payable is a liability. Assets and liabilities appear on the balance sheet only.
7. d
   The receipt of cash for classes provided would cause an increase to the Cash account and the Service Revenue account. Cash is an asset account and Service Revenue is a stockholders' equity account. Therefore, the transaction would result in an increase to assets and an increase to stockholders' equity.
8. d
   The billing to customers for classes provided would cause an increase to the Accounts Receivable account and the Service Revenue account. Accounts Receivable is an asset account and Service Revenue is a stockholders' equity account. Therefore, the transaction would result in an increase to assets and an increase to stockholders' equity.
9. b
10. d
11. b
    The payment of accounts payable would cause a decrease to the Cash account and a decrease to the Accounts Payable account. Cash is an asset account and Accounts Payable is a liability account. Therefore, the transaction would result in a decrease to assets and a decrease to liabilities.

Discussion Questions

1. What is the difference between managerial and financial accounting?
2. What is the difference between a business organization and a non-business organization? Provide some examples.
3. What are the three types of business organizations? Identify some of their characteristics.
4. What does the term *limited liability* mean?
5. Describe what GAAP refers to.
6. Identify and explain the six qualitative characteristics of GAAP.
7. What is the general purpose of financial statements? What are the four types of financial statements?
8. What is the purpose of an income statement? a balance sheet? How do they interrelate?
9. Define the terms “revenue” and “expense”.
10. What is net income? What information does it convey?
11. What is the purpose of a statement of changes in equity?
12. Stockholders’ equity consists of what two components?
13. Explain how retained earnings and dividends are related.
14. What are the three primary components of the balance sheet?
15. What are assets?
16. To what do the terms “liability” and “stockholders’ equity” refer?
17. What information is provided in the statement of cash flows?
18. What are notes to the financial statements?
19. Illustrate how the double-entry accounting system works.
20. Why are financial statements prepared at regular intervals? Who are the users of these statements?
21. What is the basic accounting equation? How does it work?
22. Explain what is meant by the term “financial transaction”. Give an example of a financial transaction.

Comprehension Problems

CP 1–1

The following statements refer to different business organizations. Match each description to the business organization it best reflects.

(S) Sole Proprietorship (P) Partnership (C) Corporation

___ 1.) Hannah and her sister, Montana, own a music recording business. Each is personally liable for the debts of the business.

___ 2.) Evanescence pays its own income tax and has two owners.

___ 3.) Dougray Designs does not pay income tax and has one owner.

___ 4.) The ownership of Hazel Company is divided into 10,000 shares of stock.

___ 5.) Anna and Elsa own Winter Memories. Neither is personally liable for the debts of the company.

CP 1-2

Presented below are several business transactions. Indicate how each transaction impacts the accounting equation by listing a (+) for an increase, a (-) for a decrease, or (NE) if the transaction had no effect on assets, liabilities or stockholders' equity.

	Assets =	Liabilities +	Stockholders' Equity
1.) Received cash for performing services.	_____	_____	_____
2.) Purchased supplies on account.	_____	_____	_____
3.) Paid expenses in cash	_____	_____	_____
4.) Paid dividends with cash	_____	_____	_____

CP 1-3

Match each statement with the principle or assumption it best describes.

A. Business entity assumption
B. Stable monetary unit assumption
C. Going concern assumption
D. Time period assumption
E. Historical cost principle
F. Fair value principle
G. Full disclosure principle
H. Materiality constraint
I. Revenue recognition principle
J. Matching principle

Each assumption/principle will be used only once.

___ 1.) Revenue is only recorded when the service or good has been delivered.

___ 2.) Information presented is based on actual amounts paid in transactions.

___ 3.) A company presents details behind financial transactions that would impact an individual's decisions.

___ 4.) Information presented reflects the assumption that the business will continue operating.

___ 5.) Every business tracks their activity separate from its owner(s).

___ 6.) A company records expenses produced in the same period as the revenues resulted.

___ 7.) A business omits information that would not impact an individual's decisions.

___ 8.) A company reports its financial activities every 52 weeks.

___ 9.) Information presented is stated in dollar amounts.

___ 10.) Certain information may be reported at its market value.

CP 1–4

Presented below are several business transactions. Indicate how each transaction impacts the accounting equation by listing a (+) for an increase, a (-) for a decrease, or (NE) if the transaction had no effect on assets, liabilities or stockholders' equity.

	Assets =	Liabilities +	Stockholders' Equity
1.) Cash invested in exchange for stock.	_____	_____	_____
2.) Purchased supplies with cash.	_____	_____	_____
3.) Paid for month's rent.	_____	_____	_____
4.) Provided services on account	_____	_____	_____
5.) Received customer's cash payment for work billed in item 4.	_____	_____	_____

CP 1–5

Using the appropriate accounting equation, study the following transactions and identify the effect of each on assets, liabilities and stockholders' equity, as applicable. Use a (+) to denote an increase and a (–) to denote a decrease, and (NE) for no effect. The first one is done as an example.

Assets	Liabilities	SE	
(-)+	_____	_____	1.) Purchased a truck for cash
_____	_____	_____	2.) Received a bank loan to pay for equipment
_____	_____	_____	3.) Paid worker salaries for pay period just ended
_____	_____	_____	4.) Made a deposit for electricity service to be provided in the future
_____	_____	_____	5.) Paid utilities for the month just ended
_____	_____	_____	6.) Purchased supplies on account
_____	_____	_____	7.) Signed a new union contract that providing increased wages in the future
_____	_____	_____	8.) Hired a messenger service to deliver letters starting next month
_____	_____	_____	9.) Billed customers for services performed
_____	_____	_____	10.) Made a cash payment to satisfy an outstanding obligation
_____	_____	_____	11.) Received a payment of cash for an amount owed by a customer
_____	_____	_____	12.) Collected cash from a customer for services rendered the same day
_____	_____	_____	13.) Paid cash for truck repairs
_____	_____	_____	14.) Made payment to supplier for outstanding account balance.

CP 1–6

The following list covers many of the types of financial transactions. Notice that each transaction has an equal and offsetting effect on the accounting equation.

Types of accounting transactions

	ASSETS	=	LIABILITIES	+	STOCKHOLDERS' EQUITY
1.	(+)				(+)
2.	(+)		(+)		
3.	(+)(-)				
4.	(-)				(-)
5.	(-)		(-)		
6.			(+)		(-)
7.			(-)		(+)
8.			(+)(-)		
9.					(+)(-)

Required: Study the above transactions and identify, by number (1 to 9), the type of transaction. Some transactions may not require an accounting entry.

Example:

__1__ Issued common stock for cash
____ Paid an account payable
____ Borrowed money from a bank
____ Collected an account receivable
____ Collected a commission on a sale made today
____ Paid for this month's advertising in a newspaper
____ Repaid money borrowed from a bank
____ Signed a contract to purchase a computer
____ Received a bill for supplies used during the month
____ Received a payment of cash in satisfaction of an amount owed by a customer
____ Sent a bill to a customer for repairs made today
____ Sold equipment for cash
____ Purchased a truck on credit, to be paid in six months
____ Requested payment from a customer of an account receivable that is overdue
____ Increased employee vacations from four to six weeks
____ Recorded the amount due to the landlord as rent for the past month.
____ Received the monthly telephone answering service bill

CP 1–7

Required: Calculate the missing amounts for companies A to E.

	A	*B*	*C*	*D*	*E*
Cash	$3,000	$1,000	$?	$6,000	$2,500
Equipment	8,000	6,000	4,000	7,000	?
Accounts payable	4,000	?	1,500	3,000	4,500
Common stock	2,000	3,000	3,000	4,000	500
Retained earnings	?	1,000	500	?	1,000

CP 1–8

Required: Calculate the net income earned during the year. Assume that the change to stockholders' equity results only from net income earned during the year.

	Assets	*Liabilities*
Balance Jan. 1, 2019	$50,000	$40,000
Balance Dec. 31, 2019	35,000	20,000

CP 1–9

Required: Indicate whether each of the following is an asset (A), liability (L), or a stockholders' equity (E) item.

1. Accounts payable
2. Accounts receivable
3. Bank loan
4. Cash
5. Equipment
6. Insurance expense
7. Loan payable
8. Prepaid insurance
9. Rent expense
10. Repair revenue
11. Common stock
12. Truck operating expense
13. Supplies
14. Dividends

CP 1–10

The following accounts are taken from the records of Jasper Inc. at January 31, 2019, its first month of operations.

Cash	$33,000
Accounts receivable	82,000
Supplies	2,000
Land	25,000
Building	70,000
Equipment	30,000
Bank loan	15,000
Accounts payable	27,000
Common stock	?
Net income	40,000
Dividends	1,000

Required:

1. Calculate the amount of total assets.
2. Calculate the amount of total liabilities.
3. Calculate the amount of common stock.

CP 1–11

Required: A corporation has been in business for one month. From the financial information at January 31 shown below, complete an income statement, statement of changes in stockholders' equity, and balance sheet.

Accounts receivable	$ 4,000
Accounts payable	5,000
Cash	1,000
Common stock	4,000
Equipment	8,000
Insurance expense	1,500
Miscellaneous expense	2,500
Office supplies expense	1,000
Service revenue	20,000
Wages expense	9,000
Dividends	2,000

CP 1–12

A junior bookkeeper of Adams Ltd. prepared the following financial statements at January 31, 2019, the end of its first month of operations.

Adams Ltd.
Income Statement
For the Month Ended January 31, 2019

Revenue		$3,335
Expenses		
Accounts payable	$ 300	
Land	1,000	
Dividends	500	1,635
Miscellaneous expenses	335	
Net income		$1,200

Balance Sheet

Assets		*Liabilities and Stockholder's Equity*	
Cash	$1,000	Rent expense	$ 300
Repairs expense	500	Common stock	3,000
Salaries expense	1,000	Retained earnings	1,200
Building	2,000		
	$4,500		$4,500

Required: Prepare a revised income statement, a statement of changes in equity, and a revised balance sheet.

CP 1–13

Financial statements are prepared according to a number of accounting concepts, some of which are listed below:

A. Business entity assumption
B. Going concern assumption
C. Stable monetary unit assumption
D. Fair value principle
E. Historical cost principle
F. Full disclosure principle
G. Materiality constraint
H. Revenue recognition principle

Required: Identify the principle that would apply in each of the following situations. Principles/assumptions will be used once.

_____ 1. An accountant for Caldwell Corporation records a $25 stapler with a five–year life as an expense. Caldwell has total assets of $1,000,000.

_____ 2. Fred Rozak, an independent consultant, must keep a set of books for his consulting firm and a separate set of books for his personal records.

_____ 3. A machine is recorded at its purchase price of $9,000 and is not revalued at the end of the accounting period to reflect its market value of $10,000.

_____ 4. Land purchased in 1985 for $10,000 is not revalued even though it would take $30,000 in equivalent money to purchase the land today.

_____ 5. Accountants of Hull Corporation do not record the value of its production equipment at the much lower amount for which it could be sold in the near future.

_____ 6. Spellman Corporation reports its actively traded investments at their market value.

_____ 7. Looten Corporation senior managers decide to disclose a recent $2 million lawsuit in a note to the financial statements even though the case will not likely be settled for two years.

_____ 8. Riggin Corporation receives $200,000 from a customer advance but delays recording the money as revenue until the work is completed next year.

Problems

P 1–1

The following balances appeared on the transactions worksheet of Hill Chairs Inc. on April 1, 2019.

ASSETS					= LIABILITY +	STOCKHOLDERS' EQUITY				
Cash	+ Accounts Receivable	+ Prepaid Expense	+ Supplies	=	Accounts Payable	+ Comm. Stock	- Div.	+ Rev.	- Exp.	
1,400	3,600	1,000	350		2,000	4,350				

The following transactions occurred during April:

a. Collected $2,000 cash in satisfaction of an amount owed by a customer
b. Billed $3,000 to customers for chairs rented to date
c. Paid the following expenses: advertising, $300; salaries, $2,000; telephone, $100
d. Paid half of the accounts payable
e. Received a $500 bill for April truck operating expenses, will paid the bill next month
f. Collected $2,500 in satisfaction of an amount owed by a customer
g. Billed $1,500 to customers for chairs rented to date
h. Issued additional common stock and received $1,000 cash
i. Paid $200 dividend in cash.

Required: Record the opening balances and the above transactions on a transactions worksheet and calculate the total of each column at the end of April. (Use the headings above on your worksheet.)

P 1–2

The following transactions of Larson Services Inc. occurred during August 2019, its first month of operations.

Aug.	1	Issued common stock for $3,000 cash
	2	Paid $600 for a one–year truck insurance policy effective September 1
	5	Collected $2,000 fees from a client for work to be performed at a later date
	7	Billed a client $5,000 for services performed today
	9	Paid $250 for supplies purchased
	12	Purchased $500 of supplies on credit
	15	Collected $1,000 of the amount billed August 7
	16	Paid $200 for advertising in The News during the first two weeks of August
	20	Paid $250 of the amount owing for supplies purchased on August 12
	25	Paid the following expenses: rent for August, $350; salaries, $2,150; telephone, $50; truck operating, $250
	28	Called clients about payment of the balances owing from August 7
	29	Billed a client $6,000 for services performed today

Required:

1. Record the above transactions on a transactions worksheet and calculate the total of each column at the end of August. Use the following headings on your worksheet; Cash, Accounts Receivable, Prepaid Expenses, Supplies, Accounts Payable, Unearned Revenue, Common Stock, Dividends, Revenues, and Expenses.
2. Prepare an income statement, statement of changes in equity, and balance sheet for August.

P 1–3

Following are the asset, liability, and stockholders' equity balances of Dumont Inc. at January 31, 2019 after its first month of operations.

ASSETS		=	LIABILITIES		+	STOCKHOLDERS' EQUITY	
Cash	$1,300		Bank loan	$8,000		Common stock	$2,000
Accounts rec.	2,400		Accounts pay.	1,000		Service revenue	7,500
Prepaid exp.	550					Advertising expense	500
Supp.	750					Commissions expense	720
Truck	9,000					Insurance expense	50
						Interest expense	80
						Rent expense	400
						Supplies expense	100
						Telephone expense	150
						Wages expense	2,300
						Dividend paid	200

Required:

Prepare an income statement and statement of changes in equity, and balance sheet for January. Record the expenses in alphabetical order. Assume no common stock was issued during the month.

P 1–4

The following is an alphabetical list of data from the records of Kenyon Services Corporation at March 31, 2019.

Accounts payable	$9,000	Equipment rental expense	$ 500
Accounts receivable	3,900	Fees earned	4,500
Advertising expense	300	Insurance expense	400
Cash	3,100	Interest expense	100
Common stock	2,000	Truck operating expense	700
Equipment	5,000	Wages expense	1,500

Required:

Prepare an income statement, statement of changes in equity, and balance sheet for March. Record the expenses in alphabetical order. Assume no common stock was issued during the month and that there was no retained earnings balance at March 1.

P 1–5

The following "financial statement" was prepared from the records of Laberge Sheathing Inc. for the eight-month period ended August 31, 2019.

Laberge Sheathing Inc.
Financial Statement
For the Eight Month Period Ended August 31, 2019

Cash	$ 400	Accounts payable	$ 7,800
Accounts receivable	3,800	Common stock	3,200
Supplies	100	Service revenue	6,000
Equipment	8,700		
Advertising expense	300		
Interest expense	500		
Maintenance expense	475		
Supplies expense	125		
Wages expense	2,000		
Dividends	600		
	$17,000		$17,000

Required:

1. When is the corporation's likely fiscal year-end?
2. Prepare an income statement and statement of changes in equity for the eight-month period ended August 31, 2019.
3. Prepare a balance sheet at August 31.

P 1–6

The following transactions took place in McIntyre Builders Corporation during June 2019, its first month of operations.

Jun.	1	Issued common stock for $8,000 cash
	1	Purchased $5,000 equipment on credit
	2	Collected $600 cash for renovations completed today
	3	Paid $20 for supplies used June 2
	4	Purchased $1,000 supplies on credit
	5	Billed customers $2,500 for renovations completed to date
	8	Collected $500 of the amount billed June 5
	10	Paid half of the amount owing for equipment purchased June 1
	18	Paid for the supplies purchased June 4
	20	Received a bill for $100 for utilities used to date
	23	Signed a union contract
	25	Collected $1,000 of the amount billed June 5
	26	Paid the following expenses: advertising, $150; telephone, $50; truck operating expense (repairs, gas), $1,000; wages, $2,500
	27	Paid $600 to the landlord for June's rent
	28	Paid $600 to the landlord for July's rent
	30	Billed $2,000 for repairs completed to date
	30	Paid $30 dividend in cash.

Required:

1. Record the above transactions on a transactions worksheet and calculate the total of each column at the end of June. Use the following headings on your worksheet; Cash, Accounts Receivable, Prepaid Expenses, Supplies, Equipment, Accounts Payable, Common Stock, Dividends, Revenues, and Expenses.

2. Prepare an income statement, statement of changes in equity, and balance sheet for June.

P 1–7

Clarke Company had the following transactions in January.

Jan. 1	The owner invested $15,000 cash in into the company.
Jan. 2	Paid $300 for three months of insurance coverage.
Jan. 6	Billed $2,500 to customers for services performed.
Jan. 7	Purchased $500 of supplies on credit.
Jan. 8	Took out a $10,000 loan from a U.S Bank
Jan. 9	Collected $1,500 for the amount billed on Jan. 6.
Jan. 10	Received a $100 bill for utilities used to date (the bill will be paid next month).
Jan. 11	Repaid $2,000 of the bank loan.
Jan. 12	Paid $200 for the supplies purchased on Jan. 7.
Jan. 15	Paid $1,500 to employees for bi-weekly payroll.
Jan. 25	Paid $1,800 for monthly January rent.
Jan. 28	Paid $600 of dividends to owner.

Required:

1. Record the above transactions on a transactions worksheet and calculate the total of each column at the end of June. Use the following headings on your worksheet; Cash, Accounts Receivable, Prepaid Insurance, Supplies, Accounts Payable, Bank Loan, Common Stock, Dividends, Revenues, and Expenses.

2. Prepare an income statement, statement of changes in equity, and balance sheet for June.

P 1–8

Cake Furniture Rentals Corporation had the following balance at April 1.

Cash	$1,800	Accounts payable	$2,000
Accounts receivable	3,800	Common stock	4,950
Prepaid rent	1,000		
Supplies	350		

The following transactions occurred during April:

1. Billed $4,000 to customers for furniture rented to date
2. Collected $5,800 cash owed by customers
3. Purchased $400 of supplies on account
4. Paid the following expenses: advertising, $300; salaries, $2,000; telephone, $100
5. Paid $1,000 of the accounts payable owed
6. Received a $500 bill for April truck repair expenses. The bill will be paid in May.
7. Collected $600 owed by a customer
8. Billed $1,500 to customers for furniture rented to date
9. Paid a $100 dividend
10. Received $2,500 cash for furniture rental services completed.
11. Issued $3,000 of stock in exchange for cash investment by owner

Required:

1. Record the above transactions on a transactions worksheet and calculate the total of each column at the end of April. Use the headings listed below on your worksheet and remember to input the April 1 beginning balances.

ASSETS				= LIAB.	+ STOCKHOLDERS' EQUITY			
Cash	A/R	Prepaid Rent	Supp.	A/P	+Comm. Stock	-Div.	+Rev.	-Exp.

2. Prepare an income statement, statement of changes in equity, and balance sheet for April.

P 1–9

Fiona Consulting Corporation had the following balance at June 1.

Cash	$6,500	Accounts payable	$2,000
Accounts receivable	2,800	Common stock	20,650
Prepaid insurance	0		
Equipment	13,350		

The following transactions occurred during the month:

1. Paid $2,000 for a 6-month insurance policy to begin July 1
2. Collected $2,000 cash owed by customers
3. Purchased $4,000 of equipment on account
4. Paid the following expenses: utilities, $300; salaries, $2,000; rent, $900
5. Paid $3,000 of the accounts payable owed
6. Received a $500 bill for June advertising services. The bill will be paid in July.
7. Billed $1,500 to customers for services provided
8. Paid a $1,000 dividend to owner
9. Received $2,500 cash for consulting services completed.
10. Issued $2,000 of stock in exchange for cash investment by owner

Required:

1. Record the above transactions on a transactions worksheet and calculate the total of each column at the end of June. Use the headings listed below on your worksheet and remember to input the June 1 beginning balances.

ASSETS				= LIAB.	+ STOCKHOLDERS' EQUITY			
Cash	A/R	Prepaid Ins.	Equip.	A/P	+Comm. Stock	-Div.	+Rev.	-Exp.

2. Prepare an income statement, statement of changes in equity, and balance sheet for June.

CHAPTER TWO

The Accounting Process

Chapter 2 looks more closely at asset, liability, and stockholders' equity accounts and how they are affected by double-entry accounting. The transactions introduced in Chapter 1 for Big Dog Carworks Corp. are used to explain "debit" and "credit" analysis. The preparation of a trial balance will be introduced. Additionally, this chapter will demonstrate how transactions are recorded in a general journal and posted to a general ledger. Finally, the concept of the accounting cycle is presented.

Chapter 2 Learning Objectives

LO1 – Describe asset, liability, and equity accounts, identifying the effect of debits and credits on each.

LO2 – Analyze transactions using double-entry accounting.

LO3 – Record transactions in a general journal and post them to a general ledger.

LO4 – Prepare a trial balance, explain its use, and prepare financial statements from it.

LO5 – Define the accounting cycle.

A. Accounts

LO1 – Describe asset, liability, and equity accounts, identifying the effect of debits and credits on each.

Chapter 1 reviewed the analysis of financial transactions and the resulting impact on the accounting equation. We now expand that discussion by introducing the way transaction is recorded in an *account*. An **account** accumulates detailed information regarding the increases and decreases in a specific asset, liability, or stockholders' equity item. Accounts are maintained in a **general ledger**. We now review and expand our understanding of asset, liability, and stockholders' equity accounts.

Asset Accounts

Recall that assets are resources that have future economic benefits for the business. The primary purpose of assets is that they be used in day-to-day operating activities in order to generate revenue either directly or indirectly. A separate account is established for each asset. Examples of asset accounts are reviewed below.

- **Cash** has future purchasing power. Coins, currency, checks, and bank account balances are examples of cash.

- **Accounts receivable (A/R)** occur when products or services are sold on account (or "on credit"). When a sale occurs on account or on credit, the customer has not paid cash but promises to pay in the future.

- **Notes receivable** are formal promises to pay accounts receivable on a specific future date along with a predetermined amount of interest.

- **Supplies** are things like paper, staples, and other business stock to be used in the future. If the supplies are used before the end of the accounting period or immaterial in amounts, they are considered an expense of the period rather than an asset. If the items remain in stock, or unused, they are considered assets.

- **Merchandise inventory** are goods held for sale.

- **Prepaid expenses** are assets that are paid in cash in advance and have benefits that apply over future periods. Common examples include: prepaid insurance, prepaid rent, subscriptions, etc.

- **Buildings** indirectly help a business generate revenue over future accounting periods since they provide space for day-to-day operating activities.

- **Land** cost must be in a separate account from any building that might be on the land. Land usually has an indefinite useful life.

Liability Accounts

As explained in Chapter 1, a liability is an obligation settled in time through the transfer of economic benefits like cash. One purpose of liabilities is to finance the purchase of assets like land, buildings, and equipment. Liabilities are also used to finance day-to-day operating activities. Examples of liability accounts are reviewed below.

- **Accounts payable (A/P)** are debts owed to suppliers for goods purchased or services received as a result of day-to-day operating activities. An example of a service received on credit might be a plumber billing the business for a repair.

- **Wages payable** are wages owed to employees for work performed but not paid at the balance sheet date.

- **Bank loans** are debts owed to a bank or other financial institution.

- **Unearned revenues** are payments received in advance of the product or service being provided. If a customer pays $1,000 for an automobile repair to be done in the next accounting period, this is recorded as a liability.

Stockholders' Equity Accounts

Chapter 1 explained that stockholders' equity represents the net assets owned by the owners of a corporation. There are five different types of stockholders' equity accounts: **common stock, retained earnings, dividends, revenues,** and **expenses**.

Common stock represents the investments made by owners into the business and causes stockholders' equity to increase.

Retained earnings is the sum of all net incomes earned over the life of the corporation to date, less any dividends distributed to stockholders over the same time period. Therefore, the Retained Earnings account

includes revenues, which cause stockholders' equity to increase, along with expenses and dividends, which cause stockholders' equity to decrease.

Revenues increase a company's retained earnings and result from earnings generated by carrying out their normal business activities – such as selling services or products.

Expenses decrease a company's retained earnings and result from the normal costs of operating a business –such as paying employees, rent, utilities, etc. Expenses also result from assets that have been used up or the obligations incurred in the course of earning revenues.

Dividends represent distributions to the company's owners (or stockholders). This distribution can take the form of cash or other assets. Dividend payments reduce the company's retained earnings and overall equity. Stockholders have a right to these accumulated earnings because they own the corporation.

Figure 2-1 summarizes stockholders' equity accounts.

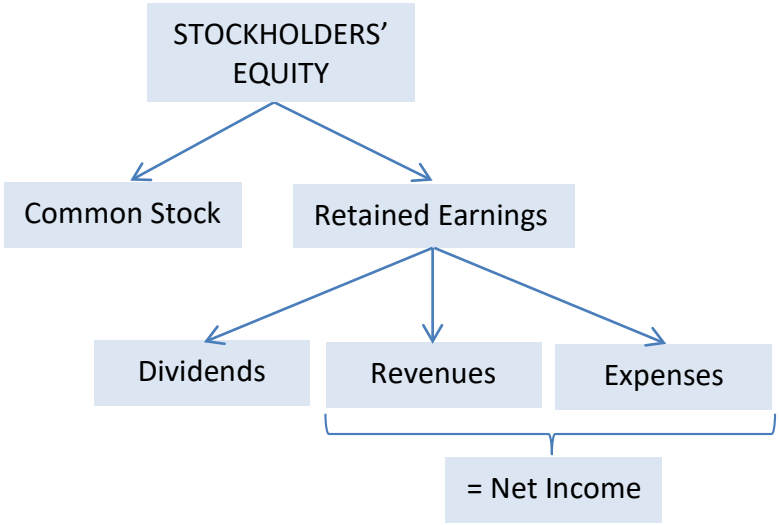


Figure 2-1 Composition of Stockholders' Equity

T-accounts

A simplified account, called a **T-account**, is often used as a learning tool to show increases and decreases in an account. It is called a T-account because it resembles the letter *T*. As shown in the T-account below, the left side records **debit** entries and the right side records **credit** entries.

Account Name	
Debit (always on left)	Credit (always on right)

The *type* of account determines whether an increase or a decrease in a particular transaction is represented by a debit or credit. For financial transactions that affect *assets*, *dividend*s, and *expenses,* increases are recorded by debits and decreases by credits. This guideline is shown in the following T-account.

Assets, Dividends, Expenses	
Debits are always increases ↑	Credits are always decreases ↓

For financial transactions that affect *liabilities, common stock,* and *revenues*, increases are recorded by credits and decreases by debits:

Liabilities, Revenues, Common Stock	
Debits are always decreases ↓	Credits are always increases ↑

	Assets	=	Liabilities	+	S/H Equity
Increases are recorded as:	Debits		Credits		Credits
Decreases are recorded as:	Credits		Debits		Debits

Now that we are familiar with the side that records the increases and decreases of various accounts, we will turn to how to use this in calculating the account ending balance. The **account balance** is determined by adding and subtracting the increases and decreases in an account as shown below:

Cash

	Debit	*Credit*
	10,000	4,000
	3,000	2,000
	400	2,400
Balance	5,000	

Accounts Payable

	Debit	*Credit*
	700	5,000
Balance		4,300

The $5,000 debit balance in the Cash account was calculated by adding all the debits and subtracting the credits (10,000 + 3,000 + 400 – 4,000 – 2,000 – 2,400). The $5,000 is recorded on the debit side of the T-account because the debits are greater than the credits. In Accounts Payable, the balance is a $4,300 credit calculated by subtracting the debits from the credits (5,000 – 700).

Notice that Cash shows a debit balance while Accounts Payable shows a credit balance. The Cash account is an asset so its *normal balance* is a debit. A **normal balance** is the side on which increases occur.

Chart of Accounts

A business will create a list of accounts called a **chart of accounts** where each account is assigned both a name and a number. A common practice is to have the accounts arranged in a manner that is compatible with the order of their use in financial statements. For instance, Asset accounts may begin with the digit '1', liability accounts with the digit '2', and stockholders' equity accounts (excluding revenues and expenses) with the digit '3'. Each business will have a unique chart of accounts that corresponds to its specific needs. Assume Big Dog Carworks Corp. uses the following numbering system for its accounts:

100-199	Asset accounts
200-299	Liability accounts
300-399	Common stock, retained earnings, and dividend
400-499	Revenue accounts
600-799	Expense accounts

B. Transaction Analysis Using Accounts

LO2 – Analyze transactions using double-entry accounting.

In Chapter 1, transactions for Big Dog Carworks Corp. were analyzed to determine the change in each item of the accounting equation. In this next section, these same transactions will be used to demonstrate double-entry accounting. **Double-entry accounting** means each transaction is recorded in at least two accounts where the total debits always equal the total credits. As a result of double-entry accounting, the sum of all the debit balance accounts in the ledger must equal the sum of all the credit balance accounts. The rule that debits = credits is rooted in the accounting equation:

ASSETS	=	LIABILITIES	+	STOCKHODLERS' EQUITY
Debits	=	Credits	+	Credits

Illustrative Problem—
Double-Entry Accounting and the Use of Accounts

Remember from the last section:

	Assets	=	Liabilities	+	S/H Equity
Increases are recorded as:	Debits		Credits		Credits
Decreases are recorded as:	Credits		Debits		Debits

We will use this information when recording the transactions of Big Dog Carworks Corp. into its T-accounts.

Transaction 1
Jan. 1 – Bob Baldwin, the sole owner of Big Dog Carworks Corporation, invested $10,000 cash into the company in exchange for stock.

Debit: An asset account, Cash, is increased resulting in a debit.

Cash	
10,000	

Credit: Common Stock, a stockholders' equity account, is increased resulting in a credit.

Common Stock	
	10,000

Transaction 2

Jan. 2 – Borrowed $4,000 from the bank.

Debit: An asset account, Cash, is increased resulting in a debit.

Cash	
4,000	

Credit: A liability account, Bank Loan, is increased resulting in a credit.

Bank Loan	
	4,000

Transaction 3

Jan. 3 – Equipment was purchased for $3,000 cash. In this case, one asset is acquired in exchange for another asset.

Debit: An asset account, Equipment, is increased resulting in a debit.

Equipment	
3,000	

Credit: An asset account, Cash, is decreased resulting in a credit.

Cash	
	3,000

Transaction 4

Jan. 3 – A truck was purchased for $8,000; Big Dog paid $1,000 cash and incurred a $7,000 bank loan for the balance. This transaction involves one debit and two credits.

Debit: An asset account, Truck, is increased by a debit.

Truck	
8,000	

Credit: An asset account, Cash, is decreased by a credit.

Cash	
	1,000

Credit: A liability account, Bank Loan, is increased by a credit.

Bank Loan	
	7,000

Transaction 5

Jan. 5 – Big Dog Carworks Corp. paid $2,400 cash for a one-year insurance policy, effective January 1. Because the insurance provides future benefit, it is recorded as an asset until it is used.

Debit: An asset account, Prepaid Insurance, is increased by a debit.

Prepaid Insurance	
2,400	

Credit: An asset account, Cash, is decreased by a credit.

Cash	
	2,400

Transaction 6

Jan. 10 – The corporation paid $2,000 cash to reduce the bank loan.

Debit: A liability account, Bank Loan, is decreased by a debit.

Bank Loan	
2,000	

Credit: An asset account, Cash, is decreased by a credit.

Cash	
	2,000

Transaction 7

Jan. 15 – The corporation received an advance payment of $400 for repair services to be performed as follows: $300 in February and $100 in March. Since the revenue relating to this cash receipt is not earned as of this date, a liability account, Unearned Repair Revenue, is created.

Debit: An asset, Cash, is increased at the time the cash is received by a debit.

Cash	
400	

Credit: a liability account, Unearned Repair Revenue, is credited.

Unearned Repair Revenue	
	400

Transaction 8

Jan. 31 – A total of $10,000 of automotive repair services is performed for customers who paid $7,500 cash. The remaining $2,500 will be paid in 30 days. Two debits are required in this case.

Debit: An asset, Cash, is increased by a debit.

Cash	
7,500	

Debit: Another asset, Accounts Receivable, is increased by a debit.

Accounts Receivable	
2,500	

Credit: A stockholders' equity account, Repair Revenue, is increased by a credit.

Repair Revenue	
	10,000

Transaction 9

Jan. 31 – Operating expenses of $7,100 were paid in cash: rent expense, $1,600; salaries expense, $4,000; and supplies expense of $1,500. $700 for truck operating expenses were incurred on credit. This transaction increases four separate expense accounts and two separate balance sheet accounts.

Debit: An expense account, Rent Expense is increased by a debit.

Rent Expense	
1,600	

Debit: An expense account, Salaries Expense is increased by a debit.

Salaries Expense	
4,000	

Debit: An expense account, Supplies Expense is increased by a debit.

Supplies Expense	
1,500	

Debit: An expense account, Truck Operating Expense is increased by a debit.

Truck Operating Expense	
700	

Credit: An asset, Cash, is decreased by a credit.

Cash	
	7,100

Credit: A liability, Accounts Payable, is increased by a credit.

Accounts Payable	
	700

Transaction 10

Jan. 31 – Dividends of $200 were paid in cash to the stockholder, Bob Baldwin. Dividends are a distribution of net income, and reduce stockholders' equity.

Debit: The Dividends account is increased by a debit.

Dividends	
200	

Credit: An asset, Cash, is decreased by a credit.

Cash	
	200

After the January transactions of Big Dog Carworks Corp. have been recorded in the T-accounts, each account is totalled and the difference between the debits and credits is calculated, as shown in the following diagram. The numbers in parentheses refer to the transaction numbers used in the preceding section. To prove that the accounting equation is in balance, the account balances for each of assets, liabilities, and stockholders' equity are added. Notice that total assets of $22,100 equal the sum of total liabilities of $10,100 plus stockholders' equity of $12,000.

ASSETS = LIABILITIES + STOCKHOLDERS' EQUITY

Cash

(1)	10,000	(3)	3,000
(2)	4,000	(4)	1,000
(7)	400	(5)	2,400
(8)	7,500	(6)	2,000
		(9)	7,100
		(10)	200
Bal.	6,200		

Accounts Receivable

(8)	2,500		

Prepaid Insurance

(5)	2,400		

Equipment

(3)	3,000		

Truck

(4)	8,000		

Bank Loan

(6)	2,000	(2)	4,000
		(4)	7,000
		Bal.	9,000

Accounts Payable

		(9)	700

Unearned Repair Revenue

		(7)	400

Common Stock

		(1)	10,000

Dividends

(10)	200		

Repair Revenue

		(8)	10,000

Rent Expense

(9)	1,600		

Salaries Expense

(9)	4,000		

Supplies Expense

(9)	1,500		

Truck Operating Expense

(9)	700		

$\underline{\underline{22{,}100}}^{1}$ = $\underline{\underline{10{,}100}}^{2}$ + $\underline{\underline{12{,}000}}^{3}$

[1] 6,200 + 2,500 + 2,400 + 3,000 + 8,000 = $\underline{\underline{22{,}100}}$

[2] 9,000 + 700 + 400 = $\underline{\underline{10{,}100}}$

[3] 10,000 – 200 + 10,000 – 1,600 – 4,000 – 1,500 – 700 = $\underline{\underline{12{,}000}}$

C. Using Formal Accounting Records

LO4 – Record transactions in a general journal and post them to a general ledger.

The preceding analysis of financial transactions used T-accounts to record debits and credits. T-accounts will continue to be used for illustrative purposes throughout this book. In actual practice, financial transactions are recorded in a **general journal**.

A general journal is a document that is used to chronologically record a business's debit and credit transactions (see Figure 2-2). It is often referred to as the *book of original entry*. **Journalizing** is the process of recording a financial transaction in the journal. The resulting debit and credit entry recorded in the journal is called a **journal entry**.

A **general ledger** is a record that contains all of a business's accounts. **Posting** is the process of transferring amounts from the journal to the matching ledger accounts. Because amounts recorded in the journal eventually end up in a ledger account, the ledger is sometimes referred to as a *book of final entry*.

Recording Transactions in the General Journal

Each transaction is first recorded in the journal. The January transactions of Big Dog Carworks Corp. are recorded in its journal as shown in Figure 2-2. The journalizing procedure follows these steps (refer to Figure 2-2 for corresponding numbers):

1. The year is recorded at the top and the month is entered on the first line of page 1. This information is repeated only on each new journal page used to record transactions.
2. The date of the first transaction is entered in the second column, on the first line. The day of each transaction is always recorded in this second column.
3. The name of the account to be debited is entered in the description column on the first line. By convention, accounts to be debited are usually recorded before accounts to be credited. The posting reference can be located in the column titled P.R. This indicates the number given to the account in the General Ledger. For example, the account number for Cash is 101. The amount of the debit is recorded in the debit column.
4. The name of the account to be credited is on the second line of the description column and is indented about one centimeter into the column. Accounts to be credited are always indented in this

way in the journal. The amount of the credit is recorded in the credit column.

5. An explanation of the transaction is entered in the description column on the next line. It is not indented.
6. A line is usually skipped after each journal entry to separate individual journal entries and the date of the next entry recorded. It is unnecessary to repeat the month if it is unchanged from that recorded at the top of the page.

GENERAL JOURNAL Page 1

	Date 2017		Accounts & Explanation	P.R.	Debit	Credit
1	Jan.	1	Cash	101	10,000	
2			Common Stock	320		10000
			To record common stock issued.			
3		2	Cash	101	4,000	
4			Bank Loan	201		4,000
			To record receipt of bank loan.			
5						
6		2	Equipment	183	3,000	
			Cash	101		3,000
			To record purchase of equipment for cash.			
		3	Truck	184	8,000	
			Bank Loan	201		7,000
			Cash	101		1,000
			To record purchase of a tow truck; paid cash and incurred additional bank loan.			
		5	Prepaid Insurance	161	2,400	
			Cash	101		2,400
			To record payment for one-year insurance policy.			
		10	Bank Loan	201	2,000	
			Cash	101		2,000
			To record payment on bank loan.			

	15	Cash	101	400	
		Unearned Repair Revenue	247		400
		To record receipt of cash for services that will not be performed in January.			
	31	Cash	101	7,500	
		Accounts Receivable	110	2,500	
		Repair Revenue	450		10,000
		To record repair revenue earned in January.			
	31	Rent Expense	654	1,600	
		Salaries Expense	656	4,000	
		Supplies Expense	668	1,500	
		Truck Operating Expense	670	700	
		Cash	101		7,100
		Accounts Payable	210		700
		To record payment of expenses for January.			
	31	Dividends	350	200	
		Cash	101		200
		To record payment of dividends.			

Figure 2–2 January General Journal Transactions for BDCC

Most of Big Dog's entries have one debit and credit. An entry can also have more than one debit or credit, in which case it is referred to as a **compound entry**. The entry dated January 3 is an example of a compound entry.

Posting Transactions to the General Ledger

The **ledger account** is a formal variation of the T-account. The ledger accounts shown in Figure 2-3 are similar to what is used in electronic/digital accounting programs. Ledger accounts are kept in the general ledger. Debits and credits recorded in the journal are transferred or "posted" to appropriate ledger accounts so that the details and balance for each account can be found easily. Figure 2-3 uses the first transaction of Big Dog Carworks Corp. to illustrate how to

post amounts and record other information. The posting procedure follows these steps (refer to Figure 2-3 for corresponding numbers):

1. The date is recorded in the appropriate general ledger account.
2. The general journal page number is recorded in the P.R. column of each ledger account as a cross reference. In this case, the posting has been made from general journal (GJ) page 1 so the reference is recorded as “GJ1”.
3. The debit and credit amounts from the general journal are posted to the debit or credit columns in the appropriate general ledger account. Here the entry debiting Cash is posted to the Cash ledger account. The entry crediting common stock is then posted to the Common Stock general ledger account.
4. After posting the entry, a balance is calculated in the Balance column of each general ledger account. A notation is recorded in the column to the left of the Balance column indicating whether the balance is a debit (DR) or credit (CR). A brief description can be entered in the Description column of the account but this is usually not necessary since the journal includes a detailed description for each journal entry.

The general journal records each financial transaction in double-entry form. Each side of the entry is posted to a separate ledger account.

GENERAL JOURNAL — Page 1

Date 2017		Description	P.R.	Debit	Credit
Jan.	1	Cash	101	10,000	
		Common Stock	320		10000
		To record common stock issued.			

2

1

3

GENERAL LEDGER
Cash — Acct. No. 101

Date 2017		Description	P.R.	Debit	Credit		Balance
Jan.	1		GJ1	10,000		DR	10,000

4

The general ledger stores transactions according to account and keeps a running total of each account balance.

GENERAL LEDGER
Common Stock — Acct. No. 320

Date 2017		Description	P.R.	Debit	Credit		Balance
Jan.	1		GJ1		10,000	CR	10,000

4

Figure 2–3 Illustration of a Transaction Posted to Two Accounts in the General Ledger

This manual process of recording, posting, summarizing, and preparing financial statements is cumbersome and time-consuming. In virtually all businesses, the use of accounting software automates much of the process. In this and subsequent chapters, either the T-account or the general ledger account format will be used to explain and illustrate concepts.

D. The Trial Balance

LO3 – Prepare a trial balance, explain its use, and prepare financial statements from it.

To help prove that the accounting equation is in balance, a trial balance is normally prepared instead of the T-account listing shown in the previous section. A **trial balance** is an internal document that lists all the account balances at a point in time. The total debits must equal total credits on the trial balance. The form and content of a trial

balance is illustrated below, using the account numbers, account names, and account balances of Big Dog Carworks Corp. at January 31, 2017. Assume that the account numbers are those assigned by the business.

Big Dog Carworks Corp.
Trial Balance
At January 31, 2017

Acct. No.	*Account*	*Account balances* Debit	Credit
101	Cash	$6,200	
110	Accounts receivable	2,500	
161	Prepaid insurance	2,400	
183	Equipment	3,000	
184	Truck	8,000	
201	Bank loan		$9,000
210	Accounts payable		700
247	Unearned repair revenue		400
320	Common stock		10,000
350	Dividends	200	
450	Repair revenue		10,000
654	Rent expense	1,600	
656	Salaries expense	4,000	
668	Supplies expense	1,500	
670	Truck operating expense	700	
		$30,100	$30,100

Double-entry accounting requires that debits equal credits. The trial balance establishes that this equality exists for Big Dog but it does not ensure that each item has been recorded in the proper account. Neither does the trial balance ensure that all items that should have been entered have been entered. In addition, a transaction may be recorded twice. Any or all of these errors could occur and the trial balance would still balance. Nevertheless, a trial balance provides a useful mathematical check before preparing financial statements.

Preparation of Financial Statements

Financial statements for the one-month period ended January 31, 2017 can now be prepared from the trial balance figures.

Big Dog Carworks Corp.
Trial Balance
At January 31, 2017

Acct. No.		*Account Balances* Debit	Credit
101	Cash	$ 6,200	
110	Accounts receivable	2,500	
161	Prepaid insurance	2,400	
183	Equipment	3,000	
184	Truck	8,000	
201	Bank loan		$ 9,000
210	Accounts payable		700
247	Unearned repair revenue		400
320	Common stock		10,000
350	Dividends	200	
450	Repair revenue		10,000
654	Rent expense	1,600	
656	Salaries expense	4,000	
668	Supplies expense	1,500	
670	Truck operating expense	700	
		$30,100	$30,100

Big Dog Carworks Corp.
Income Statement
For the Month Ended Jan. 31, 2017

Revenue		
Repairs		$10,000
Expenses		
Rent	1,600	
Salaries	4,000	
Supplies	1,500	
Truck operating	700	
Total expenses		7,800
Net income		$2,200

First, an income statement is prepared for January. Expenses are deducted from revenue to measure the amount of net income for January.

Second, net income is transferred to the statement of changes in equity as part of retained earnings.

Third, common stock and dividend amounts are transferred to the statement of changes in equity. Dividends reduce retained earnings. They are distributions of net income to owners.

Big Dog Carworks Corp.
Statement Of Changes In Equity
For the Month Ended January 31, 2017

	Common stock	*Retained earnings*	*Total equity*
Balance, January 1, 2017	$ -0-	$ -0-	$ -0-
Shares issued	10,000		10,000
Net income		2,200	2,200
Dividends		(200)	(200)
Balance, January 31, 2017	$10,000	$ 2,000	$12,000

Fourth, the columns are totaled and carried forward to the applicable section of the balance sheet (see next page).

The asset and liability accounts from the trial balance and the ending balances for common stock and retained earnings on the statement of changes in equity are used to prepare the balance sheet.

These accounts are used to prepare the balance sheet.

The common stock and retained earnings balances are transferred to the balance sheet from the statement of changes in equity.

Big Dog Carworks Corp.
Trial Balance
At January 31, 2017

Acct. No.		*Account Balances* Debit	Credit
101	Cash	$ 6,200	
110	Accounts receivable	2,500	
161	Prepaid insurance	2,400	
183	Equipment	3,000	
184	Truck	8,000	
201	Bank loan		$ 9,000
210	Accounts payable		700
247	Unearned repair revenue		400
320	Common stock		10,000
350	Dividends	200	
450	Repair revenue		10,000
654	Rent expense	1,600	
656	Salaries expense	4,000	
668	Supplies expense	1,500	
670	Truck operating expense	700	
		$30,100	$30,100

Big Dog Carworks Corp.
Balance Sheet
At January 31, 2017

Assets		
Cash	$ 6,200	
Accounts receivable	2,500	
Prepaid insurance	2,400	
Equipment	3,000	
Truck	8,000	
Total assets		$22,100
Liabilities		
Bank loan	$ 9,000	
Accounts payable	700	
Unearned repair rev.	400	$10,100
Stockholders' Equity		
Common stock	$10,000	
Retained earnings	2,000	12,000
Total liabilities and stockholders' equity		$22,100

Note the links between financial statements:

The income statement is linked to the statement of changes in equity. Revenues and expenses are reported on the income statement to show the details of net income. Because net income causes stockholders' equity to change, it is then reported on the statement of changes in equity.

The statement of changes in equity is linked to the balance sheet. The statement of changes in equity shows the details of how stockholders' equity changed during the accounting period. The balances for common stock and retained earnings that appear on the statement of changes in equity are transferred to the stockholders' equity section of the balance sheet.

The balance sheet summarizes stockholders' equity. It shows only account balances for common stock and retained earnings. To obtain the details regarding these stockholders' equity accounts, we must look at the income statement and the statement of changes in equity.

E. The Accounting Cycle

LO5 – Define the accounting cycle.

In the preceding sections, the January transactions of BDCC were used to demonstrate the steps performed to convert economic data into financial information. This conversion was carried out in accordance with basic double-entry accounting and is summarized in Figure 2-4.

Step 1: Transactions are identified and accounts are determined

Step 2: Transactions are recorded into the company's general journal

Step 3: Post transactions to general ledger accounts

Step 4: A trial balance is prepared, to prove the equality of the debits and credits.

Eventually financial statements are prepared from trial balance

Step 1: Does the transaction need to be recorded?
What accounts are impacted?

GENERAL JOURNAL Page 1

Date		Description	P.R.	Debit	Credit

GENERAL LEDGER
Name of Account Acct. No.

Date		Description	P.R.	Debit	Credit	DR CR	Balance

Example Corp.
Trial Balance
At January 31, 2017

Acct. No.	*Account*	*Account Debit*	*Account Credit*
101	Cash	xxx	
110	Accounts receivable	xxx	
201	Bank loan		xxx
	.		
	.		
		Total	Total

Income Statement For the Year Ended . . .		Balance Sheet At . . .	
Revenue	$xxx	Assets	$xx
Expenses	(xx)	Liabilities	x
Net income	$ x	Stockholders' equity	x
		Total liab. and equity	$xx

Figure 2–4 Illustrated Steps in the Accounting Cycle

The sequence just described, beginning with the identification of business transactions and ending with the communication of financial information in financial statements, is commonly referred to as the **accounting cycle.** There are additional steps involved in the accounting cycle. These will be introduced in Chapter 3.

Summary of Chapter 2 Learning Objectives

LO1 – Describe asset, liability, and equity accounts, identifying the effect of debits and credits on each.

Assets are resources that have future economic benefits. Examples are cash, accounts receivable, prepaid expenses, and machinery. Increases in assets are recorded as debits and decreases as credits. Liabilities represent an obligation to pay an asset in the future. Examples include accounts payable and unearned revenues. Increases in liabilities are recorded as credits and decreases as debits. Stockholders' equity represents the amount of net assets of the corporation that belong to owners. It includes common stock, dividends, revenues, and expenses. Increases in stockholders' equity caused by the issuing stock and earning revenues are recorded as credits. Decreases in stockholders' equity, like paying dividends and incurring expenses, are recorded as debits.

LO2 – Analyze transactions using double-entry accounting.

In double-entry accounting, each transaction is recorded in at least two accounts where the total debits always equal the total credits. The double-entry accounting rule is rooted in the accounting equation: Assets = Liabilities + Stockholders' equity.

LO3 – Record transactions in a general journal and post them to a general ledger.

Recording financial transactions was introduced in this chapter using T-accounts. A business actually records transactions in a general journal, a document which chronologically lists each debit and credit journal entry. To summarize the debit and credit entries by account, the entries in the general journal are posted (or transferred) to the general ledger. The account balances in the general ledger are used to prepare the trial balance.

Summary of Chapter 2 Learning Objectives (continued)

LO4 – Prepare a trial balance, explain its use, and prepare financial statements from it.

To help prove the accounting equation is in balance, a trial balance is prepared. The trial balance lists all the account balances at a point in time. The total debits must equal total credits on the trial balance. The trial balance is used to prepare the financial statements.

LO5 – Define the accounting cycle.

Identifying transactions, journalizing them in the general journal, posting from the general journal into the general ledger, preparing the trial balance, and generating financial statements are steps followed each accounting period. These steps form the core of the accounting cycle. Additional steps in the accounting cycle will be introduced in Chapter 3.

E N D O F C H A P T E R M A T E R I A L S

Multiple-Choice Review

1. Which is the correct sequence of steps in the recording process?
   a.) Prepare financial statements, post to ledger accounts, journalize, and identify transactions
   b.) Post to ledger accounts, journalize, identify transactions, and prepare financial statements.
   c.) Identify transactions, journalize, post to ledger accounts, and prepare a trial balance.
   d.) Identify transactions, prepare a trial balance, prepare financial statements, and post to ledger accounts

2. Debits:
   a.) Increase liabilities
   b.) Decrease assets
   c.) Increase dividends
   d.) Decrease expenses

3. Which of the following is an example of an asset?
   a.) Unearned revenue
   b.) Accounts payable
   c.) Common stock
   d.) Supplies

4. All of the following are liabilities except:
   a.) Unearned revenue
   b.) Accounts payable
   c.) Prepaid insurance
   d.) Salaries and wages payable

5. A general ledger is:
   a.) a listing of all a company's accounts and their balance at a specific date.
   b.) a listing of all a company's accounts in alphabetical order.
   c.) a collection of all the accounts maintained by a company.
   d.) also called the book of original entry.

Multiple-Choice Review (continued)

6. In June, Amalia Company received a $900 utility bill for the current period. The company plans to pay this bill in July. How would this impact the company's June accounting equation?
   a.) there would be no impact to the June accounting equation
   b.) there would be an increase to assets and a decrease to stockholders' equity.
   c.) there would be an increase to liabilities and a decrease to stockholders' equity.
   d.) there would be a decrease to assets and a decrease to stockholders' equity.

7. Assume now that when Amalia Company receives its June utility bill of a $900, the company pays the bill immediately. How would this impact the company's June accounting equation?
   a.) there would be no impact to the June accounting equation
   b.) there would be an increase to assets and a decrease to stockholders' equity.
   c.) there would be an increase to liabilities and a decrease to stockholders' equity.
   d.) there would be a decrease to assets and a decrease to stockholders' equity.

8. Lawrence Company pays its rent for the month. The journal entry to record this would include a:
   a.) debit to cash
   b.) credit to accounts payable
   c.) debit to rent expense
   d.) credit to rent expense

9. On March 1, Seedling Company receives a $3,000 payment from one of its customers as an advance for landscaping services to occur from April -June. Seedling's journal entry to record this transaction on March 1, includes a:
   a.) credit to service revenue for $3,000
   b.) debit to service revenue for $3,000
   c.) credit to unearned revenue for $3,000
   d.) debit to accounts receivable for $3,000

Answers on the following page

Answers to Multiple-Choice Review

1. c
2. c
3. d
4. c
5. c
6. c
   The proper entry to record the receipt of this bill would be a debit to Utilities Expense (which decreases stockholders' equity) and a credit to Accounts Payable (which increases liabilities).
7. d
   The proper entry to record the payment of this bill would be a debit to Utilities Expense (which decreases stockholders' equity) and a credit to Cash (which decreases assets).
8. c
   The proper entry to record the payment of the monthly rent would be a debit to Rent Expense and a credit to Cash.
9. c
   The proper entry to record the customer's advance payment would be a debit to Cash and a credit to Unearned Revenue.

Discussion Questions

1. What is an 'account'? How are debits and credits used to record transactions?
2. Why are T-accounts used in accounting?
3. How do debits and credits impact the T-account?
4. What is a chart of accounts?
5. Are increases in stockholders' equity recorded as a debit or credit?
6. Are decreases in stockholders' equity recorded as a debit or credit?
7. Summarize the rules for using debits and credits to record assets, expenses, dividends, liabilities, common stock, and revenues.
8. What is a trial balance? Why is it prepared?
9. How is a trial balance used to prepare financial statements?
10. A general journal is often called a book of original entry. Why?
11. What is a general ledger? Why is it prepared?
12. Explain the posting process.
13. What are the steps in the accounting cycle?

Comprehension Problems

CP 2–1

Identify the type of account; (A) asset, (L) liability, or (SE) stockholders' equity.

1.) Accounts payable ____
2.) Service revenue ____
3.) Cash ____
4.) Salaries expense ____
5.) Supplies ____
6.) Dividends ____

CP 2–2

Identify the financial statement where each of the following items appears. Indicate (I) for income statement, (E) for statement of changes in equity, or (B) for balance sheet. If an item appears on more than one statement, indicate *all* the statements on which the items appears.

1.) Equipment _____
2.) Rent expense _____
3.) Prepaid insurance _____
4.) Accounts receivable _____
5.) Interest revenue_____
6.) Interest payable _____
7.) Bank loan _____
8.) Common stock _____
9.) Unearned revenue _____
10.) Service revenue_____
11.) Buildings _____
12.) Retained earnings _____

CP 2–3

Identify the normal balance (debit or credit) for each account.

1.) Accounts receivable ____
2.) Service revenue ____
3.) Equipment ____
4.) Common stock ____
5.) Accounts payable ____
6.) Utilities expense ____
7.) Dividends ____
8.) Wages payable ____

CP 2–4

Identify whether a debit or credit would be needed to create the indicated change for each account.

1.) To increase service revenue ____

2.) To decrease salaries payable ____

3.) To increase computer equipment ____

4.) To increase accounts payable ____

5.) To decrease supplies ____

6.) To decrease notes payable ____

7.) To increase unearned revenue ____

8.) To decrease accounts receivable ____

9.) To increase common stock ____

10.) To decrease cash ____

CP 2–5

In order to record each of the following transactions, indicate which accounts would need to be debited and credited. The first one is completed as a sample for you:

1. Issued common stock for cash *Cash (Debit): Common Stock (Credit)*
2. Paid cash for a truck
3. Paid for prepaid insurance
4. Borrowed cash from the bank
5. Received a bill from a local garage for truck repairs done last week
6. Collected cash for services performed today
7. Billed customers for services performed last week
8. Repaid part of the bank loan
9. Made a deposit for utility services to be used in the future
10. Paid cash for truck operating expenses related to 5. above
11. Received a bill for repair supplies used during the month
12. Purchased equipment with cash
13. Received a cash payment to satisfy an amount owed by a customer

CP 2–6

Prepare journal entries for each of the selected transactions:

Jan. 1	Mr. Mufasa opens Mufasa Dreamatorium, a proprietorship that will provide dream interpretations to interested clients, by investing $25,000 cash.
Jan. 2	Mufasa Dreamatorium pays $3,000 for its January rent on its new office space.
Jan. 3	The new company purchases $2,000 of supplies on credit.
Jan. 4	Mufasa Dreamatorium receives $18,000 cash for providing dream interpretation services to clients.
Jan. 5	The company pays a $6,000 cash dividend to its owner.

CP 2–7

Record the debit and credit to the appropriate accounts for each of the following transactions for Scar Consulting Company. The first transaction is done for you as an example.

	Debit	*Credit*
1. Issued common stock for cash	Cash	Common Stock
2. Purchased equipment on credit		
3. Paid for a one–year insurance policy		
4. Billed a customer for services completed today		
5. Paid this month's utility costs		
6. Collected the amount billed in transaction 4 above		
7. Collected cash for services completed today		
8. Paid for the equipment purchased in transaction 2 above		
9. Signed a union contract		
10. Collected cash for services to be provided next month		
11. Purchased supplies with cash		
12. Paid owner cash dividend		

CP 2–8

Simba Company, a traveling theatrical production company, has the below transactions.

Jan. 1	Purchased a $10,000 truck with a bank loan.
Jan. 2	Purchased $6,000 of equipment on account.
Jan. 3	Paid for $300 of gasoline for company truck.
Jan. 4	Made $1,000 payment on bank loan.
Jan. 5	Received $2,000 cash deposit from Gerlings Musical Theatre for February's show.
Jan. 6	Paid off balance owed from Jan. 2 purchase.
Jan. 7	Purchased 12-month insurance policy for $4,000.
Jan. 8	Received $2,500 cash from Children's Discovery Museum for performance completed that day.

Requirements:

1.) Indicate the account that would be debited and credit with T-accounts. First transaction is done for you as an example below.

	Truck		Bank Loan	
	Debit	*Credit*	*Debit*	*Credit*
	+	-	-	+
Jan. 1: Purchased a $10,000 truck with a bank loan	10,000			10,000

2.) Prepare the journal entries to record the month's transactions. Use the appropriate journal entry format covered in the chapter (pages 57-58). The first transaction is done for you as an example.

GENERAL JOURNAL Page 1

Date	Accounts & Explanation	Debit	Credit
Jan. 1	Truck	10,000	
	Bank loan		10,000
	To record the purchase of a vehicle with a loan.		

CP 2–9

Zazu Company provides singing lessons to those interested in learning the art and joy of singing. The following events occurred for Zazu during February.

Feb. 1	Invested $3,000 cash into the business in exchange for stock
Feb. 2	Purchased $2,000 of equipment on credit
Feb. 3	Paid $400 cash for this month's rent
Feb. 4	Purchased on credit $4,000 of supplies
Feb. 5	Billed $2,500 to clients for singing lessons provided
Feb. 6	Paid for one-half of the amount owed from Feb. 4
Feb. 7	Collected $500 from the clients billed on Feb. 5

Required: Prepare journal entries for Zazu Company to record each of the company's transactions. Use the appropriate journal entry format covered in the chapter (pages 57-58) and omit posting reference numbers.

CP 2–10

Shenzi Company earns its income by providing comedy classes to those interested in learning the art and cathartic nature of the comedic arts. The following events occurred for Shenzi during January.

Jan. 1	The owner invested $5,000 cash in into the company.
Jan. 2	Paid $900 for three months of insurance coverage.
Jan. 6	Billed $1,500 to customers for one-week comedy classes ending on January 6.
Jan. 7	Purchased $2,000 of supplies on credit. The supplies are expected to last through April.
Jan. 8	Borrowed $7,500 from a bank
Jan. 9	Collected $500 for the amount billed on Jan. 6.
Jan. 10	Received a $200 bill for utilities used to date (the bill will be paid next month).
Jan. 11	Repaid $2,500 of the bank loan.
Jan. 12	Paid $2,000 for the supplies purchased on Jan. 7.
Jan. 15	Paid $1,500 to employees for bi-weekly payroll.
Jan. 25	Paid $1,800 for monthly January rent.

Requirements:

1. Journalize the transactions to the appropriate accounts for Shenzi Company. Use the posting references provided below.
2. Post the transactions to the below general ledger accounts.

Cash [101]

Bank Loan [201]

Common Stock [301]

Service Revenue [401]

Accounts Receivable [102]

Accounts Payable [202]

Utility Expense [601]

Prepaid Ins. [103]

Salaries Expense [602]

Supplies [104]

Rent Expense [603]

CP 2–11

Required: Prepare the journal entries and likely descriptions of the eleven transactions that were posted to the following general ledger accounts for the month ended January 31, 2019. Do not include amounts. For instance, the first entry would be:

1. Cash
   Common Stock
   To record common stock issued.

Cash	
1	2
3	5
11	10

Bank Loan	
	11

Common Stock	
	1

Repair Revenue	
	3
	4

Accounts Receivable	
4	

Accounts Payable	
10	2
	6
	7

Electricity Expense	
7	

Prepaid Expense	
5	9

Rent Expense	
9	

Supplies	
2	8

Supplies Expense	
6	
8	

CP 2–12

The following trial balance was prepared from the books of Rafiki Corporation at its year–end, December 31, 2019. After the company's bookkeeper left, the office staff was unable to balance the accounts or place them in their proper order. Individual account balances are correct, but debits may be incorrectly recorded as credits and vice-versa.

Acct.		*Accounts Balances*	
No.	*Account*	*Debits*	*Credits*
101	Cash	$120,400	
410	Commissions earned	5,000	
320	Common stock		$170,000
210	Accounts payable	30,000	
631	Insurance expense	100	
180	Land		8,000
181	Building		120,000
654	Rent expense		1,000
110	Accounts receivable		26,000
173	Supplies	6,000	
668	Supplies expense		300
201	Bank loan		80,000
656	Salaries expense		3,000
669	Telephone expense	200	
	Totals	$161,700	$408,300

Required: Prepare a trial balance showing the balances in the correct column. List the accounts in numerical order. Total the columns and ensure total debits equal total credits. Assume all accounts have normal balances.

CP 2–13

The following is Sarabi Corporation's transactions worksheet for the month of March, 2019.

	ASSETS							=	LIABILITY	+	STOCKHOLDERS' EQUITY		
Mar.	*Cash*	+	*Acct. Rec.*	+	*Ppd. Rent*	+	*Equip.*	=	*Acct. Pay.*	+	*Common Stock*	+	*Retained Earnings*
												Revenue	*Expenses*
1	+$50										+$50		
2	-$30						+$60		+$30				
3	-$20				+$20								
4	+$40		+$20									+$60 (Service)	
5	+$10						-$10						
6									+$30				-$30 (Supplies)
7			+$10									+$10 (Service)	
8					-$10								-$10 (Rent)
9									+$20				-$20 (Truck Op.)
10	-$10								-$10				

Required:

1. Prepare journal entries for the ten transactions including the likely description of the transaction.
2. Post the journal entries to T–accounts and total the accounts.
3. From the T–accounts, prepare a trial balance. List expenses in alphabetical order.
4. Prepare an income statement and statement of changes in equity for March 2019.

CP 2–14

The following trial balance was prepared from the books of Nala Corp. at its year–end, December 31, 2019. The new bookkeeper was unable to balance the accounts or to list them in their proper order. Individual account balances are correct, but debits may be classified as credits and vice-versa.

Acct.		*Account Balances*	
No.	*Account*	*Debit*	*Credit*
210	Accounts payable	$ 13,250	
110	Accounts receivable		$10,000
181	Building	50,000	
320	Common stock	75,000	
101	Cash	15,500	
182	Furniture	6,000	
180	Land		12,000
161	Prepaid insurance		9,600
201	Bank loan		28,000
350	Dividends	2,350	
162	Prepaid rent		8,000
173	Supplies	2,800	
	Totals	$164,900	$67,600

Required: Prepare a corrected trial balance showing the accounts in numerical order and balances in the correct column. Total the columns and ensure total debits equal total credits. Assume all accounts have normal balances.

CP 2–15

The following general ledger accounts are taken from the books of Kamari Corporation at June 30, 2019, the end of the first month of operation.

Cash			
Jn. 1	25,000	Jn. 1	500
20	5,000	15	1,000
		23	4,000
		30	1,000
		30	2,000
		30	16,000

Bank Loan			
		Jn. 30	4,000

Common Stock			
		Jn. 1	25,000

Repair Revenue			
		Jn. 20	5,000
		30	3,000

Prepaid Insurance			
Jn. 1	2,000	Jn. 30	200

Accounts Payable			
		Jn. 27	100

Rent Expense			
Jn. 1	500		

Accounts Receivable			
Jn. 30	3,000		

Salaries Expense			
Jn. 15	1,000		
30	1,000		

Supplies			
Jn. 23	4,000	Jn. 30	200

Supplies Expense			
Jn. 30	200		

Land			
Jn. 30	5,000		

Telephone Expense			
Jn. 27	100		

Building			
Jn. 30	15,000		

Insurance Expense			
Jn. 30	200		

Required:

1. Prepare journal entries to record the June transactions, including likely descriptions of the transactions.
2. Total the T-accounts and prepare a trial balance at June 30.
3. Prepare an income statement, statement of changes in equity, and balance sheet for June 2019.

CP 2–16

The following trial balance has been prepared from the ledger of Azizi Catering Inc.

Azizi Catering Inc.
Trial Balance
January 31, 2019

	Account Balances	
	Debits	*Credits*
Cash	$ 60	
Accounts receivable	140	
Supplies	10	
Equipment	300	
Building	700	
Land	300	
Bank loan		$100
Accounts payable		20
Common stock		250
Fees earned		1,875
Advertising expense	200	
Repairs expense	100	
Supplies expense	20	
Telephone expense	10	
Utilities expense	5	
Wages expense	400	

Required:

1. Calculate the total debits and credits.
2. Prepare an income statement, statement of changes in equity and balance sheet for January 2019. Assume common stock was issued in the prior fiscal year and that opening retained earnings is zero.

CP 2–17

The following journal entries were prepared for Timon Corporation for its first month of operation, January 2019.

			Debit	*Credit*
Jan.	1	Cash	10,000	
		Common Stock		10,000
		To record the stock issued.		
	5	Rent Expense	200	
		Cash		200
		To record the payment of rent for the month.		
	9	Supplies	4,000	
		Cash		4,000
		To record the purchase of supplies.		
	11	Cash	1,300	
		Service Revenue		1,300
		To record service revenue earned.		
	28	Truck Operating Expense	450	
		Accounts Payable		450
		To record truck repairs.		
	30	Salaries Expense	1,800	
		Cash		1,800
		To record payment of salaries for the month.		
	31	Accounts Receivable	1,600	
		Service Revenue		1,600
		To record service revenue earned during the month.		
	31	Supplies Expense	200	
		Supplies		200
		To record supplies used during the month.		
	31	Dividends	50	
		Cash		50
		To record dividends paid during the month.		

Chart of Accounts

Cash…… 101

Accounts receivable…… 102

Supplies…… 103

Accounts payable…… 201

Common stock…… 301

Dividends…… 302

Service revenue…… 401

Truck operating expense…. 601

Rent expense…… 602

Supplies expense…… 603

Salaries expense…… 604

Required:

1. Prepare necessary general ledger T-accounts and post the transactions.
2. Prepare a trial balance at January 31, 2019.
3. Prepare an income statement, statement of changes in equity, and balance sheet for January 2019.

Problems

P 2–1

The following account balances are taken from the records of Fox Creek Service Limited at October 31, 2019 after its first year of operation:

Accounts Payable	$9,000	Insurance Expense	$ 500
Accounts Receivable	6,000	Repair Revenue	19,000
Advertising Expense	2,200	Supplies Expense	800
Bank Loan	5,000	Telephone Expense	250
Cash	1,000	Truck	9,000
Common Stock	2,000	Truck Operating Expense	1,250
Commissions Expense	4,500	Wages Expense	4,000
Equipment	7,000	Wages Payable	1,500

Required:

1. Prepare a trial balance at October 31, 2019. General ledger account numbers are not necessary.
2. Prepare an income statement and statement of changes in equity for the year ended October 31, 2019.
3 Prepare a balance sheet at October 31, 2019.

P 2–2

The following ledger accounts were prepared for Davidson Tool Rentals Corporation during the first month of operation ending May 31, 2019. No journal entries were prepared to support of the amounts recorded in the ledger accounts.

Cash

May 1	5,000	May 11	1,000
6	2,000	16	500
10	1,500	20	300
15	1,200	22	600
21	800	28	400
		29	3,500

Accounts Receivable

May 5	3,000	May 10	1,500
18	2,500	15	1,200

Prepaid Advertising

May 16	500	May 31	250

Supplies

May 20	300	May 30	100

Equipment

May 11	2,000	May 21	800

Accounts Payable

May 22	600	May 11	1,000
		23	150
		24	1,100

Common Stock

		May 1	5,000

Service Revenue

		May 5	3,000
		6	2,000
		18	2,500

Advertising Expense

May 31	250		

Commissions Expense

May 24	1,100		

Rent Expense

May 28	400		

Salaries Expense

May 29	3,500		

Supplies Expense

May 30	100		

Telephone Expense

May 23	150		

Required:

1. Reconstruct the transactions that occurred during the month and prepare journal entries to record these transactions, including appropriate descriptions. Use the same accounts numbers (P.R.) as those used in the chapter plus the following:

Prepaid advertising	160
Service revenue	470
Advertising expense	610
Commissions expense	615
Telephone expense	669

   Calculate the balance in each account.
2. Prepare a trial balance in numerical order at May 31, 2019.

P 2–3

The following trial balance was prepared for Findlay Consultants Corp. at January 31, 2019, its first month of operation.

Findlay Consultants Corp.
Trial Balance
At January 31, 2019

Acct. No.	*Account*	*Account Balances* Debits	Credits
210	Accounts payable	$ 9,000	
110	Accounts receivable		
610	Advertising expense	150	
101	Cash		$ 3,625
320	Common stock	2,000	
183	Equipment		7,000
182	Furniture		4,000
236	Utilities payable		1,000
631	Insurance expense	200	
641	Maintenance expense		250
160	Prepaid advertising	300	
420	Fees earned	9,500	
654	Rent expense		400
656	Salaries expense		2,600
226	Salaries payable		1,500
668	Supplies expense	350	
669	Telephone expense	125	
184	Truck	9,000	
370	Truck operating expense		750
677	Wages expense		1,500

Required:

1. Prepare a corrected trial balance at January 31. List the accounts in numerical order. Record the amounts in their proper debit or credit positions. Re-add total debits and credits and ensure they are equal. Assume all accounts have normal balances.
2. Prepare an income statement and statement of changes in equity for the month ended January 31, 2019.
3. Prepare a balance sheet at January 31, 2019.

P 2–4

The following balances appeared in the general ledger accounts of Fenton Table Rentals Corporation at April 1, 2019.

Cash	$1,400	Accounts payable	$2,000
Accounts receivable	3,600	Common stock	4,350
Prepaid rent	1,000		
Supplies	350		

The following transactions occurred during April:

1. Collected $2,000 cash owed by a customer
2. Billed $3,000 to customers for tables rented to date
3. Paid the following expenses: advertising, $300; salaries, $2,000; telephone, $100
4. Paid half of the accounts payable owing at April 1
5. Received a $500 bill for April truck repair expenses. The bill will be paid in May
6. Collected $2,500 owed by a customer
7. Billed $1,500 to customers for tables rented to date
8. Paid a $100 dividend.

Required:

1. Open general ledger T-accounts for the following and enter the April 1 balances (account numbers are indicated in brackets): Cash (101), Accounts Receivable (110), Prepaid Rent (162), Supplies (173), Accounts Payable (210), Common Stock (320), Dividends (350), Service Revenue (470), Advertising Expense (610), Rent Expense (654), Salaries Expense (656), Supplies Expense (668), Telephone Expense (669), and Truck Operating Expense (670).
2. Prepare journal entries to record the April transactions, including general ledger account numbers.
3. Post transactions to the T- accounts.
4. Prepare a trial balance at April 30, 2019.
5. Prepare an income statement, statement of changes in equity, and balance sheet for April.

P 2–5

The following transactions occurred in Thorn Accounting Services Inc. during August 2019, its first month of operation.

Aug.	1	Issued common stock for $3,000 cash
	1	Borrowed $10,000 cash from the bank
	1	Paid $8,000 cash for a used truck
	4	Paid $600 for a one–year truck insurance policy effective September 1
	5	Collected $2,000 fees in cash from a client for work performed today
	7	Billed $5,000 fees to clients for services performed to date
	12	Purchased $500 of supplies on credit
	15	Collected $1,000 of the amount billed on August 7
	16	Paid $200 for advertising in *The News* during the first two weeks of August
	20	Paid half of the amount owing for the supplies purchased on August 12
	25	Paid cash for the following expenses: rent for August, $350; salaries, $2,150; telephone, $50; truck repairs, $250
	28	Called clients for payment of the balance owing from August 7
	29	Billed $6,000 of fees to clients for services performed to date

Required:

1. Open general ledger T-accounts for the following (account numbers are indicated in brackets): Cash (101), Accounts Receivable (110), Prepaid Insurance (161), Supplies (173), Truck (184), Bank Loan (201), Accounts Payable (210), Common Stock (320), Fees Earned (420), Advertising Expense (610), Insurance Expense (631), Rent Expense (654), Salaries Expense (656), Supplies Expense (668), Telephone Expense (669), and Truck Operating Expense (670).
2. Prepare journal entries to record the August transactions including general ledger account numbers.
3. Post these entries to the T-accounts. Total each account.
4. Prepare a trial balance at August 31, 2019.
5. Prepare an income statement, statement of changes in equity, and balance sheet for August.

P 2–6

The following transactions took place in Chan Renovations Corporation during June 2019, its first month of operation.

Jun.	1	Issued common stock for $8,000 cash
	1	Purchased $5,000 of equipment on credit
	2	Collected $600 cash for repairs completed today
	4	Purchased $1,000 of supplies on credit
	5	Billed customers $2,500 for repairs performed to date
	8	Collected $500 of the amount billed on June 5
	10	Paid half of the amount owing for equipment purchased on June 1
	18	Paid for the supplies purchased on June 4
	20	Received a $100 bill for utilities used to date
	22	Paid $600 to the landlord for June and July rent
	23	Signed a union contract that will increase wages 5% this year.
	25	Collected $1,000 of the amount billed on June 5
	27	Paid the following expenses in cash: advertising, $150; telephone, $50; truck operating expense, $1,000; wages, $2,500
	30	Billed customers $2,000 for repairs completed to date

Required:

1. Open general ledger T-accounts for the following (account numbers are indicated in brackets): Cash (101), Accounts Receivable (110), Prepaid Rent (162), Supplies (172), Equipment (183), Accounts Payable (210), Common Stock (320), Repair Revenue (450), Advertising Expense (610), Rent Expense (654), Supplies Expense (668), Telephone Expense (669), Truck Operating Expense (670), Utilities Expense (676), and Wages Expense (677).
2. Prepare journal entries to record the June transactions including general ledger account numbers.
3. Post the June entries to the T-accounts.
4. Prepare a trial balance at June 30, 2019
5. Prepare an income statement, statement of changes in equity, and a balance sheet for June.

CHAPTER THREE

Financial Accounting and the Use of Adjusting Entries

Chapters 1 and 2 described the recording and reporting of accounting transactions in detail. However, the account balances used to prepare the financial statements in these previous chapters did not necessarily reflect correct amounts. Chapter 3 introduces the concept of *adjusting entries* and how these satisfy the *matching principle*. This enables revenues and expenses to be reported in the correct accounting period. The preparation of an adjusted trial balance is discussed, as well as its use in completing financial statements. The accounting cycle – the steps performed each accounting period to produce financial statements – is also reviewed.

Chapter 3 Learning Objectives

LO1 – Explain how adjusting entries match revenues and expenses to the appropriate time period.

LO2 – Explain the use of and prepare the adjusting entries required for prepaid expenses, depreciation, unearned revenues, accrued revenues, and accrued expenses.

LO3 – Prepare an adjusted trial balance and use it to prepare financial statements.

LO4 – Identify and explain the steps in the accounting cycle.

A. The Operating Cycle

LO1 – Explain how adjusting entries match revenues and expenses to the appropriate time period.

Financial transactions occur continuously during an accounting period as part of a sequence of operating activities. For Big Dog Carworks Corp., this sequence of operating activities takes the following form:

1. Operations begin with some cash on hand.
2. Cash is used to purchase supplies and to pay expenses.
3. Revenue is earned as repair services are completed for customers.
4. Cash is collected from customers.

This cash-to-cash sequence of transactions is commonly referred to as the **operating cycle** and is illustrated in Figure 3–1.

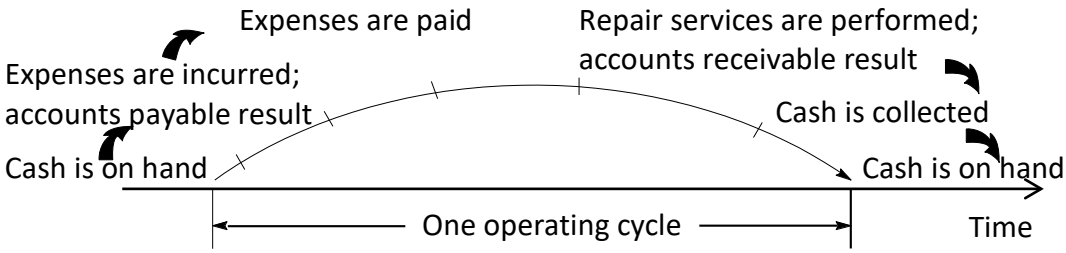


Figure 3–1 One Operating Cycle

Depending on the type of business, an operating cycle can vary in duration from short, such as one week (for example, a small grocery store) to much longer, such as one year (for example, a large construction company). Therefore, an annual accounting period could involve multiple operating cycles as shown in Figure 3-2.

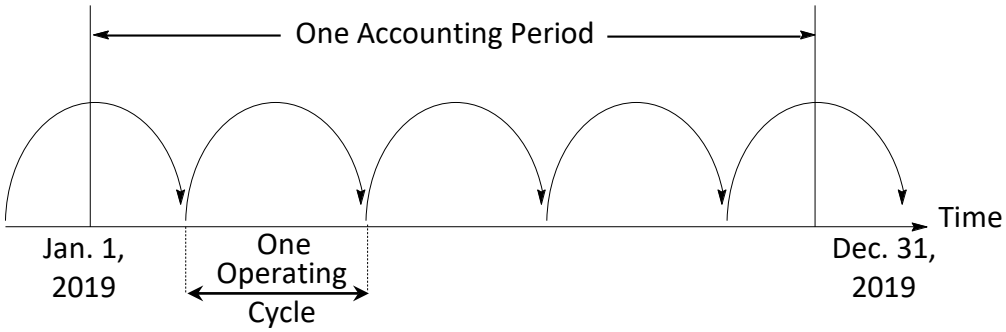


Figure 3–2 Operating Cycles within an Annual Accounting Period

Accrual- and Cash-Basis Accounting

Notice that not all of the operating cycles in Figure 3-2 are completed within the accounting period. Since financial statements are prepared at specific time intervals to meet the GAAP's time period assumption, it is necessary to consider how to record and report transactions related to the accounting period's incomplete operating cycles. These transactions can be recorded using either accrual-basis accounting or cash-basis accounting.

Cash-basis accounting requires that companies record revenue when cash is received and record expenses when cash payments are made.

Accrual-basis accounting requires companies record transactions in the time period in which the events occur (regardless of cash inlays or outlays). Accrual-basis accounting is used in the textbook as it is in accordance with general accepted accounting principles (GAAP) since it makes an effort to match revenue to the time period in which the performance obligation is satisfied and match expenses to the time period in which items are used or consumed to earn revenue. The two guiding principle of accrual-basis accounting are the revenue recognition principle and the matching (or expense recognition) principle. These two principles are discussed in more detail below.

Revenue Recognition Principle

Revenue recognition is the process of recording revenue in the accounting period in which it was earned; this is not necessarily when cash is received. Revenue is considered "earned" when the company's performance obligation has been satisfied. For example, a company agrees to provide a client with computer repair services. Therefore, when the company has performed that service, the revenue is considered earned. Since the recording of this revenue earned does not have to be tied to cash receipts, the use of an accounts receivable account may be needed. The general form of the journal entry is as follows, based on the format for entries in the general journal discussed in the prior chapter:

2017			
Date	Accounts Receivable	XX	
	Service Revenue		XX
	To record revenue earned on credit; cash will be paid at a later date.		

When cash payment is later received, the asset *Accounts Receivable* is exchanged for the asset *Cash* and the following entry is made:

2017			
Date	Cash	XX	
	Accounts Receivable		XX
	To record cash received from credit customer.		

Revenue is recognized in the first entry (the credit to service revenue), prior to the receipt of cash. The second entry has no effect on revenue.

When cash is received at the same time that revenue is recognized, the following entry is made:

2017			
Date	Cash	XX	
	Service Revenue		XX
	To record cash received from customer at time of sale.		

Transaction 8 in Chapter 2 illustrated these two possibilities.

When a cash deposit or advance payment is obtained *before* revenue is earned, a liability called Unearned Revenue is recorded as follows:

2017			
Date	Cash	XX	
	Unearned Revenue		XX
	To record cash received from customer for work to be done in the future.		

Transaction 7 in Chapter 2 illustrated this. There is no effect on the income statement at this point. Revenue is recognized only when the services have been performed.

At that time, the following entry is made:

2017			
Date	Unearned Repair Revenue	XX	
	Repair Revenue		XX
	To record the earned portion of Unearned Revenue.		

This entry reduces the unearned revenue account by the amount of revenue earned. At this point, revenue is recognized in the income statement account called Repair Revenue.

The matching of revenue to a particular time period, regardless of when cash is received, is an example of *accrual accounting***.** Accrual accounting is the process of recognizing revenues when earned and expenses when incurred regardless of when cash is exchanged. Accrual accounting is an important generally accepted accounting principle. It allows revenue and expenses to be matched to the applicable time period, regardless of when cash receipts or outlays occur. Recognition of expenses is discussed in the next section.

Matching (or Expense Recognition) Principle

In a business, costs are incurred continuously. To review, a cost is recorded as an asset if it will be incurred in producing revenue in future accounting periods. A cost is recorded as an expense if it will be used or consumed during the current period to earn revenue. This distinction between types of cost outlays is illustrated in Figure 3–3.

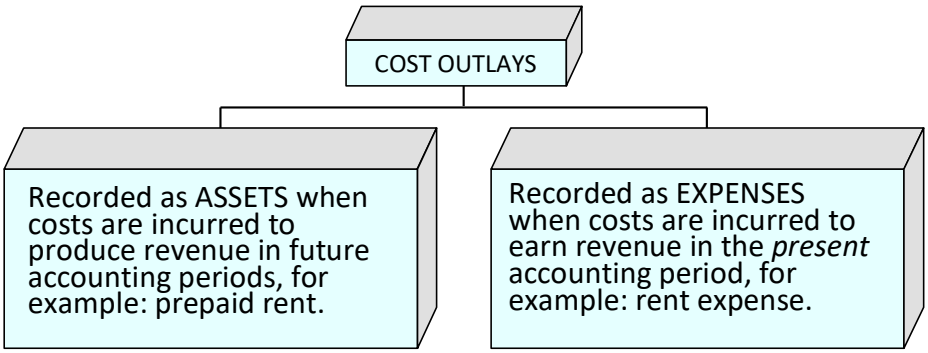


Figure 3–3 The Interrelationship between Assets and Expenses

In the previous section regarding revenue recognition, journal entries illustrated three scenarios where revenue was recognized before, at the same time as, and after cash was received. Similarly, expenses can be incurred before, at the same time as, or after cash is paid out. An example of when expenses are incurred before cash is paid occurs when the utilities expense for January is not paid until February. In this case, an account payable is created in January as follows:

2017			
Date	Utilities Expense	XX	
	Accounts Payable (or Utilities Payable)		XX
	To record January utilities expense to be paid in February.		

The utilities expense is appropriately reported in the January income statement. When the January utilities are paid with cash in February, the following is recorded:

2017			
Date	Accounts Payable (or Utilities Payable)	XX	
	Cash		XX
	To record payment in February of utilities used in January.		

This entry has no effect on expenses reported on the February income statement, since these were reported on the January income statement.

Expenses can also be recorded at the same time that cash is paid. For example, if salaries for January are paid on January 31, the entry on January 31 is:

2017			
Jan. 31	Salaries Expense	XX	
	Cash		XX
	To record payment of January salaries.		

As a result of this entry, salaries expense is reported on the January income statement when cash is paid. Transaction 9 in Chapter 2 illustrated these two options.

Finally, a cash payment can be made *before* the expense is incurred, such as insurance paid in advance. A prepayment of insurance creates an asset *Prepaid Insurance* and is recorded as:

2017			
Date	Prepaid Insurance	XX	
	Cash		XX
	To record payment of insurance in advance.		

Transaction 5 in Chapter 2 illustrated this. As the prepaid insurance benefit is used up, the appropriate expense is reported on the income statement by following entry:

2017			
Date	Insurance Expense	XX	
	Prepaid Insurance		XX
	To record the expiry of Prepaid Insurance.		

The preceding examples illustrate how to *match* expenses to the appropriate accounting period. The **matching principle** requires that

expenses be reported in the same period as the revenues they helped generate. That is, expenses are reported on the income statement: a) when related revenue is recognized, or b) during the appropriate time period, regardless of when cash is paid.

To ensure the recognition and matching of revenues and expenses to the correct accounting period, account balances must be reviewed and adjusted prior to the preparation of financial statements. This is the topic of the next section.

B. Adjusting Entries

LO2 – Explain the use of and prepare the adjusting entries required for prepaid expenses, depreciation, unearned revenues, accrued revenues, and accrued expenses.

At the end of an accounting period, before financial statements can be prepared, the accounts must be reviewed for potential adjustments. This review is done by using the **unadjusted trial balance.** The trial balance of Big Dog Carworks Corp. at January 31 was prepared in Chapter 2 and is reproduced in Figure 3-4 below. It is an unadjusted trial balance because the accounts have not yet been updated for accruals and other adjustments. We will use this trial balance to illustrate how adjustments are identified and recorded.

Big Dog Carworks Corp.
Unadjusted Trial Balance
At January 31, 2017

Acct. No.	*Account*	*Balance*	
		Debit	*Credit*
101	Cash	$6,200	
110	Accounts receivable	2,500	
161	Prepaid insurance	2,400	
183	Equipment	3,000	
184	Truck	8,000	
201	Bank loan		$9,000
210	Accounts payable		700
247	Unearned revenue		400
320	Common stock		10,000
350	Dividends	200	
450	Repair revenue		10,000
654	Rent expense	1,600	
656	Salaries expense	4,000	
668	Supplies expense	1,500	
670	Truck operating expense	700	
		$30,100	$30,100

Figure 3–4 Unadjusted Trial Balance of Big Dog Carworks Corp. at January 31, 2017

Adjustments are recorded with **adjusting entries.** Their purpose is to ensure both the balance sheet and the income statement more accurately represent financial information. Adjusting entries help satisfy the matching principle.

There are five types of adjusting entries, each of which will be discussed in the following sections.

1. Adjust prepaid expenses;
2. Adjust unearned revenues;
3. Adjust plant and equipment assets;
4. Adjust accrued revenues; and
5. Adjust accrued expenses

An **accrued revenue** is income that has been earned but has not yet been collected or recorded. An **accrued expense** is an expense that has been incurred but has not yet been paid or recorded.

Adjusting Prepaid Asset Accounts

An asset or liability account requiring adjustment at the end of an accounting period is referred to as a **mixed account** because it includes both a balance sheet portion and an income statement portion. The income statement portion must be removed from the balance sheet account by an adjusting entry.

Refer to Figure 3-4 which shows an unadjusted balance in prepaid insurance of $2,400. Recall from Chapter 2 that Big Dog paid for a 12-month insurance policy that went into effect on Jan. 1 (transaction 5).

The unadjusted trial balance shows the following balance in the Prepaid Insurance account:

Prepaid Insurance	
2,400	

The balance resulted when the journal entry below was recorded:

Prepaid Insurance	2,400	
Cash		2,400

At January 31, one month or $200 of the policy has expired (been used up) calculated as $2,400/12 months = $200.

The adjusting entry on January 31 to transfer $200 out of prepaid insurance and into insurance expense is:

(a)

2017			
Jan. 31	Insurance Expense	200	
	Prepaid Insurance		200
	To adjust for the use of one month of Prepaid Insurance.		

As shown below, the balance remaining in the Prepaid Insurance account is $2,200 after the adjusting entry is posted. The $2,200 balance represents the unexpired asset that will benefit future periods, namely, the 11 months from February to December, 2017. The $200 transferred out of prepaid insurance is posted as a debit to the Insurance Expense account to show how much insurance has been used during January.

Prepaid Insurance	
2,400	
	200
Bal. 2,200	

Insurance Expense	
200	

The asset account, Prepaid Insurance, is decreased by the $200 of insurance coverage that expired during January.

An expense account, Insurance Expense, is increased by the benefit used up in January.

If the adjustment was not recorded, assets on the balance sheet would be overstated by $200 and expenses would be understated by the same amount on the income statement.

Adjusting Unearned Liability Accounts

Recall from Chapter 2 (Transaction 7) that on January 15, Big Dog received a $400 cash payment in advance of services being performed: $300 for January and $100 for February.

The unadjusted trial balance shows the following in the Unearned Repair Revenue account:

Unearned Repair Revenue	
	400

The receipt of the $400 advance payment was recorded as follows:

Cash	400	
Unearned Repair Rev.		400

This advance payment was originally recorded as unearned revenue, since the cash was received *before* repair services were performed. Assume now that at January 31, $300 of the $400 unearned amount has been earned. Therefore, $300 must be transferred from unearned repair revenue into repair revenue. The adjusting entry at Jan. 31 is:

		(b)	
2017			
Jan. 31	Unearned Repair Revenue	300	
	Repair Revenue		300
	To adjust for repair revenue earned.		

After posting the adjustment, the $100 remaining balance in unearned repair revenue ($400 – $300) represents the amount at the end of January that will be earned in February.

Unearned Repair Revenue	
	400
300	
	100 Bal.

A liability account, unearned repair revenue, is decreased by the $300 adjustment.

Repair Revenue	
	10,000
	300
	10,300 Bal.

A revenue account, repair revenue, is increased by the $300 adjustment.

If the adjustment was not recorded, unearned repair revenue would be overstated (too high) by $300 causing liabilities on the balance sheet to be overstated. Additionally, revenue would be understated (too low) by $300 on the income statement.

Adjusting Plant and Equipment Accounts

Plant and equipment assets, also known as **long-lived assets**, are expected to generate revenues over the current and future accounting periods because they are used to produce goods, supply services, or used for administrative purposes. The truck and equipment purchased by Big Dog Carworks Corp. in January are examples of assets that provide economic benefits for more than one accounting period. Because of this, their costs also must be spread over the same time period, or **useful life**. Useful life is an estimate of how long the asset will be used to produce benefits for the business. This is done to satisfy the matching principle. For example, the $100,000 cost of a machine expected to be used over five years is not expensed entirely in the year of purchase because the benefits it provides will last for several years. Immediately expensing the purchase would cause expenses to be overstated in Year 1 and understated in Years 2, 3, 4, and 5. More appropriately, the $100,000 cost should be spread over the asset's five-year useful life.

The process of allocating the cost of a long-lived asset over the period of time it is expected to be used is called **depreciation**. Various depreciation methods are discussed in a later chapter.

For our purposes here, the benefit of plant and equipment that is used up each month will be calculated as its cost divided by its estimated useful life**,** calculated in months.

Let's work through two examples to demonstrate depreciation adjustments. Recall that in January, BDCC purchased two assets – equipment and a truck. Assume that they are considered long-lived asset because they have an estimated useful life greater than one year. The equipment was purchased for $3,000 (Transaction 3, Chapter 2). If its actual useful life is 10 years (120 months), monthly depreciation expense is $25, calculated as:

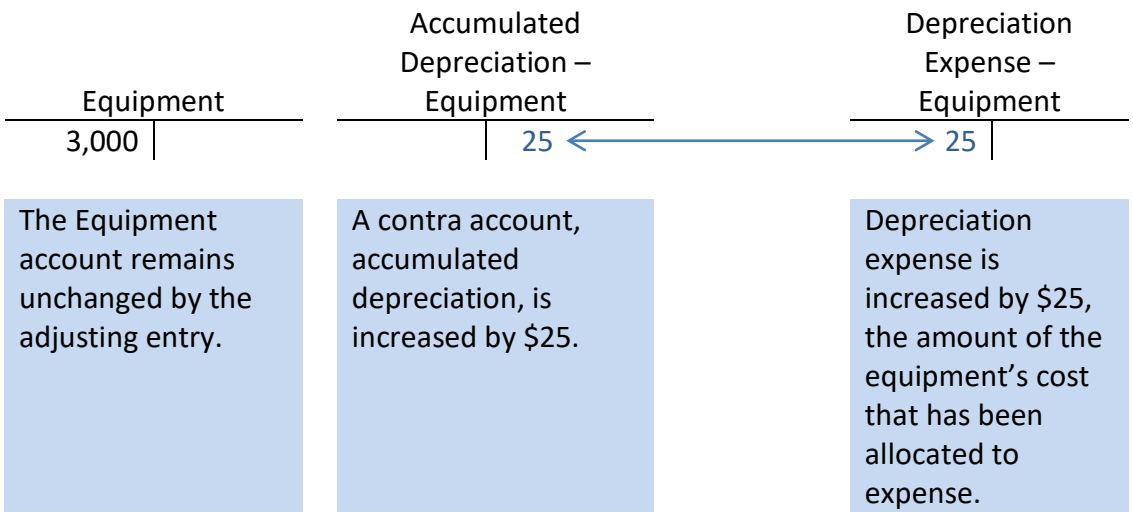
$$\frac{\text{Cost}}{\text{Estimated Useful Life}} = \frac{\$3{,}000}{120 \text{ months}} = \$25/\text{month}$$

The following adjusting entry is made for BDCC on January 31:

		(c)	
2017			
Jan. 31	Depreciation Expense – Equipment	25	
	Accumulated Depreciation – Equipment		25
	To record one month of depreciation expense on the equipment ($3,000/120 months).		

Notice that the credit side of the entry is not made to the Equipment account. Rather, a **contra account** called "Accumulated Depreciation – Equipment" is used. A contra account is a general ledger account that is related to another account (in this case, Equipment). It has a credit balance, which is subtracted from the debit balance of its related account on the financial statements. **Accumulated depreciation** is a contra account that records the amount of a particular asset's cost that has been expensed since it was put into use. The original cost of the long-lived asset needs to be maintained in the accounting records in case it is sold. Maintaining a separate accumulated depreciation contra account allows this original cost to be retained in the records.

When this adjusting entry is posted, the accounts appear as follows:



For financial statement reporting, the asset and contra asset accounts are combined. This **carrying amount** or **net book value** of the equipment on the balance sheet is shown as $2,975 ($3,000 – $25) at January 31, like this:

Equipment	3,000
Acc. Dep. – Equip.	(25)
Net book value	2,975

Recall that BDCC also purchased a truck for $8,000 during January (Transaction 4, Chapter 2). Assume the truck has an estimated useful life of 80 months. At January 31, one month of the truck cost has expired. Depreciation is calculated as:

$$\frac{\text{Cost}}{\text{Estimated Useful Life}} = \frac{\$8{,}000}{80 \text{ months}} = \$100/\text{month}$$

The adjusting entry recorded on January 31 is:

		(d)	
2017			
Jan. 31	Depreciation Expense, Truck	100	
	Accumulated Depreciation, Truck		100
	To record one month of depreciation expense on the truck ($8,000/80 months).		

When the adjusting entry is posted, the accounts appear as follows:

Truck	Accumulated Depreciation - Truck	Depreciation Expense - Truck
8,000	100	100

The Truck account remains unchanged by the adjusting entry.

A contra account, accumulated depreciation, is increased by $100.

Depreciation expense is increased by $100, the amount of the truck's cost that has been allocated to expense.

The value of the truck on the balance sheet at January 31 is shown as $7,900 ($8,000 – $100), like this:

Truck	8,000
Acc. Dep. – Truck.	(100)
Net book value	7,900

Although land is a long-lived asset, it is not depreciated because its benefits do not decrease over time. Therefore, land is often referred to as a *non-depreciable asset*.

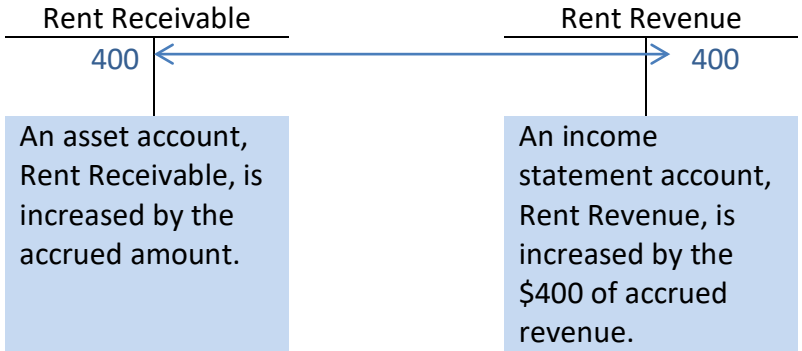
Adjusting for Accrued Revenues and Expenses

Some revenues and expenses increase as time passes and are therefore said to *accrue*. Accrued revenues and accrued expenses are items that need to be reported in the income statement for a certain time period. However, they are not recognized by the accounting system until they are received or paid in cash, because there are no source documents like sales invoices or purchase invoices to trigger their recording. Often these types or revenue and expenses need to be recognized earlier in the accounting records. This is done by adjusting entries. Common types of accrued revenues are for services already provided, rent and interest from investments. Common expenses are interest on debt, salaries, and income taxes.

Accrued revenues are revenues that have been earned but not yet collected or recorded. Assume that BDCC has rented out part of the building in which it operates to another business (this is often called a *sublet*) as of January 1, 2017. The rent is $400 per month. If the rent has not been paid to BDCC by January 31, and an accrued revenue amount needs to be recorded, as follows:

		(e)	
2017			
Jan. 31	Rent Receivable	400	
	Rent Revenue		400
	To record January rent from sublet.		

When the adjusting entry is posted, the accounts appear as follows:



In this way, rent revenue would be appropriately reported in the January income statement. If the adjustment was not recorded, assets on the balance sheet would be understated by $200 and revenues would be understated by the same amount on the income statement.

If the rent payment is received on February 3, the entry to record this would be:

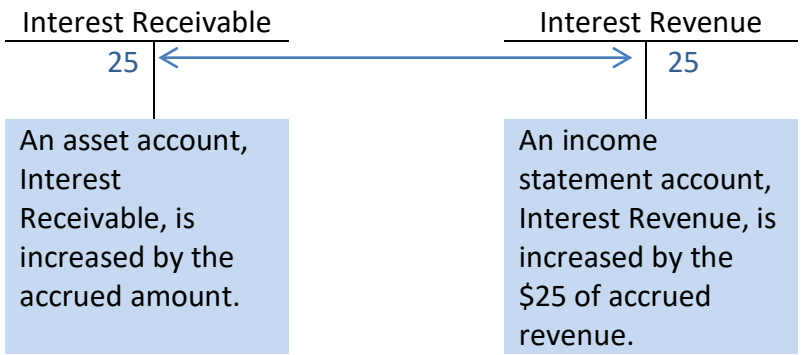
2017			
Feb. 3	Cash	400	
	Rent Receivable		400
	To record receipt of January rent from sublet.		

Another example of accrued revenue is interest receivable. Assume that cash on deposit with the bank pays interest every three months and that the interest revenue earned on the account is $25 at January 31. An accrued revenue amount needs to be recorded at January 31, as follows:

(f)

2017			
Jan. 31	Interest Receivable	25	
	Interest Revenue		25
	To record January accrued revenue on chequing account.		

When the adjusting entry is posted, the accounts appear as follows:



Accrued expenses are expenses that have been incurred but not yet paid or recorded. Like accrued revenue, these items are not usually recorded in the accounting records because they are not recorded on source documents like a sales invoice or a bill from a supplier. An example of an accrued expense in the case of BDCC is interest expense. Interest expense arises when a business borrows money from a financial institution like a bank. Interest accrues (increases) daily but is paid only at certain time, perhaps monthly or every six months.

For Big Dog Carworks Corp., the January 31, 2017 unadjusted trial balance shows a $9,000 bank loan balance. Recall from Chapter 2 that this consists of a $4,000 loan on January 2 (Transaction 2), an additional $7,000 loan on January 3 (Transaction 3), and a repayment of $2,000 on January 10 (Transaction 6). No interest has been paid on this loan as of January 31. However, interest has been accruing on the

loans since they were received. The interest needs to be recorded by means of adjusting entry.

Assume that interest expense amounts to $18. BDCC's adjusting entry to accrue this expense on January 31 is:

		(g)	
2017			
Jan. 31	Interest Expense	18	
	Interest Payable		18
	To record January accrued interest on the bank loan.		

This adjusting entry enables BDCC to include the interest expense on the January income statement even though interest has not yet been paid. The entry also creates a payable that will be reported as a liability on the balance sheet at January 31.

When the adjusting entry is posted, the accounts appear as:

Interest payable (a liability) is established to record the credit.

An expense account is established to record the debit.

Accruing Salaries Expense

Transaction 9 in Chapter 2 included a $4,000 cash payment for salaries expense. ("Wages" are similar expenses, paid to hourly workers.) Let's assume that the payments were for work performed by staff only until January 28. There are three days of salary that have not been paid to January 31. Assume this amounts to $150. This additional accrued expense for work done on January 28, 29, 30, and 31 needs to be recorded to appropriately match the salaries expense to the month of January. This is the adjusting entry:

		(h)	
2017			
Jan. 31	Salaries Expense	150	
	Salaries Payable		150
	To accrue salaries for January 29-31.		

This entry enables the company to include in expense all salaries earned by employees, even though these amounts will not be paid in cash until the next pay period in February. The entry creates an accrued liability for an expense incurred during one accounting period (January) but paid in another accounting period (February).

When the adjusting entry is posted, the accounts appear as follows:

Salaries Payable		Salaries Expense	
		4,000	
	150 ←	→ 150	
		Bal. 4,150	

A liability, Salaries Payable, is created at January 31.

An additional $150 expense is recorded for the period ended January 31.

Accruing Income Taxes Expense

Corporate income taxes expense also needs to be accrued for BDCC. In most jurisdictions, a corporation is taxed as an entity separate from its stockholders. For simplicity, assume BDCC's income tax expense for January 2017 is $500 and that this amount will be paid after the company's year-end, December 31. The adjusting entry for January is:

		(i)	
2017			
Jan. 31	Income Tax Expense	500	
	Income Tax Payable		500
	To adjust for January accrued income taxes.		

When the adjusting entry is posted, the accounts appear as follows:

Income Tax Payable		Income Tax Expense	
	500 ←	→ 500	

A liability, Income Tax Payable, is created at January 31.

Income Taxes Expense, an income statement account, is increased.

This adjusting entry enables the company to match the income tax expense accrued in January to the income earned during the same month.

Summary

Recall the five types of adjusting entries introduced at the beginning of the chapter: prepaid expenses, unearned revenues, plant and equipment assets, accrued revenues and accrued expenses. The below table summaries these types of adjustments and their impact to the company's financial statements should they not be prepared:

Type of Adjustment	Adjusting Entry	Accounts Without Adjustment
Prepaid expenses*	Dr. Expense Cr. Asset or Contra-asset	Expenses understated Assets overstated
Unearned revenues	Dr. Liability Cr. Revenue	Liabilities overstated Revenues understated
Accrued revenues	Dr. Assets Cr. Revenue	Assets understated Revenues understated
Accrued expenses	Dr. Expense Cr. Liability	Expenses understated Liabilities understated

*Plant and equipment assets are grouped into prepaid expenses for the purpose of summary.

C. The Adjusted Trial Balance

LO3 – Prepare an adjusted trial balance and use it to prepare financial statements.

In the last section, adjusting entries were recorded and posted. As a result, some account balances reported on the January 31, 2017 unadjusted trial balance in Figure 3-4 have changed. Recall that an unadjusted trial balance reports account balances *before* adjusting entries have been recorded and posted. An **adjusted trial balance** reports account balances *after* adjusting entries have been recorded and posted. Figure 3-5 shows the unadjusted trial balance, adjustments a through i discussed above, and the adjusted trial balance for BDCC at January 31, 2017. Changes are shown in blue.

Big Dog Carworks Corp.
Adjusted Trial Balance
January 31, 2017

Acct. No.	Account	Unadjusted trial balance Debit	Unadjusted trial balance Credit	Adjustments Debit	Adjustments Credit	Adjusted trial balance Debit	Adjusted trial balance Credit
101	Cash	$ 6,200				$6,200	
110	Accounts receivable	2,500				2,500	
116	Interest receivable			(f) 25		25	
125	Rent receivable			(e) 400		400	
161	Prepaid insurance	2,400			(a) 200	2,200	
183	Equipment	3,000				3,000	
184	Truck	8,000				8,000	
193	Acc. dep. – equipment				(c) 25		$ 25
194	Acc. dep. – truck				(d) 100		100
201	Bank loan		$9,000				9,000
210	Accounts payable		700				700
222	Interest payable				(g) 18		18
226	Salaries payable				(h) 150		150
247	Unearned repair revenue		400	(b) 300			100
260	Income taxes payable				(i) 500		500
320	Common stock		10,000				10,000
350	Dividends	200				200	
430	Interest revenue				(f) 25		25
440	Rent revenue				(e) 400		400
450	Repair revenue		10,000		(b) 300		10,300
623	Dep. exp. – equipment			(c) 25		25	
624	Dep. exp. – truck			(d) 100		100	
631	Insurance expense			(a) 200		200	
632	Interest expense			(g) 18		18	
654	Rent expense	1,600				1,600	
656	Salaries expense	4,000		(h) 150		4,150	
668	Supplies expense	1,500				1,500	
670	Truck operating expense	700				700	
830	Income taxes expense			(i) 500		500	
		$30,100	30,100	$1,718	$1,718	$31,318	$31,318

Figure 3–5 BDCC's January 31, 2017 Adjusted Trial Balance

Financial statements can now be prepared using the adjusted trial balance, in the same manner as shown in Chapter 2.

Big Dog Carworks Corp.
Trial Balance
January 31, 2017

Acct. No.	Account	Account Balances Debit	Account Balances Credit
101	Cash	$ 6,200	
110	Accounts receivable	2,500	
116	Interest receivable	25	
125	Rent receivable	400	
161	Prepaid insurance	2,200	
183	Equipment	3,000	
184	Truck	8,000	
193	Acc. dep. – equipment		$ 25
194	Acc. dep. – truck		100
201	Bank loan		9,000
210	Accounts payable		700
222	Interest payable		18
226	Salaries payable		150
247	Unearned repair revenue		100
260	Income taxes payable		500
320	Common stock		10,000
350	Dividends	200	
430	Interest revenue		25
440	Rent revenue		400
450	Repair revenue		10,300
623	Dep. expense – equipment	25	
624	Dep. expense – truck	100	
631	Insurance expense	200	
632	Interest expense	18	
654	Rent expense	1,600	
656	Salaries expense	4,150	
668	Supplies expense	1,500	
670	Truck operating expense	700	
830	Income taxes expense	500	
		$31,318	$31,318

The income statement is prepared first, followed by the statement of changes in equity.

Big Dog Carworks Corp.
Income Statement
For the Month Ended January 31, 2017

Revenue		
Interest	$ 25	
Rent	400	
Repairs	10,300	$10,725
Expenses		
Dep. – equip.	25	
Dep. – truck	100	
Insurance	200	
Interest	18	
Rent	1,600	
Salaries	4,150	
Supplies	1,500	
Truck operating	700	
Income taxes	500	8,793
Net income		$1,932

Big Dog Carworks Corp.
Statement Of Changes In Equity
For the Month Ended January 31, 2017

	Common stock	*Retained earnings*	*Total equity*
Balance at January 1, 2017	$ -0-	$ -0-	$ -0-
Shares issued	10,000		10,000
Net income		1,932	1,932
Dividends		(200)	(200)
Balance at January 31, 2017	$10,000	$ 1,732	$11,732

The balance sheet can be prepared once the statement of changes in equity is complete.

Big Dog Carworks Corp.
Trial Balance
January 31, 2017

Acct. No.	Account	Account Balances Debit	Account Balances Credit
101	Cash	$ 6,200	
110	Accounts receivable	2,500	
116	Interest receivable	25	
125	Rent receivable	400	
161	Prepaid insurance	2,200	
183	Equipment	3,000	
184	Truck	8,000	
193	Acc. dep. – equipment		$ 25
194	Acc. dep. – truck		100
201	Bank loan		9,000
210	Accounts payable		700
222	Interest payable		18
226	Salaries payable		150
247	Unearned repair revenue		100
260	Income taxes payable		500
320	Common stock		10,000
350	Dividends	200	
430	Interest revenue		25
440	Rent revenue		400
450	Repair revenue		10,300
623	Dep. expense – equipment	25	
624	Dep. expense – truck	100	
631	Insurance expense	200	
632	Interest expense	18	
654	Rent expense	1,600	
656	Salaries expense	4,150	
668	Supplies expense	1,500	
670	Truck operating expense	700	
830	Income taxes expense	500	
		$31,318	$31,318

Big Dog Carworks Corp.
Balance Sheet
January 31, 2017

Assets		
Cash		$6,200
Accounts receivable		2,500
Interest receivable		25
Rent receivable		400
Prepaid insurance		2,200
Equipment	3,000	
Acc. Dep. – Equip.	(25)	2,975
Truck	8,000	
Acc. Dep. – Truck	(100)	7,900
Total assets		$22,200
Liabilities		
Bank loan	9,000	
Accounts payable	700	
Interest payable	18	
Salaries payable	150	
Unearned repair rev.	100	
Income taxes pay.	500	10,468
Stockholders' Equity		
Common stock	10,000	
Retained earnings	1,732	11,732
Total liabilities and stockholders' equity		$22,200

Equipment and truck are shown net of depreciation.

These amounts are transferred from the Statement of Changes in Equity.

D. The Accounting Cycle

LO4 – Identify and explain the steps in the accounting cycle.

Recall from Chapter 2 that the accounting cycle is the process used to convert economic data into financial statement information using the double-entry accounting model. The complete accounting cycle consists of nine steps:

Step 1: Financial events are identified and analyzed for impact to company accounts.

Step 2: Transactions are recorded in the company's general journal.

Step 3: The journal entries in the general journal are posted to accounts in the general ledger.

Step 4: Prepare an unadjusted trial balance to ensure total debits equal total credits.

Step 5: The unadjusted account balances are analyzed and adjusting entries are journalized in the general journal and posted to the general ledger.

Step 6: Prepare an adjusted trial balance to prove the equality of debits and credits.

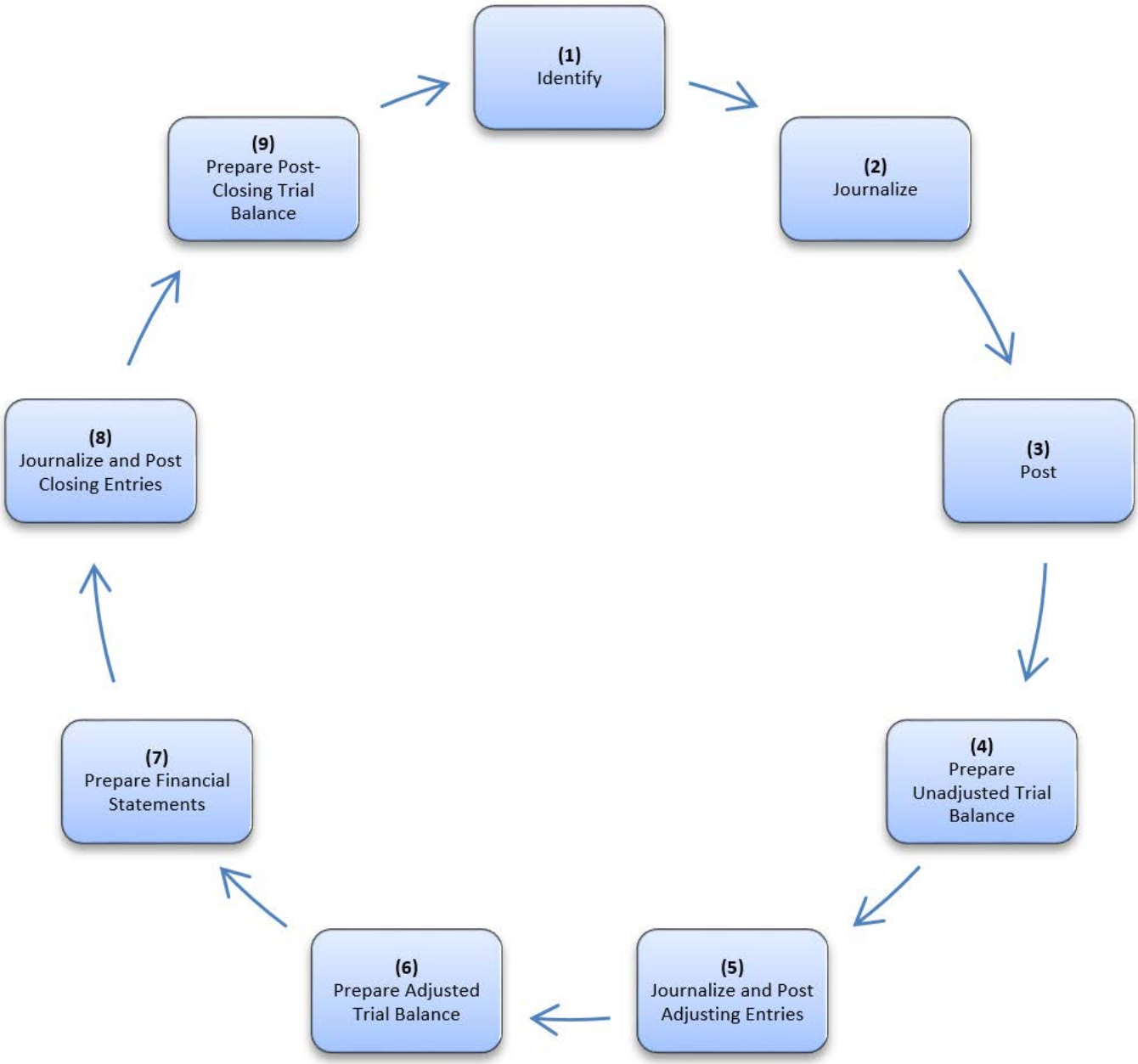
Step 7: Prepare financial statements from the adjusted trial balance.

Step 8: Closing entries are journalized and posted.

Step 9: A post-closing trial balance is prepared.

Steps 5 and 6 were introduced in this chapter. Steps 8 and 9 are discussed in the next chapter. The sequence of steps is illustrated in Figure 3-6.

Figure 3–6 The Accounting Cycle



Summary of Chapter 3 Learning Objectives

LO1 – Explain how adjusting entries match revenues and expenses to the appropriate time period.

Financial statements must be prepared in a timely manner, at minimum, once per fiscal year. For statements to reflect activities accurately, revenues and expenses must be recognized and reported in the appropriate accounting period. In order to achieve this type of matching, adjusting entries need to be prepared.

LO2 – Explain the use of and prepare the adjusting entries required for prepaid expenses, depreciation, unearned revenues, accrued revenues, and accrued expenses.

Adjusting entries are prepared at the end of an accounting period. They allocate revenues and expenses to the appropriate accounting period regardless of when cash was received or paid. The five types of adjustments are:

(1)

Date	Expense	XX	
	Prepaid Asset		XX
	To adjust prepaid expense for the amount of benefit used.		

(2)

Date	Depreciation Expense	XX	
	Accumulated Depreciation		XX
	To allocate the costs of plant and equipment over their useful lives.		

(3)

Date	Unearned Revenue	XX	
	Revenue		XX
	To adjust for revenue now earned.		

(4)

Date	Account Recievable	XX	
	Revenue		XX
	To accrue revenue earned.		

(5)

Date	Expense	XX	
	Payable		XX
	To accrue expenses incurred.		

LO3 – Prepare an adjusted trial balance and use it to prepare financial statements.

The adjusted trial balance is prepared using the account balances in the general ledger after adjusting entries have been posted. Debits must equal credits. The adjusted trial balance is used to prepare the financial statements. Financial statements are prepared based on adjusted account balances.

LO4 – Identify and explain the steps in the accounting cycle.
The steps in the accounting cycle are:

Steps occurring continually during the fiscal year:

1. Financial events are identified and analyzed for impact to company accounts.
2. Transactions are recorded in the general journal.
3. The journal entries in the general journal are posted to accounts in the general ledger.

Steps occurring whenever interim or year-end financial statements are prepared at the end of an accounting period

4. An unadjusted trial balance is prepared to ensure total debits equal total credits.
5. The unadjusted account balances are analyzed, and adjusting entries are journalized in the general journal and posted to the general ledger.
6. An adjusted trial balance is prepared to prove the equality of debits and credits.
7. The adjusted trial balance is used to prepare financial statements.

Steps occurring only at the fiscal year-end

8. Closing entries are journalized and posted.
9. A post-closing trial balance is prepared.

E N D O F C H A P T E R M A T E R I A L S

Multiple-Choice Review

1. The time period assumption:
   a.) Exists only on the time space continuum.
   b.) states that companies must wait until the end of a company's life to report its business activities.
   c.) states that the economic life of a company can be divided into artificial time periods.
   d.) requires that companies report information in the time period in which the events occurred.

2. Accrual-basis accounting:
   a.) requires that companies report information in the time period in which the events occurred.
   b.) is in accordance with generally accepted accounting principles.
   c.) requires that companies record revenue when cash is received and expenses when cash is paid.
   d.) answers a and b are correct.

3. The revenue recognition principles states that:
   a.) revenue be recorded when cash is received
   b.) revenue be recorded in the period in which the performance obligation is satisfied.
   c.) revenue be recorded when the company's owner dictates.
   d.) expenses be matched with revenues.

4. The principle that requires efforts be matched in the period in which a company consumes assets or incurs liabilities to produce revenues is the:
   a.) expense recognition principle
   b.) revenue recognition principle
   c.) full disclosure principle
   d.) historical cost principle

5. Each of the following is a major type of adjustment *except*:
   a.) unearned revenues
   b.) residual revenues
   c.) prepaid expenses
   d.) accrued expenses

Multiple-Choice Review (continued)

6. Yugo Company fails to record its year-end adjusting entry to accrue unpaid employee salaries. This omission would cause an:
   a.) an overstatement of liabilities
   b.) an understatement of net income
   c.) an overstatement of net income
   d.) an understatement of assets

7. Yugo Company has a beginning supplies balance of $400 (normal balance). A physical count at the end of the period shows a supplies balance of $150. The necessary adjusting entry is:
   a.) debit supplies $250; credit supplies expense $250
   b.) debit supplies expense $150; credit supplies $150
   c.) debit supplies expense $250; credit supplies $250
   d.) debit supplies expense $400; credit supplies $400

8. Wakfu Speech Coaching receives a customer's prepayment of $6,000 for six coaching sessions to be provided later. After five coaching sessions have been provided, Wakfu will record:
   a.) cash of $5,000
   b.) unearned revenue of $6,000
   c.) service revenue of $6,000
   d.) service revenue of $5,000

9. Eliatroupe provided $4,000 worth of services to clients at year-end but has not had a chance to bill the clients. If an adjusting entry is not made to record this,
   a.) assets will be understated
   b.) revenue will be overstated
   c.) assets will be overstated
   d.) liabilities will be overstated

10. Amalia Company pays Wakfu Company $2,000 for two speech coaching sessions to begin January 1, 2019. At December 31, 2018, Amalia would record these classes as:
   a.) unearned revenue
   b.) prepaid expense
   c.) accrued revenue
   d.) accrued expense

Answers on the following page

Answers to Multiple-Choice Review

1. c
2. d
3. b
4. a
5. b
6. c

   The adjusting entry to record unpaid employee salaries would be:

   Dr. Salaries and wages expense
   Cr. Salaries and wages payable

   This adjusting entry increases expenses (salaries and wages expense) and increases liabilities (salaries and wages payable). Therefore, if this entry is omitted expenses would be understated and liabilities would be understated. Since expenses determine net income, an understatement of expenses would mean an overstated net income.
7. c

   The adjusting entry to record supplies used would be:

   Dr. Supplies expense 250
   Cr. Supplies 250

   The amount is calculated by subtracting the ending balance (physical count) from the beginning balance. So $400 beginning balance - $150 physical count balance = $250.
8. d
9. a

   The adjusting entry to record revenue earned by unbilled:

   Dr. Accounts receivable 4,000
   Cr. Service revenue 4,000

   This adjusting entry increases assets (accounts receivable) and increases revenues (service revenue). Therefore, if this entry is omitted, both assets and revenue would be understated.
10. b

Discussion Questions

1. Do you have to wait until the operating cycle is complete before you can measure income using the accrual basis of accounting?
2. What is the relationship between the matching concept and accrual accounting? Are revenues matched to expenses, or are expenses matched to revenues? Does it matter one way or the other?
3. What are adjusting entries and why are they required?
4. What are the five types of adjusting entries?
5. Why are asset accounts like Prepaid Insurance adjusted? How are they adjusted?
6. How are long-lived asset accounts adjusted? Is the procedure similar to the adjustment of other asset and liability accounts at the end of an accounting period?
7. What is a contra account and why is it used?
8. How are liability accounts like Unearned Repair Revenue adjusted?
9. Explain the terms *accrued revenues* and *accrued expenses*. Give examples of each.
10. Why is an adjusted trial balance prepared?
11. How is the adjusted trial balance used to prepare financial statements?
12. List the nine steps in the accounting cycle.

Comprehension Problems

CP 3–1

Moon Company earned $98,000 in revenues and received $66,000 in cash from these customers. Moon incurred expenses of $62,500 but $50,500 remained unpaid at year end. Moon also prepaid $6,750 in cash for future expenses. Determine the company's net income for the period under both the accrual-basis and cash-basis of accounting.

CP 3–2

Luna Commonwealth Inc. provides therapeutic counselling for pets traumatized by small children. The following events occurred in 2018.

- Revenues earned totaled $388,000. Of that amount, $328,000 was received in cash and the remainder has been billed to clients.
- Expenses incurred totaled $225,000. Of that amount, $180,000 has been paid and the rest is still owed.
- Luna prepaid $16,000 for the first four months of 2019. A
- Luna offers discounts for customers that prepay for their pet's counselling sessions. Total deposits amounted to $18,000 at year-end for sessions to be held in 2019.

Using the above information, calculate Luna's net income for 2018. How do the revenue and expense recognition principles influence your calculation?

CP 3–3

Cinder Corporation's unadjusted trial balance at December 31 shows Supplies of $8,700 and Supplies Expense of $0. The company determines that there are $2,900 of supplies remaining at December 31. Prepare the adjusting journal entry at Dec. 31 and post to the corresponding T-accounts.

CP 3–4

Scarlett Corporation's unadjusted trial balance at December 31 shows Insurance Expense of $0 and Prepaid Insurance of $15,600. This balance represents 6 months of insurance coverage and was purchased November 1 of the year. Prepare the adjusting journal entry at Dec. 31 and post to the corresponding T-accounts.

CP 3–5

Cress Company shows Equipment with a balance of $36,000 and zero balances for Depreciation Expense and Accumulated Depreciation on their unadjusted December 31 trial balance. The equipment is expected to last 9 years and was purchased January 1st of the current year. Prepare the adjusting journal entry at Dec. 31 and show the related T-accounts -calculating any ending balances if needed.

CP 3–6

On July 1, 2018, Jason Company received $105,000 from Winter Company for a 3-year bodyguard services contract. Prepare the July 1 original entry and the Dec. 31 adjusting journal entry for Jason Company and post to the corresponding T-accounts.

CP 3–7

On December 1, Levana Corporation secured a $50,000 loan through her bank. The bank loan carries a 10% annual interest rate. Levana pays the monthly interest on the 10th day of the following month. Prepare the December 1 original entry and the Dec. 31 adjusting journal entry for Levana and post to the corresponding T-accounts (excluding cash).

CP 3–8

At year-end, Iko Company determines there is $32,000 of work completed for its clients that remains unbilled. Prepare the adjusting journal entry at Dec. 31 and post to the corresponding T-accounts.

CP 3–9

Prepare adjusting journal entries for Meyer Company at December 31, 2019. Assume that prepaid expenses are initially recorded as assets and that customer prepayments are initially recorded as liabilities. Also assume adjusting entries are prepared annually.

1.) The company has not yet recorded annual depreciation on its equipment. The equipment originally cost $8,000 and is expected to last 8 years.

2.) The prepaid insurance account showed a beginning balance of $1,200. An analysis determined that the unexpired coverage at year-end is $570.

3.) The supplies account showed a beginning balance of $500. A physical count at year-end determines $250 is the amount of supplies still available.

4.) The company determines that one-half of the work relating to a customer's $10,000 prepayment was earned this period.

5.) The company determines it has $7,500 of work completed but unbilled to customers at year-end.

6.) Wages expense of $3,000 has been incurred but are not paid as of December 31.

CP 3–10

Adjusting entries affect at least one balance sheet account and at least one income statement account. Identify the balance sheet account and income statement account for the below entries:

a.) Entry to record revenue earned that has not yet been recorded.
b.) Entry to record the expiration of prepaid insurance.
c.) Entry to record salaries and wages incurred but unpaid.
d.) Entry to record annual depreciation expense.
e.) Entry to record the earned portion of a customer's prepayment.

CP 3–11

Prepare adjusting journal entries for Kai Corporation at December 31, 2019. Assume that prepaid expenses are initially recorded as assets and that customer prepayments are initially recorded as liabilities. Also assume adjusting entries are prepared annually.

1.) One third of the work related to a $9,000 customer prepayment has been completed this period.

2.) The company has not yet recorded annual depreciation on its equipment. The equipment originally cost $5,000 and is expected to last 5 years.

3.) The prepaid insurance account showed a beginning balance of $1,200. The policy is for 12 months of coverage and was purchased on July 1 of the current year.

4.) The supplies account showed balance of $375 at January 1 of the year. During the year, $225 of supplies were purchased. A physical count at year-end determines $125 supplies on hand.

5.) The company has earned $1,250 of interest on its financial investments but has not yet recorded them at year-end.

6.) The company has incurred $13,000 of interest on its outstanding bank loan. The company has not yet recorded the amount at December 31, 2019 and will pay the interest on January 2, 2020.

CP 3–12

The following unadjusted accounts are taken from the records of B Corp. at December 31, 2019:

Bank Loan 201		Interest Expense 632		Interest Payable 222	
	12,000	1,100			100

Additional Information: Interest expense for the year should be $1,200.

Required: Prepare the adjusting entry at December 31, 2019.

CP 3–13

The preparation of adjusting entries requires a debit entry to one account and a credit entry to another account.

A	*B*
a. Insurance Expense	1. Commissions Earned
b. Rent Earned	2. Supplies Expense
c. Prepaid Rent	3. Salaries Expense
d. Interest Payable	4. Unearned Fees
e. Interest Receivable	5. Accumulated Depreciation
f. Fees Earned	6. Rent Expense
g. Supplies	7. Prepaid Insurance
h. Unearned Commissions Revenue	8. Interest Earned
i. Salaries Payable	9. Interest Expense
j. Depreciation Expense	10. Unearned Rent

Required: Match each account in column *A* with the appropriate account in column *B*.

CP 3–14

Talliaha Company has the following accounts listed on their adjusted trial balance which may require adjustment. For the below items, indicate (1) the type of adjustment needed (prepaid expense, unearned revenue, accrued revenue, or accrued expense) and (2) the account to be debited and credited in the adjusting entry.

Supplies	Interest payable
Prepaid rent	Accounts receivable
Unearned revenue	Utilities payable
Accumulated depreciation	

CP 3–15

The following unadjusted accounts are taken from the records of B Corp. at December 31, 2019:

Bank Loan 201		Interest Expense 632		Interest Payable 222	
	12,000	1,100			100

Additional Information: Interest expense for the year should be $1,200.

Required: Prepare the adjusting entry at December 31, 2019.

CP 3–16

An extract from the trial balance of Armstrong Corp. at June 30, 2019 is reproduced below:

Account	*Amount in unadjusted trial balance*	*Amount in adjusted trial balance*
Office supplies	$ 190	$ 55
Accumulated depreciation – truck	0	400
Prepaid insurance	850	610
Interest payable	0	100
Unearned rent	1,000	500

Required: Prepare in general journal format the entries that were posted, including a plausible description.

CP 3–17

The following are account balances of Graham Corporation:

Account	*Amount in unadjusted trial balance*	*Amount in adjusted trial balance*
Rent Receivable	$ -0-	$110
Prepaid Insurance	1,800	600
Interest Payable	-0-	90

Required:

1. Enter the unadjusted balance for each account in the following T-accounts: Rent Receivable, Prepaid Insurance, Interest Payable, Rent Earned, Insurance Expense, and Interest Expense.
2. Reconstruct the adjusting entry that must have been recorded for each account. General ledger account numbers are not necessary.
3. Post these adjusting entries and agree ending balances in each T-account to the adjusted balances above.
4. List revenue and expense amounts for the period.

CP 3–18

The following data are taken from an unadjusted trial balance at December 31, 2019:

Prepaid rent	$ 600
Office supplies	700
Income taxes payable	-0-
Unearned commissions revenue	1,500
Salaries expense	5,000

Additional Information:

a. The prepaid rent consisted of a payment for three months' rent at $200 per month for December 2019, January 2020, and February 2020.
b. Office supplies on hand at December 31, 2019 amounted to $300.
c. The estimated income taxes for 2019 are $5,000.
d. All but $500 in the Unearned Commissions account has been earned in 2019.
e. Salaries for the last three days of December amounting to $300 have not yet been recorded.

Required:

1. Prepare all necessary adjusting entries in general journal format at December 31, 2019. General ledger account numbers are not necessary.
2. Calculate the cumulative financial impact on assets, liabilities, stockholders' equity, revenue and expense if these adjusting entries are not made.

CP 3–19

The following are general ledger accounts extracted from the records of Bernard Inc. at December 31, 2019, its year-end ('UB' = unadjusted balance):

Prepaid Advertising		160
UB 1,000		500

Supplies		173
UB 750		400

Equipment		183
UB 21,750		

Acc. Depr. – Equip.		193
		1,500
		250

Accounts Payable		210
	UB	15,000
		200
		100
		400
		800

Salaries Payable		226
		700

Unearned Subscription Revenue		250
5,000	UB	10,000

Common Stock		320
	UB	8,000

Subscription Revenue		480
		5,000

Advertising Expense		610
500		

Commissions Expense		615
UB 800		

Depr. Expense – Equip.		623
250		

Maintenance Expense		641
200		

Salaries Expense		656
UB 9,500		
700		

Supplies Expense		688
UB 2,500		
400		

Telephone Expense		669
100		

Utilities Expense		676
400		

Required: Prepare in general journal format the adjusting entries that were posted. Include general ledger account and plausible descriptions.

CP 3–20

General ledger account balances at Dec. 31, 2019 are as follows:

Cash		101
750	50	
950	150	
90	50	
	24	
	20	
	70	

Accounts Receivable		110
228	90	

Rent Receivable		125
40		

Prepaid Insurance		161
24	2	

Office Supplies		170
50	25	

Repair Supplies		171
145	80	

Furniture		182
150		

Acc. Depr. – Furniture		191
	2	

Accounts Payable		210
70	145	

Unearned Repair Revenue		247
	500	
400		

Interest Payable		222
	12	

Income Taxes Pay.		260
	400	

Interest Expense		632
12		

Income Taxes Expense		830
400		

Common stock		320
	400	

Ret. Earn.		340
	350	

Repair Rev.		450
	950	
	228	
	400	

Rent Earned		440
	40	

Depr. Exp. - Furniture		621
2		

Insurance Exp.		631
2		

Office Supplies Exp.		650
25		

Rent Expense		654
50		

Repair Supplies Expense		655
100		

Required:

1. Label the debit and credit amounts that represent each adjusting entry made at December 31 (for example: a, b, c).
2. Prepare the adjusting entries made at December 31 in general journal form. Include posting reference numbers and plausible descriptions.

CP 3–21

The trial balance of Lauer Corporation at December 31, 2019 follows, before and after the posting of adjusting entries.

Acct. No.	*Account*	*Unadjusted trial balance*		*Adjustments*		*Adjusted trial balance*	
		Debit	*Credit*	*Debit*	*Credit*	*Debit*	*Credit*
101	Cash	$ 4,000				$ 4,000	
110	Accounts receivable	5,000				5,000	
161	Prepaid insurance	3,600				3,300	
162	Prepaid rent	1,000				500	
184	Truck	6,000				6,000	
194	Acc. dep. – truck						$1,500
210	Accounts payable		$7,000				7,000
222	Interest payable						400
226	Salaries payable						1,000
248	Unearned rent revenue		1,200				600
320	Common stock		2,700				2,700
440	Rent earned		25,000				25,600
610	Advertising expense	700				700	
615	Commissions expense	2,000				2,000	
624	Dep. expense – truck					1,500	
631	Insurance expense					300	
632	Interest expense	100				500	
654	Rent expense	5,500				6,000	
656	Salaries expense	8,000				9,000	
	Totals	$35,900	$35,900			$38,800	$38,800

Required:

1. Indicate in the "Adjustments" column the debit or credit difference between the unadjusted trial balance and the adjusted trial balance.
2. Prepare in general journal format the adjusting entries that must have been recorded. Include general ledger account numbers and plausible descriptions.

CP 3–22

The following general ledger accounts and additional information are taken from the records of Wolfe Corporation at the end of its fiscal year, December 31, 2019.

Additional information:

a. The prepaid insurance is for a one-year policy, effective July 1, 2019.
b. A physical count indicated that $500 of supplies is still on hand.
c. $50 of December rent expense has not been recorded.

Cash 101		Supplies 173		Advertising Exp. 610	
Bal. 2,700		Bal. 700		Bal. 200	

Accounts Receivable 110		Common Stock 320		Salaries Expense 656	
Bal. 2,000			Bal. 3,800	Bal. 4,500	

Prepaid Insurance 161		Repair Revenue 450		Rent Expense 654	
Bal. 1,200			Bal. 7,750	Bal. 250	

Required:

1. Record all necessary adjusting entries in general journal format including general ledger account numbers. Assume the following account numbers: Insurance Expense: 631; Supplies Expense: 668.
2. Post the adjusting entries to T-accounts and calculate balances.

Problems

P 3–1

The following unrelated accounts are extracted from the trial balance of Meekins Limited at December 31, its fiscal year-end:

	Balance	
Account	*Unadjusted*	*Adjusted*
a. Prepaid rent	$ 300	$ 600
b. Wages payable	500	700
c. Income taxes payable	-0-	1,000
d. Unearned commissions revenue	2,000	3,000
e. Other unearned revenue	25,000	20,000
f. Advertising expense	5,000	3,500
g. Depreciation expense — equipment	-0-	500
h. Supplies expense	850	625
i. Truck operating expense	4,000	4,500

Required: For each of the above accounts, prepare the most likely adjusting entry, including plausible descriptions. General ledger account numbers are not necessary.

P 3–2

The unadjusted trial balance of Lukas Films Corporation includes the following account balances at December 31, 2019, its fiscal year-end. Assume all accounts have normal debit or credit balances as applicable.

Supplies	$ 600
Prepaid rent	1,500
Prepaid insurance	900
Equipment	2,400
Unearned advertising revenue	1,000
Telephone expense	825
Wages expense	15,000

The following information applies at December 31:

a. A physical count of supplies indicates that $300 of supplies have not yet been used at December 31.

b. A $75 telephone bill for December has been received but not recorded.
c. One day of wages amounting to $125 remains unpaid and unrecorded at December 31; the amount will be included with the first Friday payment in January.
d. The equipment was purchased December 1; it is expected to last 2 years. No depreciation has yet been recorded.
e. The prepaid rent is for December 2019, and January and February 2020; rent is $500 per month.
f. Half of the unearned advertising revenue has been earned at December 31.
g. The $900 amount in Prepaid Insurance is for a one-year policy, effective July 1, 2019.

Required: Prepare all necessary adjusting entries at December 31, 2019. General ledger account numbers are not needed.

P 3–3

The unadjusted trial balance of Mighty Fine Services Inc. includes the following account balances at December 31, 2019, its fiscal year-end. No adjustments have been recorded. Assume all accounts have normal debit or credit balances.

Prepaid insurance	$600
Supplies	500
Bank loan	5,000
Subscription revenue	9,000
Salaries payable	500
Rent expense	3,900
Truck operating expense	4,000

The following information applies to the fiscal year-end:

a. The $600 prepaid insurance is for a one-year policy, effective September 1, 2019.
b. A physical count indicates that $300 of supplies is still on hand at December 31.
c. Interest on the bank loan is paid on the fifteenth day of each month; the unrecorded interest for the last 15 days of December amounts to $25.

d. The Subscription Revenue account consists of a cash receipts for 6-month subscriptions to the corporation's Computer Trends report; the subscription period began December 1.
e. Three days of salary amounting to $300 remain unpaid at December 31, in addition to the previous week's salaries of $500, which have not yet been paid.
f. The monthly rent expense amounts to $300.
g. A bill for December truck operating expense has not yet been received; an amount of $400 is owed.

Required: Prepare all necessary adjusting entries at December 31.

P 3–4

Following is the unadjusted trial balance of Pape Pens Corporation at the end of its first year of operations, December 31, 2019:

Acct. No.	*Account*	*Balance* Debit	*Balance* Credit
101	Cash	3,300	
110	Accounts receivable	4,000	
161	Prepaid insurance	1,200	
173	Supplies	500	
184	Truck	8,000	
194	Acc. dep. – truck		-0-
210	Accounts payable		5,000
226	Salaries payable		-0-
248	Unearned rent revenue		2,400
260	Income taxes payable		-0-
320	Common stock		7,000
350	Dividends	1,000	
410	Commissions earned		16,100
440	Rent earned		-0-
610	Advertising expense	200	
615	Commissions expense	1,000	
624	Dep. expense – truck	-0-	
631	Insurance expense	-0-	
632	Interest expense	400	
654	Rent expense	3,600	
656	Salaries expense	7,000	
668	Supplies expense	-0-	
669	Telephone expense	300	
830	Income taxes expense	-0-	
		30,500	30,500

The following additional information is available:

a. Prepaid insurance at December 31 amounts to $600.
b. A physical count indicates that $300 of supplies is still on hand at December 31.
c. The truck was purchased on July 1; it has an estimated useful life of 4 years.
d. One day of salaries for December 31 is unpaid; the unpaid amount of $200 will be included in the first Friday payment in January.
e. The balance in the Unearned Rent Revenue account represents six months' rental of warehouse space, effective October 1.
f. A $100 bill for December telephone charges has not yet been recorded.

g. Income taxes expense for the year is $300. This amount will be paid in the next fiscal year.

Required:

1. Prepare all necessary adjusting entries at December 31, 2019, including general ledger account numbers. Descriptions are not needed.
2. Prepare an adjusted trial balance at December 31, 2019.
3. Prepare an income statement, statement of changes in equity, and balance sheet.

P 3–5

Roth Contractors Corporation was incorporated on December 1, 2019 and had the following transactions during December:

Part A

a. Issued common stock for $5,000 cash
b. Paid $1,200 cash for three months' rent: December 2019; January and February 2020
c. Purchased a used truck for $10,000 on credit (recorded as an account payable)
d. Purchased $1,000 of supplies on credit. These are expected to be used during the month (recorded as expense)
e. Paid $1,800 for a one-year truck insurance policy, effective December 1
f. Billed a customer $4,500 for work completed to date
g. Collected $800 for work completed to date
h. Paid the following expenses in cash: advertising, $350; interest, $100; telephone, $75; truck operating, $425; wages, $2,500
i. Collected $2,000 of the amount billed in *f* above
j. Billed customers $6,500 for work completed to date
k. Signed a $9,000 contract for work to be performed in January 2020
l. Paid the following expenses in cash: advertising, $200; interest, $150; truck operating, $375; wages, $2,500
m. Collected a $2,000 advance on work to be done in January (the policy of the corporation is to record such advances as revenue at the time they are received)
n. Received a bill for $100 for utilities used during the month

Required:

1. Open general ledger T-accounts for the following: Cash, Accounts Receivable, Prepaid Insurance, Prepaid Rent, Truck, Accounts Payable, Common Stock, Repair Revenue, Advertising Expense, Interest Expense, Supplies Expense, Telephone Expense, Truck Operating Expense, Utilities Expense, and Wages Expense. General ledger account numbers are not necessary.
2. Prepare journal entries to record the December transactions.
3. Post the entries to general ledger T-accounts.

Part B

The following information relates to December 31, 2019:

o. One month of the prepaid insurance has expired.
p. The December portion of the rent paid on December 1 has expired.
q. A physical count indicates that $350 of supplies is still on hand.
r. The amount collected in transaction *m* is unearned at December 31.
s. Three days of wages for December 29, 30, and 31 are unpaid, amounting to $1,500. These will be paid in January.
t. The truck has an estimated useful life of 4 years.
u. Income taxes expense is $500. This amount will be paid in the next fiscal year.

Required:

4. Open additional general ledger T-accounts for the following: Supplies, Accumulated Depreciation, Wages Payable, Unearned Revenue, Income Taxes Payable, Depreciation Expense, Insurance Expense, Rent Expense, and Income Taxes Expense. General ledger account numbers are not necessary.
5. Prepare all necessary adjusting entries. General ledger account numbers and descriptions are not necessary.
6. Post the entries to general ledger T-accounts and calculate balances.
7. Prepare an adjusted trial balance at December 31.
8. Assume the fiscal year-end is December 31, 2019. Prepare an income statement, statement of changes in equity, and balance sheet.

P 3–6

Snow Services Corporation performs snow removal services and sells advertising space on its vehicle. The company started operations on January 1, 2019 with $30,000 cash and $30,000 of common stock. It sublets some empty office space.

Part A

The following transactions occurred during January 2019:

a. Purchased a truck for $15,000 cash on January 1
b. Collected snow removal revenue for January, February, and March amounting to $4,000 per month, $12,000 in total (recorded as Service Revenue)
c. Paid $600 for a one-year insurance policy, effective January 1
d. Invested $5,000 of temporarily-idle cash in a term deposit (recorded as Short-term Investments)
e. Purchased $500 of supplies on credit
f. Received three months of advertising revenue amounting to $900
g. Received two months of interest amounting to $150
h. Paid $5,000 cash for equipment
i. Received $1,200 cash for January, February, and March rent of office space
j. Paid $3,000 of wages during the month.

Required:

1. Open general ledger T-accounts for the following: Cash, Short-term Investments, Prepaid Insurance, Equipment, Truck, Accounts Payable, Common Stock, Other Revenue, Interest Earned, Rent Earned, Service Revenue, Supplies Expense, and Wages Expense. General ledger account numbers are not necessary.
2. Prepare journal entries to record the January transactions. Descriptions are not needed.
3. Post the entries to the general ledger accounts.

Part B

At the end January, the following adjusting entries are needed:

k. The truck purchased in transaction *a* has a useful life of five years.
l. One-third of the snow removal revenue from transaction *b* has been earned.
m. The January portion of the insurance policy has expired.
n. Half of the interest revenue still has not been earned.

o. A physical count indicates $200 of supplies is still on hand.
p. The January component of the advertising revenue has been earned.
q. $50 interest for January is accrued on the term deposit; this amount will be included with the interest payment to be received at the end of February.
r. The equipment purchased in transaction *h* on January 1 is expected to have a useful life of four years.
s. January rent revenue has been earned.
t. Three days of wages amounting to $150 remain unpaid; the amount will be paid in February.

Required:

4. Open additional general ledger T-accounts for the following: Interest Receivable, Supplies, Accumulated Depreciation—Equipment, Accumulated Depreciation—Truck, Wages Payable, Unearned Advertising Revenue, Unearned Fees Revenue, Unearned Interest Revenue, Unearned Rent Revenue, Insurance Expense, Depreciation Expense—Equipment, and Depreciation Expense—Truck. General ledger account numbers are not necessary.
5. Prepare all adjusting entries at January 31. Descriptions are not necessary.
6. Post the entries to the general ledger accounts and post balances.
7. Prepare an adjusted trial balance at January 31.

CHAPTER FOUR

Completing the Accounting Cycle

Chapters 1 through 3 discussed and illustrated the initial steps in the accounting cycle. At the end of the accounting period, after financial statements have been prepared, it is necessary to close temporary accounts to retained earnings. This process is introduced in this chapter, as is the preparation of a post-closing trial balance. Chapter 4 also expands upon the content and presentation of financial statements. It reinforces what has been learned in previous chapters and introduces the classification or grouping of accounts on the balance sheet. Chapter 4 explains notes to the financial statements, the auditor's report, and the management's responsibility report. These are all integral parts of a corporation's annual report.

Chapter 4 Learning Objectives

LO1 – Explain the purpose of closing entries and use closing entries to prepare a post-closing trial balance.

LO2 – Explain and prepare a classified balance sheet.

LO3 – Explain the importance of financial statement disclosure.

LO4 – Explain the purpose and content of notes to financial statements.

LO5 – Explain the purpose and content of the auditor's report.

A. The Closing Process

LO1 – Explain the purpose of closing entries and use closing entries to prepare a post-closing trial balance

At the end of a fiscal year after steps 1-6 of the accounting cycle have been completed and financial statements have been prepared, the revenue, expense, and dividend account balances must be zeroed so that they can begin to accumulate amounts belonging to the new fiscal year. To accomplish this, *closing entries* are journalized and posted. **Closing entries** transfer each revenue and expense account balance, as well as any balance in the Dividend account, into retained earnings. Revenues, expenses, and dividends are therefore referred to as **temporary (or nominal) accounts** because their balances are zeroed at the end of each accounting period. Balance sheet accounts such as Cash and Retained Earnings, are **permanent (or real) accounts** because they have a continuing balance from one fiscal year to the next. The closing process transfers temporary account balances into the Retained Earnings account. An interim closing account called the **Income Summary** is used. In this text, its assigned general ledger account number is 360. The four entries in the closing process are detailed below.

Entry 1: Close the revenue accounts to the Income Summary account

A single closing entry is used to transfer all revenue account (credit) balances to the Income Summary account. All revenue accounts with a credit balance are debited to bring them to zero. Their balances are transferred to the Income Summary account as an offsetting credit.

Entry 2: Close the expense accounts to the Income Summary account

A single closing entry is used to transfer all expense account (debit) balances to the Income Summary account. All expense accounts with a debit balance are credited to bring them to zero. Their balances are transferred to the Income Summary account as an offsetting debit.

The Dividend account is *not* closed to the Income Summary account because this is not an income statement account. The Dividend account is closed in Entry 4 directly to the Retained Earnings account.

After entries 1 and 2 above are posted to the Income Summary account, a new balance is calculated for the Income Summary account. If net income is reported on the income statement, the balance in the Income Summary should be a credit; if a net loss has been reported, the balance will be a debit. *If the income summary balance does not match the net income or loss reported on the income statement, the revenues and expenses have not been closed correctly.*

Entry 3: Close the Income Summary account to the Retained Earnings account

The balance in the Income Summary account is transferred to the Retained Earnings account because the net income belongs to the stockholders. An equal and offsetting entry (a debit in the case of net income) is made to the Income Summary account to bring its balance to zero. The same amount is credited to the Retained Earnings account. Again, the amount must always equal the net income reported on the income statement.

Entry 4: Close the Dividends account to Retained Earnings

The Dividend account is closed to the Retained Earnings account. This results in transferring the balance in dividends, a temporary account, to retained earnings, a permanent account.

The closing entries for Big Dog Carworks Corp. are shown in Figure 4–1.

These are for illustrative purposes only. Closing entries are only done at the fiscal year-end.

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Date 2017		Description	P.R.	Debit	Credit
		Closing Entries			
		(1)			
Jan.	31	Interest Earned	430	25	
		Rent Earned	440	400	
		Repair Revenue	450	10,300	
		Income Summary	360		10,725
		To close revenue account balances.			
		(2)			
Jan.	31	Income Summary	360	8,793	
		Depreciation Expense – Equipment	623		25
		Depreciation Expense – Truck	624		100
		Insurance Expense	631		200
		Interest Expense	632		18
		Rent Expense	654		1,600
		Salaries Expense	656		4,150
		Supplies Expense	668		1,500
		Truck Operating Expense	670		700
		Income Tax Expense	830		500
		To close expense account balances.			
		(3)			
Jan.	31	Income Summary	360	1,932	
		Retained Earnings	340		1,932
		To close Income Summary.			
		(4)			
Jan.	31	Retained Earnings	360	200	
		Dividends	350		200
		To close dividends to retained earnings.			

This amount must agree to the net income shown on the income statement.

Figure 4–1 Closing Entries for BDCC at January 31, 2017 for illustrative purposes only.

Posting the Closing Entries to the General Ledger

When entries 1 and 2 are posted to the general ledger, the balances in all revenue and expense accounts are transferred to the Income Summary account. The transfer of these balances is shown in Figure 4–2. Notice that a zero balance results for each revenue and expense account after the closing entries are posted, and there is a $1,932 credit balance in the income summary. The income summary balance agrees to the net income reported on the income statement.

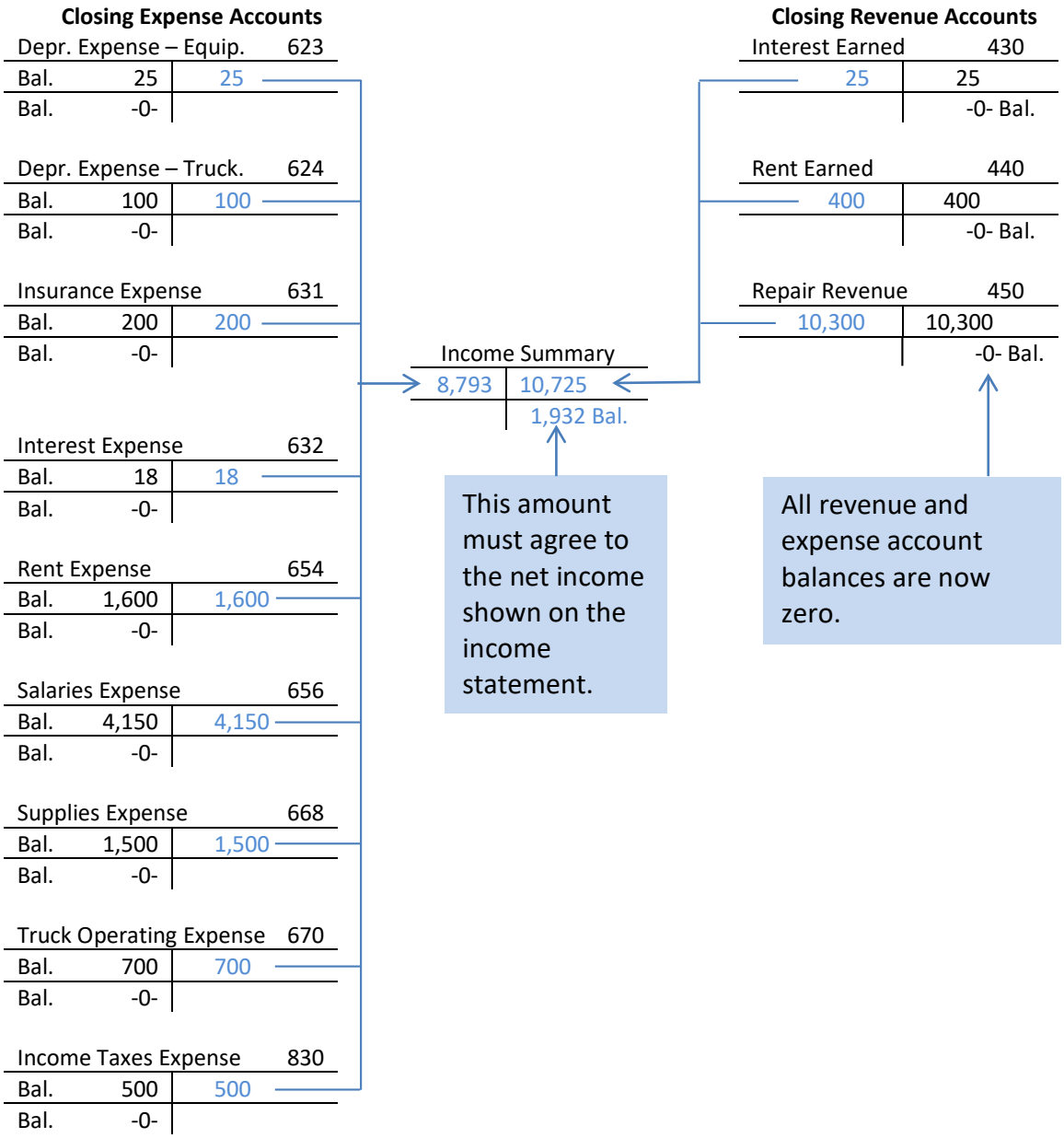

Figure 4–2 Closing Revenue and Expense Accounts

When the income summary is closed to retained earnings in the third closing entry, the $1,932 credit balance in the income summary account is transferred into retained earnings as shown in Figure 4–3. As a result, the income summary is left with a zero balance.

Income Summary		360
8,793	10,725	
1,932	1,932	Bal.
Bal.	-0-	

Retained Earnings		340
	1,932	

Figure 4–3 Closing the Income Summary Account

Finally, when dividends is closed to retained earnings in the fourth closing entry, the $200 debit balance in the Dividends account is transferred into retained earnings as shown in Figure 4–4. After the closing entry is posted, the Dividends account is left with a zero balance and retained earnings is left with a credit balance of $1,732.

Dividends		350
200	200	
Bal. -0-		

Retained Earnings		340
	1,932	
200		
	1,732	Bal.

Figure 4–4 Closing the Dividends Account

This amount must agree to the retained earnings balance calculated on the statement of changes in equity.

The Post–Closing Trial Balance

A **post-closing trial balance** is prepared immediately following the posting of closing entries. The purpose is to ensure that the debits and credits in the general ledger are equal and that all temporary accounts have been closed. The post-closing trial balance for Big Dog Carworks Corp. appears below.

Big Dog Carworks Corp.
Post-Closing Trial Balance
January 31, 2017

Acct. No.	*Account*	*Account Balances* Debit	Credit
101	Cash	$6,200	
110	Accounts receivable	2,500	
116	Interest receivable	25	
125	Rent receivable	400	
161	Prepaid insurance	2,200	
183	Equipment	3,000	
184	Truck	8,000	
193	Accumulated dep. – equip.		$ 25
194	Accumulated dep. – truck		100
201	Bank loan		9,000
210	Accounts payable		700
222	Interest payable		18
226	Salaries payable		150
247	Unearned repair revenue		100
260	Income taxes payable		500
320	Common stock		10,000
340	Retained earnings		1,732
	Totals	$22,325	$22,325

Only permanent accounts remain.

Figure 4–5 Post-Closing Trial Balance

Only balance sheet accounts – the permanent accounts – have balances and are carried forward to the next accounting year. All income statement and dividend accounts – temporary accounts – begin the new fiscal year with a zero balance, so they can be used to accumulate amounts belonging to the new fiscal year.

B. Classified Balance Sheet

LO2 – Explain and prepare a classified balance sheet.

The accounting cycle and double-entry accounting have been the focus of the preceding chapters. This chapter focuses on the presentation of financial statements, including how financial information is *classified* (the way accounts are grouped) and what is disclosed.

A common order for the presentation of financial statements is:

1. Income statement
2. Statement of changes in equity
3. Balance sheet
4. Statement of cash flows
5. Notes to the financial statements

In addition, the financial statements are often accompanied by an auditor's report and a statement entitled "Management's Responsibility for Financial Statements." Each of these items will be discussed below. Financial statement information must be disclosed for the most recent year as well as the prior year for comparison purposes.

Because external users of financial statements have no access to the entity's accounting records, it is important that financial statements be organized in a manner that is easy to understand. Thus, financial data are usually grouped into useful, similar categories within **classified financial statements**, as discussed below.

The Classified Balance Sheet

A **classified balance sheet** organizes the asset and liability accounts into categories. The previous chapters used an unclassified balance sheet which included only three broad account groupings: assets, liabilities, and stockholders' equity. The classification of asset and liability accounts into meaningful categories is designed to facilitate the analysis of balance sheet information by external users. Assets and liabilities are classified as either *current* or *non-current*.

Current Assets

Current assets are those resources that the entity expects to convert to cash or consume during the next fiscal year[1]. Examples of current assets include:

- cash, comprising paper currency and coins, deposits at banks, checks, and money orders.
- short-term investments, cash that is invested in interest-bearing deposits or shares that are easily convertible back into cash.
- accounts receivable that are due to be collected within one year.
- notes receivable, account receivables with formalized, written promises to pay specified amounts with interest, and due to be collected within one year.
- merchandise inventory that is expected to be sold within one year.

The current asset category also includes accounts whose future benefits are expected to expire within one fiscal year, such as:

- prepaid expenses, usually consisting of advance payments for insurance, rent, and similar items.
- supplies on hand at the end of an accounting year that will be used during the next year.

In North America, current assets are normally reported before non-current assets on the balance sheet. They are listed by decreasing levels of **liquidity** – their ability to be converted into cash. Therefore, cash appears first under the current asset heading.

Non-current Assets

Non-current assets are assets that will be useful for more than one year; they are often referred to as *long-lived assets***.** Non-current assets include **property, plant, and equipment (PP&E)** – items used to conduct the operations of the business. Some examples of PPE are: land, buildings, equipment, and motor vehicles.

Other types of non-current assets include long-term investments and intangible assets. **Long-term investments** include notes receivable that will be paid by customers over a period greater than one fiscal year and investments in shares and debt of other companies that will be

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[1] Or within the normal operating cycle of the entity, whichever is longer. In this text, the fiscal year will always be assumed to be longer.

held for more than one year. **Intangible assets** are resources that do not have a physical form and whose value comes from the rights held by the owner. They are used over the long term to produce or sell products and services and include copyrights, patents, trademarks, and franchises. These types of assets will be discussed in detail in a later chapter.

Current Liabilities

Current liabilities are obligations that must be paid within the next fiscal year. In North America, they are shown first in the liabilities section of the balance sheet and listed in order of their due dates. Bank loans are shown first. Examples of current liabilities include:

- bank loans (or borrowings) that are payable on demand or due within the next 12 months (or next operating cycle, whichever is longer)
- accounts payable
- accrued liabilities such as interest payable, wages payable, and income taxes payable
- unearned revenue, and
- the **current portion of non-current liabilities**; that is, the amount that will be paid in the next fiscal year. For example, assume a $30,000 bank loan is issued on December 31, 2019 and this amount is to be repaid at the rate of $1,000 at the end of each month over two years. The current portion of this loan on the December 31, 2019 balance sheet would be $12,000 (calculated as 12 months X $1,000/month). The remaining principal ($18,000) would be reported on the December 31, 2019 balance sheet as a non-current liability.

Non-Current or Long-Term Liabilities

Non-current liabilities, also referred to as **long-term liabilities**, are borrowings that do not require repayment for more than one year. Examples include a bank loan (as noted above, minus the current portion). A **mortgage** is a liability that is secured by real estate.

Stockholders' Equity

As discussed in prior chapters, the stockholders' equity section of the classified balance sheet consists of two major accounts: common stock and retained earnings.

Presentation of the Balance Sheet

The balance sheet can be presented in the **account form** where liabilities and equities are presented to the right of the assets. An alternative is the **report form** where liabilities and stockholders' equity are presented below the assets (shown below).

Meyers Company Balance Sheet December 31, 2019			
Assets			
Current assets			
Cash		$62,500	
Accounts receivable		1,620	
Interest receivable		480	
Prepaid insurance		600	
Supplies		800	
Total current assets			$ 66,000
Long-term investments			
Investments		10,000	
Notes receivables		6,000	16,000
Property, plant and equipment			
Land		20,000	
Equipment	90,000		
Less: Accumulated depr.	84,000	6,000	26,000
Intangible assets			
Patents			12,000
Total assets			$ 120,000
Liabilities and Stockholders' Equity			
Current liabilities			
Accounts payable		$ 2,820	
Salaries & wages payable		1,584	
Unearned revenue		750	
Total current liabilities			$ 5,154
Non-current liabilities			
Mortgages payable			20,000
Stockholders' Equity			
Common stock		32,000	
Retained earnings		62,846	
Total stockholders' equity			94,846
Total liabilities and stockholders' equity			$ 120,000

Figure 4–6 Classified Balance Sheet

Big Dog Carworks Corp.
Balance Sheet
At December 31, 2020

The prior year's information is also presented for comparison.

Assets are classified as current or non-current.

Assets	*2020*	*2019*
Current		
Cash	$ 10,800	$ 12,000
Accounts receivable	26,000	24,000
Merchandize inventories	120,000	100,000
Prepaid expenses	1,200	570
Total current assets	158,000	136,570
Non-current		
Property, plant, and equipment (Note 4)	126,645	10,430
Total assets	$284,645	$147,000

Liabilities	*2020*	*2019*
Current		
Borrowings (Note 5)	$ 39,000	$ 82,250
Accounts payable	24,000	22,000
Income taxes payable	15,000	10,000
Total current liabilities	78,000	114,250
Non-current		
Borrowings (Note 5)	163,145	-0-
Total liabilities	241,145	114,250
Stockholders' Equity		
Common stock (Note 6)	11,000	11,000
Retained earnings	32,500	21,750
Total stockholders' equity	43,500	32,750
Total liabilities and equity	$284,645	$147,000

Liabilities are classified as current or non-current.

Various notes are included at the end of the financial statements. Among other purposes, they provide details about a particular category on the balance sheet or income statement.

The statement of changes in equity is as follows:

Big Dog Carworks Corp.
Statement of Changes in Equity
For the Year Ended December 31, 2020

	Common stock	*Retained earnings*	*Total equity*
Balance at January 1, 2019	$11,000	$10,000	$21,000
2019 net income		15,000	15,000
Dividends		(3,250)	(3,250)
Balance at December 31, 2019	**11,000**	**21,750**	**32,750**
2020 net income		20,000	20,000
Dividends		(9,250)	(9,250)
Balance at December 31, 2020	**$11,000**	**$32,500**	**$43,500**

This column shows the continuity of retained earnings from one year-end to the next. Bolded amounts agree to the balance sheet. They are highlighted only for illustrative purposes.

The Classified Income Statement

Recall that the income statement summarizes a company's revenues less expenses over a period of time. An income statement for BDCC was presented in the first few pages of Chapter 1:

Big Dog Carworks Corp.
Income Statement
For the Month Ended January 31, 2017

Revenue		
Repairs		$10,000
Expenses		
Rent	$1,600	
Salaries	3,500	
Supplies	2,000	
Truck operating	700	
Total expenses		7,800
Net income		$2,200

The format used above was sufficient to disclose relevant financial information for Big Dog's simple start-up operations. When operations become more complex, an income statement can be classified like the balance sheet. The classified income statement will be discussed in detail in a later chapter.

Regardless of the type of financial statement, any items that are material must be disclosed separately so users will not otherwise be misled. A material amount is one which would affect the decision of a reader if it was omitted. Materiality is a matter for judgment. Office supplies of $1,000 per month used by BDCC in January 2017 in its first month of operations might be a material amount and therefore disclosed as a separate item on the income statement for the month ended January 31, 2017. If annual revenues grew to $1 million several years later, $1,000 per month for supplies might be considered immaterial. These expenditures would then be grouped with other similar items and disclosed as a single amount on the income statement.

C. Financial Statement Disclosure Decisions

LO3 – Explain the importance of financial statement disclosure.

Financial statements communicate information, with a focus on the needs of financial statement users such as a company's investors and creditors. Accounting information should make it easier for management to allocate resources and for stockholders to evaluate management. A key objective of financial statements is to fairly present the entity's economic resources, obligations, equity, and financial performance.

Fulfilling these objectives is challenging. Accountants must make a number of subjective decisions about how to apply generally accepted accounting principles. For example, they must decide how to measure wealth and how to apply recognition criteria. They must also make practical cost-benefit decisions about how much information is useful to disclose. Some of these decisions are discussed in the following section.

Making Accounting Measurements

Economists often define wealth as an increase or decrease in the entity's ability to purchase goods and services. Accountants use a more

specific measurement—they consider only increases and decreases resulting from actual transactions. If a transaction has not taken place, they do not record a change in wealth.

The accountant's measurement of wealth is shaped and limited by the assumptions underlying generally accepted accounting principles that were introduced and discussed in Chapter 1. These included the use of historical cost, matching expenses to revenues or the period in which they are incurred, and assumptions about a stable monetary unit, a separate business entity, revenue recognition, , and going concern. These assumptions mean that accountants record transactions in one currency (for example, dollars), currency retains its purchasing power, and changes in market values of assets are generally not recorded.

Economists, on the other hand, make different assumptions. They often recognize changes in market value of assets. For example, if an entity purchased land for $100,000 that subsequently increased in value to $125,000, economists would recognize a $25,000 increase in wealth. U.S. GAAP and International Financial Reporting Standards generally do not recognize this increase until the entity actually disposes of the asset; accountants would continue to value the land at its $100,000 purchase cost. This practice is based on the application of the historical cost principle.

Economic wealth is also affected by changes in the **purchasing power** of the dollar. For example, if the entity has cash of $50,000 at the beginning of a time period and purchasing power drops by 10% because of inflation, the entity has lost wealth because the $50,000 can purchase only $45,000 of goods and services. Conversely, the entity gains wealth if purchasing power increases by 10%. In this case, the same $50,000 can purchase $55,000 worth of goods and services. However, accountants do not record any changes because the monetary unit principle assumes that the currency unit is a stable measure.

Qualities of Accounting Information

Financial statements are focused on the needs of external users, primarily creditors and stockholders. They use materiality considerations to decide how particular items of information should be recorded and disclosed. To provide information to these users, accountants also make **cost-benefit judgments**. For example, if the costs associated with financial information preparation are too high or if an amount is not sufficiently large or important, a business might implement a materiality policy for various types of asset purchases to

guide how such costs are to be recorded. For example, a business might have a materiality policy for the purchase of office equipment whereby anything costing $100 or less is expensed immediately instead of recorded as an asset. In this type of situation, purchases of $100 or less are recorded as an expense instead of an asset to avoid the time and effort needed to record depreciation expense each year for small amounts. This small violation of GAAP will not impact decisions made by external users of the business's financial statements.

Accountants must also make decisions based on whether information is useful. Is it comparable to prior periods? Is it verifiable? Is it presented with clarity and conciseness to make it understandable? Readers' perception of the usefulness of accounting information is determined by how well those who prepare financial statements address these qualitative considerations.

D. Notes to Financial Statements

LO4 – Explain the purpose and content of notes to financial statements.

As an integral part of its financial statements, a company provides *notes to the financial statements*. In accordance with the full disclosure principle, these provide relevant details that are not included in the body of the financial statements. For instance, details about Big Dog's property, plant, and equipment are shown in Note 4 in the following sample notes to the financial statements. The notes help external users better understand and analyze the financial statements.

Although a detailed discussion of disclosures that might be included as part of the notes is beyond the scope of an introductory financial accounting course, a simplified example of note disclosure is shown below for Big Dog Carworks Corp.

Big Dog Carworks Corp.
Notes to the Financial Statements
For the Year Ended December 31, 2020

1. **Nature of operations**

   The principal activity of Big Dog Carworks Corp. is the servicing and repair of vehicles.

2. **General information and statement of compliance with U.S. GAAP**

   Big Dog Carworks Corp. was incorporated in California in 1981. The financial statements reflect all adjustments, which are normal and recurring in nature, necessary for fair financial statement presentation. The preparation of these financial statements is in conformity with U.S. generally accepted accounting principles (GAAP).

3. **Summary of accounting policies**

   The financial statements have been prepared using the significant accounting policies and measurement bases summarized below.

   a. Revenue

   Revenue arises from the rendering of service. It is measured by reference to the fair value of consideration received or receivable.

   b. Operating expenses

   Operating expenses are recognized in the income statement upon utilization of the service or at the date of their origin.

   c. Borrowing costs

   Borrowing costs directly attributable to the acquisition, construction, or production of property, plant, and equipment are capitalized during the period of time that is necessary to complete and prepare the asset for its intended use or sale. Other borrowing costs are expensed in the period in which they are incurred and reported as interest expense.

d. Property, plant, and equipment

Land held for use in production or administration is stated at cost. Other property, plant, and equipment are initially recognized at acquisition cost plus any costs directly attributable to bringing the assets to the locations and conditions necessary to be employed in operations. They are subsequently measured using the cost model: cost less subsequent depreciation.

Depreciation is recognized on a straight-line basis to write down the cost, net of estimated residual value. The following useful lives are applied:

Buildings: 25 years
Equipment: 10 years
Truck: 5 years
Land is not depreciated

Residual value estimates and estimates of useful life are updated at least annually.

e. Income taxes

Current income tax liabilities comprise those obligations to fiscal authorities relating to the current or prior reporting periods that are unpaid at the reporting date. Calculation of current taxes is based on tax rates and tax laws that have been enacted or substantively enacted by the end of the reporting period.

f. Common stock

Common stock represents the nominal value of shares that have been issued.

g. Estimation uncertainty

When preparing the financial statements, management undertakes a number of judgments, estimates, and assumptions about the recognition and measurement of assets, liabilities, income, and expenses. Information about estimates and assumptions that have the most significant effect on recognition and measurement of assets, liabilities, income, and expenses is provided below. Actual results may be substantially different.

4. Property, plant, and equipment

Details of the company's property, plant, and equipment and their carrying amounts at December 31 are as follows:

	2020					2019
	Land	*Building*	*Equip.*	*Truck*	*Total*	*Total*
Gross Carrying Amount						
Balance, January 1	$ -0-	$ -0-	$ 3,000	$8,000	$ 11,000	$11,000
Additions	30,000	90,000			120,000	
Balance, Dec. 31	30,000	90,000	3,000	8,000	131,000	11,000
Depreciation						
Balance, January 1		-0-	90	480	570	285
Deprecation for year		3,500	45	240	3,785	285
Balance, Dec. 31		3,500	135	720	4,355	570
Carrying Amount						
December 31	$30,000	$86,500	$ 2,865	$7,280	$126,645	$10,430

These amounts agree with the PPE balances shown in the assets section of BDCC's balance sheet.

5. Borrowings

Borrowings include the following financial liabilities measured at cost:

	Current		*Non-current*	
	2020	*2019*	*2020*	*2019*
Demand bank loan	$ 20,000	$ 52,250	$ -0-	$ -0-
Subordinated stockholder loan	13,762	30,000	-0-	-0-
Mortgage	5,238	-0-	163,145	-0-
Total carrying amount	$39,000	$82,250	$163,145	$ -0-

These amounts agree with the Borrowings balances shown in the current and non-current liability sections of BDCC's balance sheet.

The bank loan is due on demand and bears interest at 6% per year. It is secured by accounts receivable and inventories of the company.

The stockholder loan is due on demand, non-interest bearing, and unsecured.

The mortgage is payable to First Bank of California. It bears interest at 5% per year and is amortized over 25 years. Monthly payments including interest are $960. It is secured by land and buildings owned by the company. The terms of the mortgage will be re-negotiated in 2023.

6. **Common stock**

   The common stock of Big Dog Carworks Corp. consists of fully-paid common stock with a stated value of $1 each. All shares are eligible to receive dividends, have their capital repaid, and represent one vote at the annual stockholders' meeting. There were no shares issued during 2019 or 2020.

E. The Auditor's Report

LO5 – Explain the purpose and content of the auditor's report.

Financial statements are often accompanied by an auditor's report. An **audit** is an external examination of a company's financial statement information and its system of *internal controls*.

Internal controls are the processes instituted by management of a company to direct, monitor, and measure the accomplishment of its objectives. This includes the prevention and detection of fraud and error. An audit seeks not certainty, but reasonable assurance that the financial statement information is not materially misstated.

The auditor's report is a structured statement issued by an independent examiner, usually a professional accountant, who is contracted by the company to report the audit's findings to the company's stockholders. An audit report provides some assurance to present and potential investors and creditors that the company's financial statements are trustworthy. Therefore, it is a useful means to reduce the risk of their financial decisions. Put in simple terms, a **standard unqualified independent auditor's report** indicates that the financial statements are considered reliable and fairly stated. A **qualified auditor's report** is one that indicates the financial statements may not be reliable. Audit reports are covered in more advanced accounting classes. For now, an example of an unqualified auditor's

report for BDCC is shown below, along with a brief description of each component.

The auditor's independence from the company is made explicit.	REPORT OF WALKER & RANGER CPAs, LLP, INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM
The audit report is addressed to the stockholders.	To the Stockholders of Big Dog Carworks Corp.
The audited information is described.	We have audited the accompanying balance sheet of Big Dog Carworks Corp., and the related statements of income, retained earnings, and cash flows for the year then ended.
Management's responsibilities are described.	These financial statements are the responsibility of the Company's management.
The auditor's responsibilities and the audit standards used are described.	Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America.
The audit procedures are described in general terms.	Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.
A conclusion about the adequacy of audit evidence is stated.	We believe that our audit provides a reasonable basis for our opinion.
An opinion is expressed about the financial statement information.	In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Big Dog Carworks Corp. as at December 31, 2020, and the results of its operations and its cash flows for the year then ended in conformity with accounting principles generally accepted in the United States of America.
The report is signed by the auditor and dated.	March 15, 2021 San Jose, CA (signed) Walker & Ranger CPAs, LLP

Summary of Chapter 4 Learning Objectives

LO1 – Explain the purpose of closing entries and use closing entries to prepare a post-closing trial balance.

After the financial statements have been prepared, the temporary account balances (revenues, expenses, and dividends) are transferred to retained earnings, a permanent account, via closing entries. The result is that the temporary accounts will have a zero balance and will be ready to accumulate transactions for the next accounting period. General examples of the four closing entries are:

(1)

Dec. 31	Revenue	XX	
	Income Summary		XX
	To close revenue account balances to the Income Summary account.		

(2)

Dec. 31	Income Summary	YY	
	Expense		YY
	To close expense account balances to the Income Summary account.		

(3)

Dec. 31	Income Summary	ZZ	
	Retained Earnings		ZZ
	To close the Income Summary account balance to Retained Earnings (ZZ = XX – YY; ZZ must equal net income).[2]		

(4)

Dec. 31	Retained Earnings	AA	
	Dividends		AA
	To close the Dividend account to Retained Earnings.		

---

[2] When there is a net loss, the Income Summary account will have a debit balance after revenues and expenses have been closed. To close the Income Summary account when there is a net loss the Income Summary must be credited. The following closing entry is required:

Dec. 31	Retained Earnings	XXX	
	Income Summary		XXX
	To close the Income Summary account balance to Retained Earnings		

LO1 – *continued*

The post-closing trial balance is prepared after the closing entries have been posted to the general ledger. The post-closing trial balance will contain only permanent accounts because all the temporary accounts have been closed.

LO2 – Explain and prepare a classified balance sheet.

A classified balance sheet groups assets and liabilities as follows:

Assets	*Liabilities*
Current assets	Current liabilities
Non-current assets:	Non-current or long-term liabilities
Property, plant, and equipment	
Long-term investments	
Intangible assets	

Current assets are those that are used within one year or one operating cycle, whichever is longer, and include cash, accounts receivables, and supplies. Non-current assets have benefits beyond one fiscal year, or are not expected to be converted to cash within one fiscal year or one operating cycle, whichever is longer. There are three types of non-current assets: property, plant, and equipment (PPE), long-term investments, and intangible assets. Long-term investments include holdings of shares and debt of other companies. Intangible assets are rights held by the owner and do not have a physical substance; they include copyrights, patents, franchises, and trademarks. Current liabilities must be paid within one year or one operating cycle, whichever is longer. Non-current liabilities are due beyond one year or one operating cycle, whichever is longer.

LO3 –Explain the importance of financial statement disclosure.

The objective of financial statements is to communicate information to meet the needs of external users. In addition to recording and reporting verifiable financial information, accountants make decisions regarding how to measure transactions. Applying GAAP can present challenges when judgment must be applied as in the case of cost-benefit decisions and materiality considerations.

LO4 – Explain the purpose and content of notes to financial statements.

In accordance with the GAAP principle of full disclosure, relevant details not contained in the body of financial statements are included in the accompanying notes to financial statements. Notes generally include a summary of significant accounting policies, details regarding property, plant, and equipment assets, and specifics about liabilities such as the interest rates and repayment terms.

LO5 – Explain the purpose and content of the auditor's report.

An audit as it relates to the auditor's report is an external examination of a company's financial statement information and its system of internal controls. Internal controls are the processes instituted by management of a company to direct, monitor, and measure the accomplishment of its objectives including the prevention and detection of fraud and error. The auditor's report provides some assurance that the financial statements are trustworthy. In simple terms, an unqualified auditor's report indicates that the financial statements are reliable.

E N D O F C H A P T E R M A T E R I A L S

Multiple-Choice Review

1. Which of the following types of accounts will appear in the post-closing trial balance?
   a.) temporary accounts
   b.) nominal accounts
   c.) permanent accounts
   d.) all of the above

2. Identify the correct sequence of the steps in the closing process:
   a.) prepare financial statements, prepare post-closing trial balance, prepare closing entries to general ledger accounts.
   b.) prepare closing entries, post closing entries to general ledger accounts, and prepare post-closing trial balance.
   c.) prepare post-closing trial balance, prepare closing entries to general ledger accounts.
   d.) post closing entries to general ledger accounts, prepare closing entries, prepare post-closing trial balance.

3. Which of the following accounts may appear on a post-closing trial balance?
   a.) Prepaid expenses, wages payable, and dividends
   b.) Prepaid expenses, wages payable, and service revenue
   c.) Prepaid expenses, wages payable, and rent expense
   d.) Prepaid expenses, wages payable, and retained earnings

4. Which of the following accounts would *not* be closed?
   a.) Depreciation expense
   b.) Service revenue
   c.) Accumulated depreciation
   d.) Dividends

5. Closing entries:
   a.) zero out revenues, expenses, and dividends
   b.) transfer revenues, expenses, and dividends to the retained earnings account
   c.) bring the retained earnings account to its correct ending balance
   d.) all of the above

Multiple-Choice Review (continued)

6. Assets are listed on the balance sheet in order of their:
   a.) dollar amount
   b.) purchase date
   c.) liquidity
   d.) name

7. If a company experiences a net loss for the year, the Income Summary account is:
   a.) debited and Retained Earnings is credited
   b.) credited and Retained Earnings is debited
   c.) debited and Dividends are credited
   d.) credited and Dividends are debited

8. In a classified balance sheet, assets are usually classified using which categories?
   a.) current assets; short-term investments; property, plant, and equipment; long-term investments, and intangible assets
   b.) current assets; property, plant, and equipment; long-term investments, and tangible assets
   c.) current assets; long-term assets; long-term investments, and tangible assets
   d.) current assets; property, plant, and equipment; long-term investments, and intangible assets

9. Zune Company has purchased land for $500,000. Zune plans to build a new manufacturing plant on that property in 3 years. Until construction starts in three years, the property will be idle. What is the appropriate balance sheet classification for the property?
   a.) current assets
   b.) property, plant & equipment
   c.) long-term investments
   d.) intangible assets

10. Zadeliah Corporation had the following balances at year-end: Service revenues $75,000; Rent expense $8,000; Salaries expense $60,000; Dividends $2,000; and Prepaid Insurance $2,000. The balance in the income summary account before closing would be:
   a.) $5,000
   b.) $7,000
   c.) $3,000
   d.) none of the above

Answers on the following page

Answers to Multiple-Choice Review

1. c
2. b
3. d
4. c
5. d
6. c
7. b
8. d
9. b

   The income summary account is used to close revenue and expense accounts only. So revenue less all the expenses totals $7,000 ($75,000 - $8,000 - $60,000).

Discussion Questions

1. Which steps in the accounting cycle occur at the end of the fiscal year? Explain how they differ from the other steps.
2. In general, income statement accounts accumulate amounts for a time period not exceeding one year. Why is this done?
3. Identify which types of general ledger accounts are temporary and which are permanent.
4. What is the Income Summary account and what is its purpose?
5. What are the four types of closing entries, and why are they journalized?
6. Why is the Dividends account not closed to the Income Summary account when closing entries are prepared?

   What is a post-closing trial balance and why is it prepared?

10. Are financial statements primarily intended for internal or external users?
11. What are the common classifications within a classified balance sheet?
12. What are current assets?
13. What are non-current assets?
14. What are current liabilities?
15. What are non-current liabilities?
16. What is the purpose and content of the notes to the financial statements?
17. What is the purpose and content of the auditor's report?

To answer the following, refer to the Big Dog Carworks Corp. financial statements for the year ended December 31, 2020 and other information included in this chapter.

18. Identify the economic resources of Big Dog Carworks Corp. shown in its financial statements.
19. What comprise the financial statements of BDCC?
20. Why does BDCC prepare financial statements?
21. What types of assets are reported by Big Dog Carworks Corp.? What types of liabilities?
22. Accounting for financial transactions makes it possible to measure the progress of the entity. How do generally accepted accounting principles positively affect this measurement process?

Comprehension Problems

CP 4–1

Indicate the accounts that would require closing at year-end by placing an "X" in the appropriate column. If the item would not require closing, place "NA" in the column. The first item is completed as an example for you.

No.	Item	Closed?
0.)	Interest revenue	X
1.)	Rent expense	
2.)	Supplies	
3.)	Service revenue	
4.)	Common stock	
5.)	Dividends	
6.)	Retained earnings	

CP 4–2

The ledger of Arabia Company contains the following accounts with normal balances: Supplies $500; Common stock $8,000; Dividends $600; Service Revenue $12,000; Wages Expense $6,400; and Rent Expense of $1,200. Prepare any necessary closing entries for Arabia at December 31.

CP 4–3

Lawrence Company has the following year-end adjusted balances:

Acct. No.	*Account*	*Amounts*	
		Debit	*Credit*
101	Cash	$ 7,300	
110	Accounts receivable	5,000	
184	Truck	6,000	
194	Acc. dep. – truck		$1,500
210	Accounts payable		7,000
248	Unearned rent revenue		600
305	Retained earnings		2,700
320	Dividends	700	
440	Service revenue		25,700
624	Dep. expense – truck	1,500	
654	Rent expense	6,000	
656	Salaries expense	11,000	
	Totals	$37,500	$37,500

Required:

1. Prepare necessary closing journal entries.
2. Post the closing entries to the Income Summary and Retained Earnings general ledger accounts (*T-accounts are acceptable*).
3. Prepare a post-closing trial balance.

CP 4–4

Match the items to its proper balance sheet classification:

Balance Sheet Classifications

Current assets (CA)	Current liabilities (CL)
Property, plant & equipment (PP&E)	Long-term liabilities (LTL)
Long-term investments (LTI)	Stockholders' equity (SE)
Intangible assets (IA)	

If an item would not appear on the classified balance sheet, please write "NA".

Items:

1.) _____ Accounts receivable
2.) _____ Accounts payable
3.) _____ Note payable (due in 60 months)
4.) _____ Prepaid insurance
5.) _____ Common stock

CP 4–5

Match the items to its proper balance sheet classification:

Balance Sheet Classifications

Current assets (CA)	Current liabilities (CL)
Property, plant & equipment (PP&E)	Long-term liabilities (LTL)
Long-term investments (LTI)	Stockholders' equity (SE)
Intangible assets (IA)	

If an item would not appear on the classified balance sheet, please write "NA".

Items:

1.) _____ Inventory
2.) _____ Buildings
3.) _____ Accumulated depreciation -buildings
4.) _____ Note payable for building (due in 30 years)
5.) _____ Income tax payable
6.) _____ Copyrights
7.) _____ Depreciation expense
8.) _____ Retained earnings
9.) _____ Investment in mutual funds
10.) _____ Supplies
11.) _____ Utilities expense
12.) _____ Supplies

CP 4–6

The following list of accounts is taken from the records of the Viking Company Ltd. at December 31, 2019:

Account	*Balance*
Accounts payable	$200
Accounts receivable	100
Bank loan, due within 90 days	500
Building	1,000
Cash	20
Equipment	500
Land	2,000
Mortgage payable (due 2021)	1,500
Notes receivable, due within 90 days	40
Prepaid insurance	30
Retained earnings	?
Salaries payable	60
Common stock	1,200
Supplies	10

Required: Prepare a classified balance sheet. Assume all accounts have normal balances.

CP 4–7

Place the following steps of the accounting cycle in the correct order:

a) Journalize economic events.
b) Prepare an unadjusted trial balance.
c) Prepare the financial statements.
d) Identify and analyze the events of a company.
e) Journalize and post closing entries.
f) Prepare the adjusted trial balance.
g) Journalize and post adjusting entries.
h) Prepare a post-closing trial balance.
i) Post journal entries.

After ranking the above items to their sequence in the accounting cycle, indicate the frequency with which they occur (1) continually, (2) occasionally (end of accounting period), or (3) annually at the end of the fiscal year:

Problems

P 4-1

The adjusted trial balance for Grand Company is presented below.

GRAND COMPANY
Adjusted Trial Balance
December 31, 2018

Account Titles	Debit	Credit
Cash	10,387	
Accounts receivable	4,587	
Supplies	1,570	
Prepaid insurance	2,556	
Equipment	23,018	
Accumulated depreciation		4,714
Accounts payable		5,720
Salaries & wages payable		1,499
Unearned rent revenue		674
Notes payable[1]		12,018
Common stock		10,691
Retained earnings		3,740
Dividends	6,223	
Service revenue		34,758
Rent revenue		11,826
Salaries & wages expense	18,515	
Supplies expense	1,737	
Rent expense	14,800	
Insurance expense	1,273	
Depreciation expense	974	
Totals	$85,640	$85,640

[1] The note payable is due in 60 months

Required:

1.) Prepare the classified balance sheet for Grand Company.
2.) Prepare the closing journal entries for Grand Company.
3.) Prepare a post-closing trial balance for Grand Company.

P 4-2

The following balance sheet was prepared for Abbey Limited:

Abbey Limited
Balance Sheet
As at November 30, 2019

Assets			*Liabilities*		
Current			*Current*		
Bank loan	$ 1,000		Accounts payable	$ 5,600	
Notes receivable	6,000		Notes payable	2,000	
Building	12,000		Cash	1,000	
Merch. inventory	3,000				$ 8,600
		$22,000			
Non-current			*Non-current*		
Short-term investments	2,500		Mortgage payable	6,000	
Retained earnings	2,000		Equipment	2,000	
Supplies	100		Salaries payable	250	
Truck	1,350				8,250
		5,950	Total liabilities		16,850
			Stockholders' Equity		
			Common stock		11,100
Total assets		$27,950	Total liabilities and assets		$27,950

Other information you have gathered:

Amounts due on borrowings by November 30, 2020 are as follows:

Bank loan	$400
Mortgage payable	2,000
Notes payable	500

a. Notes receivable that will be collected by November 30, 2020 amount to $5,000.
b. The building was sold on December 15, 2019 for $20,000.

Required:

1. Identify the errors that exist in the balance sheet of Abbey Limited and why you consider this information incorrect.
2. Prepare a corrected, classified balance sheet.

P 4–3

The following general ledger accounts and additional information are taken from the records of Wolfe Corporation at the end of its fiscal year, December 31, 2019.

Additional information:

a. The prepaid insurance is for a one-year policy, effective July 1, 2019.
b. A physical count indicated that $500 of supplies is still on hand.
c. $50 of December rent expense has not been recorded.

Cash 101		Supplies 173		Advertising Exp. 610	
Bal. 2,700		Bal 700		Bal. 200	

Accounts Receivable 110		Common Stock 320		Salaries Expense 656	
Bal. 2,000			Bal 3,800	Bal. 4,500	

Prepaid Insurance 161		Repair Revenue 450		Rent Expense 654	
Bal. 1,200			Bal 7,750	Bal. 250	

Required:

1. Record all necessary adjusting entries in general journal format including general ledger account numbers. Assume the following account numbers: Insurance Expense: 631; Supplies Expense: 668.
2. Post the adjusting entries to T-accounts and calculate balances.
3. Prepare all closing entries in general journal format. Include posting reference numbers.
4. Post the closing entries to the applicable general ledger accounts.
5. Prepare a post-closing trial balance.

CHAPTER FIVE

Accounting for the Sale of Goods

To this point, examples of business operations have involved the sale of services. This chapter introduces business operations based on the purchase and resale of goods. For example, Target and Home Depot each purchase and resell goods—such businesses are known as merchandisers. The accounting transactions for merchandising companies differ from those of service-based businesses. Chapter 5 covers accounting for transactions of sales of goods on credit and related cash collections by merchandising firms, and transactions involving purchases and payments for goods sold in the normal course of business activities.

Chapter 5 Learning Objectives

LO1 – Describe merchandising and explain the financial statement components of sales, cost of goods sold, merchandise inventory, and gross profit; differentiate between the perpetual and periodic inventory systems.

LO2 – Analyze and record purchase transactions for a merchandiser.

LO3 – Analyze and record sales transactions for a merchandiser.

LO4 – Record adjustments to merchandise inventory.

LO5 – Explain and prepare a multiple-step income statement for a merchandiser.

LO6 – Explain the closing process for a merchandiser.

LO7 – (Appendix) Explain and identify the entries to record purchase and sales transactions in a periodic inventory system.

A. The Basics of Merchandising

LO1 - Describe merchandising and explain the financial statement components of sales, cost of goods sold, merchandise inventory, and gross profit; differentiate between the perpetual and periodic inventory systems.

A merchandising company, or **merchandiser**, differs in several basic ways from a company that provides services. First, a merchandiser purchases and then sells goods whereas a service company sells services. For example, a car dealership is a merchandiser that sells cars while an airline is a service company that sells air travel. Because merchandising involves the purchase and then the resale of goods, an expense called **cost of goods sold** results. Cost of goods sold is the purchase price of items that are then re-sold to customers. For example, the cost of goods sold for a car dealership would be the cost of the cars purchased from the manufacturer. A service company does not have an expense called cost of goods sold since it does not sell physical items. As a result, the income statement for a merchandiser includes different details. A merchandising income statement highlights cost of goods sold by showing the difference between sales revenue and cost of goods sold, which is called **gross profit** or *gross margin*. The basic income statement differences between a service business and a merchandiser are illustrated in Figure 5-1.

Service Company	*Merchandising Company*
Revenues	Sales
	Less: Cost of Goods Sold
	Equals: Gross Profit
Less: Expenses	*Less*: Other Expenses
Equals: Net Income	*Equals*: Net Income

Figure 5-1 Differences Between the Income Statements of Service and Merchandising Companies

Assume that Excel Cars Corporation decides to go into the business of buying used vehicles from a supplier and reselling these to customers. If Excel purchases a vehicle for $2,000 and then sells it for $3,000, the gross profit would be $1,000, as follows:

Sales	$ 3,000
Cost of goods sold	2,000
Gross profit	$ 1,000

The word "gross" is used by accountants to indicate that other expenses incurred in running the business must still be deducted from this amount before net income is calculated. In other words, gross profit represents the amount of sales revenue that remains to pay expenses after the cost of the goods sold is deducted.

A **gross profit percentage** can be calculated to express the relationship of gross profit to sales. The sale of the vehicle that cost $3,000 results in a 33.3% gross profit percentage ($1,000/3,000). That is, for every $1 of sales, the company has $.33 left to cover other expenses after deducting cost of goods sold. Readers of financial statements use this percentage as a means to evaluate the performance of one company against other companies in the same industry, or in the same company from year to year. Small fluctuations in the gross profit percentage can have significant effects on the financial performance of a company because the amount of sales and cost of goods sold are often very large in comparison to other income statement items.

Another difference between a service company and a merchandiser relates to the balance sheet. Since a merchandiser purchases goods for resale, goods held for resale by a merchandiser are called *merchandise inventory* and are reported as an asset on the balance sheet. A service company would not normally have merchandise inventory.

Inventory Systems

There are two ways that inventory is managed: the perpetual inventory system or periodic inventory system. This chapter focuses on the perpetual system. In a **perpetual inventory system**, the Merchandise Inventory and Cost Of Goods Sold accounts in the general ledger are updated immediately when a purchase or sale of goods occurs. When merchandise inventory is purchased, the cost is debited to the Merchandise Inventory account. As inventory is sold to customers, the cost of the inventory sold is removed from the Merchandise Inventory account and debited to the Cost Of Goods Sold account. Under a perpetual system, the detailed composition of merchandise inventory – item description, number of items, cost per item, and total cost – is known at any time. However, a physical count is still performed at the end of the accounting period to determine and adjust for differences between the actual inventory on hand and the Merchandise Inventory account balance in the general ledger.

Some businesses will use a **periodic inventory system** instead**.** The purchase of merchandise inventory is debited to a temporary account called Purchases in the general ledger. At the end of the accounting period, inventory is counted, the Merchandise Inventory account is updated, and cost of goods sold is calculated. In a periodic inventory system, the real-time balances in Merchandise Inventory and Cost Of Goods Sold accounts are not known. The periodic system is discussed in greater detail in the appendix to this chapter.

B. The Purchase and Payment of Merchandise Using the Perpetual Inventory Method

LO2 – Analyze and record purchase transactions for a merchandiser.

As introduced in Chapter 3, a company's operating cycle includes purchases *on account* or *on credit* and is highlighted in Figure 5–2.

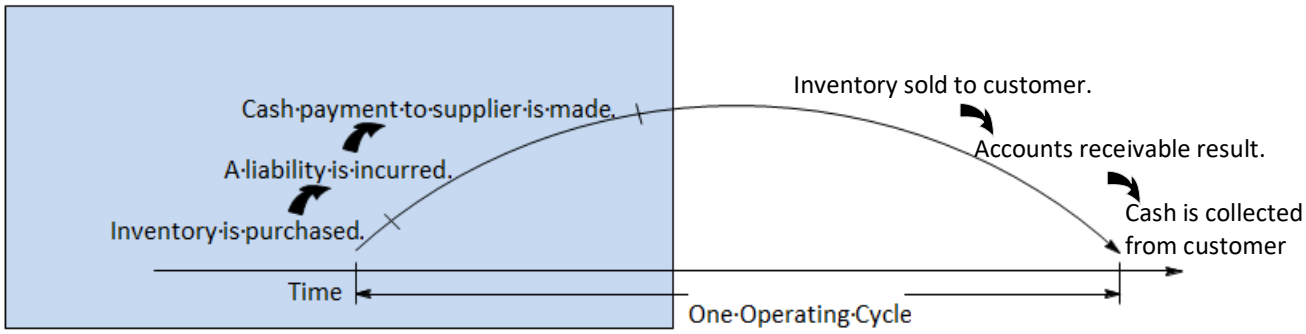

Figure 5–2 Purchase and Payment Portion of the Operating Cycle

Recording the Purchase of Merchandise Inventory

When merchandise inventory is purchased, the cost is recorded in a Merchandise Inventory general ledger account. An account payable results when the merchandise inventory is acquired but will not be paid in cash until a later date. For example, recall the vehicle purchased on account by Excel Cars Corporation for $2,000. Assume this was purchased on May 2, 2019. The journal entry and general ledger T-account effects would be as follows:

General Journal Entry				*General Ledger Effect*
				Merch. Inventory
May 2 Merchandise Inventory	150	2,000	→	2,000 |
				Accounts Payable
Accounts Payable	210	2,000	→	| 2,000
To record purchase of vehicle.				

In addition to the purchase of merchandise inventory, there are other activities that affect the Merchandise Inventory account. For instance, merchandise may occasionally be returned to a supplier or damaged in transit, or discounts may be earned for prompt cash payment. These transactions result in the reduction of amounts due to the supplier and thus the costs of inventory. The purchase of merchandise inventory may also involve the payment of transportation and handling costs. These are all costs necessary to prepare inventory for sale, and all such costs are included in the Merchandise Inventory account. These costs are discussed in the following sections.

Purchase Returns and Allowances

Assume that the vehicle purchased by Excel turned out to be the wrong color. The supplier was contacted on May 3 and agreed to reduce the price by $300 to $1,700. This is an example of a **purchase returns and allowances** adjustment. The amount of the allowance, or reduction, is recorded as via journal entry as a credit to the Merchandise Inventory account. The entry and related T-account effects are:

				Accounts Payable
				2,000
May 3 Accounts Payable	210	300	→	300 |
				1,700
				Merch. Inventory
				2,000 |
Merchandise Inventory	150	300	→	| 300
				1,700 |
To record reduction in account payable: vehicle wrong color.				

Note that the cost of the vehicle has been reduced to $1,700 ($2,000 – $300) as has the amount owing to the supplier.

Purchase Discounts

Purchase discounts affect the purchase price of merchandise if payment is made within a time period specified in the supplier's invoice. For example, if the terms on the $2,000 invoice for one vehicle received by Excel indicates "1/15, n/45", this means that the $2,000 must be paid within 45 days ('n' = net). However, if cash payment is made by Excel within 15 days, the purchase price will be reduced by 1%.

Assuming the amount is paid within 15 days, the supplier's terms entitle Excel to deduct $17 [($2,000 - $300) = $1,700 x 1% = $17]. The payment to the supplier if payment was made on May 9 would be recorded as:

Date	Description	P.R.	Debit	Credit
May 9	Accounts Payable	210	1,700	
	Merchandise Inventory	150		17
	Cash	101		1,683
	To record payment on account in full and purchases discount applied.			

Accounts Payable

	1,700
1,700	

Merch. Inventory

2,000	
	300
	17
1,683	

Cash

	1,683

The cost of the vehicle in Excel's inventory records is now $1,683 ($2,000 – 300 – 17). If payment is made after the discount period, $1,700 of cash is paid and the entry would be:

Accounts Payable	1,700	
Cash		1,700
To record payment on account; no purchase discount applied.		

In this case, the Merchandise Inventory account is not affected. The cost of the vehicle in the general ledger remains at $1,700.

Trade discounts are similar to purchase discounts. A supplier advertises a **list price** which is the normal selling price of its goods to merchandisers. Trade discounts are given by suppliers to merchandisers that buy a large quantity of goods. For instance, assume a supplier offers a 10% trade discount on purchases of 1,000 units or more where the list price is $1/unit. If Beta Merchandiser Corp. buys 1,000 units on account, the entry in Beta's records would be:

Merchandise Inventory	900	
Accounts Payable		900

To record purchase of cups; 10% trade discount applied (1,000 x $1 x 90% = $900)

Note that just the net amount (list price less trade discount) is recorded.

Transportation

Costs to transport goods from the supplier to the seller must also be considered when recording the cost of merchandise inventory. The shipping terms on the invoice identify the point at which ownership of the inventory transfers from the supplier to the purchaser. When the terms are **FOB shipping point**, ownership transfers at the 'shipping point' so the purchaser is responsible for transportation costs. **FOB destination** indicates that ownership transfers at the 'destination point' so the seller is responsible for transportation costs. FOB is the abbreviation for "free on board."

Assume that Excel's supplier sells with terms of FOB shipping point indicating that transportation costs are Excel's responsibility. If the cost of shipping is $125 and this amount was paid in cash to the truck driver at time of delivery on May 9, the entry would be:

Date	Description	P.R.	Debit	Credit
May 9	Merchandise Inventory	150	125	
	Cash	101		125

To record freight on vehicle purchased.

Merch. Inventory

2,000	
	300
	17
125	
1,808	

Cash

	125

The cost of the vehicle in the Excel Merchandise Inventory account is now $1,808. It is important to note that Excel's transportation costs to deliver goods to customers are recorded as *delivery expenses* that do not affect the Merchandise Inventory account.

The next section describes how the sale of merchandise is recorded as well as the related costs of items sold.

C. Merchandise Inventory: Sales and Collection Using the Perpetual Inventory System

LO3 – Analyze and record sales transactions for a merchandiser.

In addition to purchases on account, a merchandising company's operating cycle includes the sale of merchandise inventory *on account* or *on credit* as highlighted in Figure 5–3.

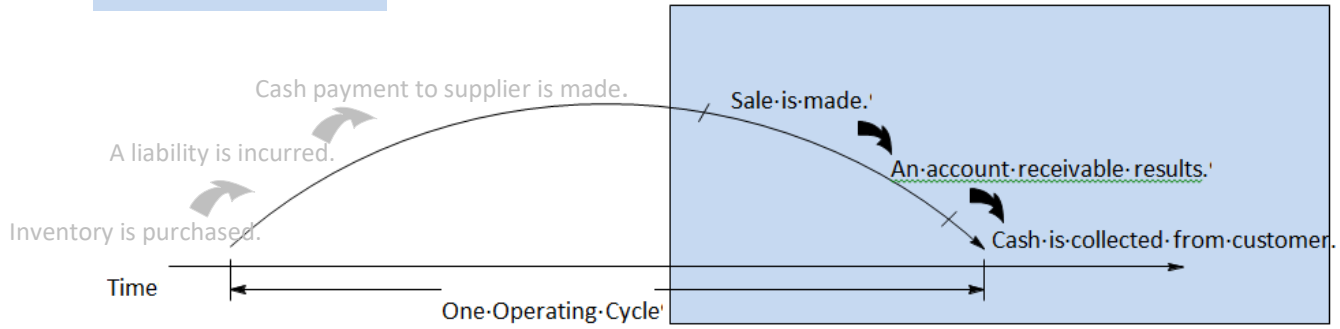

Figure 5–3 Sales and Collection Portion of the Operating Cycle

There are some slight recording differences when revenue is earned in a merchandising company. These are discussed below.

Recording the Sale of Merchandise Inventory

The sale of merchandise inventory is recorded with two entries:

1. recording the sale by debiting Cash or Accounts Receivable and crediting Sales, and
2. recording the cost of the sale by debiting Cost of Goods Sold and crediting Merchandise Inventory.

Assume the vehicle purchased by Excel is sold on May 15 for $3,000 on account. Recall that the cost of this vehicle in the Excel Merchandise Inventory account is $1,808, as shown below.

The entries to record the sale of the merchandise inventory are:

Date	Description	P.R.	Dr.	Cr.
May 15	Accounts Receivable	110	3,000	
	Sales	500		3,000
	To record the sale of vehicle on account.			
	Cost of Goods Sold	570	1,808	
	Merchandise Inventory	150		1,808
	To record the cost of vehicle sold.			

Accounts Receivable: 3,000

Sales: 3,000

Cost of Goods Sold: 1,808

Merch. Inventory: 1,808 / -0-

Costs are transferred to the income statement from the balance sheet at the same time the sale is recorded.

The first part of the entry records the sales revenue. The second part is required to reduce the Merchandise Inventory account and transfer the cost of the merchandise sold to the Cost of Goods Sold account, and then to the income statement. The part of the entry ensures that both the Merchandise Inventory and Cost of Goods Sold accounts in the general ledger are up to date.

Sales Returns and Allowances

When merchandise inventory that has been sold is returned to the merchandiser by the customer, a **sales return and allowance** is recorded. For example, assume some damage occurs to the car sold by Excel while it is being delivered to the customer on May 17. Excel would give the customer a **sales allowance** by agreeing to reduce the amount owing by, say, $100. The entry is:

May 17	Sales Returns and Allowances	508	100	
	Accounts Receivable	110		100
	To record customer allowance for damage to vehicle during delivery.			

Sales Ret. & Allow.: 100

Accounts Receivable: 3,000 / 100 / **2,900**

Accounts receivable is credited because the original sale was made on account and has not yet been paid. The amount owing from the

customer is reduced to $2,900. If the $2,900 had already been paid, a credit would be made to Cash and $100 refunded to the customer. The Sales Returns and Allowances account is a *contra* revenue account, meaning it is *deducted* from Sales when preparing the income statement.

If goods are returned by a customer, a **sales return** occurs. The related sales and cost of goods sold recorded on the income statement are reversed and the goods are returned to inventory. For example, assume Max Corporation sells a plastic container for $3 that it purchased for $1. The dual entry at the time of sale would be:

Accounts Receivable	3	
Sales		3
To record sale of plastic container on account.		

Cost of Goods Sold	1	
Merchandise Inventory		1
To record cost of plastic container sold.		

If the container is returned, the journal entry would reverse the original entry, except that Sales Returns and Allowances would be debited instead of the Sales account:

Sales Returns and Allowances	**3**	
Accounts Receivable		3
To record customer credit granted for return.		

Merchandise Inventory	1	
Cost of Goods Sold		1
To record cost of plastic container returned.		

Use of a Sales Returns and Allowances contra account allows management to track the amount of returned and damaged items for their information purposes.

Sales Discounts

Another contra revenue account, **Sales Discounts**, records reductions in sales amounts when a customer pays within a certain time period. For example, assume Excel Cars Corporation offers sales terms of "2/10, n30." This means that the amount owed must be paid by the customer within 30 days ('n' = net); however, if the customer chooses to pay within 10 days, a 2% discount may be deducted from the amount owing.

Consider the sale of the vehicle for $2,900 ($3,000 less the $100 allowance for damage). Payment within 10 days entitles the customer to a $58 discount ($2,900 x 2% = $58). If payment is made on May 21 and therefore within the discount period, Excel receives $2,842 cash ($2,900 - 58) and prepares the following entry:

Date	Description	P.R.	Dr.	Cr.
May 21	Cash	101	2,842	
	Sales Discounts	509	58	
	Accounts Receivable	110		2,900

Cash: 2,842

Sales Discounts: 58

Accounts Receivable: 2,900 | 2,900 | -0-

To record customer payment of account within the sales discount period.

This entry reduces the accounts receivable amount to zero which is the desired result. If payment is not made within the discount period, the customer pays the full amount owing of $2,900.

The Sales Allowances and Sales Discounts contra accounts are deducted from sales on the income statement to arrive at net sales. Cost of goods sold is deducted from net sales. If Excel purchased and sold only this one vehicle, the partial income statement for the period from January 1 to May 31 would show:

Excel Cars Corporation
Partial Income Statement
For the Five Month Period Ended May 31, 2019

Sales		$3,000
Less: Sales returns and allowances	$100	
Sales discounts	58	158
Net sales		2,842
Cost of goods sold		1,808
Gross profit		1,034

As was the case for Sales Returns and Allowances, the balance in the Sales Discounts account is deducted from Sales on the income statement to arrive at Net Sales. Merchandisers often report only the net sales amount on the income statement. Details from sales returns and allowances, and sales discounts, are often omitted because they are

immaterial in amount relative to total sales. However, separate general ledger accounts for each of sales returns and allowances, and sales discounts, are useful in helping management identify potential problems that require investigation.

D. Adjustments to Merchandise Inventory Using the Perpetual Inventory System

LO4 – Record adjustments to merchandize inventory.

In the simple example above, Excel did not have any merchandise inventory on hand at either the start of the year or at the end of May. It purchased and sold one vehicle during the month.

Now assume that Excel Cars Corporation purchased five vehicles from its supplier for $2,000 each on June 2, 2019. The company sold three of these for $3,000 each on June 16. On June 30, ending inventory would consist of two vehicles valued at $2,000 each, or $4,000 in total. (Note that inventory is valued at cost, not estimated selling price.) Assume there are no applicable transportation, purchase allowances or discounts expenditures.

The journal entry to record the purchase of the vehicles on June 2 would be:

Date	Description	P.R.	Dr.	Cr.
June 2	Merchandise Inventory	150	10,000	
	Accounts Payable	210		10,000

To record purchase of five vehicles.

Merch. Inventory

-0-	
10,000	
10,000	

Accounts Payable

	-0-
	10,000
10,000	

The summary journal entry to record the sale of the vehicles on June 16 would be:

Date	Description	P.R.	Dr.	Cr.
June 16	Accounts Receivable	110	9,000	
	Sales	500		9,000
	To record sale of three vehicles at $3,000 each.			

Accounts Receivable	
-0-	
9,000	
9,000	

Sales	
	3,000
	9,000
	12,000

Cost of Goods Sold	570	6,000		
Merchandise Inventory	550		6,000	
To record cost of three vehicles sold.				

Cost of Goods Sold	
1,808	
6,000	
7,808	

Merch. Inventory	
10,000	
	6,000
4,000	

Assume the purchases and sales of vehicles in May and June were the only activity of the company during its fiscal year ended December 31, 2019, and the only opening general ledger account balances were Cash - $5,000 and Common Stock - $5,000. After the May and June transactions are recorded, the general ledger T-accounts would appear as follows:

Cash	
5,000	1,683[3]
[7]2,842	125[4]
6,034	

Accounts Payable	
[2]300	2,000[1]
[3]1,700	10,000[8]
	10,000

Common Stock	
	5,000

Sales	
	3,000[5]
	9,000[9]
	12,000

Accounts Rec.	
[5]3,000	100[6]
[9]9,000	2,900[7]
9,000	

Sales Ret. & Allow.	
[6]100	

Sales Discounts	
[7]58	

Merchandise Inv.	
[1]2,000	300[2]
[4]125	17[3]
1,808	
	1,808[5]
-0-	
[8]10,000	6,000[9]
4,000	

Cost of Goods Sold	
[5]1,808	
[9]6,000	
7,808	

Summary of transactions

[1] Purchased one vehicle on credit, May 2
[2] Adjustment by supplier for wrong color
[3] Paid supplier May 9; purchase discount taken
[4] Paid transportation costs
[5] Sold one vehicle on May 15
[6] Customer credited for delivery damage May 17
[7] Payment received from customer on May 21; sales discount applied
[8] Purchased five vehicles on credit, June 2
[9] Sold three vehicles on June 16

At the end of the fiscal year, an unadjusted trial balance would be prepared based on this information, as follows:

Excel Cars Corporation
Unadjusted Trial Balance
December 31, 2019

Account No.	*Account Title*	*Account Balance*	
		Debit	*Credit*
101	Cash	$ 6,034	
110	Accounts Receivable	9,000	
150	Merchandise Inventory	4,000	
210	Accounts Payable		$ 10,000
320	Common Stock		5,000
500	Sales		12,000
508	Sales Returns and Allowances	100	
509	Sales Discounts	58	
570	Cost of Goods Sold	7,808	
		$27,000	$27,000

Shrinkage

There is one adjusting entry that may need to be made at year-end related to merchandise inventory. Usually, a physical count of inventory is conducted at the fiscal year-end. Costs are attached to these items and all are totaled. This total is then compared to the Merchandise Inventory account balance. These should agree, unless inventory has been lost for some reason. This discrepancy is called **shrinkage**. Theft and deterioration of goods held for re-sale are the most common examples of shrinkage.

Assume that one of the two vehicles remaining on Excel's vehicle lot is stolen prior to the year-end and that this has (somehow) gone unnoticed by staff. A physical count at December 31 would reveal one vehicle on hand. This vehicle would be traced to the related purchase invoice and valued at $2,000. Comparing this amount to the balance in the Merchandise Inventory account would reveal a discrepancy of $2,000 ($4,000 – 2,000), and the theft would be revealed. This ability to compare accounting records with actual items on hand can be a valuable means for management to safeguard assets of the company, especially when there are thousands of goods purchased for resale. The system alerts managers to possible shrinkage problems.

At the year-end, the loss of one vehicle must be reflected in the accounting records. The following adjusting entry would be made:

Date	Description	P.R.	Dr.	Cr.
Dec. 31	Cost of Goods Sold	570	2,000	
	Merchandise Inv.	550		2,000

To adjust merchandise inventory to physical count at year-end: vehicle stolen.

Generally, shrinkage is recorded as part of cost of goods sold. If the amounts are abnormally large, however, a separate general ledger account can be maintained called, say, Inventory Shrinkage. The amount is still combined with cost of goods sold and not disclosed separately on the income statement, as it is considered information to be used only internally (to spur investment in the protection of physical inventory, for instance). However, it does provide information to management about the cost of shrinkage and may alert them to the need to provide better physical protection for inventory assets.

As there are no more adjustments at year-end in this example, an adjusted trial balance is prepared, as follows:

Excel Cars Corporation
Adjusted Trial Balance
December 31, 2019

Acct. No.	*Account*	*Account Balance*	
		Debit	*Credit*
101	Cash	$ 6,034	
110	Accounts Receivable	9,000	
150	Merchandise Inventory	2,000	
210	Accounts Payable		$ 10,000
320	Common Stock		5,000
500	Sales		12,000
508	Sales Returns and Allowances	100	
509	Sales Discounts	58	
570	Cost of Goods Sold	9,808	
		$27,000	$27,000

The financial statements for the year ended December 31 would be prepared from this information, as follows:

Excel Cars Corporation
Income Statement
For the Year Ended December 31, 2019

Sales		$12,000
Less: Sales returns and allowances	$100	
Sales discounts	58	158
Net sales		11,842
Cost of goods sold		9,808
Gross profit and net income		$ 2,034

In this case, sales consists of four vehicles sold for $3,000 each, or $12,000 in total. Cost of goods sold of $9,808 consists of four vehicles that were originally purchased for $2,000 each, or $8,000 in total, plus transportation costs of $125 and the loss of one vehicle ($2,000), less a purchase allowance of $300 and a purchase discount of $17 related to the May sale ($8,000 + 125 + 2,000 – 300 – 17 = $9,808). Gross profit therefore equals $2,034. Since there are no other expenses, net income is also $2,034.

The statement of changes in equity would show:

Excel Cars Corporation
Statement of Changes in Equity
For the Year Ended December 31, 2019

	Common stock	*Retained earnings*	*Total equity*
Balance at January 1, 2019	$5,000	$ -0-	$5,000
Net income		2,034	2,034
Balance at December 31, 2019	$5,000	$2,034	$7,034

The balance sheet at year-end would show:

Excel Cars Corporation
Balance Sheet
At December 31, 2019

Assets		
Current assets		
Cash		$ 6,034
Accounts receivable		9,000
Merchandise inventory		**2,000**
Total assets		$17,034
Liabilities		
Accounts payable		$10,000
Stockholders' Equity		
Common stock	$5,000	
Retained earnings	2,034	7,034
Total liabilities and stockholders' equity		$17,034

The one vehicle remaining in inventory at December 31 is valued at $2,000. This is the amount that remains in the Merchandise Inventory general ledger account, verified by physical count at year-end. It is appropriately shown as an asset on the balance sheet at December 31.

E. Merchandising Income Statement

LO5 – Explain and prepare a multiple-step income statement for a merchandiser.

Businesses are required to show expenses on the income statement based on either the *nature* or the *function* of the expense. The **nature of an expense** is determined by its basic characteristics (what it is). For example, when expenses are listed on the income statement as interest, depreciation, income taxes, or salaries, this identifies the nature of each expense. In contrast, the **function of an expense** describes the grouping of expenses based on their purpose (what they relate to). For example, an income statement that shows cost of goods sold, selling expenses, and general and administrative expenses has grouped expenses by their function. When expenses are grouped by function, additional information must be disclosed to show the nature of expenses within each group. *Full disclosure* is the generally accepted accounting principle that requires financial statements to report all relevant information about the operations and financial position of the entity. Information that is relevant but not included in the body of the statements is provided in the notes to the financial statements.

A merchandising income statement can be prepared in different formats. For this course, only one format will be used—the *multiple-step, or classified, format.* This format is generally used only for internal reporting because of its detail. Most external financial statement users would find this detail excessive and distracting.

An example of a multiple-step income statement is shown below using assumed data for XYZ Inc. for its month ended December 31, 2019 with the main categories identified.

XYZ Inc.
Income Statement
For the Month Ended December 31, 2019

Computation of net sales	**Sales**		$100,000
	Less: Sales discounts	$1,000	
	Sales returns and allowances	500	1,500
	Net sales		98,500
Computation of gross profit	**Cost of goods sold**		50,000
	Gross profit		48,500
Computation of income from operations	**Operating expenses**		
	Selling expenses		
	Sales salaries	$11,000	
	Rent, store	12,000	
	Advertising	5,000	
	Total selling expenses	28,000	
	General and administrative expenses		
	Office salaries	9,000	
	Rent, office	3,000	
	Supplies	2,500	
	Insurance	1,000	
	Total general and administrative	15,500	
	Total operating expenses		43,500
	Income from operations		5,000
Computation of non-operating items	**Other revenues (expenses)**		
	Rent revenue	12,000	
	Interest expense	(1,500)	
	Total other revenues (expenses)		10,500
	Income before income taxes		15,500
	Income taxes		2,000
	Net income		$13,500

Notice that the multiple-step income statement shows expenses by both function and nature. The broad categories that show expenses by function include operating expenses, selling expenses, general and administrative expenses, and income taxes. Within each category, the nature of expenses is disclosed including sales salaries, advertising, depreciation, supplies, and insurance. Notice that Rent Expense has been divided between two groupings because it applies to both selling (store) and general (office) expenses.

The normal operating activity for XYZ Inc. is merchandising. Revenues and expenses that are not part of normal operating activities are listed

under Other Revenues and Expenses. XYZ Inc. shows Rent Revenue under Other Revenues and Expenses because this type of revenue is not part of its merchandising operations. Interest earned, dividends earned, and gains on the sale of property, plant, and equipment are more examples of other revenues not related to merchandising operations. XYZ Inc. deducts interest expense under Other Revenues and Expenses. Interest expense does not result from operating activities; it is a financing activity because it is associated with the borrowing of money. Other examples of non-operating expenses include losses on the sale of property, plant, and equipment. Finally, income taxes expense is deducted. Income tax is a government levy, and considered unrelated to normal business operations.

F. Closing Entries for a Merchandiser Using the Perpetual Inventory System

LO6 – Explain the closing process for a merchandiser.

The process of recording closing entries for service companies was illustrated in Chapter 3. The closing procedure for merchandising companies is the same as for service companies—all income statement accounts are transferred to the Income Summary account, the Income Summary is closed to Retained Earnings, and Dividends are closed to Retained Earnings.

When preparing closing entries for a merchandiser, the income statement accounts unique for merchandisers need to be considered—Sales, Sales Discounts, Sales Returns and Allowances, and Cost of Goods Sold. Sales is a revenue account so has a normal credit balance. To close Sales, it must be debited with a corresponding credit to the income summary. Sales Discounts and Sales Returns and Allowances are both contra revenue accounts so each has a normal debit balance. Cost of Goods Sold has a normal debit balance because it is an expense. To close these debit balance accounts, a credit is required with a corresponding debit to the income summary.

All accounts listed in the income statement columns are transferred to the income summary account, and then the income summary is closed to retained earnings. The same three-step process is used, as shown in chapter 3, as applied to the financial information of Excel Cars Corporation for the year ended December 31, 2019:

Entry 1

All income statement accounts with credit balances are debited to bring them to zero. Their balances are transferred to the income summary account.

(a)

Dec. 31	Sales	150	12,000	
	Income Summary	360		12,000
	To close all income statement accounts with credit balances to the income summary.			

Entry 2

All income statement accounts with debit balances are credited to bring them to zero. Their balances are transferred to the income summary account.

(b)

Dec. 31	Income Summary	360	9,966	
	Cost of Goods Sold	570		9,808
	Sales Returns and Allow.	508		100
	Sales Discounts	509		58
	To close all income statement accounts with debit balances to income summary.			

Entry 3

The Income Summary account is closed to the Retained Earnings account. The effect is to transfer temporary (income statement) account balances in the income summary totalling $4,034 to the permanent (balance sheet) account, Retained Earnings.

(c)

Dec. 31	Income Summary	360	2,034	
	Retained Earnings	340		2,034
	To close income summary account to retained earnings.			

After these closing entries are posted, the general ledger T-accounts would appear as follows:

Cash

5,000	1,683[3]
[7]2,842	125[4]
6,034	

Accounts Payable

[2]300	2,000[1]
[3]1,700	10,000[8]
	10,000

Common Stock

	5,000

Sales

	3,000[5]
	9,000[9]
	12,000
[a]12,000	
-0-	

Retained Earnings

	2,034[c]

Accounts Rec.

[5]3,000	100[6]
[9]9,000	2,900[7]
9,000	

The balance in the Income Summary is transferred to Retained Earnings.

Income Summary

[b]9,966	12,000[a]
[c]2,034	
-0-	

Sales Ret. & Allow.

[6]100	
	100[b]
-0-	

Sales Discounts

[7]58	
	58[b]
-0-	

Merchandise Inventory

[1]2,000	300[2]
[4]125	17[3]
1,808	
	1,808[5]
-0-	
[8]10,000	6,000[9]
4,000	
	2,000
2,000	

Adjusting entry for inventory shrinkage

Cost of Goods Sold

[5]1,808	
[9]6,000	
7,808	
2,000	
9,808	
	9,808[b]
-0-	

All income statement accounts and the income summary account are reduced to zero and net income for the year of $2,034 is transferred to retained earnings.

Appendix: The Periodic Inventory System

LO7 – Explain and identify the entries to record purchase and sales transactions in a periodic inventory system.

The perpetual inventory system maintains a continuous, real-time balance in both Merchandise Inventory, a balance sheet account, and Cost of Goods Sold, an income statement account. As a result, the Merchandise inventory general ledger account balance should always equal the value of physical inventory on hand at any point in time. Additionally, the Cost of goods sold general ledger account balance should always equal the total cost of merchandise inventory sold for the accounting period. The accounts should perpetually agree; hence the name. An alternate system is considered below, called the *periodic* inventory system.

Description of the Periodic Inventory System

The periodic inventory system does not maintain a constantly-updated merchandise inventory balance. Instead, ending inventory is determined by a physical count and valued at the end of an accounting period. The change in inventory is recorded only periodically. Additionally, a Cost of goods sold account is not maintained in a periodic system. Instead, cost of goods sold is calculated at the end of the accounting period.

When goods are purchased using the periodic inventory system, the cost of merchandise is recorded in a **Purchases** account in the general ledger, rather than in the Merchandise Inventory account as is done under the perpetual inventory system. The Purchases account is an income statement account that accumulates the cost of merchandise acquired for resale.

Recall that Excel purchased a vehicle on account from its supplier on May 2 for $2,000. The journal entry and general ledger T-account effects using the periodic inventory system would be as follows:

May 2	Purchases	550	2,000	
	Accounts Payable	210		2,000
	To record purchase of vehicle.			

Purchases

2,000	

Accounts Payable

	2,000

Other types of activities related to the purchase of merchandise, like allowances for damaged items, purchase discounts, and transportation and handling charges, are not recorded in the Merchandise Inventory

account either. Rather, they are recorded in special income statement accounts. Accounting for each type of transaction is explained below.

Purchase returns and Allowances

Recall that the price of the vehicle purchased on May 2 was reduced from $2,000 to $1,700 because it was the wrong color. Under the periodic inventory system, the amount of the reduction is accumulated in a separate **Purchase returns and Allowances**, an income statement account. Excel would record the transaction as follows:

					Accounts Payable	
						2,000
May 3	Accounts Payable	210	300		300	

				Purch. Ret. & Allows.	
	Purch. Ret. and Allow.	558	300		300

To record reduction in account payable: vehicle damaged.

The Purchase returns and Allowances amount of $300 is deducted from Purchases when calculating cost of goods sold on the income statement. It is a contra account.

Purchase discounts

Another contra account, **Purchase discounts**, accumulates reductions in the purchase price of merchandise if payment is made within a time period specified in the supplier's invoice. Recall that if amount owing on the vehicle is paid within 15 days, the supplier's terms entitle Excel to deduct $17 [($2,000 - 300) = $1,700 x 1% = $17].

Under the periodic inventory system, the $1,683 cash payment to the supplier on May 9 is recorded as follows:

					Accounts Payable	
						1,700
May 9	Accounts Payable	210	1,700		1,700	

				Purchase discounts	
	Purchase discounts	559	17		17

				Cash	
	Cash	101	1,683		1,683

To record payment on account in full and purchases discount applied.

The discount of $17 is deducted when calculating cost of goods sold on the income statement.

Transportation

Under the perpetual inventory system, the cost of transporting the vehicle to Excel's premises was added to the Merchandise Inventory account on the balance sheet. Under the periodic inventory system, a **Transportation-in** account is used to accumulate freight charges on merchandise purchased for re-sale. Like the Purchases and Purchase discounts accounts, this is also an income statement account which is used to calculate cost of goods sold directly on the income statement.

Recall the cost of shipping the vehicle is $125 and it is paid in cash to the truck driver. Payment would be recorded as follows:

					Transportation-In	
May 9	Transportation-In	560	125		125	
					Cash	
	Cash	101		125		125

To record transportation costs on vehicle.

The vehicle is then sold for $3,000 on May 15. A $100 allowance is granted for damage to the vehicle during delivery. A $58 sales discount is granted because the customer paid the balance owing to Excel within the discount period. The sales transactions are recorded in the same manner under both the perpetual and periodic inventory systems.

The summary of these transactions is:

May 15	Accounts Receivable	110	3,000	
	Sales	500		3,000
May 17	Sales Ret. and Allowances	508	100	
	Accounts Receivable	110		100
May 21	Cash	101	2,842	
	Sales Discounts	509	58	
	Accounts Receivable	110		2,900

Note, however, that there is no entry made to adjust Merchandise Inventory and cost of goods sold when recording the May 15 sales. This is different from the perpetual inventory system. There have been no entries made to the Merchandise Inventory account to date using the periodic inventory system.

The same transactions also occur in June as described earlier. Five vehicles are purchased for $2,000 each, or $10,000 in total. The entry to record the purchase of the vehicles is:

June 2	Purchases	550	10,000	
	Accounts Payable	210		10,000

Purchases

2,000	
10,000	
12,000	

Accounts Payable

	-0-
	10,000
	10,000

Three vehicles are sold during June for $3,000 each, or $9,000 in total. The entry to record the sale of the vehicles is:

June 16	Accounts Receivable	110	9,000	
	Sales	500		9,000

Accounts Receivable

-0-	
9,000	
9,000	

Sales

	3,000
	9,000
	12,000

Again, note that there are no adjustments to the Merchandise Inventory or Cost of Goods Sold accounts in the general ledger at this point, unlike the perpetual inventory system. After the June transactions are recorded, the general ledger T-accounts would appear as follows:

Cash	
5,000	1,683[3]
[7]2,842	125[4]
6,034	

Accounts Payable	
[2]300	2,000[1]
[3]1,700	10,000[8]
	10,000

Common Stock	
	5,000

Sales	
	3,000[5]
	9,000[9]
	12,000

Accounts Rec.	
[5]3,000	100[6]
[9]9,000	2,900[7]
9,000	

Sales Ret. & Allow.	
[6]100	

Sales Discounts	
[7]58	

Merchandise Inventory	
-0-	

Using the periodic inventory system, no transactions are recorded during the year in the Merchandize Inventory account. Purchases are recorded in a separate general ledger account.

Purchases	
[1]2,000	
[8]10,000	
12,000	

Purch. Ret. & Allows.	
	300[2]

Purchase Discounts	
	17[3]

Transportation-In	
[4]125	

Summary of transactions

[1] Purchased one vehicle on credit, May 2
[2] Adjustment by supplier for wrong color
[3] Paid supplier May 9; purchase discount taken
[4] Paid transportation costs
[5] Sold one vehicle on May 15
[6] Customer credited for delivery damage May 17
[7] Payment received from customer on May 21; sales discount applied
[8] Purchased five vehicles on credit, June 2
[9] Sold three vehicles on June 16

Assume again that no other transactions occur during the year. When financial statements are prepared at December 31, a physical count of

inventory is taken. Purchase invoices are referenced to determine the value of the items counted. The resulting amount is inserted into the income statement to determine the cost of goods sold for the year.

In the case of Excel, a physical count should show that there is one vehicle left on the lot. Referring to the purchase documents, this vehicle would be valued at its purchase price - $2,000. The value of ending inventory would thus be calculated as $2,000. This information is inserted directly into the income statement of Excel for the year ended December 31, 2019. Combined with the information in the general ledger T-accounts, the income statement would show:

Excel Cars Corporation
Income Statement
For the Year Ended December 31, 2019

Sales		$12,000
Less: Sales returns and allowances	$100	
Sales discounts	58	158
Net sales		11,842
Cost of goods sold:		
Opening inventory	-0-	
Purchases	12,000	
Transportation-in	125	
Less: Purchase returns and allow.	(300)	
Purchase discounts	(17)	
Cost of goods available for sale	11,808	
Less: Ending inventory	(2,000)	
Cost of goods sold		9,808
Gross profit and net income		$ 2,034

Ending inventory is counted and valued. The total amount is inserted into the income statement to determine cost of goods sold.

Net income remains the same under either the perpetual or periodic inventory system ($2,034). The periodic method is simpler to use than the perpetual inventory system, and is often used by small businesses because the costs of inventory recordkeeping are reduced. However, a perpetual inventory system enables management to compare inventory records to actual goods on hand at a period end to determine if any shrinkage has occurred. This security feature is not present with the periodic inventory system. The extra costs of recordkeeping using a perpetual inventory system are offset by the added control over a high-value asset like inventory, especially when there are thousands of items that a business may buy for re-sale each year and where shrinkage can be a significant issue.

Closing Entries – Periodic Inventory System

The process of closing the general ledger temporary accounts to retained earnings at the end of an accounting year is the same under the perpetual or periodic system, with one exception. Under the periodic system, an entry must be made in the Merchandise Inventory account to adjust this balance to the amount of inventory counted and valued at year-end. Otherwise, the steps are the same:

Entry 1

All income statement accounts with credit balances are debited to bring them to zero. Their balances are transferred to the income summary account. *At the same time, the ending inventory balance ($2,000 in this case) is debited to the Merchandise Inventory account.*

		(a)		
Dec. 31	Merchandise Inv. (ending)	150	2,000	
	Sales	500	12,000	
	Purchase Ret. and Allow.	558	300	
	Purchase Discounts	559	17	
	Income Summary	360		14,317
	To close all income statement accounts with credit balances to income summary and record ending inventory balance in Merchandise Inventory account.			

Entry 2

All income statement accounts with debit balances are credited to bring them to zero. Their balances are transferred to the Income Summary account. *At the same time, the opening inventory balance (zero in this case) is credited to the Merchandise Inventory account:*

(b)

Dec. 31	Income Summary	360	12,283	
	Merch. Inv. (opening)	150		-0-
	Sales Return and Allows.	508		100
	Sales Discounts	509		58
	Purchases	550		12,000
	Transportation-In	560		125

To close all income statement accounts with credit balances to income summary and remove opening inventory from the Merchandise Inventory account.

The combined effect of entries 1 and 2 on the Merchandise Inventory account is to adjust it to the actual ending balance at December 31 of $2,000. At the end of this process, the account will show:

		Merchandise Inventory	
Jan. 1	Opening balance	-0-	
	Add: Ending inventory (closing entry posted)	2,000	
	Less: Opening inventory (closing entry posted)		-0-
Dec. 31	Ending balance	2,000	

Entry 3

The income summary account is closed to the Retained Earnings account. The effect is to transfer temporary account balances in the income summary totalling $2,034 to the permanent general ledger account, Retained Earnings.

(c)

Dec. 31	Income Summary	360	2,034	
	Retained Earnings	340		2,034

To close the Income Summary account to the Retained Earnings account.

After these closing entries are posted, the general ledger T-accounts would appear as follows:

Cash	
5,000	1,683[3]
[7]2,842	125[4]
6,034	

Accounts Payable	
[2]300	2,000[1]
[3]1,700	10,000[8]
	10,000

Common Stock	
	5,000

Retained Earnings	
	2,034[c]

Sales	
	3,000[5]
	9,000[9]
	12,000
[a]12,000	
-0-	

Accounts Rec.	
[5]3,000	100[6]
[9]9,000	2,900[7]
9,000	

Income Summary	
[b]12,283	14,317[a]
[c]2,034	
-0-	

Sales Ret. & Allow.	
[6]100	
	100[b]
-0-	

Merchandise Inventory	
-0-	
[a]2,000	
	-0-[b]
2,000	

Sales Discounts	
[7]58	
	58[b]
-0-	

Purchases	
[1]2,000	
[9]10,000	
12,000	
	12,000[b]
-0-	

Purch. Ret. & Allows.	
	300[2]
[a]300	
-0-	

Purchase Discounts	
	17[3]
[a]17	
-0-	

Transportation-In	
[4]125	
	125[b]
-0-	

Opening Inventory

Under the periodic inventory system, the ending inventory of one accounting time period becomes the opening inventory of the next accounting time period. Opening inventory is added to purchases each period and ending inventory is deducted to calculate cost of goods sold.

Assume that Excel Cars Corporation had the following transactions in 2020, its next accounting year:

Opening inventory	1 vehicle at $2,000
Plus: Purchases	6 vehicles at $2,000 each
Less: Sales	(5) vehicles at $3,000 each
Equals ending inventory	2 vehicles at $2,000 each

Journal entries are omitted in this example. The gross profit and net income calculations disclosed on the income statement for 2019 and 2020 are shown below. Note that the ending inventory at December 31, 2019 becomes the opening inventory at January 1, 2020.

Excel Cars Corporation
Income Statement
For the Year Ended December 31, 2020

	2019	*2020*
Sales	$12,000	$15,000
Less: Sales returns and allowances	(100)	-0-
Sales discounts	(58)	-0-
Net sales	11,842	15,000
Cost of goods sold		
Opening inventory	-0-	2,000
Purchases	12,000	12,000
Transportation-in	125	-0-
Less: Purchase returns and allow.	(300)	-0-
Purchase discounts	(17)	-0-
Cost of goods available for sale	11,808	14,000
Less: ending inventory	(2,000)	(4,000)
Cost of goods sold	9,808	10,000
Gross profit and net income	$ 2,034	$ 5,000

Ending inventory for 2019 becomes the opening inventory for 2020.

In 2020, seven vehicles are available for sale – one remaining from 2019 and now included as opening inventory at January 1, 2020 plus six

purchased in 2020. Cost of goods available for sale therefore equals $14,000 for the 2020 fiscal year (7 x $2,000). Two vehicles are not sold so are shown as ending inventory at December 31, 2020. Their total cost of $4,000 is deducted from cost of goods available for sale to arrive at cost of goods sold for 2020 of $10,000. As was done on 2019, ending inventory amounts would be determined by counting the vehicles on the lot at December 31, 2020 and determining from purchase invoices how much was paid for these.

The interrelationship of inventory disclosed in the income statement and balance sheet using the periodic inventory system can be illustrated as follows:

Excel Car Corporation
Income Statement
For the Year Ended December 31, 2020

Sales		$15,000
Cost of goods sold		
Opening inventory (Jan. 1, 2020)	$2,000	
Cost of goods purchased	12,000	
Cost of goods available	14,000	
Less: Ending inventory (Dec. 31)	(4,000)	
Cost of goods sold		10,000
Gross profit and net income		$ 5,000

Excel Car Corporation
Balance Sheet
At December 31

	2019	*2020*
Assets		
Cash	$A,000	$C,000
Accounts receivable	B,000	D,000
Merchandise inventory	2,000	4,000

Closing entries for 2020 would be prepared using the same process as previously described.

Entry 1

			(a)	
Dec. 31	Merchandise Inv. (ending)	150	4,000	
	Sales	500	15,000	
	Income Summary	360		19,000
	To close all income statement accounts with credit balances to the income summary and record ending inventory balance.			

Entry 2

			(b)	
Dec. 31	Income Summary	360	14,000	
	Merch. Inv. (opening)	150		2,000
	Purchases	550		12,000
	To close all income statement accounts with credit balances to the income summary and remove opening inventory from the Merchandise Inventory account.			

The combined effect of entries 1 and 2 on the Merchandise Inventory account is to adjust it to the actual ending balance at December 31, 2020 of $4,000. At the end of this process, the Merchandise Inventory account in the general ledger will show:

		Merchandise Inventory	
Jan. 1	Opening balance	2,000	
	Add: Ending Inventory (closing entry posted)	4,000	
	Less: Opening Inventory (closing entry posted)		2,000
Dec. 31	Ending balance	4,000	

The usual entry is made to close the Income Summary account to the Retained Earnings account.

Entry 3

			(c)	
Dec. 31	Income Summary	360	5,000	
	Retained Earnings	340		5,000
	To close the Income Summary account to the Retained Earnings account.			

Summary of Chapter 5 Learning Objectives

LO1 – Describe merchandising and explain the financial statement components of sales, cost of goods sold, merchandise inventory, and gross profit; differentiate between the perpetual and periodic inventory systems.

Merchandisers buy and resell products. Merchandise inventory, an asset, is purchased from suppliers and resold to customers to generate sales revenue. The cost of the merchandise inventory sold is an expense called cost of goods sold. The profit realized on the sale of merchandise inventory before considering any other expenses is called gross profit. Gross profit may be expressed as a dollar amount or as a percentage. To track merchandise inventory and cost of goods sold in real time, a perpetual inventory system is used; the balance in each of Merchandise Inventory and Cost of Goods Sold is always up-to-date. In a periodic inventory system, a physical count of the inventory must be performed in order to determine the balance in Merchandise Inventory and Cost of Goods Sold.

LO2 – Analyze and record purchase transactions for a merchandiser.

In a perpetual inventory system, a merchandiser debits Merchandise Inventory regarding the purchase of merchandise for resale from a supplier. Any purchase returns and allowances or purchase discounts are credited to Merchandise Inventory as they occur to keep the accounts up-to-date.

LO3 – Analyze and record sales transactions for a merchandiser.

In a perpetual inventory system, a merchandiser records two entries at the time of sale: one to record the sale and a second to record the cost of the sale. Sales returns that are returned to inventory also require to entries: one to reverse the sale by debiting a sales returns and allowances account and a second to restore the merchandise to inventory by debiting Merchandise Inventory and crediting Cost of Goods Sold. Sales returns not restored to inventory as well as sales allowances are recorded with one entry: debit sales returns and allowances and credit cash or accounts receivable. Sales discounts are recorded when a credit customer submits their payment within the discount period specified.

LO4 – Record adjustments to merchandise inventory.

A physical count of merchandise inventory is performed and the total compared to the general ledger balance of Merchandise Inventory. Discrepancies are recorded as an adjusting entry that debits cost of goods sold and credits Merchandise Inventory.

LO5 – Explain and prepare a multiple-step income statement for a merchandiser.

A multiple-step, or classified, income statement for a merchandiser is for internal use because of the detail provided. Sales, less sales returns and allowances and sales discounts, results in net sales. Net sales less cost of goods sold equals gross profit. Expenses are shown based on both their function and nature. The functional or group headings are: operating expenses, selling expenses, and general and administrative expenses. Within each grouping, the nature of expenses is detailed including: depreciation, salaries, advertising, wages, and insurance. A specific expense can be divided between groupings.

LO6 – Explain the closing process for a merchandiser.

The steps in preparing closing entries for a merchandiser are the same as for a service company. The difference is that a merchandiser will need to close income statement accounts unique to merchandising such as: Sales, Sales Returns and Allowances, Sales Discounts, and Cost of Goods Sold.

LO7 – (Appendix) Explain and identify the entries to record purchase and sales transactions in a periodic inventory system.

A periodic inventory system maintains a Merchandise Inventory account but does not have a Cost of Goods Sold account. The Merchandise Inventory account is updated at the end of the accounting period as a result of a physical inventory count. Because a merchandiser using a period system does not use a Merchandise Inventory account to record purchase or sales transactions during the accounting period, it maintains accounts that are different than under a perpetual system, namely, Purchases, Purchase Returns and Allowances, Purchase Discounts, and Transportation-in.

E N D O F C H A P T E R M A T E R I A L S

Multiple-Choice Review

1. Gross profit results when:
   a.) revenues exceed expenses
   b.) revenues exceed cost of goods sold
   c.) revenues exceed operating expenses
   d.) revenues exceed non-operating expenses

2. Which account would be found for a merchandising company but not a service company?
   a.) inventory
   b.) cost of goods sold
   c.) sales returns and allowances
   d.) all of the above

3. Which account has a normal debit balance?
   a.) inventory
   b.) cost of goods sold
   c.) sales returns and allowances
   d.) all of the above

4. Under the perpetual inventory system, companies record inventory purchases:
   a.) by debiting the Purchase account
   b.) by debiting the Inventory account
   c.) by debiting the Purchase Returns & Allowance account
   d.) by crediting the Accounts Receivable account

5. Under the perpetual inventory system, companies record inventory freight costs:
   a.) by debiting the Purchase account
   b.) by debiting the Inventory account
   c.) by debiting the Purchase Returns & Allowance account
   d.) by crediting the Accounts Receivable account

6. Under the perpetual inventory system, companies record returns by crediting which account?
   a.) Purchases
   b.) Inventory
   c.) Purchase Returns
   d.) Purchase Allowances

Multiple-Choice Review (continued)

7. Tulilly purchases $875 worth of merchandise from a supplier on February 1, terms 4/15, n/30. Tulilly makes a return of $50 of the merchandise on Feb. 5. The amount Zulilly pays her supplier on February 14 is:
   a.) $875 c.) $900
   b.) $825 d.) $792

8. The steps in the accounting cycle for a merchandising company are the same as those for a service company *except* that*:*
   a.) an additional entry may be required to record for inventory shrinkage.
   b.) closing entries are not required for merchandising companies.
   c.) adjusting entries are not required for merchandising companies.
   d.) an adjusted trial balance is not required for merchandising companies.

9. Depreciation expense would be found in which section of the multiple-step income statement?
   a.) Net sales c.) Operating expenses
   b.) Cost of goods sold d.) Other expenses

10. The multiple-step income statement will show each of the following *except*:
   a.) a non-operating section c.) a net sales section
   b.) a gross profit section d.) a financing section

11. If net sales are $1,000,000, cost of goods sold is $620,000, operating expenses are $200,000, and other revenues are $80,000, the gross profit is:
   a.) $1,000,000 c.) $180,000
   b.) $380,000 d.) $260,000

12. If net sales are $1,000,000, cost of goods sold is $620,000, operating expenses are $200,000, and other revenues are $80,000, the income from operations is:
   a.) $1,000,000 c.) $180,000
   b.) $380,000 d.) $260,000

Answers on the following page

Answers to Multiple-Choice Review

1. b
2. d
3. d
4. b
5. b
6. b
7. d
8. a
9. c
10. d
11. b
12. c

Discussion Questions

1. How does the income statement prepared for a company that sells goods differ from that prepared for a service business?
2. How is gross profit calculated? What relationships do the gross profit and gross profit percentage calculations express? Explain, using an example.
3. What is a perpetual inventory system?
4. How is the purchase of merchandise inventory on credit recorded in a perpetual system?
5. How is a purchase return recorded in a perpetual system?
6. What does the credit term of "1/15, n/30" mean?
7. How is a purchase discount recorded in a perpetual system?
8. How is the sale of merchandise inventory on credit recorded in a perpetual system?
9. How is a sales return recorded in a perpetual system?
10. What is a sales discount and how is it recorded in a perpetual inventory system?
11. Why does merchandise inventory need to be adjusted at the end of the accounting period and how is this done in a perpetual inventory system?
12. What types of transactions affect merchandise inventory in a perpetual inventory system?
13. How are the closing entries for a merchandiser using a perpetual inventory system different than for a service company?
14. When reporting expenses on multi-step income statement, how is the function of an expense reported? The nature of an expense?
15. On a multiple-step income statement, what is reported under the heading 'Other revenues and expenses' and why?
16. (Appendix) Compare the perpetual and periodic inventory systems. What are some advantages of each?
17. (Appendix) What contra accounts are used in conjunction with purchases using the periodic inventory system?
18. (Appendix) How is cost of goods available for sale calculated using the periodic inventory system?
19. (Appendix) How is cost of goods sold calculated using the periodic inventory system?
20. (Appendix) Explain how ending inventory is recorded in the accounts of a business that sells goods using a periodic inventory system.

Comprehension Problems

CP 5–1

Identify each statement as true of false.

___ 1.) The main source of revenue for a merchandising company is generated from selling goods.
___ 2.) A periodic inventory system will calculate the cost of goods sold after each sale.
___ 3.) Net sales less cost of goods sold equals gross profit.
___ 4.) Under a perpetual inventory system, costs to purchase inventory are debited to the Inventory account.
___ 5.) A perpetual inventory system will record any costs to make its merchandise ready for sale with a debit to the Inventory account.

CP 5–2

Consider the following information of Jones Corporation:

	2022	*2021*	*2020*	*2019*
Sales	$10,000	$9,000	$?	$7,000
Cost of goods sold	?	6,840	6,160	?
Gross profit	2,500	?	1,840	?
Gross profit percentage	?	?	?	22%

Required:
1. Calculate the missing amounts for each year.
2. What does this information indicate about the company?

CP 5–3

On March 1, Lumiere Company purchases $7,000 of merchandise from Cogsworth Company on account. On March 3, Lumiere returns $700 of merchandise after discovering they are damaged. Record the transactions for Lumiere Company.

CP 5–4

Gaston Company, a merchandiser of quality antler chandeliers, sells $10,000 worth of merchandise to LeFou Inc. on April 1. Gaston's cost for the merchandise is $6,000. On April 3, LeFou returns $1,000 worth of merchandise which had a cost of $600 to Gaston. Record the transactions for Gaston.

CP 5–5

Belle Company purchases $2,000 of merchandise from Roselle Booksellers on April 1. The terms of the sale are FOB destination and 2/10, n/30. On April 2, Belle returns $400 of merchandise after discovering they are damaged. Belle remits their payment to Roselle on April 9. Record the transactions for Belle Company.

CP 5–6

Gaston Company, a merchandiser of quality antler chandeliers, sells $10,000 worth of merchandise to LeFou Company on April 1. Gaston's cost for the merchandise is $6,000. Terms of the sale are FOB shipping point and 1/5, n/20. Transportation costs amount to $200 for the merchandise. On April 3, LeFou returns $1,000 worth of merchandise which had a cost of $600 to Gaston. LeFou remits payment on April 5 to Gaston Company.

Required:
1.) Identify the buyer and seller in this transaction.
2.) Prepare the entries for LeFou Company.
3.) Prepare the entries for Gaston Company.
4.) Calculate Gaston's gross profit and gross profit percentage.

CP 5–7

Reber Corp. uses the perpetual inventory system. Its transactions during July 2019 are as follows:

July	6	Purchased $600 of merchandise on account from Hobson Corporation for terms 1/10, n/30
	9	Returned $200 of defective merchandise
	15	Paid the amount owing to Hobson.

Required: Prepare journal entries to record the above transactions.

CP 5–8

The following events occurred for a merchandising company.

Apr.	1	Sold merchandise for $3,000, terms 2/10, n/30. The cost of the merchandise is $2,100.
	4	Customer from the April 1 sale returned merchandise worth $500 and a cost of $300.
	11	Received customer's payment.

Required:

1.) Prepare journal entries to record each of the following sales transactions of this merchandising company. Show any calculations and assume a perpetual inventory system is used.
2.) How would the last journal entry change if the customer payment was made on April 12?

CP 5–9

Boucher Corporation uses the perpetual inventory system. Its transactions during June 2019 are as follows:

June	1	Boucher purchased $1,200 of merchandise inventory from a supplier for terms 1/10, n/60.
	3	Boucher sold all of the inventory purchased on June 1 for $1,500 on credit to Wright Inc. for terms 2/10, n/30.
	8	Wright returned $800 of defective merchandise purchased June 3 (cost to Boucher: $600).
	13	Boucher received payment from Wright Inc. for the balance owed.

Required: Prepare journal entries to record the above transactions.

CP 5–10

Horne Inc. sells goods and use the perpetual inventory system. The company had $3,000 of merchandise inventory at the start of its fiscal year, January 1, 2019. During the year, the company had only the following transactions:

May 5	Horne sold $4,000 of merchandise on account to Sperling Renovations Ltd. for terms 2/10, n/30. Cost of merchandise to Horne from its supplier was $2,500.
7	Sperling returned $500 of merchandise; Horne issued a credit memo. (Cost of merchandise to Horne was $300)
15	Horne received the amount due from Sperling Renovations Ltd.

A physical count and valuation of merchandise inventory at May 31, the fiscal year-end, showed $700 of goods on hand for Horne Inc.

Required: Prepare journal entries to record the above transactions and adjustment.

1. In the records of Horne Inc.
2. In the records of Sperling Renovations Ltd.

Assume both companies use the perpetual inventory system.

CP 5–11

The following information is taken from the records of Smith Corp. at June 30, 2019, the fiscal year-end:

Advertising expense	$ 1,500
Commissions expense	4,000
Cost of goods sold	50,000
Delivery expense	1,000
Insurance expense	1,000
Rent expense	2,500
Salaries expense	5,000
Sales (gross)	72,000
Sales returns and allowances	2,000

Required:

1. Prepare a multiple-step income statement. Assume all expenses not related to cost of goods sold are selling expenses.
2. Compute gross profit percentage.

CP 5–6

Refer to the information in CP 5-5.

Required: Prepare all closing entries for Smith Corp. at June 30, 2019.

Problems

P 5–1

Snow White's Red Delicious Inc. sells ceramic apples to local restaurants and bakeries for their display windows. The company extends credit terms of 2/10, n/30 to all of its customers with FOB shipping point terms. During the month of April, the following merchandising transactions occurred.

April 1 Purchased merchandise on account for $1,500 from Castle Empire, shipping terms were FOB shipping point, credit terms 3/10, n/30. Shipping costs were $100.

April 3 Sold merchandise on account to Dwarf Village Cafe for $2,200. The cost of the merchandise is $1,500.

April 5 Purchased merchandise on account for $2,000 from Granny Smith Inc. Shipping terms were FOB destination, credit terms 2/5, n/60. Shipping costs were $150.

April 8 Sold $1,800 of merchandise to Gem Diner. The cost of the merchandise is $1,000.

April 5 Granted Gem Diner $200 credit for damaged merchandise returned. The cost of the returned items was $120.

April 9 Paid Castle Empire for amount owed.

April 12 Received payment from Dwarf Village Cafe.

April 15 Paid Granny Smith Inc. for amount owed.

April 19 Received payment from Gem Diner.

Required:

1.) Please journalize the events for Snow White.
2.) Compute net sales for Snow White based on the April transactions.
3.) Compute total gross profit for Snow White based on the April events.

P 5–2

Salem Corp. was incorporated on July 2, 2019 to operate a merchandising business. Salem uses the perpetual inventory system. All its sales on account are made according to the following terms: 2/10, n/30. Its transactions during July 2019 are as follows:

July	2	Issued common stock for $5,000 cash to George Salem, the incorporator and sole stockholder of the corporation
	2	Purchased $3,500 merchandise on account from Blic Pens Ltd. for terms 2/10, n/30
	2	Sold $2,000 of merchandise on account to Spellman Chair Rentals Inc. (Cost to Salem: $1,200)
	3	Paid Sayer Holdings Corp. $500 for July rent
	5	Paid Easton Furniture Ltd. $1,000 for equipment
	8	Collected $200 for a cash sale made today to Ethan Matthews Furniture Ltd. (Cost: $120)
	8	Purchased $2,000 merchandise on account from Shaw Distributors Inc. for terms 2/15, n/30
	9	Received the amount due from Spellman Chair Rentals Inc. for the July 2 sale (less discount)
	10	Paid Blic Pens Ltd. for the July 2 purchase (less discount)
	10	Purchased $200 of merchandise on account from Peel Products Inc. for terms n/30
	15	Sold $2,000 of merchandise on account to Eagle Products Corp. (Cost: $1,300)
	15	Purchased $1,500 of merchandise on account from Bevan Door Inc. for terms 2/10, n/30
	15	Received a memo from Shaw Distributors Inc. to reduce its account payable by $100 for defective merchandise included in the July 8 purchase.
	16	Eagle Products Corp. returned $200 of merchandise: reduced related Account Payable. (Cost to Salem: $150)
	20	Sold $3,500 of merchandise on account to Aspen Promotions Ltd. (Cost: $2,700)
	20	Paid Shaw Distributors Inc. for half the purchase made July 8

	24	Received half the amount due from Eagle Products Corp. in partial payment for the July 15 sale
	24	Paid Bevan Doors Ltd. for the purchase made July 15
	26	Sold $600 merchandise on account to Longbeach Sales Ltd. (Cost: $400)
	26	Purchased $800 of merchandise on account from Silverman Co. for terms 2/10, n/30
	31	Paid Speedy Transport Co. $350 for transportation to Salem's warehouse during the month (all purchases are FOB shipping point).

Required:

1. Prepare journal entries to record the July transactions.
2. Calculate the ending balance in merchandise inventory.
3. Assume the merchandise inventory is counted at July 31 and assigned a total cost of $2,400. Prepare the July 31 adjusting entry. Show calculations.

P 5–3

Randall Sales Corp. was incorporated on May 1, 2019 to operate a merchandising business. All its sales on account are made according to the following terms: 2/10, n/30. Its transactions during May 2019 are as follows:

May	1	Issued common stock for $2,000 cash to Harry Randall, the incorporator and sole stockholder of the corporation
	1	Received $10,000 from the First Chance Bank as a demand bank loan
	1	Paid Viva Corp. $1,500 for 3 months' rent in advance—$500 for each of May, June, and July
	1	Paid Avanti Equipment Ltd. $5,000 for equipment
	1	Purchased $5,000 of merchandise on account from Renaud Wholesalers Ltd. for terms 2/10, n/30
	1	Sold $2,500 of merchandise on account to North Vancouver Distributors. (Cost to Randall: $1,700)
	2	Purchased $1,800 of merchandise on account from Lilydale Products Ltd. for terms n/30
	2	Sold $2,000 of merchandise on account to Tarrabain Sales Inc. (Cost: $1,400)
	3	Collected $500 for a cash sale made today to Smith Weston Ltd.

5 Paid All West Insurance Inc. $1,200 for a 1-year insurance policy, effective May l
5 Sold $1,000 of merchandise on account to Trent Stores Corporation. (Cost: $700)
6 Tarrabain Sales Inc. returned $500 of merchandise: reduced the related Account Payable. (Cost: $300)
8 Received a memo from Renaud Wholesalers Ltd. to reduce its account payable by $300 for defective merchandise included in the May 1 purchase and returned subsequently to Renaud
8 Purchased $2,800 of merchandise on account from Pinegrove Novelties Ltd. for terms 2/15, n/30
9 Received the amount due from North Vancouver Distributors from the May 1 sale (less discount)
9 Paid Renaud Wholesalers Corp. for the May 1 purchase (less discount)
10 Sold $400 of merchandise on account to Eastern Warehouse. (Cost: $250)
11 Received the amount due from Tarrabain Sales Inc.
13 Paid Fast Delivery Corporation $100 for Transportation-In
15 Purchased $1,500 of merchandise on account from James Bay Distributors Inc. for terms 2/10, n/30
15 Sold $1,500 of merchandise on account to Ransom Outlets Inc. (Cost: $1,100)
15 Paid $500 in commissions to Yvonne Smith, *re:* sales invoices nos. 1, 2, and 3
19 Paid Lilydale Products Inc. for the May 2 purchase
19 Purchased $1,200 of merchandise on account from Midlife Stores Corp. for terms 1/10, n/30
22 Purchased $600 of merchandise on account from Speedy Sales Co. for terms n/30
22 Paid to Pinegrove Novelties Inc. for the May 8 purchase
24 Paid to In Transit Corporation $150 for Transportation-In (FOB shipping point)
25 Sold $900 of merchandise on account to Timmins Centres Ltd. (Cost: $650)
26 Received the amount due from Trent Stores Corporation
27 Paid $200 to Intown Deliveries Ltd. for deliveries made to customers

28	Collected $300 for a cash sale made today to Betty Regal. (Cost: $250)
28	Made a $200 cash purchase from Joe Balla Sales Inc.
28	Sold $900 of merchandise on account to Sault Rapids Corp. (Cost: $700)
29	Purchased $100 of merchandise on account from Amigos Inc.
29	Paid Intown Deliveries Ltd. $300 for deliveries to customers
29	Paid Main Force Advertising Agency $400 for advertising materials used during May
29	Paid State Hydro $100 for electricity
29	Paid Yvonne Smith $350 commission, *re:* sales invoices nos. 4, 5, 6, and 7
30	Collected $l,000 on account from Ransom Outlets Inc.
31	Paid Midlife Stores Corp. $700 on account

Inventory on hand at May 31 was counted and valued at $6,500.

Required: Prepare journal entries to record the May transactions and any month-end adjusting entries needed. Show calculations for shrinkage.

P 5–4

The following closing entries were prepared for Whirlybird Products Inc. at December 31, 2019, the end of its fiscal year.

Dec. 31	Sales	510	37,800	
	Income Summary	360		37,800
31	Income Summary	360	32,800	
	Cost of Goods Sold	570		26,800
	Sales Returns and Allowances	508		690
	Sales Discounts	509		310
	Salaries Expenses	656		5,000
31	Income Summary	360	5,000	
	Retained Earnings	340		5,000

Required:

1. Determine the most appropriate explanation for each closing entry.
2. Post the closing entries to general ledger T-accounts and calculate balances.
3. Calculate gross profit.

P 5–5

Southern Cross Corporation supplies you with the following information applicable to the current year, December 31, 2019. The company uses the perpetual inventory system.

Delivery expense	$ 2,000
Sales	100,000
Merchandise inventory (Dec. 31)	15,000
Cost of goods sold	70,000
Office supplies expense	7,000
Sales returns and allowances	10,000
Salaries expense	4,000
Supplies	5,000

Required:

1. Prepare an income statement. List expenses other than cost of goods sold as other expenses. Assume all accounts have normal balances.
2. Prepare all required closing entries.

P 5–6

The following trial balance has been extracted from the records of Acme Automotive Inc. at December 31, 2019, its fiscal year-end. The company uses the perpetual inventory system.

	Account Balances	
Account	*Dr.*	*Cr.*
Cash	750	
Accounts receivable	12,000	
Merchandise inventory	56,000	
Supplies	-0-	
Equipment	4,400	
Bank loan (due May, 2020)		5,000
Accounts payable		12,540
Income taxes payable		2,400
Common stock		2,000
Retained earnings		600
Sales		100,000
Sales returns and allowances	1,500	
Sales discounts	500	
Cost of goods sold	34,000	
Advertising expense	1,700	
Commissions expense	4,800	
Delivery expense	650	
Insurance expense	450	
Interest expense	600	
Office supplies expense	250	
Rent expense	1,950	
Telephone expense	300	
Utilities expense	290	
Income taxes expense	2,400	
	$122,540	$122,540

Required:

1. Prepare adjusting entries, for the following:
   a. $1,000 of sales on account has not been recorded. (Cost to Acme: $700)
   b. A physical count indicates that $100 of office supplies is still on hand at year-end.
   c. A telephone bill for $60 owing at December 31 has not yet been recorded.
   d. A physical count indicates that $53,000 of merchandise inventory is on hand at December 31, 2019.

2. Prepare a multiple-step income statement and statement of changes in equity for the year ended December 31, 2019
3. Prepare a classified balance sheet at December 31.
4. Prepare closing entries.

CHAPTER SIX

Assigning Costs to Merchandise

Recording transactions related to the purchase and sale of merchandise inventory was introduced and discussed in Chapter 5. This chapter reviews how the cost of goods sold is calculated using various inventory cost flow assumptions. Additionally, issues related to merchandise inventory that remains on hand at the end of an accounting period are also explored.

Chapter 6 Learning Objectives

LO1 – Determine inventory ownership under different situations.

LO2 – Calculate cost of goods sold and merchandise inventory under specific identification, first-in first-out (FIFO), last-in first-out, and weighted average cost flow assumptions, using the perpetual inventory system.

LO3 – Explain the impact on financial statements of inventory cost flow assumptions and errors.

LO4 – Explain and calculate lower of cost and net realizable value inventory adjustments.

A. Determining Inventory Ownership

LO1 – Determine inventory ownership under different situations.

The merchandise inventory account reflects all goods the company owns for resale purposes. However, at times the inventory calculation may need to consider special items; such as inventory in transit, inventory on consignment, or damaged inventory. Those situations will be discussed in this section. First, in order to determine the proper inventory balance, a company should take a physical inventory count at least once a year.

Physical Inventory Count

Typically, companies will take a physical count of their inventory at the end of the accounting period. This is done regardless of whether the company is using a perpetual or periodic inventory system. This count provides the company with critical information regarding its inventory levels, its accounting system, and provides for accurate reporting since as any difference will be adjusted for in the year-end adjusting entries (covered previously in chapter 5). Remember that a company's inventory balance should reflect all the goods it owns for resale. Therefore, special consideration should be given to goods that the company owns but does not have on premises, and therefore, would not be included in the physical inventory count performed on its premises. Common examples of this include inventory currently in transit or inventory on consignment.

Inventory in Transit

Goods that are in the process of being moved (shipped to a customer or from a supplier for example) at the end of the period create difficulty in computing an accurate inventory count. The company must determine who has legal ownership of the goods. This ownership is determined by the shipping terms:

1. *FOB (free on board) destination* –ownership of the inventory resides with the seller until the goods reach the buyer's established destination.
2. *FOB (free on board) shipping point* –ownership of the inventory resides with the buyer once loaded for shipment.

Inventory on Consignment

Under a consignment agreement, the owner (consignor) contracts with another party (consignee) who agrees to sell the goods for a fee. The consignee never takes ownership of the goods. Therefore, the consignor, or original owner, reports any consigned goods as part of their inventory until sold.

Damaged Inventory

It is likely that, through the course of normal business, inventory may become damaged or obsolete. If the inventory can still be sold (but at a reduced price), it should remain in the inventory balance at its net realizable value. Net realizable value is calculated as the estimated selling price less the cost of making the sale (advertising, transportation, cost of purchase, etc.). If the inventory cannot be sold, it should not remain in the company's inventory balance.

B. Inventory Cost Flow Assumptions

LO2 – Calculate cost of goods sold and merchandise inventory under specific identification, first-in first-out (FIFO), last-in first out (LIFO) and weighted average cost flow assumptions using the perpetual inventory system.

Determining the cost of each unit of inventory, and thus the total cost of ending inventory on the balance sheet, can be challenging. Why? We know from Chapter 5 that the cost of inventory can be affected by discounts, returns, transportation costs, and shrinkage. Additionally, the purchase cost of an inventory item can be different from one purchase date to the next. For example, the cost of raw coffee beans purchased by a manufacturer could be $5.00 a kilogram in October and $7.00 a kilogram in November because of changes in weather conditions in South America. Therefore, each kilo of coffee inventory may have a different cost depending on which kilo is assumed to be unsold. Also, some types of inventory physically flow into and out of a warehouse in a specific sequence, while others do not. For instance, a retail grocer needs to manage vegetable sales so that the oldest produce is sold first. On the other hand, a car dealership has no control over which vehicles are sold because customers make specific choices based on their preferences. Finally, a company that sells many low-value, similar items like pencils may want to merely choose the easiest method to calculate ending inventory. So how is the cost of a unit in merchandise inventory determined? There are several methods that can be used, as described in the following sections.

Assume a company sells only one product and uses the perpetual inventory system. It has no beginning inventory at June 1, 2019. The company purchased five units during June as shown in Figure 6-1.

	Purchase Transaction	
Date	*Number of units*	*Price per unit*
June 1	1	$ 1
5	1	2
7	1	3
21	1	4
28	1	5
	5	$15

Figure 6-1 June Purchases and Purchase Price per Unit

At June 28, there are 5 units in inventory with a total cost of $15 ($1 + $2 + $3 + $4 + $5). Assume four units are sold on June 30 for $10 each. The cost of the four units sold could be determined based on identifying the cost associated with the specific units sold, like a car dealership, especially if the value of one unit of inventory is large. Alternatively, a company might assume that the oldest purchases are sold first. Or a company may assume that the most recent inventory purchases are those that are sold first. Finally, if a company sells large quantities of similar low dollar value items such as pencils, an average cost might be used to calculate ending inventory because it is simpler. These methods are called respectively, *specific identification*; *first-in first-out* (*FIFO)*; *last-in first-out (LIFO)* and *weighted average*.

Specific Identification

Under **specific identification**, each inventory item that is sold is matched with its purchase cost. This method is most practical when inventory consists of relatively few, expensive items, particularly when individual units can be identified with serial numbers—for example, motor vehicles sold by a dealership.

Assume the four units sold on June 30 are those purchased on June 1, 5, 7, and 28. The fourth unit purchased on June 21 remains in ending inventory. Cost of goods sold would total $11 ($1 + $2 + $3 + $5). Sales would total $40 (4 @ $10). As a result, gross profit would be $29 ($40 – 11). Ending inventory would be $4, the cost of the unit purchased on June 21.

The general ledger T-accounts for Merchandise Inventory and Cost of Goods Sold would show:

Merchandise Inventory					
Jun. 1	$1				
5	2				
7	3				
21	4				
28	5				
		11	Jun. 30 →		11
End. Bal.	4				

Cost of Goods Sold

Figure 6-2 Cost of Goods Sold using Specific Identification

The entry to record the June 30 sale on account would be:

Accounts Receivable	110	40	
Sales	500		40

To record the sale of merchandise on account.

Cost of Goods Sold	570	11	
Merchandise Inventory	150		11

To record the cost of the sale.

It is not possible to use specific identification when inventory consists of a large number of similar, inexpensive items that cannot be easily differentiated. Consequently, a method of assigning costs to inventory items based on an assumed flow of goods can be adopted. Three such generally accepted methods, known as **cost flow assumptions**, are discussed next.

The First-in, First-out (FIFO) Cost Flow Assumption

First-in, first-out (FIFO) assumes that the first goods purchased are the first ones sold. A FIFO cost flow assumption makes sense when inventory consists of perishable items such as groceries and other time-sensitive goods. ***However, there is no requirement that the physical flow of goods coincides to the cost flow assumption used.*** It is up the company's management to select the appropriate cost flow method.

Using the information from the previous example, the first four units purchased are assumed to be the first four units sold under FIFO. The cost of the four units sold is $10 ($1 + $2 + $3 + $4). Sales still equal $40, so gross profit under FIFO is $30 ($40 – $10). The cost of the one

remaining unit in ending inventory would be the cost of the fifth unit purchased ($5).

The general ledger T-accounts for Merchandise Inventory and Cost of Goods Sold as illustrated in Figure 6-3 would show:

Merchandise Inventory					
Jun. 1	$1				
5	2				
7	3				
21	4				
28	5				
		10	Jun. 30	→	10
End. Bal.	5				

Cost of Goods Sold

Figure 6-3 Cost of Goods Sold using FIFO

The entry to record the sale would be:

Accounts Receivable	110	40	
Sales	500		40

To record the sale of merchandise on account.

Cost of Goods Sold	570	10	
Merchandise Inventory	150		10

To record the cost of the sale.

The Last-in, First-out (LIFO) Cost Flow Assumption

Last-in, first-out (LIFO) assumes that the most recent goods purchased are the first ones sold. A LIFO cost flow assumption may make sense when inventory consists of items stored in stacks or piles so that the last items (on top of the stack or pile) is sold first such as hay or lumber. ***However, there is no requirement that the physical flow of goods coincides to the cost flow assumption used.*** It is up the company's management to select the appropriate cost flow method.

Using the information from Figure 6-1, the last four units purchased are assumed to be the first four units sold under LIFO. The cost of the four units sold is $14 ($5 + $4 + $3 + $2). Sales still equal $40, so gross profit under LIFO is $26 ($40 – $14). The cost of the one remaining unit in ending inventory would be the cost of the first unit purchased ($1).

The general ledger T-accounts for Merchandise Inventory and Cost of Goods Sold as illustrated in Figure 6-4 would show:

Merchandise Inventory					
Jun. 1	$1				
5	2				
7	3				
21	4				
28	5				
		14	Jun. 30	→	14
End. Bal.	1				

Cost of Goods Sold

Figure 6-4 Cost of Goods Sold using LIFO

The entry to record the sale would be:

Accounts Receivable	110	40	
Sales	500		40
To record the sale of merchandise on account.			

Cost of Goods Sold	570	14	
Merchandise Inventory	150		14
To record the cost of the sale.			

It is interesting to note that while the use of the LIFO method for inventory costing is permitted under U.S. GAAP, its use is *prohibited* under International Financial Reporting Standards (IFRS).

The LIFO conformity rule states that a company using the LIFO method for tax reporting *must* also use this method for financial reporting.

The Weighted Average Cost Flow Assumption

A **weighted average** cost flow is used when low-value, similar items are sold, or when inventory is in the form of a gas or liquid – example, when several crude oil shipments are stored in one large holding tank. The weighted average cost assumption is popular in practice because it is easy to calculate. ***However, there is no requirement that the physical flow of goods coincides to the cost flow assumption used.*** It is up the company's management to select the appropriate cost flow method.

To calculate a weighted average, the total cost of all purchases of a particular inventory type is divided by the number of units purchased. In our example, the purchase prices for all five units are totalled ($1 +

$2 + $3 + $4 + $5 = $15) and divided by the total number of units purchased (5). The weighted average cost for each unit is $3 ($15/5). The weighted average cost of goods sold would be $12 (4 units @ $3). Sales still equal $40 resulting in a gross profit under weighted average of $28 ($40 – $12). The cost of the one unit remaining in ending inventory is $3.

The general ledger T-accounts for Merchandise Inventory and Cost of Goods Sold as illustrated in Figure 6-5 would show:

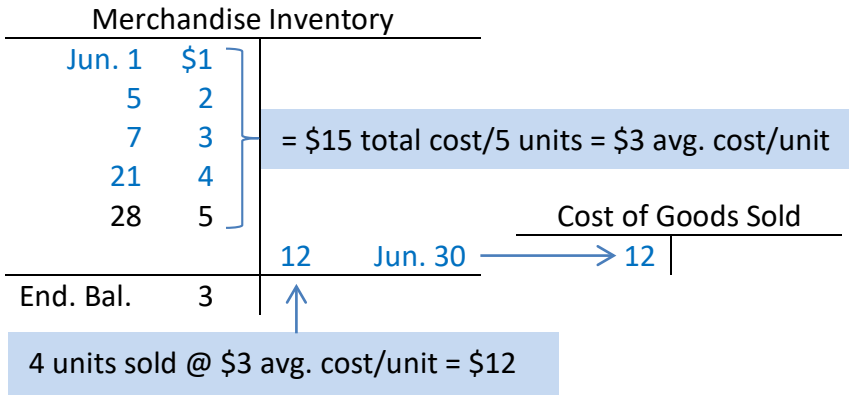

Figure 6-5 Cost of Goods Sold using Weighted Average

The entry to record the sale would be:

Accounts Receivable	110	40	
Sales	500		40
To record the sale of merchandise on account.			

Cost of Goods Sold	570	12	
Merchandise Inventory	150		12
To record the cost of the sale.			

Cost Flow Assumptions: A Comprehensive Example

Recall that under the perpetual inventory system, cost of goods sold is calculated and recorded in the accounting system at the time when sales are recorded. In our simplified example, all sales occurred on June 30 after all inventory had been purchased. In reality, the purchase and sale of merchandise is continous. To demonstrate the calculations when purchases and sales occur continuously throughout the accounting period, let's review a more comprehensive example.

Assume the same example as above, except that sales of units occur as follows during June:

Date	*Number of units sold*
June 3	1
8	1
23	1
29	1

To help with the calculation of cost of goods sold, an **inventory record card** will be used to track the individual transactions. This card records information about purchases such as the date, number of units purchased, and purchase cost per unit. It also records cost of goods sold information: the date of sale, number of units sold, and the cost of each unit sold. Finally, the card records the balance of units on hand, the cost of each unit held, and the total cost of the units on hand.

A partially-completed inventory record card is shown in Figure 6-6 below:

The card tracks the flow of *each type* of inventory.

	Purchased			*Sold*			*Balance in Inventory*		
Date	*Units*	*Unit Cost*	*Total $*	*Units*	*Unit Cost*	*Total $*	*Units*	*Unit Cost*	*Total $*
June 1	1						1		
3				1			0		
5	1						1		
7	1						2		
8				1			1		
21	1						2		
23				1			1		
28	1						2		
29				1			**1**		

Ending Inventory is 1 unit.

Figure 6-6 Inventory Record Card

In Figure 6-6, the inventory at the end of the accounting period is one unit. This is the number of units on hand according to the accounting records. A **physical inventory count** must still be done, generally at the end of the fiscal year, to verify the quantities actually on hand. As discussed in Chapter 5, any discrepancies identified by the physical inventory count are adjusted for as shrinkage.

As purchases and sales are made, costs are assigned to the goods using the chosen cost flow assumption. This information is used to calculate the cost of goods sold amount for each sales transaction at the time of sale. These costs will vary depending on the inventory cost flow assumption used. As we will see in the next sections, the cost of sales may also vary depending on *when* sales occur.

Comprehensive Example—Specific Identification

To apply specific identification, we need information about which units were sold on each date. Assume that specific units were sold as below.

Date of Sale	*Specific Unit Sold*
June 3	The unit purchased on June 1 was sold on June 3
8	The unit purchased on June 7 was sold on June 8
23	The unit purchased on June 5 was sold on June 23
29	The unit purchased on June 28 was sold on June 29

Using the information above to apply specific identification, the resulting inventory record card appears in Figure 6-7.

	Purchased			*Sold*			*Balance in Inventory*		
Date	*Units*	*Unit Cost*	*Total $*	*Units*	*Unit Cost*	*Total $*	*Units*	*Unit Cost*	*Total $*
June 1	1	$1	$1				1	$1	$1
3				1	$1	$1	0	$0	$0
5	1	$2	$2				1	$2	$2
7	1	$3	$3				2	1@$2 1@$3	$5
8				1	$3	$3	1	$2	$2
21	1	$4	$4				2	1@$2 1@$4	$6
23				1	$2	$2	1	$4	$4
28	1	$5	$5				2	1@$4 1@$5	$9
29				1	$5	$5	**1**	**$4**	**$4**

Figure 6-7 Inventory Record Card using Specific Identification

Notice in Figure 6-8 below that the number of units sold plus the units in ending inventory equals the total units that were available for sale (4 + 1 = 5 units). As well, the cost of goods sold plus the cost of items in ending inventory equals the cost of goods available for sale ($11 + $4 = $15). This relationship will always be true for each of specific identification, FIFO, LIFO, and weighted average.

	Purchased			*Sold*			*Balance in Inventory*		
Date	*Units*	*Unit Cost*	*Total $*	*Units*	*Unit Cost*	*Total $*	*Units*	*Unit Cost*	*Total $*
June 1	1	$1	$1				1	$1	$1
3				1	$1	$1	0	$0	$0
5	1	$2	$2				1	$2	$2
7	1	$3	$3				2	1@$2 1@$3	$5
8				1	$3	$3	1	$2	$2
21	1	$4	$4				2	1@$2 1@$4	$6
23				1	$2	$2	1	$4	$4
28	1	$5	$5				2	1@$4 1@$5	$9
29				1	$5	$5	**1**	**$4**	**$4**

Total number of units available for sale: **5 units**

=

Total number of units sold: **4 units**

+

Total number of units in ending inventory: **1 unit**

Total cost of goods available for sale: **$15**

=

Total cost of goods sold: **$11**

+

Total cost of ending inventory: **$4**

Figure 6-8 Total Number (or Cost) of Units Sold plus Total Number (or Cost) of Units in Ending Inventory equals Total Number (or Cost) of Units Available for Sale

Comprehensive Example—FIFO (Perpetual)

Using the same information, we now apply the FIFO cost flow assumption as shown in Figure 6-9.

	Purchased			*Sold*			*Balance in Inventory*		
Date	*Units*	*Unit Cost*	*Total $*	*Units*	*Unit Cost*	*Total $*	*Units*	*Unit Cost*	*Total $*
June 1	1	$1	$1				1	$1	$1
3				1	$1	$1	0	$0	$0
5	1	$2	$2				1	$2	$2
7	1	$3	$3				2	1@$2 1@$3	$5
8				1	$2	$2	1	$3	$3
21	1	$4	$4				2	1@$3 1@$4	$7
23				1	$3	$3	1	$4	$4
28	1	$5	$5				2	1@$4 1@$5	$9
29				1	$4	$4	**1**	**$5**	**$5**

Total number of units available for sale: **5 units** = Total number of units sold: **4 units** + Total number of units in ending inventory: **1 unit**

Total cost of goods available for sale: **$15** = Total cost of goods sold: **$10** + Total cost of ending inventory: **$5**

Figure 6-9 Inventory Record Card using FIFO (Perpetual)

When calculating the cost of the units sold in FIFO, the oldest unit in inventory will always be the first unit removed. For example, in Figure 6-9, on June 8, one unit is sold when the previous balance in inventory consisted of 2 units: 1 unit purchased on June 5 that cost $2 and 1 unit purchased on June 7 that cost $3. Because the unit costing $2 was in inventory first (before the June 8 unit costing $3), the cost assigned to the unit sold on June 8 is $2. Under FIFO, the first units into inventory are assumed to be the first units removed from inventory when calculating cost of goods sold. Therefore, under FIFO, ending inventory will always be the most recent units purchased. In Figure 6-9, there is

one unit in ending inventory and it is assigned the $5 cost of the most recent purchase which was made on June 28.

Comprehensive Example—LIFO (Perpetual)

Using the same information, we now apply the LIFO cost flow assumption as shown in Figure 6-10.

	Purchased			*Sold*			*Balance in Inventory*		
Date	*Units*	*Unit Cost*	*Total $*	*Units*	*Unit Cost*	*Total $*	*Units*	*Unit Cost*	*Total $*
June 1	1	$1	$1				1	$1	$1
3				1	$1	$1	0	$0	$0
5	1	$2	$2				1	$2	$2
7	1	$3	$3				2	1@$2 1@$3	$5
8				1	$3	$3	1	$2	$2
21	1	$4	$4				2	1@$2 1@$4	$6
23				1	$4	$4	1	$2	$2
28	1	$5	$5				2	1@$2 1@$5	$7
29				1	$5	$5	**1**	**$2**	**$2**

Total number of units available for sale: **5 units** = Total number of units sold: **4 units** + Total number of units in ending inventory: **1 unit**

Total cost of goods available for sale: **$15** = Total cost of goods sold: **$13** + Total cost of ending inventory: **$2**

Figure 6-10 Inventory Record Card using LIFO (Perpetual)

When calculating the cost of the units sold in LIFO, the most recent unit purchased into inventory will always be the first unit removed. For example, in Figure 6-10, on June 8, one unit is sold when the previous balance in inventory consisted of 2 units: 1 unit purchased on June 5 that cost $2 and 1 unit purchased on June 7 that cost $3. Because the unit costing $3 was the most recent purchase to inventory, the cost assigned to the unit sold on June 8 is $3. Under LIFO, the most recent

inventory added is assumed to be the first units removed from inventory when calculating cost of goods sold. Therefore, under LIFO, ending inventory will always be the earliest units purchased. In Figure 6-10, there is one unit in ending inventory and it is assigned the $2 cost from the earliest, unsold inventory purchase on June 5.

Comprehensive Example—Weighted Average (Perpetual)

The inventory record card transactions using weighted average costing are detailed in Figure 6-11. *For consistency, all weighted average calculations will be rounded to two decimal places.* When a perpetual inventory system is used, the weighted average is calculated each time a purchase is made. For example, after the June 7 purchase, the balance in inventory is 2 units with a total cost of $5.00 (1 unit at $2.00 + 1 unit at $3.00) resulting in an average cost per unit of $2.50 ($5.00 ÷ 2 units = $2.50). When a sale occurs, the cost of the sale is based on the most recent average cost per unit. For example, the cost of the sale on June 3 uses the $1.00 average cost per unit from June 1 while the cost of the sale on June 8 uses the $2.50 average cost per unit from June 7.

	Purchased			*Sold*			*Balance in Inventory*				*Average Cost Calc.*	
Date	*Units*	*Unit cost*	*Total $*	*Units*	*Unit cost*	*Total $*	*Units*	*Unit cost*	*Total $*		*Tot. $ /Tot. units*	*Avg. cost /unit*
June 1	1	$1	$1				1	$1.00	$1.00		$1.00/1	$1.00
3				1	$1.00	$1.00	0	$0.00	$0.00		$0.00/0	$0.00
5	1	$2	$2				1	$2.00	$2.00		$2.00/1	$2.00
7	1	$3	$3				2	$2.50	$5.00		$5.00/2	$2.50
8				1	$2.50	$2.50	1	$2.50	$2.50		$2.50/1	$2.50
21	1	$4	$4				2	$3.25	$6.50		$6.50/2	$3.25
23				1	$3.25	$3.25	1	$3.25	$3.25		$3.25/1	$3.25
28	1	$5	$5				2	$4.13*	$8.25		$8.25/2	$4.13*
29				1	$4.13	$4.13	1	$4.12	$4.12		$2.12/1	$4.12

*rounded

Figure 6-11 Inventory Record Card using Weighted Average Costing (Perpetual)

A common error made by students when applying weighted average occurs when the unit costs are rounded. For example, on June 28, the average cost per unit is rounded to $4.13 ($8.25 ÷ 2 units = $4.125/unit rounded to $4.13). On June 29, the cost of the unit sold is $4.13, the June 28 average cost per unit. Care must be taken to recognize that the total remaining balance in inventory after the June 29 sale is $4.12, calculated as the June 28 ending inventory total dollar amount of $8.25 less the June 29 total cost of goods sold of $4.13. Students will often

incorrectly use the average cost per unit, in this case $4.13, to calculate the ending inventory balance. This produces an incorrect result. The cost of goods sold plus the balance in inventory must equal the goods available for sale ($4.12 + $4.13 = $8.25).

Figure 6-12 compares the results of the four cost flow methods. Goods available for sale, units sold, and units in ending inventory are the same regardless of which method is used. Because each cost flow method allocates the cost of goods available for sale in a particular way, the cost of goods sold and ending inventory values are different for each method.

Cost flow assumption	*Total cost of goods available for sale*	*Total units available for sale*	*Total cost of goods sold*	*Total units sold*	*Total cost of ending inventory*	*Total units in ending inventory*
Specific identification	$15.00	5	$11.00	4	$4.00	1
FIFO	15.00	5	10.00	4	5.00	1
LIFO	15.00	5	13.00	4	2.00	1
Weighted average	15.00	5	10.88	4	4.12	1

Figure 6-12 Comparing Specific Identification, FIFO, LIFO, and Weighted Average

Journal Entries

In Chapter 5 the journal entries to record the sale of merchandise were introduced. Chapter 5 showed how the dollar value included in these journal entries is determined. We now know that the information in the inventory record is used to prepare the journal entries in the general journal. For example, the credit sale on June 23 using weighted average costing would be recorded as follows (refer to Figure 6-11).

Accounts Receivable	110	10.00	
Sales	500		10.00

To record the sale of merchandise on account at $10 per unit.

Cost of Goods Sold	570	3.25	
Merchandise Inventory	150		3.25

To record the cost of the sale.

Perpetual inventory incorporates an internal control feature that is lost under the periodic inventory system. Losses resulting from theft and error can easily be determined when the actual quantity of goods on hand is counted and compared with the quantities shown in the

inventory records as being on hand. It may seem that this advantage is offset by the time and expense required to continuously update inventory records, particularly where there are thousands of different items of various sizes on hand. However, computerization makes this record keeping easier and less expensive because the inventory accounting system can be tied in to the sales system so that inventory is updated whenever a sale is recorded.

Inventory Record Card

In a company such as a large drugstore or hardware chain, inventory consists of thousands of different products. For businesses that carry large volumes of many inventory types, the general ledger merchandise inventory account contains only summarized transactions of the purchases and sales. The detailed transactions for each type of inventory would be recorded in the underlying inventory record cards. The inventory record card is an example of a **subsidiary ledger***,* more commonly called a **subledger**. The *merchandise inventory subledger* provides a detailed listing of type, amount, and total cost of all types of inventory held at a particular point in time. The sum of the balances on each inventory record card in the subledger would always equal the ending amount recorded in the Mechandise Inventory general ledger account. So a subledger contains the detail for each product in inventory while the general ledger account shows only a summary. In this way, the general ledger information is streamlined while allowing for detail to be available through the subledger.

C. Financial Statement Impact of Different Inventory Cost Flows

LO3 – Explain the impact on financial statements of inventory cost flow assumptions and errors.

Purchase prices may change as a result of larger economic or political phenomenon. For example, the cost of a barrel of oil can be affected by a decision made by a large producer like the government of Saudi Arabia. Changes in the purchasing power of a national currency over time can also affect the costs of purchased inventory. When costs of purchases are increasing, as in a period of *inflation* (or decreasing, as in a period of *deflation*), each cost flow assumption results in a different value for cost of goods sold and the resulting ending inventory, gross profit, and net income.

Using information from the preceding comprehensive example, the effects of each cost flow assumption on net income and ending inventory for the month are shown in Figure 6-13.

	Spec. ident.	*FIFO*	*LIFO*	*Wtd. avg.*
Sales (4 units @ $10)	$40.00	$40.00	$40.00	$40.00
Cost of goods sold	11.00	10.00	13.00	10.88
Gross profit and net income	$29.00	$30.00	$27.00	$29.12
Ending inventory (on the balance sheet)	$ 4.00	$ 5.00	$ 2.00	$ 4.12

Figure 6-13 Effects of Different Cost Flow Assumptions

FIFO *maximizes* net income and ending inventory amounts when costs are rising. FIFO *minimizes* net income and ending inventory amounts when purchase costs are decreasing. Whereas LIFO creates the opposite effect. LIFO *minimizes* net income and ending inventory amounts when costs are rising. LIFO *maximizes* net income and ending inventory amounts when purchase costs are decreasing.

Because different cost flow assumptions can affect the financial statements, GAAP requires that each company disclose the inventory cost flow method it uses in a note to the financial statements. Additionally, GAAP requires that once a method is adopted, it must be used every accounting period consistently thereafter unless there is a justifiable reason to change. However, if a company carries a variety of inventory items, it may choose a different cost flow assumption for each type of item, as long as these are applied consistently and disclosed. For example, Wal-Mart might use weighted average to account for its sporting goods items and specific identification for each of its various major appliances. Also, if a company selects the LIFO method for reporting its taxable income, the company must also use the LIFO method for reporting its income to stockholders.

Effect of Inventory Errors on the Financial Statements

There are two components necessary to determine the inventory value disclosed on a corporation's balance sheet. The first component involves calculating the quantity of inventory on hand at the end of an accounting period by performing a physical inventory count. The second requirement involves assigning the most appropriate cost to this quantity of inventory.

An error in calculating either the quantity or the cost of ending inventory will misstate reported income for two time periods. Assume merchandise inventory at December 31, 2018, 2019, and 2020 was reported as $2,000 and that merchandise purchases during each of 2019 and 2020 were $20,000. There were no other expenditures.

Assume further that sales each year amounted to $30,000 with cost of goods sold of $20,000 resulting in gross profit of $10,000. These transactions are summarized below.

Merchandise Inventory					2019	2020
Beg. Bal.	2,000			Sales	$30,000	$30,000
2019 Purch.	20,000	20,000	2019 COGS	COGS	20,000	20,000
2019 Bal.	2,000			Gross profit	$10,000	$10,000
2020 Purch.	20,000	20,000	2020 COGS			
2020 Bal.	2,000					

Figure 6-14 Income Statement Effects, No Errors in Ending Inventory

Assume now that ending inventory was misstated at December 31, 2019. Instead of the $2,000 that was reported, the correct value should have been $1,000. The effect of this error was to understate cost of goods sold on the income statement—cost of goods sold should have been $21,000 in 2019 as shown below instead of $20,000 as originally reported above. Because of the 2019 error, the 2020 beginning inventory was incorrectly reported above as $2,000 and should have been $1,000 as shown below. This caused the 2020 gross profit to be understated by $1,000—cost of goods sold in 2020 should have been $19,000 as illustrated below but was originally reported above as $20,000.

Ending inventory is incorrectly stated.

Merchandise Inventory					2019	2020
Op. Bal.	2,000			Sales	$30,000	$30,000
2019 Purch.	20,000	20,000	2019 COGS	COGS	21,000	19,000
		1,000	Inv. Adj.	Gross profit	$ 9,000	$11,000
2019 Bal.	**1,000**					
2020 Purch.	20,000					
Inv. Adj.	1,000	20,000	2020 COGS			
2020 Bal.	2,000					

Figure 6-15 Income Statement Effects, Error in 2019 Ending Inventory

As can be seen, income is misstated in both 2019 and 2020 because cost of goods sold in both years is affected by the adjustment to ending inventory needed at the end of 2019 and 2020. The opposite effects occur when inventory is understated at the end of an accounting period.

An error in ending inventory is offset in the next year because one year's ending inventory becomes the next year's opening inventory. This process can be illustrated by comparing gross profits for 2019 and 2020 in the example. The sum of both years' gross profits is the same.

	Overstated inventory	*Correct inventory*
Gross profit for 2019	$10,000	$ 9,000
Gross profit for 2020	10,000	11,000
Total	$20,000	$20,000

Figure 6-16 Gross Profit Effects Balance Out Over Two Years

D. Lower of Cost and Net Realizable Value (LCNRV)

LO4 – Explain and calculate lower of cost and net realizable value inventory adjustments.

In addition to the adjusting entry to record the shrinkage of merchandise inventory (discussed in Chapter 5), there is an additional adjusting entry to be considered at the end of the accounting period when calculating cost of goods sold and ending inventory values for the financial statements. Generally accepted accounting principles require that inventory be valued at the lesser amount of its **laid-down cost** and the amount for which it can likely be sold—its **net realizable value (NRV)**. This concept is known as the **lower of cost and net realizable** value, or **LCNRV**. Laid-down cost includes the invoice price of the goods (less any purchase discounts) plus transportation in, insurance while in transit, and any other expenditure made by the purchaser to get the merchandise to the place of business and ready for sale.

As an example of LCNRV, a change in consumer demand may mean that inventories become obsolete and need to be reduced in value below the purchase cost. This often occurs in the electronics industry as new and more popular products are introduced.

The lower of cost and net realizable value can be applied to individual inventory items or groups of similar items. Assume two types of inventory for a paper supply company, as shown in Figure 6-17 below.

			LCNRV	
	Total cost	*Total NRV*	*Unit basis*	*Group basis*
White paper	$1,250	$1,200	$1,200	
Colored paper	1,400	1,500	1,400	
Total	$2,650	$2,700	$2,600	$2,650
Ending inventory (LCNRV)			$2,600	$2,650

Figure 6-17 LCNRV Calculations

Depending on the calculation used, the valuation of ending inventory will be either $2,600 or $2,650. Under the unit basis, the lower of cost and net realizable value is selected for each item: $1,200 for white paper and $1,400 for colored paper, for a total LCNRV of $2,600. Because the LCNRV is lower than cost, an adjusting entry must be recorded as follows.

Cost of Goods Sold	570	50	
Merchandise Inventory	150		50
To adjust inventory to LCNRV.			

The purpose of the adjusting entry is to ensure that inventory is not overstated on the balance sheet and that net income is not overstated on the income statement. This treatment follows the accounting principle of **conservatism**, which requires companies to select the conservative choice among accounting options to avoid overstating assets or net income.

If white paper and colored paper are considered a similar group, the calculations in Figure 6-17 above show they have a combined cost of $2,650 and a combined net realizable value of $2,700. LCNRV would therefore be $2,650. In this case, the cost is equal to the LCNRV so no adjusting entry would be required if applying LCNRV on a group basis.

Summary of Chapter 6 Learning Objectives

LO1 – Determine inventory ownership under different situations.

Determining accurate inventory levels is critical. Companies must conduct periodic physical counts of their inventory to ensure the accuracy of its financial statements. Companies should pay particular attention to inventory (1) in transit, (2) on consignment, and (3) damaged and/or unsellable.

LO2 – Calculate cost of goods sold and merchandise inventory under specific identification, first-in first-out (FIFO), last-in first-out (LIFO), and weighted average cost flow assumptions, using the perpetual inventory system.

Cost of goods available for sale must be allocated between cost of goods sold and ending inventory using a cost flow assumption. Specific identification allocates cost to units sold by using the actual cost of the specific unit sold. FIFO (first-in first-out) allocates cost to units sold by assuming the units sold were the oldest units in inventory. LIFO (last-in first-out) allocates cost to units sold by assuming the units sold were the latest units in inventory. Weighted average allocates cost to units sold by calculating a weighted average cost per unit at the time of sale.

LO3 – Explain the impact on financial statements of inventory cost flow assumptions and errors.

As costs of each unit of inventory purchased change, particular inventory methods will assign different cost of goods sold and ending inventory to the financial statements. Specific identification achieves the exact matching of revenues and costs while weighted average smooths out price changes. The use of FIFO results in a more current cost of inventory appearing on the balance sheet as ending inventory. The use of LIFO results in the current costs appearing on the income statement as cost of goods sold. The cost flow method in use must be disclosed in the notes to the financial statements and be applied consistently from period to period. An error in ending inventory in one period impacts the balance sheet (inventory and stockholders' equity) and the income statement (COGS and net income) for that accounting period and the next. However, inventory errors in one period reverse themselves in the next.

Summary of Chapter 6 Learning Objectives (continued)

LO4 – Explain and calculate lower of cost and net realizable value inventory adjustments.

Inventory must be evaluated, at minimum, each accounting period to determine whether the net realizable value (NRV) is lower than cost, known as the lower of cost and net realizable value (LCNRV) of inventory. An adjustment is made if the NRV is lower than cost. LCNRV can be applied to groups of similar items or by item.

E N D O F C H A P T E R M A T E R I A L S

Multiple-Choice Review

1. Burbank Company would include which item in their physical inventory count?
   a.) Consigned inventory Burbank is holding for Zatu Company
   b.) Inventory purchased by Burbank in transit shipped FOB destination
   c.) Inventory sold by Burbank in transit shipped FOB shipping point
   d.) Inventory sold by Burbank in transit shipping FOB destination

2. Damaged inventory:
   a.) should be recorded in inventory at its full original cost
   b.) should be recorded in inventory at its net realizable value
   c.) should be recorded in inventory at its net cost
   d.) should be removed from inventory even if it can be sold

3. The inventory costing method that allocates inventory costs to sales revenue in the order in which they were experienced is:
   a.) FIFO
   b.) LIFO
   c.) Weighted average
   d.) Specific identification

4. Ending inventory will appear on the:
   a.) Income Statement
   b.) Statement of Changes in Equity
   c.) Balance Sheet
   d.) Statement of Cash Flows

5. If inventory costs are rising, the costing method that will result in the highest net income for the period will be:
   a.) FIFO
   b.) LIFO
   c.) Weighted average
   d.) Specific identification

Multiple-Choice Review (continued)

Use the following data for questions 6-9

Chase Company has the following details regarding their inventory:

Beginning inventory (1/1/2019)	40 units at $20
Purchase (1/8/2019)	50 units at $21
Purchase (1/12/2019)	50 units at $22
Sale (1/15/2019)	110 units
Purchase (1/20/2019)	50 units at $23
Sale (1/30/2019)	45 units

6. How many units are left on hand at the end of the period?
   a.) 40 c.) 35
   b.) 190 d.) 110

7. Using the FIFO method, what is the cost of the ending inventory?
   a.) $735 c.) $805
   b.) $700 d.) $770

8. Using the LIFO method, what is the cost of the ending inventory?
   a.) $735 c.) $805
   b.) $700 d.) $770

9. Using the Weighted Average method, what is the cost of the ending inventory? Round to two decimals.
   a.) $737.45 c.) $805
   b.) $752.50 d.) $779.45

10. Zune company purchased 1,000 walkmans during the period and has 900 left in ending inventory at a cost of $100 each and a net realizable value of $10 each. The ending inventory, calculated using the lower of cost or net-realizable-value rule is:
    a.) $100,000 c.) $9,000
    b.) $90,000 d.) $0

11. The lower of cost or net-realizable value rule is consistent with which accounting convention?
    a.) historical cost
    b.) stable monetary unit
    c.) conservatism
    d.) matching

Answers on the following page

Answers to Multiple-Choice Review

1. d
2. b
   Damaged inventory, that can be sold at a reduced price, should be recorded in the company's inventory at its net realizable value.
3. a
   The first-in, first-out (FIFO) inventory costing method allocates costs against sales revenues in the order in which they were incurred. Whereas LIFO allocates the most recent costs against sales revenues, the weighted average method allocates a weighted average of the inventory costs against sales revenue, and the specific identification method traces costs to sales revenue based on the exact units sold.
4. c
   Inventory is an asset, therefore, any remaining inventory will appear on the balance sheet.
5. a
   When the FIFO method is being used, and inventory costs are rising, the earlier (or lower) costs will be matched against sales revenue resulting in the highest net income.
6. c
   (40 + 50 + 50 – 110 +50 -45 = 35)
7. c
   35 units remain at a cost of $23 per unit (from 1/20/2019 purchase). So 35 units x $23 = $805
8. b
   35 units remain at a cost of $20 per unit (from beginning inventory). So 35 units x $20 = $700
9. d
   35 units remain at an average cost of $22.27 per unit. So 35 units x $22.27 = $779.45
10. c
    Ending inventory of 900 units x $10 net realizable value = $9,000
11. c

Discussion Questions

1. What three situations require special attention when calculating inventory levels? Explain each one and what factors are used to determine proper inventory ownership.
2. What three inventory cost flow assumptions can be used in perpetual inventory systems?
3. What impact does the use of different inventory cost flow assumptions have on financial statements?
4. How do rising costs affect ending inventory and cost of goods sold values using FIFO, LIFO, and weighted average cost flow assumptions?
5. Assume that you are the president of your company and paid a year-end bonus according to the amount of net income earned during the year. When prices are rising, would you choose a FIFO, LIFO, or weighted average cost flow assumption? Explain, using an example to support your answer. Would your choice be the same if prices were falling?
6. The ending inventory of CBCA Inc. is overstated by $5,000 at December 31, 2019. What is the effect on 2019 net income? What is the effect on 2020 net income assuming that no other inventory errors have occurred during 2020?
7. What is meant by the laid-down cost of inventory?
8. When should inventory be valued at less than cost? What does the term *net realizable value* mean?
9. What is the primary reason for using the LCNRV method of inventory valuation?

Comprehension Problems

CP 6-1

Benson Company has tallied its year-end inventory and arrived at a balance of $37,000. That balance does not include the following items:

a) Inventory of $12,000 in transit from a supplier, shipped FOB destination
b) Inventory of $8,000 on consignment to June Company
c) Inventory of $6,000 in transit to customer, shipped FOB destination
d) Inventory of $2,000 in transit from supplier, shipping FOB shipping point

Required:

1.) Calculate Benson's year-end inventory balance.
2.) Where will this figure appear on the financial statements?

CP 6-2

Spirit Company has taken its physical inventory count for the year, and has determined the balance to be $570,000. Not included in this amount were $26,000 of inventory sold to customer in transit at year-end with shipping terms FOB shipping point; $10,000 of office supplies still on hand at year-end; $18,000 of inventory purchased from a supplier with shipping terms FOB shipping point; $2,000 of goods Spirit is holding for Lucky Company; and $6,000 of inventory for an old product line that can now be sold for $3,000.

Required:

What amount should Spirit report for its year-end inventory?

CP 6-3

Laplante Inc. uses the perpetual inventory system. The following transactions took place during January 2019

Date		*Units*	*Unit Cost*
Jan. 1	Opening Inventory	100	$1
7	Purchase #1	10	2
9	Sale #1	80	
21	Purchase #2	20	3
24	Sale #2	40	

Required: Using the table below, calculate cost of goods sold for the January 9 and 24 sales, and ending inventory under the following inventory cost flow assumptions:

1. FIFO
2. LIFO
3. Weighted average.

	Purchased			*Sold*			*Balance in Inventory*		
Date	*Units*	*Unit Cost*	*Total $*	*Units*	*Unit Cost*	*Total $*	*Units*	*Unit Cost*	*Total $*
Jan. 1							100	$1	$100
7									
9									
21									
24									

CP 6-4

ABBA uses the perpetual inventory system. The following transactions took place in January 2019.

Date		*Units*	*Unit Selling Price/ Cost*
Jan. 1	Opening Inventory	2,000	$0.50
5	Sale #1	1,200	5.00
6	Purchase #1	1,000	2.00
10	Purchase #2	500	1.00
16	Sale #2	2,000	6.00
21	Purchase #3	1,000	2.50

Assume all sales are made on account.

Required:

1. Assume ABBA uses the FIFO inventory cost flow assumption
   a. Record the journal entry for the January 5 sale. Show calculations for cost of goods sold.
   b. Record the journal entry for the January 16 sale. Show calculations for cost of goods sold.
   c. Calculate ending inventory in units, cost per unit, and total cost.
2. Assume ABBA uses the LIFO inventory cost flow assumption
   a. Record the journal entry for the January 5 sale. Show calculations for cost of goods sold.
   b. Record the journal entry for the January 16 sale. Show calculations for cost of goods sold.
   c. Calculate ending inventory in units, cost per unit, and total cost.
3. Assume ABBA uses the weighted average inventory cost flow assumption
   a. Record the journal entry for the January 5 sale. Show calculations for cost of goods sold.
   b. Record the journal entry for the January 16 sale. Show calculations for cost of goods sold.
   c. Calculate ending inventory in units, cost per unit, and total cost.

CP 6-5

The following information is taken from the records of East Oak Distributors Inc. The company uses the perpetual inventory system.

Date		*Units*	*Unit Cost*
May 1	Opening Inventory	100	$1
5	Sale #1	80	
6	Purchase #1	200	2
12	Purchase #2	125	3
13	Sale #2*	300	
19	Purchase #3	350	2
29	Purchase #4	150	1
30	Sale #3**	400	

*for specific identification, sold 175 units of purchase #1 and all units of purchase #2.

**for specific identification, sold 20 units of opening inventory, 300 units of purchase #3, and 80 units of purchase #4.

Required:

1. Calculate cost of goods sold and the cost of ending inventory under each of the following inventory cost flow assumptions:
   a. FIFO
   b. LIFO
   c. Specific identification
   d. Weighted average.
2. Assume each unit was sold for $5. Complete the following partial income statements:

	FIFO	*LIFO*	*Spec. Ident.*	*Wtd. Avg.*
Sales	$	$	$	$
Cost of goods sold	_____	_____	_____	_____
Gross profit	_____	_____	_____	_____

3. Which costing method would you choose if you wished to maximize net income? Maximize ending inventory value?

CP 6-6

Required: Choose the method of inventory valuation that corresponds to each of the statements that follow:

1. FIFO
2. LIFO
3. Weighted average
4. Specific identification

___ Matches actual flow of goods with actual flow of costs in most cases
___ Matches old costs with new sales prices
___ Results in the lowest net income in periods of falling prices
___ Matches recent costs with new sales prices
___ Does not assume any particular flow of goods
___ Best suited for inventory consisting of perishable items
___ Values ending inventory at approximate replacement cost

CP 6-7

Partial income statements of Lilydale Products Inc. are below:

	2019	*2020*	*2021*
Sales	$30,000	$40,000	$50,000
Cost of Goods Sold	20,000	23,000	25,000
Gross Profit	$10,000	$17,000	$25,000

Required:

1. Calculate the impact of the two errors listed below on the gross profit calculated for the three years:
   a. The 2019 ending inventory was understated by $2,000.
   b. The 2021 ending inventory was overstated by $5,000.
2. What is the impact of these errors on total assets?

CP 6-8

Erndale Products Ltd. has the following items in inventory at year-end:

Item	*Units*	*Cost (FIFO)*	*NRV*
X	2	$ 50	$60
Y	3	150	75
Z	4	25	20

Required:

Calculate the cost of ending inventory using LCNRV on

1. A unit-by-unit basis
2. A group inventory basis.

Problems

P 6-1

The following sales and purchases of the same product were made during 2019 at Yang Corporation. The opening inventory consisted of 50 units at $1 each.

Purchases				*Sales*		
		Units	$ per unit		Units	Retail Price
Apr. 15	Purch. #1	200	$2	Apr. 25	250*	$4
Oct. 15	Purch. #2	600	$5	Oct. 25	500**	$6

*for specific identification, sold 50 units of opening inventory and 200 units of purchase #1

**for specific identification, sold 500 units of purchase #2

Required:

1. Calculate cost of goods sold and the cost of ending inventory under each of FIFO, LIFO, specific identification, and weighted average inventory cost flow assumptions. A sample table is provided:

	Purchased			*Sold*			*Balance in inventory*		
Date	*Units*	*Unit cost*	*Total $*	*Units*	*Unit cost*	*Total $*	*Units*	*Unit cost*	*Total $*
							50	$1	$50

2. Prepare calculations comparing the effect on gross profit of the three inventory cost flow assumptions.
3. The president wants to maximize the company's net income this year. What would you suggest that is in accordance with GAAP?

P 6-2

Palermo Inc. uses the perpetual inventory system. All sales are made on account. The following data are taken from the company's for the year ended December 31, 2019:

Purchases				*Sales*			
		Units	*Unit cost*			*Units*	*Unit sell. price*
Jan. 1	Op. Inv.	25	$1				
Feb. 15	Purchase #1	15	$2	Feb. 28	Sale #1	30	$2
Mar. 14	Purchase #2	10	$3	Apr. 9	Sale #2	15	$4
Oct. 28	Purchase #3	35	$4	Dec. 21	Sale #3	50	$6
Dec. 4	Purchase #4	40	$5				

Required:

1. Show the journal entries to record the December 21 sale under a) FIFO, b) LIFO and c) weighted average inventory cost flow assumptions.
2. Calculate the amount of gross profit for the year under each of the above inventory cost flow assumptions. Which method matches cost of goods sold more closely with revenues? Why?
3. Given your answer to (2), what inventory cost flow assumption would be picked if management wanted to minimize income taxes?

P 6-3

Southern Cross Company Limited made the following purchases and sales of Products A and B during the year ended December 31, 2019:

Product A

		Units	*Unit cost/ selling price*
Jan. 07	Purchase #1	8,000	$12.00
Mar. 30	Sale #1	9,000	16.00
May 10	Purchase #2	12,000	12.10
Jul. 04	Sale #2	14,000	17.00

Product B

		Units	*Unit cost/ selling price*
Jan. 13	Purchase #1	5,000	$13.81
Jul. 15	Sale #1	1,000	20.00
Oct. 23	Purchase #2	7,000	14.21
Dec. 14	Sale #2	8,000	21.00

Opening inventory at January 1 amounted to 4,000 units at $11.90 per unit for Product A and 2,000 units at $13.26 per unit for Product B.

Required:

1. Prepare inventory record cards for Products A and B for the year using the weighted average inventory cost flow assumption.
2. Calculate total cost of ending inventory at December 31, 2019.
3. Assume now that Southern Cross keeps over 1,000 types of inventory on hand. Why might staff prefer to use computerized accounting software if a perpetual inventory system is used?
4. (Appendix) What recommendations might you make to the president of Southern Cross regarding the use of the perpetual inventory system if only Products A and B are sold?

P 6-4

Northgate Products Corp. sells gadgets and uses the perpetual inventory system. During the month of January 2019, the number of gadgets purchased and sold was as follows:

	Purchased			*Sold*			*Balance in inventory*		
Date	*Units*	*Unit cost*	*Total $*	*Units*	*Unit cost*	*Total $*	*Units*	*Unit cost*	*Total $*
Jan. 1							100	$1	
3	100	$1							
8	200	$2							
10				200*					
15	300	$3							
20				400**					
27	400	$1							

Assume the January 10 units were sold on account for $3 each, and the January 20 units were sold on account for $5 each.

*for specific identification, sold 50 units of opening inventory and 150 units of purchase #2

**for specific identification, sold 100 units of purchase #1 and 300 units from purchase #3

Required:

1. Complete the inventory record card, and calculate cost of goods sold and the cost of ending inventory under each of the following inventory cost flow assumptions:
   a. FIFO
   b. LIFO
   c. Specific identification
   d. Weighted average.
2. Prepare the journal entries required to record purchases and sales using the FIFO inventory cost flow assumption.
3. Calculate the sum of cost of goods sold and ending inventory balances under each of the inventory methods. Explain the results.

P 6-5

Partial income statements of Schneider Products Inc. are reproduced below:

	2019	*2020*
Sales	$50,000	$50,000
Cost of goods sold	20,000	23,000
Gross profit	$30,000	$27,000

The 2019 ending inventory was overstated by $2,000 during the physical count. The 2020 physical inventory count was done properly.

Required:

1. Calculate the impact of this error on the gross profit calculated for 2019 and 2020.
2. What is the impact of this error on total assets at the end of 2019 and 2020? Net assets?

P 6-6

The year-end inventory of Goodall Inc. consisted of the following similar groups of items, priced at cost and at net realizable value:

Item	*Cost*	*NRV*
A	$60	$63
B	40	40
C	80	78
D	50	42

Required: Calculate ending inventory based on:

1. Cost
2. LCNRV (unit basis)
3. LCNRV (group basis).

P 6-7

Reflex Corporation sells three products. The inventory valuation of these products is shown below for years 2019 and 2020.

	2019			*2020*		
	Cost	*Market*	*Unit basis (LCNRV)*	*Cost*	*Market*	*Unit basis (LCNRV)*
Product X	$14,000	$15,000	?	$15,000	$16,000	?
Product Y	12,500	12,000	?	12,000	11,500	?
Product Z	11,000	11,500	?	10,500	10,000	?
Total	?	?	?	?	?	?

The partial comparative income statements for the two years follow:

	2019		*2020*	
Sales		$1,500		$1,500
Cost of goods sold				
Opening inventory				
Purchases				
Cost of goods available				
Ending inventory				
Cost of goods sold				
Gross profit				

Required:

1. If Reflex values its inventory using LCNRV/unit basis, complete the 2019 and 2020 cost, net realizable value, and LCNRV calculations.
2. Complete the partial income statements for 2019 using cost, LCNRV/unit basis, and LCNRV/group basis to calculate ending inventory and cost of goods sold.
3. Complete the partial income statements for 2020 using cost, LCNRV/unit basis, and LCNRV/group basis to calculate ending inventory and cost of goods sold.
4. Which inventory valuation would yield the same gross profits for 2019 and 2020?
   a. Cost and LCNRV/unit basis
   b. Cost and LCNRV/group basis
   c. Cost basis.
5. Which methods yield the maximum combined profits for both years?

CHAPTER SEVEN

Internal Control and Cash

This chapter focuses on internal controls and how they can be applied to assets –specifically cash. Internal control over cash involves processes and procedures that include the preparation of a bank reconciliation and the use of a petty cash fund.

Chapter 7 Learning Objectives

LO1 – Define internal control and explain how it is applied to cash.

LO2 – Explain the purpose of and prepare a bank reconciliation, and record related adjustments.

LO3 – Explain and journalize petty cash transactions.

A. Internal Control

LO1 – Define internal control and explain how it is applied to cash.

Assets are the lifeblood of a company. As such, they must be protected. This duty falls to managers of a company. The policies and procedures implemented by management to protect assets are collectively referred to as *internal controls.* An effective internal control program not only protects assets, but also aids in accurate recordkeeping, produces financial statement information in a timely manner, ensures compliance with laws and regulations, and promotes efficient operations. Effective internal control procedures ensure that adequate records are maintained, transactions are authorized, duties among employees are divided between recordkeeping functions and control of assets, and employees' work is checked by others. The use of electronic recordkeeping systems does not decrease the need for good internal controls.

The effectiveness of internal controls is limited by human error and fraud. Human error can occur because of negligence or mistakes. Fraud is the intentional decision to circumvent internal control systems for personal gain. Sometimes, employees cooperate in order to avoid internal controls. This *collusion* is often difficult to detect, but fortunately, it is not a common occurrence when adequate controls are in place.

Internal control takes many forms. Some are broadly based, like mandatory employee drug testing, video surveillance, and scrutiny of company email systems. Others are specific to a particular type of asset or process. For instance, internal controls need to be applied to a company's accounting system to ensure that transactions are processed efficiently and correctly to produce reliable records in a timely manner. Procedures should be documented to promote good recordkeeping, and employees need to be trained in the application of internal control procedures.

Financial statements prepared according to generally accepted accounting principles are useful not only to external users in evaluating the financial performance and financial position of the company, but also for internal decision making. There are various internal control mechanisms that aid in the production of timely and useful financial information. For instance, using a chart of accounts is necessary to ensure transactions are consistently recorded in the appropriate account.

The design of accounting records and documents is another important means to provide financial information. Financial data is entered and summarized in records and transmitted by documents. A good system of internal control requires that these records and documents be prepared at the time a transaction takes place or as soon as possible afterward, since they become less credible and the possibility of error increases as time passes. Documents supporting financial transactions – for example, sales invoices – should also be consecutively pre-numbered, to indicate whether any are missing.

Internal control also promotes the protection of assets. Cash is particularly vulnerable to misuse. A good system of internal control for cash should provide adequate procedures for protecting cash receipts and cash disbursements. Procedures to exercise control over cash vary from company to company and depend upon such variables as company size, number of employees, and cash sources. However, effective cash control generally requires the following:

- Separation of duties: People responsible for handling cash should not be responsible for maintaining cash records. By separating the custodial and record-keeping duties, theft of cash and its concealment is less likely.
- Same-day deposits: All cash receipts should be deposited daily in the company's bank account. This prevents theft and personal use of the money before deposit.
- Payments made using non-cash means: Checks or electronic funds transfer (EFT) provide separate external records to verify cash disbursements. For example, many businesses pay their employees using electronic funds transfer because it is more secure and efficient than using cash or even checks.

Two forms of internal control over cash will be discussed in this chapter: the preparation of bank reconciliations and the use of a petty cash account.

B. Bank Reconciliation

LO2 – Explain the purpose of and prepare a bank reconciliation, and record related adjustments.

The widespread use of banks facilitates cash transactions between entities and provides a safeguard for the cash assets being exchanged. This involvement of banks as intermediaries between entities has accounting implications. At any point in time, the cash balance in the accounting records of a particular company usually differs from the bank cash balance of that company. Differences occur because some

cash transactions recorded in the accounting records have not yet been recorded by the bank and, conversely, some cash transactions recorded by the bank have not yet been recorded in the company's accounting records.

The use of a **bank reconciliation** is one method of internal control over cash. A bank reconciliation proves the accuracy of both the company's and the bank's records, and reveals any errors made by either party. The bank reconciliation is a tool that can help detect attempts at theft and manipulation of records. An example of a bank reconciliation for Big Dog Carworks Corp. is shown in Figure 7-1:

Big Dog Carworks Corp.
Bank Reconciliation
March 31, 2019

This balance is taken from the company's bank statement at March 31.

This balance is taken from the company's general ledger at March 31.

Bank balance		$24,927	Book balance	$20,673
Less: Outstanding checks		-0-	Adjustments	
Check No.	*Amount*			
580	$4,051			
599	196			
600	7			
		4,254		
Adjusted bank balance		$20,673	Adjusted book balance	$20,673

These checks have been issued by the company, but have not yet cleared the bank. They are called "reconciling items".

These balances must agree.

Figure 7-1 Big Dog's Bank Reconciliation at March 31, 2019

The bank reconciliation provides a simple method to show why the **bank statement** issued by the company's bank and the Cash balance in a company's general ledger differ on a given date like a month-end, and whether these differences are acceptable. In the example above, the difference ($24,927 versus $20,673) occurs because there are three checks that have been recorded in BDCC's general ledger Cash account totaling $4,254 that have not yet been presented and accepted for payment (or been *cleared*) by the bank. Checks that are recorded in the company's general ledger but are not paid out of its bank account when the bank statement is prepared are referred to as **outstanding checks**. Outstanding checks cause the bank statement balance to be overstated compared to the company's records. These checks must be subtracted from the bank balance on the bank

reconciliation so that the bank statement and Cash general ledger balances agree.

These outstanding checks will likely be cashed by the bank a few days after the month end and will appear on the next month's bank statement. As a result, these differences are reasonable, occurring only because of slight timing differences between transactions being recorded in the general ledger and on the bank statement.

The steps needed to prepare a bank reconciliation are discussed below.

The Bank Reconciliation

Discrepancies between the cash balance reported on the bank statement and the cash balance reported in a business's Cash account in the general ledger at a particular date are known as **reconciling items** and are added or subtracted to either the general ledger Cash balance or the amount of cash shown at the end of the period on the bank statement. The cash balance prior to reconciliation is called the unreconciled cash balance. The balance after adding and subtracting the reconciling items is called the reconciled, or adjusted cash balance. The following is a list of potential reconciling items and their impact on the bank reconciliation.

Bank reconciling items

- Deposits in transit (added)
- Outstanding checks (subtracted)
- Bank errors (added or subtracted, depending on the nature of the error)

General ledger reconciling items

- Collection of notes receivable (added)
- NSF checks (subtracted)
- Bank charges (subtracted)
- Book errors (added or subtracted, depending on the nature of the error)

Bank Reconciling Items

Cash receipts are recorded as an increase of cash in the company's accounting records when they are received. These cash receipts are deposited by the company into its bank. The bank records an increase in cash only when these amounts are actually deposited with the bank. Not all cash receipts recorded by the company may have been recorded by the bank when the bank statement is prepared. There may be deposits in transit (also called *outstanding deposits*). Deposits in transit cause the bank statement cash balance to be understated. Therefore, these deposits are a reconciling item that must be added to the unreconciled bank balance on the bank reconciliation.

On the date that a check is prepared by a company, it is recorded as a reduction of cash in a company's general ledger. A bank statement will

not record a cash reduction until a check clears the bank. Outstanding checks mean that the bank statement balance is overstated. Therefore, outstanding checks are a reconciling item that must be subtracted from the unreconciled bank balance on the bank reconciliation as shown in Figure 7-1 above.

Bank errors sometimes occur and are not revealed until the transactions on the bank statement are compared to the company's accounting records. When an error is identified, the company notifies the bank to have it corrected. Depending on the nature of the error, it is either added to or subtracted from the unreconciled bank balance on the bank reconciliation. For example, if the bank cleared a check as $520 that was correctly written for $250, the $270 difference would be added to the unreconciled bank balance on the bank reconciliation. The cash balance reported on the bank statement is understated by $270 as a result of this error. As another example, if the bank recorded a deposit as $520 when the correct amount was actually $250, the $270 difference would be subtracted from the unreconciled bank balance on the bank reconciliation. The cash balance reported on the bank statement is overstated by $270 as a result of this specific error. Each error must be carefully analyzed to determine how it will be treated on the bank reconciliation.

General Ledger Reconciling Items

The collection of notes receivable[1] may be made by a bank on behalf of the company. These collections are often unknown to the company until they appear as an addition on the bank statement. They cause the general ledger Cash account to be understated. As a result, the collection of a notes receivable is added to the unreconciled general ledger Cash balance on the bank reconciliation.

Checks returned to the bank because there were not sufficient funds (NSF) in a customer's bank account to cover them appear on the bank statement as a reduction of cash. The company must then request that the customer pay the amount again. As a result, the general ledger Cash account is overstated by the amount of the NSF check. NSF checks must be subtracted from the unreconciled general ledger Cash balance of cash on the bank reconciliation.

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[1] Recall that a note receivable is a formalized document arising from an account receivable transaction. It specifies the terms of repayment of the amount owing to the company by a customer, as well as any interest that will be paid.

Checks received by a company and deposited into its bank account may be returned by the customer's bank for a number of other reasons (for example, the check was "stale-dated" – issued too long ago; was unsigned or illegible; or shows the wrong account number). Returned checks cause the general ledger Cash account to be overstated compared to the bank statement. These returned checks must be deducted from the unreconciled general ledger Cash balance on the bank reconciliation.

Bank service charges are also deducted from the customer's bank account. Since the service charges have not yet been recorded by the company, the general ledger Cash account is overstated. Therefore, service charges are subtracted from the unreconciled general ledger Cash balance on the bank reconciliation.

A business may incorrectly record journal entries involving cash. For instance, a deposit or check may be recorded for the wrong amount in the company records. These errors are often detected when amounts recorded by the company are compared to the bank statement. Depending on the nature of the error, it will be either added to or subtracted from the unreconciled general ledger Cash balance on the bank reconciliation. For example, if the company issued a check for $250 but recorded it in the records as $520, the $270 difference would be added to the unreconciled general ledger Cash balance of Cash on the bank reconciliation to correct the error, because the general ledger Cash balance is too low. As another example, if the company recorded a deposit as $520 when the correct amount of the deposit was $250, the $270 difference would be subtracted from the unreconciled general ledger Cash balance on the bank reconciliation to correct the error because the general ledger Cash balance is too high. Each error must be analyzed to determine whether it will be added to or subtracted from the unreconciled general ledger Cash balance on the bank reconciliation.

Illustrative Problem—Bank Reconciliation

Now, a bank reconciliation will be prepared for BDCC for the next month-end, April 30. The general ledger Cash account shows an opening balance of $20,673 at April 1 (note that this is the amount that is shown in Figure 7-1 as the March 31 ending Cash balance. Assume cash receipts (debits) amount to $9,482 in April and that cash disbursements (credits) amount to $8,226. The ending balance general ledger Cash balance at April 30 is $21,929. The general ledger for April is shown in Figure 7-2.

The opening balance agrees to the March 31 general ledger balance shown on the bank reconciliation in Fig. 7-1

GENERAL LEDGER

Cash Acct. No. 101

Date 2019		Description	P.R.	Debit	Credit		Balance
Mar.	31	Balance				DR	20,673
Apr.	30	April cash receipts	CRJ6	9,482		DR	30,155
	30	April cash payments	CDJ18		8,226	DR	21,929

The ending balance is used as the unreconciled general ledger balance on the April 30 bank reconciliation.

Figure 7-2 Big Dog's General Ledger 'Cash' Account for April 30, 2019

Assume further that April deposits made and checks issued are as follows:

Deposits		*Checks*	
Date	*Amount*	*No.*	*Amount*
April 5	$1,570	601	$ 24
10	390	602	1,720
23	5,000	603	230
28	1,522	604	200
30	1,000	605	2,220
		606	287
		607	1,364
		608	100
		609	40
		610	1,520
		611	124
		612	397
Total	$9,482	Total	$8,226

These totals agree to the Cash general ledger account debits and credits in Figure 7-2.

The bank statement issued by BDCC's bank is as follows:

Second Chartered Bank
Big Dog Carworks Corp.
Bank Statement
Month Ended April 30, 2019

Date	*Type*	*Out*	*In*	*Balance*
Apr. 1				$24,927
2	Deposit		1,570	26,497
3	Ck. 580	(4,051)		22,446
4	Deposit		390	22,836
6	Ck. 599	(196)		22,640
7	Ck. 601	(24)		22,616
9	Ck. 603	(230)		22,386
11	Ck. 604	(200)		22,186
16	Ck. 611	(124)		22,062
17	Ck. 612	(397)		21,665
18	Ck. 600	(7)		21,658
19	Deposit		5,000	26,658
21	Ck. 605	(2,220)		24,438
22	NSF	(180)		24,258
24	Deposit		1,522	25,780
26	Ck. 602	(1,720)		24,060
28	Ck. 115	(31)		24,029
30	SC	(6)		24,023

Ck. = check SC = service charge
NSF = not sufficient funds

The opening balance agrees to the March 31 bank statement balance shown in Fig. 7-1

The ending balance is used as the unreconciled bank statement balance on the April 30 bank reconciliation.

Figure 7-3 Big Dog's Bank Statement for the month of April, 2019

There are nine steps to follow in preparing a bank reconciliation:

Step 1

a. List the unreconciled April 30 general ledger cash balance ($21,929 from Figure 7-2) on the right side of the bank reconciliation, similar to that shown in Figure 7-1.
b. List the ending cash balance on the bank statement ($24,023 from Figure 7-3) on the left side of the bank reconciliation, similar to that shown in Figure 7-1.

The bank reconciliation should show:

Big Dog Carworks Corp. Bank Reconciliation April 30, 2019			
Bank balance at Apr. 30	$24,023	Book balance	$21,929

Step 2

Compare clearing checks shown on the bank statement with checks recorded as cash disbursements in the company's records.

a. Review the prior month's bank reconciliation and ensure that outstanding checks have cleared the bank in the subsequent month.

In the company records:
These checks were recorded in March; therefore, the cash balance per the general ledger is correctly stated.

In the bank statement:
These outstanding March checks may not have cleared the bank in April. If some of the checks have not yet been paid, the bank's balance is overstated at April 30 by the amount of these checks.

The outstanding checks on the March 31 bank reconciliation are shown in Figure 7-1 and reproduced below.

Checks clearing the bank are marked with an 'x' on the prior month's outstanding check list and on the April bank statement, as follows:

Check No.	*Amount*	
580	$4,051	x
599	196	x
600	7	x

Date	*Type*	*Out*		*In*	*Balance*
Apr. 1					$24,927
2	Deposit			1,570	26,497
3	Ck. 580	(4,051)	x		22,446
4	Deposit			390	22,836
6	Ck. 599	(196)	x		22,640
7	Ck. 601	(24)			22,616
9	Ck. 603	(230)			22,386
11	Ck. 604	(200)			22,186
16	Ck. 611	(124)			22,062
17	Ck. 612	(397)			21,665
18	Ck. 600	(7)	x		21,658
19	Deposit			5,000	26,658
21	Ck. 605	(2,220)			24,438
22	NSF	(180)			24,258
24	Deposit			1,522	25,780
26	Ck. 602	(1,720)			24,060
28	115	(31)			24,029
30	SC	(6)			24,023

All the March outstanding checks (# 580, 599, and 600) were paid by the bank in April; no adjustment is required in the April 30 bank reconciliation—the cash balance per the company's general ledger and the bank statement at April 30 are correctly stated in relation to these March outstanding checks.

b. Compare the checks clearing the bank in April with the checks recorded as April cash disbursements. Cleared items are marked with an 'x' on the April check list and the April bank statement:

Check No.	*Amount*	
601	$ 24	x
602	1,720	x
603	230	x
604	200	x
605	2,220	x
606	287	
607	1,364	
608	100	
609	40	
610	1,520	
611	124	x
612	397	x
Total	$8,226	

These April checks are still outstanding.

Date	*Type*	*Out*		*In*	*Balance*
Apr. 1					$24,927
2	Deposit			1,570	26,497
3	Ck. 580	(4,051)	x		22,446
4	Deposit			390	22,836
6	Ck. 599	(196)	x		22,640
7	Ck. 601	(24)	x		22,616
9	Ck. 603	(230)	x		22,386
11	Ck. 604	(200)	x		22,186
16	Ck. 611	(124)	x		22,062
17	Ck. 612	(397)	x		21,665
18	Ck. 600	(7)	x		21,658
19	Deposit			5,000	26,658
21	Ck. 605	(2,220)	x		24,438
22	NSF	(180)			24,258
24	Deposit			1,522	25,780
26	Ck. 602	(1,720)	x		24,060
28	Ck. 115	(31)			24,029
30	SC	(6)			24,023

In the company records:
These checks were recorded in April; therefore, the general ledger Cash balance is correctly stated.

In the bank statement:
These outstanding checks were not paid by the bank in April. Therefore, the unreconciled bank balance on April 30 of $24,023 is overstated.

The outstanding checks must be deducted from the unreconciled bank statement balance on the bank reconciliation, as follows:

Big Dog Carworks Corp.
Bank Reconciliation
April 30, 2019

Bank balance		$24,023	Book balance	$21,929
Add:			Add:	
Less: Outstanding checks				
Check No.	*Amount*			
606	$ 287			
607	1,364			
608	100			
609	40			
610	1,520	3,311		

Step 3

Other disbursements made by the bank but not recorded in the company records are identified and marked with an 'x'.

Date	*Type*	*Out*		*In*	*Balance*
Apr. 1					$24,927
2	Deposit			1,570	26,497
3	Ck. 580	(4,051)	x		22,446
4	Deposit			390	22,836
6	Ck. 599	(196)	x		22,640
7	Ck. 601	(24)	x		22,616
9	Ck. 603	(230)	x		22,386
11	Ck. 604	(200)	x		22,186
16	Ck. 611	(124)	x		22,062
17	Ck. 612	(397)	x		21,665
18	Ck. 600	(7)	x		21,658
19	Deposit			5,000	26,658
21	Ck. 605	(2,220)	x		24,438
22	NSF	(180)	x		24,258
24	Deposit			1,522	25,780
26	Ck. 602	(1,720)	x		24,060
28	Ck. 115	(31)	x		24,029
30	SC	(6)	x		24,023

a. An examination of the April bank statement shows that the bank had deducted the NSF check of John Donne for $180.

In the company records:
The check of John Donne had originally been recorded as a cash receipt (a payment on account). During April, no entry was made regarding this returned check; therefore, the cash balance in the general ledger is overstated at April 30.

In the bank statement:
The bank has already made a deduction from the cash balance shown on the bank statement for this NSF check.

In reconciling the cash balances shown in the general ledger and on the bank statement, this returned check must be deducted from the unreconciled general ledger Cash balance of $21,929 shown on the bank reconciliation. It also should be set up as an account receivable and a notice should be sent to Donne requesting payment again. The journal entry to do this will be discussed below.

b. An examination of the April 30 bank statement also shows that the bank has deducted a service charge of $6 during April.

In the company records:
This service charge was not deducted from the cash balance in the general ledger during April. Therefore, the cash balance is overstated at April 30.

In the bank statement:
The service charges have already been deducted from the cash balance shown on the bank statement.

To reconcile the cash balance in the company records with the bank statement, this service charge must be deducted from the unreconciled general ledger Cash balance shown on the bank reconciliation.

c. An examination of the April bank statement shows that the bank deducted a check issued by another company for $31 from the BDCC bank account in error. (Assume that when notified, the bank indicated it would make a correction in May's bank statement.)

In the company records:
This check does not belong to Big Dog and does not require any change in its accounting records.

In the bank statement:
The check should not have been deducted from Big Dog's bank account. Therefore, the cash balance shown on the bank statement balance on the April 30 bank reconciliation is understated.

To reconcile the cash balance in the company records with the bank statement, the checks deducted in error must be added to the unreconciled bank statement balance of $24,023 shown on the bank reconciliation.

These three reconciling items are included on the bank reconciliation as follows:

Big Dog Carworks Corp.
Bank Reconciliation
April 30, 2019

Bank balance		$24,023	Book balance at Apr. 30		$21,929
Add: Check deducted in error		31	Add:		
Less: Outstanding checks			Less: Bank charges	$ 6	
Check No.	*Amount*		NSF check – J. Donne	180	186
606	$ 287				
607	1,364				
608	100				
609	40				
610	1,520	3,311			

Step 4

Compare clearing deposits shown on the bank statement with deposits recorded as cash receipts in the company's records.

a. Review the prior month's bank reconciliation and ensure that deposits in transits have cleared the bank in the subsequent month.

In the company records:
The March cash receipts have been recorded correctly.

In the bank statement:
All of the March cash receipts have been deposited and recorded on the bank statement. There are no deposits in transits at March 31.

b. Compare the deposits clearing the bank in April with the deposits recorded as April cash receipts. Cleared items are marked with an 'x' on the April deposits list and the April bank statement:

Date	*Amount*	
April 5	$1,570	x
10	390	x
23	5,000	x
28	1,522	x
30	1,000	
Total	$9,482	

This April deposit is still outstanding.

Date	*Type*	*Out*		*In*		*Balance*
Apr. 1						$24,927
2	Deposit			1,570	x	26,497
3	Ck. 580	(4,051)	x			22,446
4	Deposit			390	x	22,836
6	Ck. 599	(196)	x			22,640
7	Ck. 601	(24)	x			22,616
9	Ck. 603	(230)	x			22,386
11	Ck. 604	(200)	x			22,186
16	Ck. 611	(124)	x			22,062
17	Ck. 612	(397)	x			21,665
18	Ck. 600	(7)	x			21,658
19	Deposit			5,000	x	26,658
21	Ck. 605	(2,220)	x			24,438
22	NSF	(180)	x			24,258
24	Deposit			1,522	x	25,780
26	Ck. 602	(1,720)	x			24,060
28	Ck. 115	(31)				24,029
30	SC	(6)	x			24,023

This comparison indicates that the April 30 cash receipt amounting to $1,000 has not yet been included as a deposit in the bank statement.

In the company records:
The April cash receipts have been recorded correctly.

In the bank statement:
The April cash receipts have been deposited and recorded on the bank statement, except for the April 30 deposit.

To reconcile the cash balance in the company records with the bank statement, the deposits in transit must be added to the bank statement ending cash balance of $24,023 on the bank reconciliation, as follows:

Big Dog Carworks Corp.
Bank Reconciliation
April 30, 2019

Bank balance		$24,023	Book balance		$21,929
			Add:		
Add: Check deducted in error		31			
Deposit in transit		1,000			
		25,054			
Less: Outstanding checks			Less: Bank charges	$ 6	
Check No.	*Amount*		NSF check – J. Donne	180	186
606	$ 287				
607	1,364				
608	100				
609	40				
610	1,520	3,311			

Step 5

Total both sides of the bank reconciliation. The result should be that the reconciled general ledger Cash balance and the bank statement balances are equal.

The completed bank reconciliation is shown in Figure 7-4.

Big Dog Carworks Corp.
Bank Reconciliation
April 30, 2019

Bank balance		$24,023	Book balance		$21,929
			Add:		
Add: Check deducted in error		31			
Deposit in transit		1,000			
		25,054			
Less: Outstanding checks			Less: Bank charges	$ 6	
Check No.	*Amount*		NSF check – J. Donne	180	186
606	$ 287				
607	1,364				
608	100				
609	40				
610	1,520	3,311			
Adjusted bank balance		$21,743	Adjusted book balance		$21,743

These balances must agree.

Reconciling items in this section do not require journal entries. The deposits in transits and checks should clear the bank in May. The $31 check deducted in error must be reported to the bank so it can make the necessary corrections to Big Dog's account in the next month.

Reconciling items in this section require journal entries to be made in the general journal to adjust the unreconciled Cash balance of $21,929 in the general ledger to the reconciled balance of $21,743.

Figure 7-4 BDCC's April 30 Bank Reconciliation

Step 6

The adjusted balance of $21,743 calculated in the bank reconciliation must be reflected in the company's general ledger Cash account. Adjusting entries must be prepared. The adjusting entries are based on the reconciling item on the left-hand side of the bank reconciliation and are as follows:

Bank Charges Expense	632	6	
Cash	101		6
Accounts Receivable – Donne	110	180	
Cash	101		180
To record reconciling items from April 30 bank reconciliation.			

Once the adjustment is posted, the Cash general ledger account balance is correct, as illustrated in Figure 7-5.

GENERAL LEDGER

Cash Acct. No. 101

Date 2019		Description	P.R.	Debit	Credit		Balance
Mar.	31	Balance				DR	20,673
Apr.	30	April cash receipts	CRJ6	9,482		DR	30,155
	30	April cash payments	CDJ18		8,226	DR	21,929
	30	Bank charge expense	Adj.		6	DR	21,923
	30	NSF check	Adj.		180	DR	21,743

This adjusted Cash balance in the general ledger now agrees with the bank reconciliation.

Figure 7-5 Updated Cash Account in the General Ledger

Big Dog does not make any adjusting entries for the reconciling items on the left (bank) side of the bank reconciliation since these items should eventually clear the bank or be corrected by the bank on a later month's bank statement.

Debit and Credit Card Transactions

Debit and credit cards are commonly accepted by companies when customers make purchases. Because the cash is efficiently and safely transferred directly into a company's bank account by the debit or

credit card company, such transactions enhance internal control over cash. However, the seller is typically charged a fee for accepting debit and credit cards. For example, assume BDCC makes a $1,000 sale to a customer who uses a credit card that charges BDCC a fee of 2%; the cost of the sale is $750.

BDCC would record the following entries:

Cash	101	980	
Bank Charges Expense	632	20	
Sales	500		1,000
To record sale and related credit card fee.			
Cost of Goods Sold	570	750	
Merchandize Inventory	150		750
To record cost of sales.			

The credit card fee is calculated as the $1,000 sale x 2% = $20. This means that BDCC collects net cash proceeds of $980 ($1,000 - $20). The use of debit cards also involves fees. These entries are journalized in the same manner.

C. Petty Cash

LO3 – Explain and journalize petty cash transactions.

The payment of small amounts by check may be inconvenient and costly. For example, using cash to pay for postage on an incoming package might be less than the total cost of processing a check. A small amount of cash kept on hand to pay for small, infrequent expenses is referred to as a **petty cash fund**.

Establishing and Reimbursing the Petty Cash Fund

To set up the petty cash fund, a check is prepared for the amount of the fund. The custodian of the fund cashes the check and places the coins and currency in a locked box. Responsibility for the petty cash fund should be delegated to only one person, who should be held accountable for its contents. Cash payments, supported by receipts, are made by this petty cash custodian out of the fund as required. When the amount of cash has been reduced to a pre-determined level, the receipts are compiled and submitted for entry into the accounting system. A check is then issued to reimburse the petty cash fund for the total amount of the receipts. At any given time, the petty cash amount should consist of cash and supporting receipts, all totaling the petty cash fund amount. To demonstrate the management of a petty cash

fund, assume that a $200 check is issued for the purpose of establishing a petty cash fund.

The journal entry is:

Petty Cash	100	200	
Cash	101		200
To establish the $200 petty cash fund.			

Petty Cash is a current asset account. When reporting Cash on the financial statements, the balances in Petty Cash and Cash are usually added together and reported as one amount.

Assume the petty cash custodian has receipts totaling $190 and $10 in coin and currency remaining in the petty cash box. The receipts consist of the following: delivery charges, $100; postage, $35; and office supplies, $55. The petty cash custodian submits the receipts to the accountant who records the following entry and issues a check for $190.

Delivery Expense	620	100	
Postage Expense	652	35	
Office Supplies Expense[2]	650	55	
Cash	101		190
To reimburse the petty cash fund.			

As an added internal control, petty cash receipts should be cancelled at the time of reimbursement in order to prevent their reuse for duplicate reimbursements. The petty cash custodian cashes the $190 check. The $190 plus the $10 of coin and currency in the locked box immediately prior to reimbursement equals the $200 total maintained in the petty cash fund.

Sometimes, the receipts plus the coin and currency in the petty cash locked box do not equal the required petty cash balance. To demonstrate, assume the same information above except that the coin and currency remaining in the petty cash locked box was $8. This amount plus the receipts for $190 equals $198 and not $200, indicating a shortage in the petty cash box. The entry at the time of reimbursement reflects the shortage and is recorded as:

---

[2] An expense is debited instead of an asset like Unused Office Supplies. The need to purchase supplies through petty cash assumes the immediate use of the items.

Delivery Expense	620	100	
Postage Expense	652	35	
Office Supplies Expense	650	55	
Cash Over/Short Expense	614	2	
Cash	101		192

To reimburse the petty cash fund and account for the $2 shortage.

Notice that the $192 credit to Cash plus the $8 of coin and currency remaining in the petty cash box immediately prior to reimbursement equals the $200 required total in the petty cash fund.

Assume, instead, that the coin and currency in the petty cash locked box was $14. This amount plus the receipts for $190 equals $204 and not $200, indicating an overage in the petty cash box. The entry at the time of reimbursement reflects the overage and is recorded as:

Delivery Expense	650	100	
Postage Expense	652	35	
Office Supplies Expense	650	55	
Cash Over/Short Exp.	614		4
Cash	101		186

To reimburse the petty cash fund and account for the $4 overage.

Again, notice that the $186 credit to Cash plus the $14 of coin and currency remaining in the petty cash box immediately prior to reimbursement equals the $200 required total in the petty cash fund.

The size of the petty cash fund should not be large enough to become a potential theft issue. If a petty cash fund is too large, it may be an indicator that transactions that should be paid by check are not being processed in accordance with company policy.

Summary of Chapter 7 Learning Objectives

LO1 – Define internal control and explain how it is applied to cash.

The purpose of internal controls is to safeguard the assets of a business. Since cash is a particularly vulnerable asset, policies and procedures specific to cash need to be implemented, such as the use of checks and electronic funds transfer for payments, daily cash deposits into a financial institution, and the preparation of bank reconciliations.

LO2 – Explain the purpose of and prepare a bank reconciliation, and record related adjustments.

A bank reconciliation is a form of internal control that reconciles the bank statement balance to the general ledger Cash account, also known as the general ledger balance. Reconciling items that affect the bank statement balance are deposits in transits, outstanding checks, and bank errors. Reconciling items that affect the general ledger Cash balance are collections made by the bank on behalf of the company, NSF checks, bank service charges, and errors. Once the book and bank statement balances are reconciled, an adjusting entry is prepared based on the reconciling items affecting the general ledger balance.

LO3 – Explain and journalize petty cash transactions.

A petty cash fund is used to pay small, irregular amounts for which issuing a check would be inefficient. A petty cash custodian administers the fund by obtaining a check from the cash payments clerk. The check is cashed and the coin and currency placed in a locked box. The petty cash custodian collects receipts and reimburses individuals for the related amounts. When the petty cash fund is replenished, the receipts are compiled and submitted for entry in the accounting records so that a replacement check can be issued and cashed.

E N D O F C H A P T E R M A T E R I A L S

Multiple-Choice Review

1. The policies and procedures used by management to protect assets from fraud, ensure accuracy of records, and ensure adherence to various laws and regulations are known as:
   a.) system design
   b.) internal controls
   c.) financial statements
   d.) lock box

2. In preparing a bank reconciliation, the amount of outstanding checks would be:
   a.) added to the bank's unadjusted cash balance
   b.) subtracted from the bank's unadjusted cash balance
   c.) added to the company's unadjusted cash balance
   d.) subtracted from the company's unadjusted cash balance

3. In preparing a bank reconciliation, the amount of deposits in transit would be:
   a.) added to the bank's unadjusted cash balance
   b.) subtracted from the bank's unadjusted cash balance
   c.) added to the company's unadjusted cash balance
   d.) subtracted from the company's unadjusted cash balance

4. A not sufficient funds (NSF) check represents
   a.) an adjustment to the bank's cash balance
   b.) a returned customer check
   c.) a liability for the company
   d.) a type of petty cash expenditure

5. Interest earned on a company's bank cash balance will appear on their bank reconciliation as an:
   a.) addition to the bank's unadjusted cash balance
   b.) subtraction from the bank's unadjusted cash balance
   c.) addition to the company's unadjusted cash balance
   d.) subtraction from the company's unadjusted cash balance

Multiple-Choice Review (continued)

The following information is available for Larry Company at May 31

1) The May bank statement shows a balance of $2,050
2) The general ledger shows a balance of $1,404.58 at May 31
3) A $145 deposit was placed in the bank's night depository on May 31
4) Outstanding checks amount to $350 at May 31
5) A customer's $500 note receivable is collected by the bank. A $15 collection fee was deducted from this amount. The remainder was deposited into Larry Company's account.
6) The bank deducted a $53 service fee for the month.
7) Interest earned from the bank totals $8.42 for the month.

6. Using this information, what is the adjusted cash balance on Larry Company's May Bank Reconciliation?
   a.) $2,050
   b.) $1,951
   c.) $2,255
   d.) $1,845

7. Using the information for Larry Company, after preparing the bank reconciliation, journal entries will be needed for which items?
   a.) 1-7
   b.) 3-7
   c.) 5-7
   d.) 3, 5, and 7

8. The journal entry to record the collection of a customer's note receivable (item 5) less any related fees would include the following accounts:

a)	Cash	485	
	Bank fees	15	
	Interest revenue		500

b)	Cash	485	
	Bank fees	15	
	Note receivable		500

c)	Cash	485	
	Note receivable		485

Answers on the following page

Answers to Multiple-Choice Review

1. b
2. b
3. a
4. b
5. c
6. d

Larry Company
Bank Reconciliation
May 30, 2019

Bank balance	$2,050	Book balance		$1,404.58
Add:		Add:		
Deposits in transit	145	Collection of note receivable ($500 less $15 fee)	$485	
	2,195	Interest earned	8.42	493.42
				1,898
Less: Outstanding checks	350	Less: Bank charges		53
Adjusted bank balance	$ 1,845	Adjusted book balance		$ 1,845

7. c
8. b

Discussion Questions

1. What is internal control?
2. How does the preparation of a bank reconciliation strengthen the internal control of cash?
3. What are some reconciling items that appear in a bank reconciliation?
4. What are the steps in preparing a bank reconciliation?
5. What is an NSF check?
6. What are the journal entries needed in a petty cash system?
7. What is the difference between establishing and replenishing the petty cash fund?

Comprehension Problems

CP 7–1

For each of the following items, (1) identify whether they would affect the bank or book side of the bank reconciliation and (2) whether they represent an addition or subtraction on that bank reconciliation side.

a.) Deposits in transit
b.) Collection of customer's note receivable
c.) Interest earned
d.) Bank fees
e.) Outstanding checks
f.) NSF check
g.) Collection fee for customer note

CP 7–2

The following information relates to Fluffy Bunny Inc. at July 31.

a.) Cash balance per bank statement at July 31, $7,263

b.) Cash balance per company's general ledger at July 31, $7,284

c.) July's monthly bank charge amounts to $28

d.) Deposits in transit at July 31, $1,300

e.) Outstanding checks at July 31, $591

f.) The bank collected a $730 note receivable for Fluffy Bunny. The bank deducted a $14 collection fee and deposited the net amount into the company's bank account.

Required:

1.) Prepare a bank reconciliation for Fluffy Bunny Inc. at July 31, 2019.

2.) Prepare any adjusting journal entries needed at July 31, after preparing the bank reconciliation for Fluffy Bunny.

CP 7–3

The following information pertains to Ferguson Corp. at December 31, 2019, its year-end:

Cash per company records		$5,005
Cash per bank statement		7,000
Bank service charges not yet recorded in company records		30
Note collected by bank not yet recorded in company records, including $25 of interest		1,325
Fluet Inc. check deducted in error by bank		200
December deposit recorded by the bank January 3, 2020		700
December checks not yet paid by bank in December		
#631	$354	
#642	746	
#660	200	
#661	300	
	$1,600	

Required: Prepare a bank reconciliation and all necessary adjusting journal entries at December 31, 2019.

CP 7–4

The Cash general ledger account balance of Gladstone Ltd. was $2,531 at March 31, 2019. On this same date, the bank statement had a balance of $1,500. The following discrepancies were noted:

a. A deposit of $1,000 made on March 30, 2019 was not yet recorded by the bank on the March statement.
b. A customer's check amounting to $700 and deposited on March 15 was returned NSF with the bank statement.
c. Check #4302 for office supplies expense, correctly made out for $125 and clearing the bank for this amount, was recorded in the company records as $152.
d. $20 for March service charges were recorded on the bank statement but not in the company records.
e. A cancelled check for $250 belonging to Global Corp. but charged by the bank to Gladstone Ltd. was included with the cancelled checks returned by the bank.
f. There were $622 of outstanding checks at March 31.
g. The bank collected a $250 note receivable. Interest earned totaled $50 and the bank deducted a $10 collection fee and deposited the net amount into the company's bank account.

Required: Prepare a bank reconciliation and record all necessary adjusting entries at March 31, 2019.

CP 7–5

The following transactions were made by Landers Corp. in March 2019.

Mar. 1	Established a petty cash fund of $200		
12	Reimbursed the fund for the following:		
		Postage	$10
		Office supplies	50
		Maintenance	35
		Meals (selling expenses)	25
			$120
18	Increased the fund by an additional $200		
25	Reimbursed the fund for the following:		
		Office supplies	$75
		Delivery charges	30
			$105
28	Reduced the amount of the fund to $350.		

Required: Prepare journal entries to record these transactions.

Problems

P 7–1

The reconciliation of the cash balance per bank statement with the balance in the Cash account in the general ledger usually results in one of five types of adjustments. These are:

a. Additions to the reported general ledger cash balance
b. Deductions from the reported general ledger cash balance
c. Additions to the reported cash balance per the bank statement
d. Deductions from the reported cash balance per the bank statement
e. Information that has no effect on the current reconciliation.

Required:

1. Using the above letters *a* to *e* from the list, indicate the appropriate adjustment for each of the following items that apply to Goertzen Ltd. for December, 2019:

   ___ The company has received a $3,000 loan from the bank that was deposited into its bank account but was not recorded in the company records.

   ___ A $250 check was not returned with the bank statement though it was paid by the bank.

   ___ Checks amounting to $4,290 shown as outstanding on the November reconciliation still have not been paid.

   ___ A collection of a note receivable for $1,000 made by the bank has not been previously reported to Goertzen. This includes interest earned of $50.

   ___ The bank has erroneously charged Goertzen with a $1,100 check, which should have been charged to Gagetown Ltd.

   ___ A $350 check made out by Fynn Company and deposited by Goertzen has been returned by the bank marked NSF; this is the first knowledge Goertzen has of this action.

   ___ A check for deposit in the amount of $840 was erroneously recorded as $730 in the company records.

   ___ A $600 bank deposit of December 31 does not appear on the bank statement.

   ___ Bank service charges amounting to $75 were deducted from the bank statement but not yet from the company records.

2. Prepare a bank reconciliation using the data given above. On December 31, the Cash account in the general ledger of Goertzen Ltd. showed a balance of $84,293. The bank statement showed a balance of $90,568.

3. Prepare journal entries required to adjust the general ledger Cash account of Goertzen Ltd. to the reconciled balance.

P 7–2

Gibson Energy Ltd. controls its cash by depositing receipts on a daily basis and making all disbursements by check. After all the posting for the month of November 2019 was completed, the Cash balance in the general ledger account at November 30 was $4,213. The bank statement for the month ended November 30 received from the First National Bank showed the balance to be $4,440. The following data are available for the purpose of reconciling these balances:

a. Cash receipts for November 30 amounting to $611 have been placed in the night depository and do not appear on the bank statement.

b. Bank memos previously not available to Gibson Energy are included with the bank statement. A memo for an NSF check, originally received as payment for an account receivable of $130, is included. A memo for bank charges of $10 is also included. Another memo advises Gibson Energy Ltd. that $494 has been deposited to the account, ($500 less a bank charge of $6). This represents the net proceeds of a collection the bank had made on behalf of Gibson Energy Ltd. on a $500 note receivable.

c. Checks written during November but not included with the bank statement are no. 1154, $32; no. 1192, $54; no. 1193, $83; no. 1194, $109.

d. Check no. 1042 is returned with the bank statement. The check was made for $494, the correct amount owing for office expense. The check was recorded in the company records as $548.

e. Checks outstanding at the end of October included checks no. 1014 for $152 and no. 1016 for $179. Check no. 1016 was paid in the bank statement; check no. 1014 was not.

Required:

1. Prepare a bank reconciliation at November 30.

2. Prepare the necessary adjusting journal entries required to make the Cash account in the general ledger agree with the adjusted cash balance on the November 30 bank reconciliation.

P 7–3

The following transactions were made by Simpson Corp. in December 2019.

Dec. 1 Established a petty cash fund of $200.

14 Reimbursed the fund for receipts as follows:

Office supplies	$50
Maintenance	35

Petty cash on hand prior to reimbursement was $46.

29 Reimbursed the fund for the following:

Office supplies	$10
Delivery charges	20

Petty cash on hand prior to reimbursement was $72.

31 Reduced the amount of the fund to $50.

Required:

1. Prepare journal entries to record these transactions.
2. Suggest improvements to the internal controls of Simpson's petty cash fund.

CHAPTER EIGHT

Receivables

This chapter focuses receivables, specifically two types –accounts receivables and note receivables. Though, these assets are created with the intent for collection at a later time, some receivables may never be collected. To match the cost of these uncollectible receivables to the related revenue, bad debts must be estimated using either the income statement method or balance sheet method. Actual account receivables are written off when judged to be uncollectible. Write-offs can be subsequently recovered. The journalizing of short-term notes receivable and related interest revenue is also discussed in this chapter.

Chapter 8 Learning Objectives

LO1 – Explain, calculate, and record estimated uncollectible accounts receivable and subsequent write-offs and recoveries.

LO2 – Explain and record short-term notes receivable and calculate related interest.

A. Accounts Receivable

LO1 – Explain, calculate, and record estimated uncollectible accounts receivable and subsequent write-offs and recoveries.

Extending credit to customers results in increased sales and therefore profits. However, there is a risk that some accounts receivable will not be collected. A good internal control system is designed to minimize bad debt losses. One such control is to permit sales on account only to credit-worthy customers; this can be difficult to determine in advance. The revenue portion of the operating cycle, as shown in Figure 8-1, begins with a sale on credit and is completed with the collection of cash. Unfortunately, not all receivables are collected. This section discusses issues related to accounts receivable and their collection.

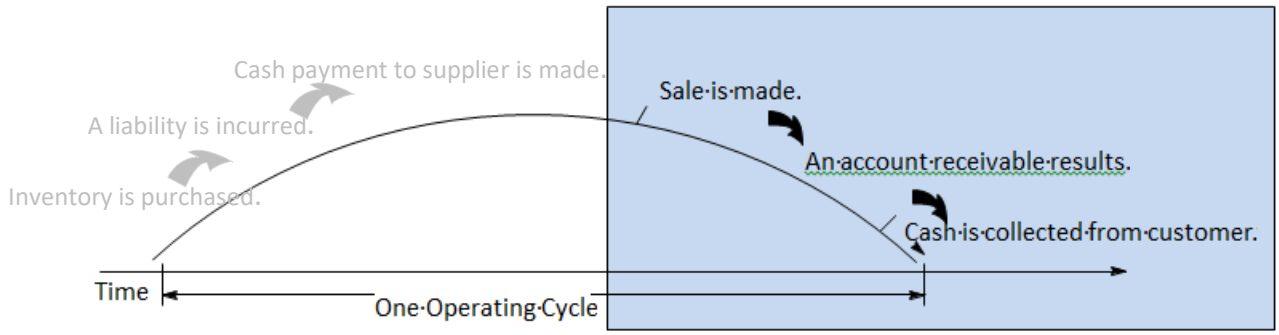


Figure 8-1 Revenue Portion of Operating Cycle

Uncollectible Accounts Receivable

Companies with credit sales realize that some of these amounts may never be collected. These **uncollectible accounts**, commonly known as **bad debts**, are an expense associated with selling on credit.

GAAP requires that bad debt expenses be matched to the credit sales of the same period. For example, assume BDCC recorded a $1,000 credit sale to XYA Company in April, 2018. Assume further that in 2019 it was determined that the $1,000 receivable from XYA Company would never be collected. The bad debt arising from the credit sale to XYA Company should be matched to the period in which the sale occurred, namely, April, 2018. But how can that be done if it is not known which receivables will become uncollectible until a future date? A means of estimating and recording the amount of sales that will not be collected in cash is needed. This is done by establishing a contra current asset account called **Allowance for Doubtful Accounts** in the general ledger to record estimated uncollectible receivables. This account is a contra account to accounts receivable and is disclosed on the balance sheet as shown below using assumed values.

Accounts receivable	$25,000	
Less: Allowance for doubtful accounts	1,400	$23,600

OR

Accounts receivable (net of $1,400 allowance for doubtful accounts)	$ 23,600

Shown at net realizable value

The Allowance for Doubtful Accounts contra account reduces accounts receivable to the amount that is expected to be collected (called ***net realizable value***)—in this case, $23,600.

Estimating Uncollectible Accounts Receivable

The allowance for doubtful accounts is used to reflect how much of the total Accounts Receivable is estimated to be uncollectible. To record estimated uncollectible accounts, the following adjusting entry is made.

Bad Debts Expense	613	xxx	
Allow. For Doubt. Acct.	111		xxx

To record estimated uncollectible accounts receivable.

The bad debt expense is shown on the income statement. Allowance for doubtful accounts appears on the balance sheet and is subtracted from accounts receivable resulting in the estimated net realizable value of accounts receivable.

Two different methods can be used to estimate uncollectible accounts. One method focuses on estimating Bad Debt Expense on the income statement, while the other focuses on estimating the desired balance in allowance for doubtful accounts on the balance sheet.

1 -The Income Statement Method

The first method for estimating uncollectible accounts is called the **income statement method** (also called the percent of sales method) which estimates bad debt expense based on credit sales. Bad debt expense is calculated by applying an estimated loss percentage to credit sales for the period. The percentage is typically based on actual losses experienced in prior years. For instance, a company may have the following history of uncollected sales on account:

Year	*Credit sales*	*Amounts not collected*
2017	$150,000	$1,000
2018	200,000	1,200
2019	250,000	800
	$600,000	$3,000

The average loss over these years is $3,000/$600,000, or ½ of 1%. If management anticipates that similar losses can be expected in 2020 and credit sales for 2020 amount to $300,000, bad debts expense would be estimated as $1,500 ($300,000 x 0.005).

Under the income statement method, the $1,500 represents estimated bad debt expense and is recorded as:

Bad Debts Expense	613	1,500	
Allow. For Doubt. Acct.	111		1,500

To record estimated bad debts expense.

This estimated bad debt expense is calculated without considering any existing balance in the allowance for doubtful accounts.

Allowance for doubtful account <u>before</u> posting adjustment
Assume the balance remaining in Allowance for doubtful accounts from the previous period is $250.

Allowance for doubtful account <u>after</u> posting adjustment
The adjustment estimating bad debt expense of $1,500 is posted to allowance for doubtful accounts to get an adjusted balance of $1,750.

Allowance for Doubtful Accounts	
	Bal. 250

Allowance for Doubtful Accounts	
Bal.	250
Adjust.	1,500
Adj. bal.	1,750

2 -The Balance Sheet Method

The second method for estimating uncollectible accounts is called the **balance sheet method** (also called the percent of accounts receivable method) which normally estimates uncollectible accounts by using an aging of accounts receivable. An **aging of accounts receivable** is a schedule that lists the company's accounts receivable according to how long each account has been outstanding. This aging analysis approach assumes that the longer a receivable is outstanding, the less chance there is of collecting it. This process is illustrated in the below schedule.

		Number Of Days Outstanding at Dec. 31, 2019				
Customer	*Total*	*1–30*	*31–60*	*61–90*	*91–120*	*Over 120*
Bendix Inc.	$1,000					$1,000
Devco Marketing Inc.	6,000	$1,000	$3,000	$2,000		
Horngren Corp.	4,000	2,000	1,000		$1,000	
Perry Co. Ltd.	5,000	3,000	1,000		1,000	
Others	9,000	4,000			5,000	
Totals	$25,000	$10,000	$5,000	$2,000	$7,000	$1,000

In this example, accounts receivable total $25,000 at December 31. These are classified into five time periods: those receivables that 1–30 days past due; 31–60 days past due; 61–90 days past due; 91–120 days past due; and over 120 days past due.

Management estimates a bad debt percentage as follows:

Number Of Days Outstanding at Dec. 31, 2019				
1–30	*31–60*	*61–90*	*91–120*	*Over 120*
1%	3%	5%	10%	40%

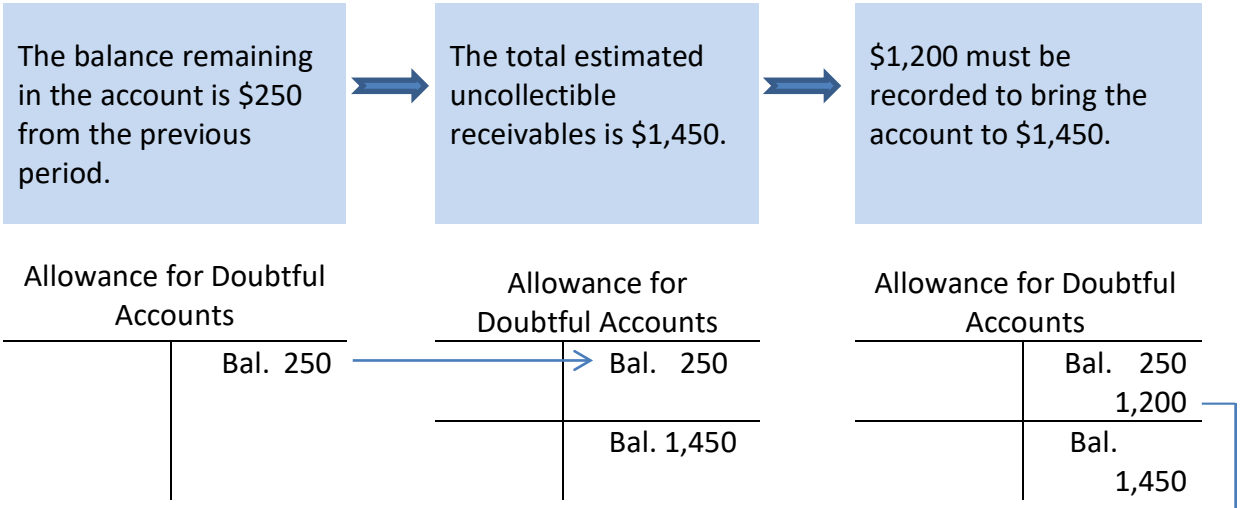
The calculation of expected uncollectible accounts receivable at December 31, 2019 would be as follows:

Calculation of Uncollectible Amounts
December 31, 2019

Age (days)	*Accounts receivable*	*Estimated bad debt percentage*	*Estimated uncollectible amount*
1–30	$10,000	1%	$ 100
31–60	5,000	3%	150
61–90	2,000	5%	100
91–120	7,000	10%	700
Over 120	1,000	40%	400
Totals	$25,000		$1,450

A total of $1,450 of accounts receivable is estimated to be uncollectible at December 31, 2019.

Under the balance sheet method, the estimated bad debt expense consists of the *difference* between the opening allowance for doubtful accounts balance ($250, as in the prior example) and the estimated uncollectible receivables ($1,450) required at year-end.



The adjustment is recorded by the following journal entry:

Bad Debts Expense	613	1,200	
Allow. For Doubt. Acct.	111		1,200
To record estimated bad debts expense.			

As an alternative to using an aging analysis to estimate uncollectible accounts, a simplified balance sheet method can be used. The **simplified balance sheet method** calculates the total estimated uncollectible accounts as a percentage of the outstanding accounts receivables balance. For example, assume an unadjusted balance in the allowance for doubtful accounts of $250 as in the preceding example. Also assume the accounts receivable balance at the end of the period was $25,000 as in the previous illustration. If it was estimated that 6% of these would be uncollectible based on historical data, the adjustment would be:

Bad Debts Expense	613	1,250	
Allow. For Doubt. Acct.	111		1,250
To record estimated bad debts expense.			

The total estimated uncollectible accounts is $1,500 ($25,000 × 6%). Given an unadjusted balance in allowance for doubtful accounts of

$250, the adjustment to allowance for doubtful accounts must be a credit of $1,250 ($1,500 - $250).

Regardless of whether the income statement method or balance sheet method is used, the amount estimated as an allowance for doubtful accounts seldom agrees with the amounts that actually prove uncollectible. A credit balance remains in the allowance account if fewer bad debts occur during the year than are estimated. There is a debit balance in the allowance account if more bad debts occur during the year than are estimated. By monitoring the balance in the Allowance for Doubtful Accounts general ledger account at each year-end, though, management can determine whether the estimates of uncollectible amounts are accurate. If not, they can adjust estimates going forward.

Writing Off Accounts Receivable

When recording the adjusting entry to estimate uncollectible accounts receivable at the end of the period, it is not known which specific receivables will become uncollectible. When a specific account is determined to be uncollectible, it must be removed from the accounts receivable account. This process is known as a **write-off**. To demonstrate the write-off of an account receivable, assume that on January 15, 2020 the $1,000 credit account for customer Bendix Inc. is identified as uncollectible because of the company's bankruptcy. The receivable is removed by this entry:

Allow. For Doubt. Acct.	111	1,000	
Acct. Rec. – Bendix Inc.	110		1,000
To write-off Bendix Inc.'s account receivable			

The $1,000 write-off reduces both the accounts receivable and allowance for doubtful accounts. The write-off does not affect net realizable accounts receivable, as demonstrated below.

	Before write-off	*Write-off*	*After write-off*
Accounts receivable	$25,000	Cr 1,000	$24,000
Less: Allowance for doubtful accounts	1,450	Dr 1,000	450
Net accounts receivable	$23,550		$23,550

A write-off does not affect bad debt expense. Recall that the adjusting entry to estimate uncollectible accounts was:

Bad Debts Expense	613	xxx	
Allow. For Doubt. Acct.	111		xxx
To record estimated uncollectible accounts receivable.			

This adjustment was recorded because GAAP requires that the bad debt expense be matched to the period in which the sales occurred even though it is not known which receivables will become uncollectible. Later, when an uncollectible receivable is identified, it is written off as:

Allow. For Doubt. Acct.	111	xxx	
Accounts Receivable	110		xxx
To record estimated uncollectible accounts receivable.			

The allowance for doubtful accounts entries cancel each other out so that the net effect is a debit to bad debt expense and a credit to accounts receivable. The use of the allowance for doubtful accounts contra account allows us to estimate uncollectible accounts in one period and record the write-off of bad receivables as they become known in a later period.

Recovery of a Write-Off

When Bendix Inc. went bankrupt, its debt to Big Dog Carworks Corp. was written off in anticipation that there would be no recovery of the amount owed. Assume that on July 31, 2020 an announcement was made that 25% of amounts owed by Bendix would be paid. This new information indicates that BDCC will be able to recover a portion of the receivable previously written off. This recovery requires two journal entries at July 31, 2020. The first entry reinstates the amount *expected* to be collected by BDCC — $250 ($1,000 x 25%) in this case — and is recorded as:

Accounts Rec. – Bendix Inc.	110	250	
Allow. For Doubt. Acct.	111		250

To reverse write-off and reinstate collectible portion of account.

This entry reverses the collectible part of the receivable previously written off. The effect of the reversal is shown below.

Accounts Receivable			
Bal.	$25,000		
		Write-off	1,000
Recovery	250		

Allowance for Doubtful Accounts			
		Bal.	1,450
Write-off	1,000		
		Recovery	250

The second entry records the collection of the reinstated amount as:

Cash.	101	250	
Acct. Rec. – Bendix Inc.	110		250

To record recovery of collectible portion of account previously written off.

The various journal entries related to accounts receivable are summarized below.

Sale on account	Accounts Receivable	XXX	
	Sales.....		XXX
	COGS.....	XXX	
	Merchandize Inventory		XXX
Adjusting entry estimating uncollectible accounts	Bad Debts Expense.....	XXX	
	Allow. For Doubt. Acct.		XXX
Write-off of uncollectible account	Allow. For Doubt. Acct.	XXX	
	Accounts Receivable.....		XXX
Partial recovery of account previously written off	Accounts Receivable	XXX	
	Allow. For Doubt. Acct.		XXX
	Cash	XXX	
	Accounts Receivable.....		XXX

B. Notes Receivable

LO2 -Explain and record short-term notes receivable and calculate related interest.

Notes receivable are formalized accounts receivable. They are recorded as current assets if they are due within twelve months of the date of issue. A note receivable is a signed, legally-enforceable document. The customer who owes the money promises to pay the company the *principal* plus *interest* on the due date. The **principal** is the specific amount owed. **Interest** is the cost of borrowing (not paying). Interest is calculated as: (principal × annual Interest rate × length of time outstanding).

Notes receivable can arise for many reasons. The ones covered in this chapter are: (1) sale of merchandise to a customer, (2) extension of an account receivable by replacing it with a note receivable, and (3) a cash loan made to an outside party.

A more formal relationship between a company and its creditors can be evidenced in a written agreement for repayment known as a Notes Payable. These notes payable can be short-term or long-term depending on the repayment date. The written agreement, or promissory note, includes information such as:

- **The parties involved (creditor and payee)**
- **Amount due (known as principal or face value)**
- **Interest rate (stated as an annual rate)**
- **Repayment date (known as maturity date)**

At the note's due date (or maturity date), the payee is responsible for remitting full payment. Full payment includes the principal amount plus any interest, the sum of these two amounts are known as the note's maturity value.

Short-term notes payable may arise for many reasons. The ones covered in this chapter are: **(1)** purchase of an asset, **(2)** extension of an account payable by replacing it with a note payable, and **(3)** a cash borrowed from a bank.

(1) Company purchases an asset by issuing a note payable.

Assume company Worshester purchases computer equipment on March 1, with a cost of $10,000. The supplier accepts Worshester's note payable for that amount with 12% interest and due in 10 months. The journal entry Worshester would make on March 1 would be:

Worshester Company [1] General Journal			
Date	Accounts	Debit	Credit
Mar. 1	Computer equipment	10,000	
	Notes payable		10,000
	(To record purchase of computer equipment with $10,000, 12%, 10 month note payable)		

(2) Company extends an account payable by replacing it with a note payable

Assume company Turnip is struggling to pay its existing accounts payable balance with one of its suppliers within the given credit period. On September 1, the supplier agrees to extend the credit period by entering into a promissory note with Turnip. The note will be for the accounts payable balance of $5,000, carry an 18% interest rate and be due date in 180 days. The journal entry Turnip would make on September 1 would be:

Turnip Company General Journal			
Date	Accounts	Debit	Credit
Sep. 1	Accounts payable	5,000	
	Notes payable		5,000
	(To record extension of an accounts payable with a $5,000, 18%, 180 day note payable)		

(3) Company borrows cash from a bank.

Assume company Maya approaches its local bank, Second National Bank, and seeks a $25,000 business loan at the beginning of the year. The bank requires Maya, the borrower, to sign a promissory note for the loan. The note shows the amount borrowed (known as the note's principal), the interest rate (stated on an annual amount) and the due date (known as the note's maturity date). Maya's principal amount is the amount borrowed of $25,000, the interest rate is 10%, and the maturity date will be in 5 years. The journal entry Maya would make on January 1 would be:

Maya Company General Journal			
Date	Accounts	Debit	Credit
Jan. 1	Cash	25,000	
	Notes payable		25,000

[1] The general journal page number and posting reference numbers are omitted in this chapter for the purpose of focusing the new content.

	(To record amount borrowed from Second National Bank with a $25,000, 10%, 5-year note payable)		

Determining Maturity Date

Calculating Interest

Let's assume that BDCC provided $4,000 of services to customer Woodlow on April 1, 2019. The journal entry at April 1 would be:

Account Rec. - Woodlow	110	4,000	
Service Revenue	470		4,000
To record service revenue from Woodlow.			

At June 30, Woodlow's account remains unpaid beyond the acceptable length of time so the company decides to extend the customer's overdue account receivable (the second option list from above). The extension results in a note receivable being created. On July 1, BDCC and the customer agree to sign a 4%, 3-month note. The journal entry on July 1 would be:

Note Receivable - Woodlow	120	4,000	
Account Rec. - Woodlow	110		4,000
To record conversion of the account receivable from Woodlow to a 4%, 3-month note receivable.			

The amount debited to notes receivable ($4,000) is referred to as the note's principal (or **face value**). The date the principal and interest is due is referred to as the **maturity date**. The total value due at the maturity date is called the **maturity value** and it is the sum of the principal and total interest.

The maturity date of the note is therefore November 1st (3 months after the creation of the note). If the customer pays, or honors, the note at maturity the journal entry on November 1 would be:

Cash	101	4,040	
Note Rec. -Woodlow	120		4,000
Interest Revenue	430		40

To record the collection of the Woodlow note receivable and related interest ($4,000 x 4% x 3/12 mos. = $40).

If, instead, at maturity the customer had dishonored the note (not paid the maturity value) the journal entry on November 1 would be:

Accounts Receivable	111	4,040	
Note Rec. -Woodlow	120		4,000
Interest Revenue	430		40

To record the collection of the Woodlow note receivable and related interest ($4,000 x 4% x 3/12 mos. = $40).

Note this entry is recorded only if future payment is expected. If future payment is not expected then the customer's account should be transferred to the Allowance for Doubtful Accounts account.

Accruing Interest Revenue on a Note Receivable

In the previous example, no interest revenue needed to be accrued since the customer's payment occurred in the same period as the creation of the note (2019). If instead the note was created on December 1 (instead of July 1) the December 1 entry would be:

Note Receivable - Woodlow	120	4,000	
Account Rec. - Woodlow	110		4,000

To record conversion of the account receivable from Woodlow to a 4%, 3-month note receivable.

You'll note this entry is nearly identical to the July 1 entry. The difference occurs at year-end. If the company's year-end is on December 31, 2019, an adjusting entry would be necessary to accrue interest revenue from December 1 to December 31:

Interest Receivable	116	13	
Interest Revenue	430		13

To record interest revenue accrued on the Woodlow note receivable at year-end ($4,000 x 4% x 1/12 mos. = $13).

The maturity date is three months from the date of issue, or February 28, 2020. On that date, BDCC would record the collection of the note receivable and related interest as:

Cash	101	4,040	
Note Rec. -Woodlow	120		4,000

Interest Receivable	116	13
Interest Revenue	430	27

To record the collection of the note receivable and interest from January 1 to February 28, 2020 ($4,000 x 4% x 2/12 mos. = $27).

Summary of Chapter 8 Learning Objectives

LO1 – Explain, calculate, and record estimated uncollectible accounts receivable and subsequent write-offs and recoveries.

Not all accounts receivable are collected, resulting in uncollectible accounts. Because it is not known which receivables will become uncollectible, the allowance approach is used to match the cost of estimated uncollectible accounts to the period in which the related revenue was generated. The adjusting entry to record estimated uncollectible amounts is a debit to the Bad Debt Expense general ledger account and a credit to the Allowance for Doubtful Accounts account. The income statement method and the balance sheet method are two ways to estimate and apply the allowance approach. The income statement method calculates bad debt expense based on a percentage of credit sales while the balance sheet method calculates total estimated uncollectible accounts in the Allowance for Doubtful Accounts using an aging analysis. When receivables are identified as being uncollectible, they are written off. If write-offs subsequently become collectible, a recovery is recorded using two entries: by reversing the write-off (or the portion that is recoverable), then recording the cash receipt.

LO2 – Explain and record short-term notes receivable and calculate related interest.

A short-term note receivable is a promissory note that bears an interest rate calculated over the term of the note. Short-term notes receivable are considered current assets if they mature within twelve months from the date of issue. Notes can be issued to a customer at the time of sale, or to replace an overdue account receivable, or represent a cash loan made. Journal entries are required for the creation of the note, the honoring/ dishonoring of the note, and for any interest revenue that needs to be accrued.

E N D O F C H A P T E R M A T E R I A L S

Multiple-Choice Review

1. Accounts receivable should be shown in the assets section of the balance sheet at their:
   a.) original amount
   b.) net realizable value
   c.) market value
   d.) lower-of-cost or net realizable value

2. The adjusting entry to estimate uncollectible accounts affects:
   a.) the balance sheet only
   b.) the income statement only
   c.) the balance sheet and income statement
   d.) none of the financial statements

3. At the end of the year, Zoology Company has an Accounts Receivable balance of $100,000, an Allowance for Doubtful Accounts balance of $7,000, and a Bad Debt Expense balance of $8,000. The net realizable value of accounts receivable is:
   a.) $85,000
   b.) $92,000
   c.) $93,000
   d.) $108,000

4. At the end of the year, Lucky Company had an Accounts Receivable unadjusted balance of $200,000 and an Allowance for Doubtful Accounts unadjusted balance of $2,500. An aging of receivables analysis shows that uncollectible accounts are estimated to be $8,500. Given this information, what is the amount of bad debt expense for the year?
   a.) $2,500
   b.) $6,000
   c.) $8,000
   d.) $0

5. The write-off off an uncollectible account results in a:
   a.) debit to Bad Debt Expense
   b.) credit to Bad Debt Expense
   c.) debit to Allowance for Doubtful Accounts
   d.) debit to Accounts Receivable

Multiple-Choice Review (continued)

6. If a note receivable is dishonored, Accounts Receivable will be debited for what amount?
   a.) the note's principal
   b.) the note's maturity value
   c.) the note's maturity value plus interest
   d.) the note's principal less interest

7. A receivable that is documented by a formal written agreement between two parties that usually involves interest is a(n):
   a.) account receivable
   b.) trade receivable
   c.) note receivable
   d.) interest receivable

8. What is the due date of a $10,000, 90-day, 8% note receivable created on August 5?
   a.) October 31
   b.) November 2
   c.) November 3
   d.) November 4

9. The journal entry to record the collection of a note receivable, with interest accrued at year-end, will include which accounts?

a)	Cash		
	Interest receivable		
	Notes receivable		
	Interest revenue		

b)	Cash		
	Notes receivable		
	Interest receivable		
	Interest revenue		

c)	Cash		
	Note receivable		

10. What is the maturity value of a $10,000, 90-day, 14% note?
    a.) $10,900
    b.) $10,000
    c.) $10,350
    d.) $11,400

Answers on the following page

Answers to Multiple-Choice Review

1. b
2. c
3. c

Accounts receivable balance	$100,000
Less: Allowance for Doubtful Accounts balance	7,000
Net realizable value	93,000

4. b
   Bad debt expense ($8,500 -$2,500)

5. c
6. b
7. c
8. c

Days in August (31 -5)	26
Days in September	30
Days in October	31
Days in November	3
Total days of note	90

9. b
10. c

Face value of note	$10,000
+ Interest (($10,000 x. 14 x (90/360))	350
Maturity value	$10,350

Discussion Questions

1. How does use of allowance for doubtful accounts match expenses with revenue?
2. How does the income statement method calculate the estimated amount of uncollectible accounts?
3. What is an ageing schedule for bad debts, and how is it used in calculating the estimated amount of uncollectible accounts?
4. How are credit balances in accounts receivable reported on the financial statements?
5. What is an example of a journal entry to create a note receivable?
6. Explain the process for a note that is unpaid (dishonored) at its maturity date.

Comprehension Problems

CP 8–1

Lulu Company has the following year-end unadjusted balances:

Accounts receivable	$490,000
Sales revenue	3,100,000
Allowance for Doubtful Accounts	4,100

***Required**:*

1. Assume the company uses the income statement method to estimate uncollectible accounts. Based on past experience, the company estimates 1% of sales will be uncollectible. Prepare the journal entry to estimate uncollectible accounts for the period.

2. *Independent of requirement 1*

   Assume the company uses the balance sheet method to estimate uncollectible accounts. Based on past experience, the company estimates 5% of accounts receivable will be uncollectible. Prepare the journal entry to estimate uncollectible accounts for the period.

3. What financial statements were impacted by this year-end journal entry to estimate uncollectible accounts? Why must the company prepare this entry?

CP 8–2

Using the information above for Lulu Company, now assume the Allowance for Doubtful Accounts balance is an unadjusted debit balance. How will that impact your journal entry for items 1 & 2?

CP 8–3

Fufu Company has the following year-end unadjusted balances:

Accounts receivable	$62,000
Sales revenue	780,000
Sales discounts	9,000
Allowance for Doubtful Accounts	1,900

***Required**:*

1. Assume the company uses the income statement method to estimate uncollectible accounts. Based on past experience, the company estimates 1% of net sales will be uncollectible. Prepare the journal entry to estimate uncollectible accounts for the period.

2. *Independent of requirement 1*

   Assume the company uses the balance sheet method to estimate uncollectible accounts. Based on past experience, the company estimates 12% of accounts receivable will be uncollectible. Prepare the journal entry to estimate uncollectible accounts for the period. 3.

3. What financial statements were impacted by this year-end journal entry to estimate uncollectible accounts? Why must the company prepare this entry?

CP 8–4

Koss Co. Ltd. began operations on January 1, 2018. It had the following transactions during 2018, 2020, and 2021.

2018	Dec.	31	Estimated uncollectible accounts as $5,000 (calculated as 2% of sales)
2020	Apr.	15	Wrote off the balance of N. Lang, $700
	Aug.	8	Wrote off $3,000 of miscellaneous customer accounts as uncollectible
	Dec.	31	Estimated uncollectible accounts as $4,000 (1½% of sales)
2021	Mar.	6	Recovered $200 from N. Lang, whose account was written off in 2020; no further recoveries are expected
	Sept.	4	Wrote off as uncollectible $4,000 of miscellaneous customer accounts
	Dec.	31	Estimated uncollectible accounts as $4,500 (1½% of sales).

Required:

1. Prepare journal entries to record the above transactions.
2. Assume that management is considering a switch to the balance sheet method of calculating the allowance for doubtful accounts. Under this method, the allowance at the end of 2021 is estimated to be $2,000. Comment on the discrepancy between the two methods of estimating allowance for doubtful accounts.

CP 8–5

Impulse Inc. had the following unadjusted account balances at December 31, 2019, its year-end.

	Account Balances	
	Debit	*Credit*
Accounts Receivable	$125,000	
Allowance for Doubtful Accounts		$ 3,000
Sales		750,000

Impulse estimates its uncollectible accounts as five per cent of its December 31 accounts receivable balance.

Required:

1. Calculate the amount of estimated uncollectible accounts that will appear on Impulse's balance sheet at December 31, 2019.

2. Calculate the amount of bad debt expense that will appear on Impulse's income statement at December 31, 2019.
3. Prepare a partial balance sheet at December 31, 2019 showing accounts receivable, allowance for doubtful accounts, and the net accounts receivable.

CP 8–6

The following information is taken from the records of Salzl Corp. at its December 31 year-end:

	2019	*2020*
Accounts written off		
During 2019	$2,400	
During 2020		$1,000
Recovery of accounts written off		
Recovered in 2020		300
Allowance for doubtful accounts (adjusted balance)		
At December 31, 2018	8,000	
At December 31, 2019	9,000	

Salzl had always estimated its uncollectible accounts at two per cent of sales. However, because of large discrepancies between the estimated and actual amounts, Hilroy decided to estimate its December 31, 2019 uncollectible accounts by preparing an ageing of its accounts receivable. An amount of $10,000 was considered uncollectible at December 31, 2020.

Required:

1. Calculate the amount of bad debt expense for 2019.
2. Calculate the amount of bad debt expense for 2020.

CP 8–7

Sather Ltd. had the following unadjusted account balances at December 31, 2019:

Accounts Receivable	$150,000
Allowance for Doubtful Accounts	3,000
Sales	750,000

Required:

1. Assume that Sather Ltd. estimated its uncollectible accounts at December 31, 2019 to be two per cent of sales.
   a. Prepare the appropriate adjusting entry to record the estimated uncollectible accounts at December 31, 2019.
   b. Calculate the balance in the Allowance for Doubtful Accounts account after posting the adjusting entry.
2. Assume that Sather Ltd. estimated its uncollectible accounts at December 31, 2019 to be ten per cent of the net accounts receivable balance.

   a. Prepare the appropriate adjusting entry to record the estimated uncollectible accounts at December 31, 2019.
   b. Calculate the balance in the Allowance for Doubtful Accounts account after posting the adjusting entry.
3. Why is there a difference in the calculated estimates of doubtful accounts in questions 1 and 2**?**

CP 8–8

Elliot Inc. has the following unadjusted account balances at December 31, 2019:

	Account Balances	
	Debit	*Credit*
Accounts Receivable	$50,000	
Allowance for Doubtful Accounts	1,000	
Sales		$200,000

Required:

1. Assume Elliot estimates that two per cent of its sales will not be collected.
   a. What amount of bad debt expense will be reported on Elliot's income statement at December 31, 2019?

b. What amount of allowance for doubtful accounts will be reported on Elliot's balance sheet at December 31, 2019?

2. Assume Elliot estimates that five per cent of accounts receivable will not be collected.
   a. What amount of bad debt expense will be reported on Elliot's income statement at December 31, 2019?
   b. What amount of allowance for doubtful accounts will be reported on Elliot's balance sheet at December 31, 2019?
3. Which calculation provides better matching: that made in question 1 or in question 2? Why?

CP 8–9

On March 1, Betty Inc. sold merchandise on account to Goop Corporation for $24,000, terms were n/30. Goop was unable to pay within the credit period. Therefore, on April 12, Goop agreed to a promissory note with Betty Inc. The note settles Goop's open account and is due in 120 days and carries 12% interest. Record all entries for Betty Inc. regarding these events -beginning with the sale of merchandise on March 1. Assume the cost of this merchandise was $18,000 and that Goop honored the note at is maturity date.

CP 8–10

A $12,000 account receivable owing from Smith Co. to Jones Inc. was converted into a 6%, 3-month note receivable on November 1, 2019.

Required:

1. Prepare the entry needed to record the note receivable in Jones' accounting records.
2. Prepare the entry needed to record accrued interest on the note receivable in Jones' accounting records at December 31, 2019.
3. What is the maturity date for this note?
4. Assume Smith honors the note at its maturity date, record the journal entry for Jones Inc.

Problems

P 8–1

The balance of the accounts receivable account of Griffin Ltd. at December 31, 2019 was $74,460. Included in this balance are the credit balances of two customers, amounting to $3,200 and $1,800.

Required:

1. What amount for accounts receivable would be shown as assets on the balance sheet? How would it be presented?
2. How would the credit balances in the customers' accounts be disclosed?

P 8–2

The following balances appear in the unadjusted trial balance of Lapointe Inc. at its year-end, December 31, 2019.

	Account Balances	
	Debit	*Credit*
Accounts Receivable	$100,000	
Allowance for Uncollectible Accounts		$ 5,000
Sales (all on credit)		600,000

Lapointe uses the balance sheet method of calculating its allowance for doubtful accounts account. At December 31, 2019, it estimates that three per cent of accounts receivable would not be collected. Lapointe had the following transactions during 2020:

a. Accounts receivable worth $9,000 were written off.
b. Credit sales amounted to $800,000.
c. Collections of accounts receivable amounted to $700,000.
d. Lapointe collected $2,000 in 2020 that was previously written off in 2019. This amount is not included in the collection of accounts receivable described in *c*.
e. At year-end, Lapointe estimated that the amount of doubtful accounts at December 31, 2020 was $10,000.

Required:

1. Prepare all journal entries required for 2019 and 2020.
2. If Lapointe had used the income statement method of estimating uncollectible accounts, calculate the balance in the Allowance for Doubtful Accounts general ledger account at December 31, 2019

and 2020. Assume that Lapointe estimated doubtful accounts to be one per cent of sales for both years.

P 8–3

The following balances are taken from the unadjusted trial balance of Penner Inc. at its year-end, December 31, 2019.

	Account Balances	
	Debit	*Credit*
Accounts Receivable	$150,000	
Allowance for Doubtful Accounts		$ 1,500
Sales	500,000	
Sales Returns and Allowances		50,000

An aging of accounts receivable at December 31, 2019 reveals the following information:

Age (days)	*Accounts receivable*	*Estimated loss percentage*
1-30	$ 50,000	2%
31-60	27,000	4%
61-90	40,000	5%
91-120	30,000	10%
Over 120	3,000	50%
Total	$150,000	

The balance for R. Laws of $1,000 is over 120 days past due. It is included in the aging of accounts receivable balance and has not yet been written off.

Part A: 2019

Required: Prepare journal entries to record:

1. The write-off of R. Laws' account of $1,000 on December 31, 2019. (*Hint:* Recalculate the accounts receivable balance after the write-off.)
2. The appropriate adjusting entry to set up the required balance in the Allowance for Doubtful Accounts general ledger account at December 31, 2019. *(Hint:* Remember that R. Laws' account has been written off.)

Part B: 2020

The following transactions were made in 2020.

a. Sales on account were $700,000.
b. Collections of accounts receivable amounted to $599,000.
c. Penner wrote off $10,000 of accounts receivable.
d. An ageing of accounts receivable at December 31, 2020 revealed the following information:

Age (days)	*Accounts receivable*	*Estimated loss percentage*
1-30	$170,000	2%
31-60	35,000	3%
61-90	-0-	4%
91-120	27,000	25%
Over 120	8,000	50%
Total	$240,000	

Required: Prepare the appropriate adjusting entry to set up the required Allowance for Doubtful Accounts general ledger account balance at December 31, 2020.

P 8–4

Tarpon Inc. made $1,000,000 in sales during 2020. Thirty per cent of these were cash sales. During the year, $25,000 of accounts receivable were written off as being uncollectible. In addition, $15,000 of the accounts that were written off in 2019 were unexpectedly collected. At its year-end, December 31, 2020, Tarpon had $250,000 of accounts receivable. The balance in the Allowance for Doubtful Accounts general ledger account was $15,000 credit at December 31, 2019.

Age (days)	*Accounts receivable*
1-30	$100,000
31-60	50,000
61-90	25,000
91-120	60,000
Over 120	15,000
Total	$250,000

Required:

1. Prepare journal entries to record the following 2020 transactions:
   a. The write-off of $25,000
   b. The recovery of $15,000.
2. Recalculate the balance in the Allowance for Doubtful Accounts general ledger account at December 31, 2020.
3. Prepare the adjusting entry required at December 31, 2020 for each of the following scenarios:
   a. The estimated uncollectible accounts at December 31, 2020 is three per cent of credit sales.
   b. The estimated uncollectible accounts at December 31, 2020 is estimated at five per cent of accounts receivable.
   c. The estimated uncollectible accounts at December 31, 2020 are calculated as follows:

Age (days)	*Estimated loss percentage*
1-30	2%
31-60	4%
61-90	5%
91-120	10%
Over 120	50%

P 8–5

The Arcand Co. Ltd. has estimated its bad debts at 1 per cent of net credit sales. During 2020, Arcand decided to calculate the required balance for the allowance for doubtful accounts at year-end, December 31, by ageing its accounts receivable. The review suggested a required balance of $7,200. The following data, which already have been recorded in the company's general ledger, are also available:

	2019	*2020*
Accounts written off		
On March 14, 2019 (Boven)	$600	
On March 30, 2020 (Seaton)		$300
Recoveries of accounts written off		
On June 5, 2020 (Boven)		400

The Allowance for Doubtful Accounts general ledger account reported the following balances: January 1, 2019—$1,500 credit; January 1, 2020—$3,900 credit.

Required: Prepare journal entries to record

1. The amount of bad debt expense for the year 2019
2. The bad debt expense on December 31, 2020
3. The collection from Boven on June 5, 2020.

P 8–6

At December 31, 2018, the Elias Paper Company Ltd. balance sheet had a balance of $1,268,800 in accounts receivable. In addition, a contra account showed an allowance for doubtful accounts balance of $32,400. Credit sales for 2019 were $8,540,000, with collections of the receivables amounting to $8,262,560, including $15,600 that Elias had written off as uncollectible in December 2018 from Huron Supplies Ltd. During 2019, Elias wrote off $33,660 as uncollectible.

On November 1, 2019, a customer with a $720,000 balance in accounts receivable sent $200,000 in cash (included in the cash collections) and a note receivable for the balance. The account was considered to be collectible.

At December 31, 2019, Elias' year-end, the balance in accounts receivable included $200,580 of past due accounts, which management estimated would result in a 10 per cent loss, based on past experience. In addition, it was management's policy to set up an allowance on remaining accounts receivable equal to 2 per cent of the balance outstanding.

Required:

1. Prepare general journal entries for all 2019 transactions relating to notes and accounts receivable.
2. Prepare all adjusting entries at December 31, 2019.
3. Show the amount that should appear in the 2019 income statement as bad debt expense.
4. What is the total for the allowance for doubtful accounts at December 31, 2019?

P 8–7

The accounts receivable listing of Grant Corporation shows the following on December 31, 2019. The general ledger showed a $200 credit balance in Allowance for Doubtful Accounts before adjustment.

Name of customer	*Invoice date*	*Amount*
Greenwood Fruit Packers Ltd.	May 2	$ 600
Granville Ltd.	August 15	335
Kutcher Inc.	October 2	720
Kutcher Inc.	December 8	275
Lamb Fruit Inc.	March 3	445
Grimm Fruit Company	November 11	822
Fehr Produce Corp.	November 20	250
Fehr Produce Corp.	September 4	465
Fehr Produce Corp.	July 10	922
Golden Fruit Ltd.	December 5	500

Required:

1. Prepare an aging of accounts receivable at December 31, 2019, divided into five time periods as follows:

Age (days)
1-30
31-60
61-90
91-120
121-150
Over 150

2. Compute the estimated loss (rounded to two decimal places) based on the following:

Age (days)	*Estimated loss percentage*
1-30	0.5%
31-60	1%
61-90	3%
91-120	10%
121-150	25%
Over 150	50%

3. Prepare the journal entry to record the bad debt expense for the year.

P 8–8

Zajic Corp. had the following transactions relating to uncollectible accounts during 2019:

Feb.	15	Wrote off F. Young's account of $200 as uncollectible
Apr.	30	Collected from G. Yopek Inc. $100 that had been written off in 2018
June	26	Received $300 from Wong Machine Ltd. (Wong's previous balance was $700); no further payments are expected and the balance was written off
Sept.	7	Wrote off H. Wolfe's account of $350
Dec.	31	Analysed accounts receivable, revealing the following:

a. Accounts to be written off:

S. Wuff	$300
P. Levesque	400
T. White	100

b. Aging of accounts receivable:

Age (days)	*Accounts receivable*	*Estimated loss percentage*
1-30	$ 20,000	2%
31-60	12,000	4%
61-90	5,000	5%
91-120	3,000	10%
Over 120	10,000	50%
Total	$ 50,000	

Required:

1. Assume that there was a credit balance of $1,735 in the Allowance for Doubtful Accounts general ledger account at December 31, 2018. Prepare the entry to write off the uncollectible accounts at December 31, 2019.
2. Prepare the appropriate adjusting entry to set up the required balance in the Allowance for Doubtful Accounts general ledger account at December 31, 2019.

P 8–9

A $120,000 account receivable owing from Baron Cabinets Ltd. to Glimmer Enterprises was converted into a 12%, 12-month note receivable on August 1, 2019. Principal of $10,000 per month plus accrued interest on the outstanding balance was to be paid on the note on the last day of each month.

Required:

1. Prepare the entry needed to record the note receivable in Glimmer's accounting records on August 1.
2. Prepare the entry needed to record accrued interest on the note receivable in Glimmer's accounting records at December 31, 2019.
3. Record the cash received from the note in Glimmer's accounting records on February 28, 2020.

CHAPTER NINE

Long-lived Assets

Long-lived or **capital** assets are used in the normal operating activities of a business and are expected to provide benefits for a period in excess of one year. These long-lived assets are separated into categories the main ones being (a) plant assets and (b) intangible assets. The different types of long-lived assets and the various techniques to allocate their cost will be discussed in this chapter.

Chapter 9 Learning Objectives

LO1 – Distinguish the different types of plant assets and how to accurately calculate their cost.

LO2 - Explain, calculate, and record depreciation of plant assets using the units-of-production, straight-line, and double-declining balance methods.

LO3 – Calculate and record depreciation for partial years.

LO4 – Calculate and record entries for revised depreciation estimates.

LO5 – Account for the disposal of plant assets.

LO6 – Explain and record the acquisition and amortization of intangible assets.

LO7 - Explain goodwill and identify where on the balance sheet it is reported.

LO8 – Describe the disclosure requirements for long-lived assets in the notes to the financial statements.

A. Plant Assets

LO1 - Distinguish the different types of plant assets and how to accurately calculate their cost.

Plant Assets are long-lived assets that are acquired for the purpose of generating revenue either directly or indirectly. They are also called *fixed assets* and *property, plant and equipment (PP&E)*. They are held for use in the production or supply of goods and services, have been acquired for use on a continuing basis, and are not intended for sale in the ordinary course of business. Examples of PP&E assets include land, office and manufacturing buildings, production machinery, trucks, ships or aircraft used to deliver goods or transport passengers, salespersons' automobiles owned by a company, or a farmer's production machinery such as tractors and field equipment. PP&E assets are **tangible assets** because they can be physically touched. There are other types of non-current assets that are **intangible**—existing only as legal concepts—such as copyrights and patents. These will be discussed later in this chapter.

A long-term asset can be considered a bundle of future benefits that will be used up over a period of years. Each year, a pre-determined portion of these benefits is allocated to expense on the income statement. This concept was briefly introduced in Chapter 3. It will be examined more fully in this chapter.

Capital Expenditures

Any cash disbursement is referred to as an **expenditure**. A **capital expenditure** results in the acquisition of a non-current asset, including any additional costs involved in preparing the asset for its intended use. Examples of various costs that may be incurred to prepare PPE for use are listed below.

	Capital expenditures			
	Land	*Land Improv.*	*Building*	*Equipment*
Costs to acquire PP&E	Purchase price Commission to real estate agent Legal fees	Purchase price Transportation Insurance (during transportation)	Purchase price Commission to real estate agent Legal fees	Invoice cost Transportation Insurance (during transportation)
Costs to prepare PP&E for use	Costs of draining, clearing, and landscaping; demolition Assessments for streets and sewage system	Installation Wiring Inspection Testing	Repair and remodelling costs before use Payments to tenants for premature termination of lease	Assembly Installation (including wages paid to company employees) Special floor foundations or supports Wiring Inspection Test run costs

To demonstrate, assume that equipment is purchased for $20,000. Additional costs include transportation costs $500, installation costs $1,000, construction costs for a cement foundation $2,500, and test run(s) costs to debug the equipment $2,000. The total capitalized cost of the asset to put it into use is $26,000.

Determining whether an outlay is a capital expenditure or a *revenue expenditure* is a matter of judgment. A **revenue expenditure** does not have a future benefit beyond one year. The concept of materiality enters into the distinction between capital and revenue expenditures. As a matter of expediency, an expenditure of $20 that has all the characteristics of a capital expenditure would probably be expensed rather than capitalized, because the time and effort required by accounting staff to capitalize and then depreciate the item over its estimated useful life is much greater than the benefits derived from doing so. Capitalization policies are established by many companies to resolve the problem of distinguishing between capital and revenue expenditures. For example, one company's capitalization policy may state that all capital expenditures equal to or greater than $1,000 will capitalized, while all capital expenditures under $1,000 will be expensed when incurred. Another company may have a capitalization policy limit of $500.

Not all asset-related expenditures incurred after the purchase of an asset are capitalized. An expenditure made to maintain PP&E in satisfactory working order is a revenue expenditure and recorded as a debit to an expense account. Examples of these expenditures include: (a) the cost of replacing small parts of an asset that normally wear out (in the case of a truck, for example: new tires, new muffler, new battery); (b) continuing expenditures for maintaining the asset in good working order (for example, oil changes, antifreeze, transmission fluid changes); and (c) costs of renewing structural parts of an asset (for example, repairs of collision damage, repair or replacement of rusted parts).

Although some expenditures for repair and maintenance may benefit more than one accounting period, they may not be material in amount or they may have uncertain future benefits. They are therefore treated as expenses. These three criteria must all be met for an expenditure to be considered capital in nature.

1. Will it benefit more than one accounting period?
2. Will it enhance the service potential of the asset, or make it more valuable or more adaptable?
3. Is the dollar amount material?

If the expenditure does not meet all three criteria, then it is a revenue expenditure and is expensed.

Land

The purchase of land is a capital expenditure when the land is used in the operation of a business. In addition to the costs listed in the schedule above, the cost of land should be increased by the cost of removing any unwanted structures on it. This cost is reduced by the proceeds, if any, obtained from the sale of the scrap. For example, assume that the purchase price of land is $100,000 before an additional $15,000 cost to raze an old building: $1,000 is expected to be received for salvaged materials. The cost of the land is calculated as $114,000 ($100,000 + $15,000 - $1,000).

Frequently, land and useful buildings are purchased for a *lump sum*. That is, one price is negotiated for their entire purchase. A lump sum purchase price must be apportioned between the PP&E assets acquired on the basis of their respective market values, perhaps established by a municipal assessment or a professional land appraiser. Assume that a lump sum of $150,000 cash is paid for land and a building, and that the land is appraised at 25% of the total purchase

price. The Land account would be debited for $37,500 ($150,000 x 25%) and the Building account would be debited for the remaining 75% or $112,500 ($150,000 x 75% = $112,500 or $150,000 - $37,500 = $112,500) as shown in the following journal entry.

Land	37,500	
Building	112,500	
Cash		150,000

To record the purchase of land and building for a lump sum of $150,000; land: $150,000 x 25% = $37,500; building: $150,000 x 75% = $112,500.

Land Improvements

Land improvements are enhancements made upon land. These improvements wear out over time and therefore necessitate a separate asset category from land. Examples of land improvements include parking lots, walkways, landscaping, lighting systems, and fences. The cost of land improvements are the materials, labor, and any other costs to prepare the improvements for their proper use. For example, assume a company spends $40,000 to pave a parking lot on their existing land. The journal entry would appear as follows:

Land improvements	40,000	
Cash		40,000

To record the costs associated with installing a parking lot.

Building and Equipment

When a capital asset is purchased, its cost includes the purchase price plus all costs to prepare the asset for its intended use. However, a company may construct its own building or equipment. In the case of a building, for example, costs include those incurred for excavation, building permits, insurance and property taxes during construction, engineering fees, the cost of labor incurred by having company employees supervise and work on the construction of the building, and the cost of any interest incurred to finance the construction during the construction period.

B. Depreciation

LO2 - Explain, calculate, and record depreciation of plant assets using the units-of-production, straight-line, and double-declining balance methods.

The role of **depreciation** is to allocate the cost of a PP&E asset (except land) over the accounting periods expected to receive benefits from its use. Depreciation begins when the asset is in the location and condition necessary for it to be put to use. Depreciation continues even if the asset becomes idle or is retired from use, unless it is fully depreciated. Land is not depreciated, as it is assumed to have an unlimited life.

Depreciation is an application of the matching principle.

> According to generally accepted accounting principles, a company should select a method of depreciation that represents the way in which the asset's future economic benefits are estimated to be used up.

There are many different ways to calculate depreciation. The most frequently used methods are usage-based and time-based. There are three factors necessary to calculate depreciation of PP&E:

- cost of the asset
- salvage value
- estimated useful life or productive output.

Salvage value, also called residual value, is the estimated worth of the asset at the end of its estimated useful life. This concept was not introduced when depreciation was briefly discussed in Chapter 3. A long-lived asset is not depreciated below its salvage value.

Useful life is the length of time that a long-lived asset is estimated to be of benefit *to the current owner*. This is not necessarily the same as the asset's economic life. If a company has a policy of replacing its delivery truck every two years, its useful life is two years even though it may be used by the next owner for several more years.

Estimated useful life is the length of time the asset is estimated to be used productively in the company's operations. It is also known as service life or productive output. This can be measured in units of output, hours used, kilometres driven, or total length of productivity.

Regardless of depreciation method chosen, it must be applied consistently from year to year. Different depreciations methods can be applied to different types of depreciable assets, however.

Usage-Based Depreciation Method – Units-of-Production

Usage-based depreciation methods, such as the units-of-production method, are used when the output of an asset varies from period to period.

> Usage methods assume that the asset will contribute to the earning of revenues in relation to the amount of output during the accounting period. Therefore, the depreciation expense will vary from year to year.

To demonstrate, assume that Big Dog Carworks Corp. purchased a $20,000 piece of equipment on January 1, 2019 with a $2,000 residual value and estimated productive life of 10,000 units.

If 1,500 units were produced during 2019, the depreciation expense for the year ended December 31, 2019 would be calculated using the following formula:

Cost – salvage value / Estimated units output	=	Depreciation per unit	x	Number of units produced	=	Depreciation expense
$20,000 – 2,000 / 10,000 units	=	$1.80 per unit	x	1,500 units	=	$2,700

The following adjusting entry would be made on December 31, 2019:

2019			
Dec. 31	Depreciation Expense	2,700	
	Accumulated Depreciation		2,700

To record depreciation expense using the units-of-production method; ($20,000 - $2,000)/10,000 units = $1.80/unit; $1.80/unit x 1,500 units = $2,700.

The **carrying amount** or net book value (NBV) of the asset is its cost less accumulated depreciation. On the December 31, 2019 balance sheet, the carrying amount would be $17,300 ($20,000 - 2,700).

> Note that the salvage value is only used to calculate depreciation expense. It is not recorded in the accounts of the company or included as part of the carrying amount on the balance sheet.

If 2,000 units were produced during 2020, depreciation expense for that year would be $3,600 ($1.80 per unit x 2,000 units). At December 31, 2020, the following adjusting entry would be recorded:

2020			
Dec. 31	Depreciation Expense	3,600	
	Accumulated Depreciation		3,600

To record depreciation expense using the units-of-production method; ($20,000 - $2,000)/10,000 units = $1.80/unit; $1.80/unit x 2,000 units = $3,600.

The carrying amount at December 31, 2020 would be $13,700 ($20,000 – 2,700 – 3,600).

If the equipment produces 1,000 units in 2021, 2,500 units in 2022, and 3,000 units in 2023, depreciation expense and carrying amounts each year would be as follows:

(a)	*(b)*	*(c)*	*(d)*	*(e)*	*(f)*
Year	*Carrying amount at start of year*	*Usage (units)*	*Rate**	*Depr. expense*	*Carrying amount at end of year (b) – (e)*
2019	$20,000	1,500	$1.80	$2,700	$17,300
2020	17,300	2,000	1.80	3,600	13,700
2021	13,700	1,000	1.80	1,800	11,900
2022	11,900	2,500	1.80	4,500	7,400
2023	7,400	3,000	1.80	5,400	2,000
		10,000		$18,000	

*($20,000 – 2,000)/10,000 units = $1.80 per unit

If the equipment produces exactly 10,000 units over its useful life and is then retired, depreciation expense overall years will total $18,000 (10,000 units x $1.80) and the carrying amount will equal residual value of $2,000 ($20,000 – 18,000).

Time-Based Depreciation Method - Straight-Line

A simplified method of **straight-line depreciation** was introduced in Chapter 3. This method assumes that the asset will contribute to the earning of revenues equally each time period. Therefore, equal amounts of depreciation are recorded during each year of the asset's useful life.

Straight-line depreciation is calculated as:

$$\frac{\text{(Cost - salvage value)}}{\text{Useful life}} = \text{Depreciation expense each period}$$

To demonstrate, assume the same $20,000 piece of equipment used earlier, with a useful life of five years and a salvage value of $2,000. Straight-line depreciation would be $3,600 per year calculated as:

$$\frac{\$20{,}000 - \$2{,}000}{5 \text{ years}} = \$3{,}600 \text{ depreciation expense each year}$$

Over the five-year useful life of the equipment, depreciation expense and carrying amounts will be as follows:

(a)	*(b)*	*(c)*	*(d)*
Year	*Carrying amount at start of year*	*Depr. expense*	*Carrying amount at end of year (b) – (c)*
2019	$20,000	$3,600	$16,400
2020	16,400	3,600	12,800
2021	12,800	3,600	9,200
2022	9,200	3,600	5,600
2023	5,600	3,600	**2,000**
		$18,000	

The carrying amount at December 31, 2023 will be the salvage value of $2,000.

Under the straight-line method, depreciation expense for each accounting period remains the same dollar amount over the useful life of the asset.

Accelerated Time-Based Depreciation Method – Double-Declining Balance (DDB)

An **accelerated depreciation** method assumes that a capital asset will contribute more to the earning of revenues in the earlier stages of its useful life than in the later stages. This means that more depreciation is recorded in earlier years with the depreciation expense decreasing each year. This approach is most appropriate where assets experience a high degree of obsolescence (such as computers) or where the value of the asset is highest in the first years when it is new and efficient and declines significantly each year as it is used and becomes worn (such as mining equipment).

Under an accelerated depreciation method, depreciation expense decreases each year over the useful life of the asset.

One type of accelerated depreciation is the **double-declining balance (DDB) method**. To calculate, the percentage cost of the asset (100%) is divided by its estimated useful life, *without regard to salvage value*. The resulting rate is doubled. The doubled rate is applied at the end of each year to the carrying amount of the asset.

For example, assume the same $20,000 equipment with an estimated useful life of five years. The straight-line rate is 20 per cent, calculated by dividing 100 per cent by five years, the useful life (100%/5 = 20%). This straight-line rate of 20% is then doubled to 40%.

Regardless of which depreciation method is used, a capital asset cannot be depreciated below its carrying amount, in this case $2,000.

(a)	*(b)*	*(c)*	*(d)*	*(e)*
Year	*Carrying amount at start of year*	*DDB rate*	*Depr. expense (b) x (c)*	*Carrying amount at end of year (b) – (d)*
2019	$20,000	40%	$8,000	$12,000
2020	12,000	40%	4,800	7,200
2021	7,200	40%	2,880	4,320
2022	4,320	40%	1,728	2,592
2023	2,592	40%	592	2,000
			$18,000	

Although the 2023 depreciation expense would otherwise be $1,037 ($2,592 x 40%), only $592 is recorded to bring the carrying amount of the asset down to its residual value of $2,000.

Partial Year Depreciation

LO3 – Calculate and record depreciation for partial years.

Assets may be purchased or sold at any time during a fiscal year. Should depreciation be calculated for a whole year in such a case? The answer depends on corporate accounting policy. There are many alternatives for partial year depreciation, the one used in this chapter will be the whole-month approach.

To illustrate the whole-month approach of recording depreciation, assume again that on January 1, 2019 Big Dog Carworks Corp. purchases equipment for $20,000, with a useful life of five years and a salvage value of $2,000. Recall that depreciation expense for 2019 was calculated as $3,600 using the straight-line method. If the equipment had been purchased March 1, 2019, the depreciation expense for 2019 would be $3,000 ($3,600 x 10/12). The equipment is only used for 10 months in 2019 (March –December) so only 10 months' worth of depreciation expense will appear in the financial records. The journal entry at December 31, 2019 would be:

2019			
Dec. 31	Depreciation Expense	3,000	
	Accumulated Depreciation		3,000

To record depreciation expense for ten months using the straight-line method; (($20,000 - $2,000)/5 years) * ($^{10}/_{12}$) = $3,000.

Revising Depreciation

LO4 – Calculate and record entries for revised depreciation estimates.

Depreciation calculations need to be revised when accounting estimates like useful life or salvage value change. Both the useful life and salvage value of a depreciable asset are estimated at the time it is purchased. As time goes by, these estimates may change for a variety of reasons. In these cases, the depreciation expense is recalculated from the date of the change in the accounting estimate and applied going forward. *No change is made to depreciation expense already recorded.*

Consider the original example of the equipment purchased for $20,000 on January 1, 2019, with an estimated useful life of five years and salvage value of $2,000. If the straight-line depreciation method and the whole month approach are used, the depreciation expense is $3,600 in 2019 and $3,600 in 2020. The carrying amount at the end of 2020 is $12,800 ($20,000 – 3,600 – 3,600). Assume that on December 31, 2021, management estimates the remaining useful life of the

equipment to be eight years from that date, and the salvage value to be $5,000.

Depreciation expense for the remaining six years would be calculated as:

$$\frac{\text{(Remaining carrying amount – salvage value)}}{\text{Remaining useful life}}$$

$$= \frac{\$12{,}800 - 5{,}000}{8 \text{ years}}$$

$$= \$1{,}600 \text{ per year}$$

C. Disposal of Property, Plant, and Equipment

LO5 – Account for the disposal of plant assets.

Property, plant, and equipment is **disposed**, or derecognized, when it is sold or when no future economic benefit is expected. The cost and any related accumulated depreciation are removed from the accounting records.

To account for the disposal of a PP&E asset, the following must occur:

1. If the disposal occurs part way through the accounting period, depreciation must be updated to the date of disposal by this type of adjusting entry:

Depreciation Expense	XXX	
Accumulated Depreciation.		XXX
To record depreciation to date of disposal.		

2. The disposal, including any resulting gain or loss, is recorded by this type of adjusting entry:

Cash (or other assets received)	XXX	
Accumulated Depreciation	XXX	
OR { Loss on Disposal	XXX	
Gain on Disposal		XXX
PP&E Asset (such as Equipment)		XXX
To record disposal of asset.		

A loss results when the carrying amount of the asset is greater than the proceeds received. A gain results when the carrying amount is less than proceeds received.

Sale or Retirement of PP&E

When a PP&E asset is sold or has reached the end of its useful life, the asset's cost and accumulated depreciation must be removed from the records, after depreciation expense has been recorded up to the date of disposal.

Recall the calculation of straight-line depreciation for the equipment purchased January 1, 2019 for $20,000, with an estimated useful life of five years and a salvage value of $2,000. Assume that the equipment is sold on November 30, 2023. First, depreciation would be calculated to the date of disposal.

Depreciation Expense	3,300	
Accumulated Depreciation.		3,300

To record 11 months of depreciation before disposal; $3,600 * ($^{11}/_{12}$) = $3,300.

After this entry is posted, the general ledger T-accounts at December 31, 2023 for Equipment and Accumulated Depreciation would show the following entries:

Equipment			
2019	20,000		

Accumulated Depreciation - Equipment		
	2019	3,600
	2020	3,600
	2021	3,600
	2022	3,600
	2023	3,300*
		17,700

*see above entry

The carrying amount at this date is $2,300 ($20,000 cost – 17,700 accumulated depreciation). Three different situations are possible.

1. **Sale at carrying amount**

Assume the equipment is sold for its carrying amount of $2,300. No gain or loss on disposal would occur.

Cost	$ 20,000
Accumulated depreciation	(17,700)
Carrying amount	2,300
Proceeds of disposition	(2,300)
Gain on disposal	$ -0-

The entry would be:

2023			
Nov. 30	Cash	2,300	
	Accum. Depr. – Equip.	17,700	
	Equipment		20,000
	To record disposal of asset.		

2. Sale above carrying amount

Assume the equipment is sold for $7,000. A gain of $4,700 would occur.

Cost	$ 20,000
Accumulated depreciation	(17,700)
Carrying amount	2,300
Proceeds of disposition	(7,000)
Gain on disposal	$ (4,700)

The adjusting entry would be:

2023			
Nov. 30	Cash	7,000	
	Accum. Depr. – Equip.	17,700	
	Gain on Disposal		4,700
	Equipment		20,000
	To record disposal of asset.		

3. Sale below carrying amount

Assume the equipment is sold for $500. A loss on disposal of $1,800 would occur.

Cost	$ 20,000
Accumulated depreciation	(17,700)
Carrying amount	2,300
Proceeds of disposition	(500)
Loss on disposal	$ 1,800

The adjusting entry would be:

2023			
Nov. 30	Cash	500	
	Accum. Depr. – Equip.	17,700	
	Loss on Disposal	1,800	
	Equipment		20,000
	To record disposal of asset.		

In each of these cases, the cash proceeds must be recorded (by a debit) and the cost and accumulated depreciation must be removed from the accounts. A credit difference represents a gain on disposal while a debit difference represents a loss. Losses and gains on disposal are reported on the income statement as *Other Revenues and Expenses*.

D. Intangible Assets

LO6 – Explain and record the acquisition and amortization of intangible assets.

Another major category of long-lived assets is intangible assets. These arise from legal rights. They do not have physical substance. The characteristics of various types of intangible assets are discussed below.

Patents

A **patent** grants a company an exclusive legal privilege to produce and sell a product or use a process for a specified period. This period varies depending on the nature of the product or process patented, and on the legislation in effect. Modifications to the original product or

process can result in a new patent being granted, in effect extending the life of the original patent.

Patents are recorded at cost. If purchased from an inventor, the patent's cost is easily identified. If developed internally, the patent's capitalized costs include all expenditures incurred in the development of the product or process, including salaries and benefits of staff involved.

Copyrights

A **copyright** confers on the holder an exclusive legal privilege to publish a literary or artistic work. In this case, the state grants control over a published or artistic work for the life of the copyright holder (usually the original artist) and for a specified period afterward. This control extends to the reproduction, sale, or other use of the copyrighted material.

Trademarks

A **trademark** is a symbol or a word used by a company to identify itself or one of its products in the marketplace. Symbols are often logos printed on company stationery or displayed at company offices, on vehicles, or in advertising. A well-known example is Coke®. The right to use a trademark can be protected by registering it with the appropriate government agency. The symbol '®'denotes that a trademark is registered. Its use by others is thereby restricted.

Franchises

A **franchise** is a legal right granted by one company (the franchisor) to another company (the franchisee) to sell particular products or to provide certain services in a given region using a specific trademark or trade name. In return, the franchisee pays a fee to the franchisor. McDonald's® is an example of a franchised fast-food chain.

In addition to the payment of an initial franchise fee, which is capitalized, a franchise agreement usually requires annual payments. These payments are considered operating expenses.

Computer Software

Computer software programs may be developed by a company, patented, and then sold to customers for use on their computers. Productivity software like Microsoft Office® is an example. The cost of acquiring and developing computer software programs is recorded as

an intangible asset, even if it is stored on a physical device like a computer. However, computer software that is integral to machinery—for instance, software that is necessary to control a piece of production equipment—is included as the cost of the equipment and classified as PP&E.

Capitalization of Intangible Assets

Normally, intangible assets are measured at cost at the time of acquisition and are reported in the asset section of a company's balance sheet under the heading "Intangible Assets." The cost of an acquired intangible asset includes its purchase price and any expenditures needed to directly prepare it for its intended use. Only rarely are subsequent expenditures added to the initial cost of a purchased intangible asset. Instead, these are expensed as they are incurred.

Amortization of Intangible Assets

Plant and equipment assets are depreciated. Intangible assets are also depreciated but the term used is *amortization*. **Amortization** is the systematic process of allocating the cost of intangible assets over their estimated useful lives. The straight-line method is usually used but other methods are permitted under GAAP.

Like PP&E, useful lives and salvage values of intangible assets are estimated by management and must be reviewed annually for reasonableness. As well, any effects on amortization expense because of changes in estimates are accounted for prospectively. That is, prior accounting periods' expenses are not changed. This topic is covered in more detail in later accounting classes.

E. Goodwill

LO7 - Explain goodwill and identify where on the statement of financial position it is reported.

Assume that Big Dog Carworks Corp. purchases another company for $10 million ($10M). BDCC takes over all operations, including management and staff. There are no liabilities. The fair values of the assets consist of the following:

Patents	$2M
Machinery	$7M
Total	$9M

Why would BDCC pay $10M for assets with a fair value of only $9M? The extra $1M represents *goodwill*. **Goodwill** is the excess paid over the fair value of the net assets when one company buys another. It is an estimate of the ability of the company to generate superior earnings in the future compared to other companies in the same industry.

Goodwill is the combination of the acquired company's assets which cannot be separately identified—such as a well-trained workforce, better retail locations, superior products, or excellent senior managers— the value of which is recognized only when a significant portion of the shares of another company are purchased.

Recall that among other characteristics, intangible assets must be separately identifiable. Because components of goodwill are not separately identifiable, goodwill is not considered an intangible asset. Neither is it amortized. However, it does have future value and therefore is recorded as a long-lived asset under its own heading of "Goodwill" on the balance sheet. Its fair value is estimated by management at the end of each fiscal year. If its value has been impaired it is reported at this lower amount.

F. Disclosure

LO8 – Describe the disclosure requirements for long-lived assets in the notes to the financial statements.

When long-lived assets are presented on the balance sheet, the notes to the financial statements need to disclose the following:

- details of each class of assets (e.g., land; equipment including separate parts; patents; goodwill)
- measurement basis (usually historical cost)
- type of depreciation and amortization methods used, including estimated useful lives
- cost and accumulated depreciation at the beginning and end of the period, including additions, disposals, and impairment losses
- whether the assets are constructed by the company for its own use (if PP&E) or internally developed (if intangible assets).

Examples of appropriate disclosure of long-lived assets were shown in notes 3(d) and 4 of BDCC's financial statements in Chapter 4.

Summary of Chapter 9 Learning Objectives

LO1 – Describe how the cost of property, plant, and equipment is determined.

Property, plant, and equipment (PP&E) are tangible, long-lived assets that are acquired for the purpose of generating revenue either directly or indirectly. A capital expditure is debited to a PP&E asset account because it results in the acquisition of a non-current asset and includes any additional expenditures to prepare the asset for its intended use at or after initial acquisition. A revenue expenditure does not have a future benefit beyond one year so is expensed. The details regarding a PP&E asset are maintained in a PP&E subsidiary ledger.

LO2 - Explain, calculate, and record depreciation of PP&E using the units-of-production, straight-line, and double-declining balance methods.

Depreciation allocates the cost of a PP&E asset (except land) over the accounting periods expected to receive benefits from its use. A PP&E asset's cost, salvage value, and useful life or productive output are used to calculate depreciation. There are different depreciation methods. Units-of-production is a usage-based method. Straight-line and double-declining balance are time-based methods. The formulas for calculating yearly depreciation expense using these methods are:

Units of production:

$$\frac{\text{(Cost – salvage value)}}{\text{Estimated total output}} \times \text{units of actual output for year}$$

Straight-line:

$$\frac{\text{(Cost – salvage value)}}{\text{Useful life}}$$

Double-declining balance:

$$\text{Carrying amount} \times \left\{\frac{100\%}{\text{Useful life}} \times 2\right\}$$

Under DDB, depreciation expense in subsequent years is calculated based on the prior year's carrying amount.

Under all methods, carrying amount cannot be less than salvage value.

LO3 – Calculate and record depreciation for partial years.

When assets are acquired or disposed partway through the accounting period, partial period depreciation is recorded. There are several ways to account for partial period depreciation. The whole-month approach records depreciation to the nearest whole month placed in service.

LO4 – Calculate and record entries for revised depreciation estimates.

When there is a change that impacts depreciation (such as a change in the estimated useful life or estimated salvage value, or a subsequent capital expenditure) revised depreciation is applied prospectively – that is, prior accounting periods' expenses are not changed. The calculation is:

$$\frac{(\text{Remaining carrying amount} - \text{revised salvage value})}{\text{Revised useful life}}$$

LO5 – Account for the disposal of PP&E assets.

Property, plant, and equipment is disposed when it is sold or when no future economic benefit is expected. To account for the disposal of a PP&E asset, the following must occur:

1. If the disposal occurs part way through the accounting period, depreciation must be updated to the date of disposal by this type of adjusting entry:

Depreciation Expense	XXX	
Accumulated Depreciation.		XXX
To adjust depreciation to date of disposal.		

2. The disposal, including any resulting gain or loss, is recorded by this type of adjusting entry:

	Cash (or other assets received)	XXX	
	Accumulated Depreciation	XXX	
OR	Loss on Disposal	XXX	
OR	Gain on Disposal		XXX
	PP&E Asset (such as Equipment)		XXX
	To record disposal of asset.		

A loss results when the carrying amount of the asset is greater than the proceeds received, if any. A gain results when the carrying amount is less than any proceeds received.

LO6 – Explain and record the acquisition and amortization of intangible assets.

Intangible assets are long-lived assets that arise from legal rights and do not have physical substance. Examples include patents, copyrights, trademarks, and franchises. Intangibles are amortized using the straight-line method.

LO7 – Explain goodwill and identify where on the balance sheet it is reported.

Goodwill is a long-lived asset that does not have physical substance but it is *not* an intangible. When one company buys another company, goodwill is the excess paid over the fair value of the net assets purchased and represents the ability to generate superior future earnings compared to other companies in the same industry. Goodwill appears in the asset section of the balance sheet under its own heading of "Goodwill." It is not amortized.

LO8 – Describe the disclosure requirements for long-lived assets in the notes to the financial statements.

When long-lived assets are presented on the balance sheet, the notes to the financial statements need to disclose the following:

- details of each class of assets (e.g., land; equipment including separate parts; patents; goodwill)
- measurement basis (usually historical cost)
- type of depreciation and amortization methods used, including estimated useful lives
- cost and accumulated depreciation at the beginning and end of the period, including additions, disposals, and impairment losses
- whether the assets are constructed by the company for its own use (if PP&E) or internally developed (if intangible assets).

E N D O F C H A P T E R M A T E R I A L S

Multiple-Choice Review

1. Which of the following long-lived assets are depreciated?
   a.) land, land improvements, buildings, and equipment
   b.) buildings and equipment
   c.) land improvements, building, and equipment
   d.) land improvements and equipment

2. Which of the following costs, associated with the purchase of equipment, would be charged to an asset account?
   a.) invoice price
   b.) freight charges
   c.) installation costs
   d.) all of the above

3. Regardless of the depreciation method used, the journal entry to record depreciation will affect:
   a.) balance sheet accounts only
   b.) income statement accounts only
   c.) balance sheet and income statement accounts
   d.) none of the financial statements

4. An accelerated depreciation method is:
   a.) straight-line
   b.) units of production
   c.) double-declining balance
   d.) all of the above

5. Which of the following is an example of an intangible asset?
   a.) patents
   b.) goodwill
   c.) copyrights
   d.) all of the above

6. What is the amount of depreciation, using the double-declining balance method, for the second year for equipment costing $109,000, with an estimated salvage value of $9,00 and an estimated life of 8 years?
   a.) $18,750.00
   b.) $27,250.00
   c.) $20,437.50
   d.) $25,000.00

Multiple-Choice Review (continued)

7. A company purchases a $10,000 piece of equipment with a $1,000 salvage value and estimated life of 5 years on October 1, 2019. What is the company's depreciation expense for 2019 if they use the straight-line method of depreciation?
   a.) $1,800
   b.) $2,000
   c.) $450
   d.) $0

8. Laney's Flower Delivery Service purchased a delivery van for $60,000 on January 1, 2017. It was originally depreciation on a straight-line basis over 10 years with an estimated salvage value of $12,000. On December 31, 2019, before adjusting entries had been made, the company decided to change the remaining estimated life to 4 years (including 2019) and the salvage value to $2,000. What will be the depreciation expense for 2019?
   a.) $6,000
   b.) $4,800
   c.) $15,000
   d.) $12,100

9. Equipment was sold for $3,000. What is the journal entry to record the sale if the equipment had a cost of $45,000 and accumulated depreciation of $44,000?

a)	Cash	3,000	
	Accumulated depreciation	44,000	
	Equipment		45,000
	Gain on sale of equipment		2,000

b)	Cash	3,000	
	Equipment		1,000
	Gain on sale of equipment		2,000

c)	Cash	3,000	
	Loss on sale of equipment	42,000	
	Equipment		45,000

d)	Accumulated depreciation	44,000	
	Loss on sale of equipment	1,000	
	Equipment		45,000

Answers on the following page

Answers to Multiple-Choice Review

1. c
2. d
3. c
4. c
5. d
6. c
   DDB Rate = 25% (SL Rate of 12.50 x 2)
   Beg. Book Value = $81,750 ($109,000 - $27,250)

   $81,750 x 25% = $20,437.50

7. c
   ($10,00 - $1,000) / 5 years = $1,800 x (3/12) = $450

8. d
   First determine the vehicle's book value at the date using the original information

   Book value = cost – accumulated depreciation

   Depreciation expense = ($60,000 - $12,000) / 10 years = $4,800 x 2 years = $9,600

   Book value = $60,000 - $9,600 = $50,400

   Now place the book value into the revised depreciation formula:

   $$\text{Revised Depreciation} = \frac{\text{Book value – New salvage value}}{\text{Remaining useful life}}$$

   $$\text{Revised Depreciation} = \frac{\$50{,}400 - \$2{,}000}{4} = \boxed{\$12{,}100}$$

9. a

Discussion Questions

1. The cost of a long-lived asset is said to be *capitalized*. What does this mean?
2. How does a capital expenditure differ from a revenue expenditure?
3. Assume that you have purchased a computer for business use; illustrate, using examples, capital and revenue expenditures associated with its purchase.
4. A company purchases land and buildings for a *lump sum*. What does this mean? What is the acceptable manner of accounting for a lump sum purchase?
5. How does the concept of materiality affect the recording of an expenditure as a capital or revenue item?
6. When one long-lived asset is exchanged for another, how is the cost of the newly-acquired asset determined?
7. What is depreciation?
8. Long-lived assets can be considered future benefits to be used over a period of years. The value of these benefits in the first years may not be the same as in later years. Using a car as an example, indicate whether you agree or disagree.
9. What is the effect on the carrying amount of an asset over its useful life when it is depreciated using the declining balance method? the straight-line method?
10. What is the double-declining balance rate of depreciation for an asset that is expected to have a ten-year useful life?
11. How is partial-year depreciation expense calculated?
12. What changes in estimates affect calculation of depreciation expense using the straight-line method? Explain the appropriate accounting treatment when there is a revision of an estimate that affects the calculation of depreciation expense.
13. Explain the effect on the calculation of depreciation expense for capital expenditures made subsequent to the initial purchase of property, plant, or equipment.
14. Why are the significant parts of property, plant, and equipment recorded separately?
15. When does the disposal of PP&E not result in a gain or loss?
16. How are intangible assets different from property, plant, and equipment? the same?
17. What is goodwill? How does it differ from an intangible asset? Why is a company's internally-generated goodwill not recorded in its accounting records?

Comprehension Problems

CP 9-1

Accountants distinguish between capital and revenue expenditures for some types of transactions. The entries for such transactions can be made to any one of the following accounts:

Balance sheet accounts
a. Land
b. Buildings
c. Equipment
d. Trucks
e. Automobiles
f. Accumulated depreciation
g. Land improvements

Income statement accounts
h. A revenue account
i. An expense account.

Required: For each transaction below, indicate the account to be adjusted. Explain your answers and state any assumptions you make.

Example:
__b__ Architect fees to design building
____ Battery purchased for truck
____ Cash discount received on payment for equipment
____ Commission paid to real estate agent to purchase land
____ Cost of equipment test runs
____ Cost to remodel building
____ Cost to replace manual elevator with automatic elevator
____ Cost of sewage system
____ Equipment assembly expenditure
____ Expenditures for debugging equipment
____ Installation of air-conditioner in automobile
____ Insurance paid during construction of building
____ Legal fees associated with court case to defend title to land purchased
____ Oil change for truck
____ Payment for landscaping

___ Proceeds received on demolition of derelict building on land purchased
___ Expenditures for removal of derelict structures
___ Repair made to building after moving in
___ Repair of collision damage to truck
___ Repair of torn seats in automobile
___ Replacement of rusted fender on automobile
___ Replacement of transmission in automobile
___ Special floor foundations for installation of equipment
___ Tires purchased for truck
___ Transportation expenditures to bring equipment to plant.

CP 9-2

Ekman Corporation purchased a new laser printer to be used in its business. The printer had a list price of $4,000, but Ekman was able to purchase it for $3,250. The company expects it to have a useful life of five years, with an estimated salvage value of $250. Ekman is paying the delivery costs of $100, set-up and debugging costs of $300, and the costs of purchasing an appropriate table for $50. There was sales tax of 10 per cent on the purchase price of the printer but not on the other costs.

Required:

1. Calculate the total cost of the laser printer.
2. Ekman management asks you whether the straight-line or double-declining balance method of depreciation would be most appropriate for the printer. Provide calculations to support your answer.

CP 9-3

Freeman Inc. purchased a piece of agricultural land several years ago for $125,000. The land has a fair value of $200,000 now. The company plans to exchange this land for equipment owned by a land developer that has a fair value of $240,000. The equipment was originally purchased for $325,000, and $80,000 of depreciation has been recorded to the date of the sale on April 30, 2019.

Required:

1. Assume each party values the acquired asset based on the fair value of the asset given up. Prepare the journal entry on the books of
   a. Freeman
   b. the developer.
2. Why would the developer give up an asset with a fair value of $240,000 in exchange for an asset with a fair value of only $200,000?

CP 9-4

Mayr Inc. purchased a machine for its factory on June 6, 2019 for $110,000. The machine is expected to have an estimated useful life of ten years with a salvage value of $10,000.

Required: Compute the depreciation for 2019 and 2020 using

1. The straight-line method
2. The double-declining balance method.

CP 9-5

Penny Corp. purchased a new car on March 1, 2019 for $25,000. The estimated useful life of the car was five years or 500,000 kms. Estimated salvage value was $5,000. The car was driven 120,000 kms. in 2019 and 150,000 kms. in 2020.

Required: Calculate the depreciation for 2019 and 2020 using

1. The straight-line method
2. Usage method (kms.)
3. Double-declining balance method.

CP 9-6

Global Flow Inc. purchased a computer on January 1, 2019 for $3,000 cash. It had an estimated useful life of three years and no salvage value. Global Flow made the following changes to the computer:

Mar. 1, 2019	Added storage capacity at a cost of $1,000. This had no effect on salvage value or estimated useful life.
Apr. 1, 2020	Added a new processing board for $2,000, which extended the estimated useful life of the computer another three years but did not affect salvage value.

Required:

1. Prepare a journal entry to record each of the above expenditures. Assume all amounts are material. Descriptions are not necessary.
2. Calculate and prepare journal entries to record depreciation expense for 2019 and 2020 using the double-declining balance method. Assume a December 31 fiscal year-end.

CP 9-7

Refer to the information in CP 9-4. At December 31, 2021, Mayr revised its estimate of the machine's useful life to four remaining years. The salvage value remained the same.

Required: Calculate the depreciation for 2021 using

1. The straight-line method
2. The double-declining balance method.

CP 9-8

Refer to the information in CP 9-4 and 9-7. Assume Mayr disposed of the machine on May 31, 2022.

Required: Using the straight-line method of depreciation, record the disposal assuming

1. The equipment was sold for $60,000
2. The equipment was sold for $85,000
3. The equipment was sold for $63,125.

Show all calculations.

CP 9-9

Refer to the information in CP 9-4 and 9-7. Assume that on May 31, 2022 Mayr traded in the machine on an improved model with a listed selling price of $150,000. The company received a trade-in allowance of $100,000 on the old machine. The fair value of the old machine was $95,000.

Required: Prepare the journal entry to record the trade-in on the equipment. Assume the straight-line method of depreciation is used.

CP 9-10

Murphy Limited purchased a $30,000 asset with a five-year life expectancy and no salvage value. Two alternative methods of calculating depreciation expense are presented below.

Year	*Method A*	*Method B*
1	$3,000	$6,000
2	6,000	9,600
3	?	?

Required:

1. Identify the method of depreciation and compute the depreciation expense for the third year under each method.
2. The chief financial officer of Murphy considers depreciation to be nothing more than an arbitrary calculation, based on unreliable estimates. She proposes to use method B for years 1 and 2 and method A for years 3, 4, and 5. In this way, she can deduct the maximum depreciation each year over the life of the asset. Is her proposal acceptable? Why or why not?
3. What factors should be considered in choosing a method of depreciation?

CP 9-11

The Savage Corporation purchased three milling machines on January 1, 2015 and immediately placed them into service. The following information relates to these purchases:

	Machine 1	*Machine 2*	*Machine 3*
Cost	$7,500	$7,500	$7,500
Salvage value	-0-	1,200	300
Useful life	5 Years	6 Years	8 Years

The company uses the straight-line method of depreciation. On January 1, 2020, machine 1 was sold for $500. On the same day, management re-evaluated the estimated useful lives and the salvage values of the remaining machines. They came to the conclusion that machine 2 had a remaining useful life of two years (that is, to December 31, 2021), while salvage value remained unchanged. Machine 3 had a remaining useful life of five years (that is, to December 31, 2024) but now had no salvage value.

Required: Prepare journal entries

1. To record the sale of machine 1 on January 1, 2020.
2. To record the revised 2020 depreciation expense for machine 2.
3. To record the revised 2020 depreciation expense for machine 3.

CP 9-12

The following Equipment and Accumulated Depreciation accounts appear in the general ledger of the Sadler Corporation at December 31, 2018.

GENERAL LEDGER

Equipment Acct. No. 183

Date 2016		Description	P.R.	Debit	Credit		Balance
Aug.	1	Purchase	GJ7	15,000		DR	15,000

Accumulated Depreciation – Equipment Acct. No. 193

Date 2018		Description	P.R.	Debit	Credit		Balance
		Balance forward				CR	2,250
Dec.	31	Depreciation 2018	GJ9		1,500	CR	3,750

At the time of purchase, the equipment had an estimated useful life of ten years with no salvage value. The straight-line method of depreciation is used. On January 1, 2019, it was estimated that the equipment would last only four more years (to December 31, 2022).

Required:

1. Calculate the depreciation expense for 2019.
2. Prepare the journal entry to record 2019 depreciation expense.
3. Post the accumulated depreciation part of the entry in 2 above to the general ledger and calculate the new balance in the account.
4. How much should the depreciation amount have been in each year if the actual four-year useful life of the equipment had been known at the time of purchase?
5. Given the substantial difference between the depreciation amounts in 2018 and 2019, is the information conveyed to the reader of Sadler Corporation's 2019 financial statements reasonable?

CP 9-13

St. Laurent Limited purchased a truck for cash on January 1, 2018. The company's fiscal year-end is December 31. The following details apply:

Cost	*Useful life*	*Salvage value*	*Depreciation method*
$10,500	5 years	$500	Double-declining balance

On March 1, 2019, the company paid $3,500 for gas and oil, a tune-up, new tires, and a battery. It also paid $4,000 to install a lift on the back of the truck. Only the latter amount is material.

Required:

1. Prepare journal entries to record
   a. the purchase of the truck
   b. depreciation for 2018
   c. the 2019 expenditures relating to the truck
   d. depreciation for 2019.
2. Prepare the journal entries to record the sale of the truck on March 3, 2020 for $8,000 cash, including 2020 depreciation expense.

CP 9-14

Brown Company paid $900,000 cash to purchase the following tangible and intangible assets of Coffee Company on January 1, 2019:

Land	$300,000
Building	200,000
Patents	100,000
Machinery	250,000

The building is depreciated using the double-declining balance method, has an estimated useful life of ten years, and a salvage value of $10,000. The machinery has an estimated useful life of five years and a salvage value of 10% of cost. Depreciation expense is calculated on the basis of productive output. The machinery's productive output was estimated to be 60,000 units. Actual production was as follows:

2019	10,000
2020	15,000
2021	20,000

The patents have an estimated useful life of twenty years and are amortized on a straight-line basis. They have no salvage value. On December 31, 2020, the value of the patents was estimated to be $80,000. The machinery was sold on December 2, 2021 for $100,000. Its fiscal year-end is December 31.

Required: Prepare journal entries to record in the records of Brown:

1. The $900,000 purchase
2. Depreciation and amortization expense for 2019
3. The decline in value of the patents at December 31, 2020
4. The sale of the machinery.

Problems

P 9-1

Arrow Construction Company Ltd. purchased a farm from K. Jones. Arrow and Jones completed the transaction under the following terms: a cheque from Arrow to Jones for $140,000; bank loan assumed by Arrow, $100,000. Legal, accounting, and brokerage fees amounted to $20,000. It was Arrow's intention to build homes on the property after sub-dividing. Crops on the farm were sold for $6,000; a house was sold for $1,600; barns were razed at a cost of $6,000. Salvaged lumber was sold for $4,400. The property was cleared and levelled at a cost of $10,000. The necessary property was turned over to the township for roads, schools, churches, and playgrounds. Riverside still expected to secure a total of 500 identical lots from the remaining land.

Required: Prepare a schedule showing the cost to Arrow of the 500 lots.

P 9-2

The following items relate to the acquisition of a new machine by the Bohn Group Inc. On the right-hand side are a number of possible accounting treatments; on the left-hand side are a number of independent accounting situations:

	Situation	*Accounting treatment*
___	Invoice price of new machine, net of cash discount offered	(1) Debit Machinery account
___	Cash discount on the above, which has not yet been taken	(2) Debit an expense account for the current period
___	Anticipated first year's savings in operating costs from use of new machine	(3) Debit an asset other than the machine and write-off the asset separately from the machine
___	Two-year service contract on operations of new machine paid in full	(4) Credit Machinery account
___	Cost of materials used while testing new machine	(5) None of the above; explain what account would be appropriate, if applicable.
___	Cost of installing sound insulation in wall near machine so that nearby office employees will not be disturbed by it	
___	Cost of removing machine that new machine replaces.	

Required: Indicate the appropriate accounting treatment for each situation. Record any assumptions that you think might be necessary for any given situation.

P 9-3

Northland Shows Ltd. acquired a new amusement ride on July 1. The following details apply to the purchase:

Cost per supplier's invoice (The invoice provided a 1% cash discount if paid within 30 days. It was paid on July 15.)	$20,000
Cash payment on July 4 to Dalton Construction Ltd. for cement base for new ride	4,000
Transportation paid on purchase, July 5	520
Insurance for operation of ride paid in cash on July 5 for three-year term, commencing July 6	90
Alterations to new ride paid in cash July 5 (25% of this will be reimbursed by the vendor)	900
Installation costs paid in cash July 6	188

Required:

1. Prepare journal entries to record the acquisition of Northland's new ride.
2. Calculate the carrying amount of the asset.

P 9-4

Janz Corporation purchased a piece of machinery on January 1, 2017. The company's year-end is December 31. The following information is applicable:

Cost	*Useful life*	*Salvage value*	*Depreciation method*
$90,000	9,000 units	-0-	Usage

Output during 2018 and 2019 was 2,000 and 3,000 units, respectively.

Required:

1. Calculate the depreciation expense for 2018 and 2019.
2. What is the balance of accumulated depreciation at the end of 2019?
3. What is the carrying amount of the machinery shown on the balance sheet at the end of 2019?
4. Prepare a partial comparative balance sheet for Janz Corporation at the end of 2019.

P 9-5

Livingston Corp. purchased a printer on January 1, 2019. The company year-end is December 31. The following information is applicable:

Cost	*Estimated useful life*	*Salvage value*	*Usage (units)*	
$5,000	4 years	$1,000	2019	10,000
			2020	15,000
			2021	20,000
			2022	5,000

Required:

1. Calculate the depreciation expense for the four-year period under each of these depreciation methods: straight-line, double-declining balance, and usage. Present your solution in the following format:

	Depreciation expense		
Year	*Straight-line*	*Double-declining balance*	*Units of Production*
2019			
2020			
2021			
2022			
Total			

2. The president has asked you to describe one factor that might affect depreciation rate and salvage value estimates, and how these changes to estimates will be accommodated should they occur. How would you respond?
3. Which method of depreciation would you recommend in this case? Why?

P 9-6

Roberto Trucks Inc. purchased a delivery van on January 1, 2018. Assume this was the company's only capital asset. The following information is available.

Cost	*Estimated useful life*	*Salvage value*
$11,000	4 years or 75,000 kms.	$2,000

The truck was driven 20,000 km in 2018.

Required:

1. Calculate the depreciation for 2018 under each of the following methods:
   a. Usage
   b. Straight-line
   c. Double-declining balance
2. Compare the depreciation expense and carrying amount for 2018 under each of these methods.
3. If one of management's objectives is to maximize 2018 net income, what method should be adopted?

P 9-7

Wynne Ltd. purchased a machine on January 1, 2019 for $23,000. During 2019, transportation charges paid by Wynne amounted to $600 and another $1,400 cost was incurred for installation. Useful life is three years. The salvage value of the machine is $2,000.

Required:

1. Determine the cost of the machine on which depreciation will be calculated (that is, the depreciable amount, not the carrying amount) under
   a. straight-line method
   b. double-declining balance method.
2. Calculate the depreciation for each year of the expected useful life of the machine under
   a. straight-line method
   b. double-declining balance method.

   Assume that the whole month approach is used.
3. On January 1, 2020, Wynne changed the estimated useful life of the machine from the date of purchase from a total of three years to a total of five years. Salvage value remained at $2,000. Calculate

the depreciation that should be recorded in 2020 and each year thereafter assuming the company uses the straight-line method.

P 9-8

On January 1, 2013, Young Inc. purchased a machine for $30,000. Its engineers had estimated useful life for the machine at twenty years. The salvage value was estimated to be 10 per cent of the original cost. Seven years later, on January 1, 2020, experts were hired to review the expected useful life and salvage value of the machine. Here are the findings:

Estimated useful life as of January 1, 2020	8 years
New salvage value	$6,000

Depreciation has not yet been recorded in 2020. Assume that the straight-line method of depreciation is used and the company uses the whole month approach in the years of acquisition and disposal.

Required:

1. Calculate the carrying amount of the machine at December 31, 2019.
2. Calculate the cost of the machine that remains to be depreciated at January 1, 2020 based on the new estimates.
3. Calculate the amount of depreciation expense to be recorded at December 31, 2020, and prepare the necessary journal entry.
4. Record the journal entries if the machine is sold on March 31, 2021 for $22,000.

P 9-9

Part A

Davies Fabricating Inc. started business on May 1, 2018. The year-end of the company is December 31. On May 5, 2018, the company purchased equipment for $130,000 cash. The equipment had an estimated useful life of four years, an estimated total production output of 100,000 units, and a salvage value of $10,000. The equipment was depreciated using the units-of-production (usage) method. Actual units of output over three years were: 2018— 12,000; 2019—30,000; and 2020—20,000.

On January 1, 2021, the company traded in the original equipment for new equipment. The company paid and additional $140,000 cash for the new equipment. The company had used the units-of-output (usage) method to calculate depreciation on the old manufacturing equipment. The fair value of the original equipment was $60,000 at the date of the trade.

Required: Prepare journal entries to record the transactions on the following dates:
1. May 1, 2018
2. January 1, 2021

Part B

On January 1, 2019, Davies Fabricating Inc. was able to buy a nearby warehouse for the storage of its finished product. The cost included land, $50,000 and building, $300,000. The company signed a ten-year bank loan for $320,000 and paid the balance in cash. The building had an estimated useful life of fifty years with no salvage value. On June 28, 2023, the warehouse was totally destroyed by fire. On July 31, the company was notified that it would receive $270,000 from the insurance company as settlement in full for the building at a later date. The building was depreciated on the straight-line basis.

Required: Prepare journal entries to record the transactions on the following dates:
1. January 1, 2019
2. June 28, 2023.

P 9-10

Robbins Inc. purchased the following assets of Marine Company for $500,000 cash on September 30, 2018:

Land	$300,000
Building	100,000

The building will be depreciated using the straight-line method. It has an estimated useful life of forty years and a salvage value of 10% of cost.

Robbins Inc. has a fiscal year-end of December 31.

Required:

1. Prepare journal entries to record
   a. the $500,000 purchase
   b. depreciation expense for 2018
   c. the sale of the computer software on September 15, 2020.
2. Calculate the carrying amounts of the assets at December 31, 2020.

P 9-11

CPA Rail purchased an electric-diesel locomotive for $3 million on January 1, 2017. It had the following major components:

(a)	*(b)*	*(c)*	*(d)*
Component	*Component cost*	*Salvage value*	*Useful life (years)*
Wheel assemblies (4)	$1,200,000	$30,000	30
Diesel engine	1,000,000	100,000	5
Electric motors (4)	600,000	60,000	6
Other	200,000	-0-	10
Total	$3,000,000		

On January 1, 2019 management revised the estimated useful life of the diesel engine down to two years (to December 31, 2020). Salvage value remained unchanged. On August 31, 2020 one of the electric motors was replaced for $180,000, a material amount. Useful life of the new motor is estimated at four years (to December 31, 2024) and salvage value is estimated at $20,000. The replaced motor was sold for $10,000 cash on the same date. The locomotive was sold on September 20, 2021 for $1,500,000.

Assume the company uses straight-line depreciation.

Required

1. Calculate 2019 depreciation expense for the locomotive.
2. Calculate the gain or loss on disposal of the electric motor in 2020.
3. Calculate 2020 depreciation expense.
4. Calculate the carrying amount of the locomotive at December 31, 2020.
5. Calculate the gain or loss on disposal of the locomotive in 2021.

CHAPTER TEN

Current Liabilities

A corporation often has liabilities – amounts owed to creditors. These are a normal part of doing business, as some of the company's operations must be financed through borrowings. These borrowings must be computed, recorded, and presented accurately. This chapter will address these topics with an emphasis on those liabilities due in the near future.

Chapter 10 Learning Objectives

LO1 – Explain the difference between current and long-term liabilities.

LO2 – Understand the different types of current liabilities and the journal entries associated with each.

LO3 – Describe the events leading to short-term notes payable.

LO4 – Understand how to compute the maturity date for short-term notes payable.

LO5 – Compute the interest expense for short-term notes payable.

LO6 – Describe, calculate and record payroll liabilities.

LO7 – Explain the current portion of long-term debt and how it is recorded.

LO8 – Distinguish between known and estimated liabilities.

LO9 – Identify contingent liabilities and their appropriate accounting treatment.

A. Current versus Long-Term Liabilities

LO1 - Explain the difference between current and long-term liabilities.

Current liabilities, also called *short-term liabilities*, obligations that are expected to be paid within one year or the operating cycle, whichever is longer. A company's operating cycle is the amount of time it takes a company to make a good, or provide a service, and collect cash from its customers for that good or service. Most companies have an operating cycle shorter than one year, this is why current liabilities are generally stated as those obligations due within one year. Examples of current liabilities include accounts payable, unearned revenue, sales taxes payable, short-term notes payable, and payroll liabilities.

Long-term liabilities, also called *non-current liabilities*, are forms of debt expected to be paid beyond one year or the operating cycle, whichever is longer. Examples may include warranty liabilities, long-term notes payable, and loans payable.

Even though the period for repayment differs between current and long-term liabilities, they do have several features in common. Both current and long-term liabilities arise from past events (transactions), signify future amounts owed and, therefore, represent a present obligation for the company.

Therefore, as these liabilities are present obligations for the company (due either in the short-term or long-term) these amounts need to be disclosed on the company's financial statements. And as discussed in Chapter 4, current and long-term liabilities must be shown separately on the balance sheet. Doing so helps financial statement readers assess the *liquidity* of a corporation – its ability to satisfy current liabilities (generally with cash) as they come due.

Check your knowledge

1.) What makes a liability a current liability?

2.) What are some characteristics of liabilities?

3.) On which financial statement will liabilities appear? Where?

Answers on page 402

B. Current Liabilities

LO2 - Understand the different types of current liabilities and the journal entries associated with each.

Current liabilities result from a company's normal business operations and often include accounts payable, unearned revenue, sales taxes payable, short-term notes payable, and payroll liabilities.

Accounts Payable

Term Tip –

the term "payable" is an obligation requiring a future payment.

Accounts payable, also called *trade accounts payable*, are amounts owed to suppliers for items purchased on credit through the normal course of business. For example, a company purchasing office supplies on credit. The company needs office supplies to keep business operations running and has purchased them on credit –which allows the company to pay at a later time. Let's assume Flower Company on March 1, purchases $1,500 of office supplies on credit, the entry by Flower Company will be:

Flower Company General Journal			
Date	Accounts	Debit	Credit
Mar. 1	Office supplies	1,500	
	Accounts payable		1,500
	(To record purchase of office supplies on account)		

Posting references omitted

The future point in time at which the payment is due depends on each supplier. A supplier offering credit terms of 3/10, n/30 means that the supplier grants a repayment period of 30 days (credit terms were covered in detail in Chapter 5). Therefore, a supplier offering these terms would expect payment 30 days from the date of the invoice. When this payment is made, Flower Company makes the below entry:

Flower Company General Journal			
Date	Accounts	Debit	Credit
Mar. 30	Accounts payable	1,500	
	Cash		1,500
	(To record payment of account payable)		

Accounts payable are the most common type of current liability, and will be reported in the current liabilities section of a company's classified balance sheet.

Unearned Revenues

Unearned revenues, or *customer deposits* or *customer prepayments*, result from cash being received before a company provides the related product or service to the customer. If this cash advance had been recorded as revenue at the time received, it would violate the revenue recognition principle which states the product or service must be provided in order to recognized as revenue. As a result, the company must classify these customer prepayments as a liability. If the product or service is expected to be provided within one year, the classification would be a current liability. If the product or service is expected to be provided after one year, then the customer prepayment is classified as a long-term liability. Most liabilities require future payment of an asset (normally cash) to satisfy the obligation, unearned revenue is one of the few that does not. The obligation is satisfied through a good or service being provided, not cash.

Unearned revenue can play a big role in certain types of companies that provide a re-occurring stream of services or future services such as airline companies, magazine subscriptions, or entertainment distribution companies. Southwest, National Geographic, and Ticketmaster are all examples of companies with large amounts of unearned revenue as part of their normal business operations.

Assume on October 1, 2020, National Geographic Magazine receives 4,000 customer prepayments for its 12-month subscription (cost is $20 per 12-month subscription). The journal entry National Geographic will make on October 1st is:

National Geographic Magazine General Journal			
Date	Accounts	Debit	Credit
2020			
Oct. 1	Cash	80,000	
	Unearned subscription revenue		80,000
	(To record customer prepayments for 12-month magazine subscriptions) *(4,000 subscriptions x $20 = $80,000)*		

In Chapter 3 we saw that adjusting journal entries must be prepared at the end of the period to recognize any revenue earned and record any expenses incurred during the period. Often times, current liability accounts will be involved in these entries. At December 31, 2020, National Geographic Magazine will have to make the following journal entry to record the subscriptions revenue now earned for delivering magazines October –December of the current year.

National Geographic Magazine General Journal			
Date	Accounts	Debit	Credit
2020			
Dec. 31	Unearned subscription revenue	20,000	
	Earned subscription revenue		20,000
	(To adjust for subscription revenue now earned) *($80,000 x 3/12 months)*		

The remaining 9-months of unearned subscriptions of $60,000 ($80,000 - $20,000) will appear in the current liabilities section of the company's balance sheet since it is expected to be earned in six months (see Figure 10-1 below).

National Geographic Magazine Balance Sheet (partial) December 31, 2020		
Liabilities		
Current liabilities		
Accounts payable	$ 21,000	
Salaries & wages payable	6,000	
Interest payable	2,000	
Unearned subscription revenue	60,000	
Total current liabilities		$ 89,000

Figure 10-1: Balance Sheet showing current liability section

Sales Taxes Payable

Sales taxes are assessed on the sale of most tangible goods in many states and counties. The tax is usually calculated as a percent of the good's selling price. This tax is collected by the company selling the good and then remitted to the appropriate agency in a timely manner (either monthly, quarterly, semi-annually, or annually depending on their level of sales). Since the selling company *owes* these tax

collections to the local governments and must pay them in a relative short amount of time, a current liability needs to be recorded. This current liability, sales tax payable, is recorded at the time of the sale.

For example, Darci Company is a retailer of toeless socks. On April 1, the company sells $5,000 of merchandise with a cost of $2,800. The sales tax rate is 9%. The journal entry to record this would be:

	Darci Company General Journal			
	Date	Accounts	Debit	Credit
	Apr. 1	Cash	5,450	
1		Sales taxes payable (9%)		450
		Sales revenue		5,000
		(To record cash collections for sale of merchandise and related sales tax)		
2		COGS	2,800	
		Inventory		2,800
		(To record the cost of merchandise sold)		

1 Note that in the first journal entry the Cash account is debited for the sum of the sales price and sales tax.

2 Note that the second journal entry the cost of goods sold is recorded (this topic was covered in Chapter 5).

Alternate approach for calculating sales taxes payable:
Sometimes companies will not enter the sales tax separately when ringing up a sale. They calculate the amount of sales tax owed at the end of the day by dividing the day's cash receipts by 100% plus the sales tax percent. Let's assume Darci Company instead uses this method. So at the end of the day on April 1st, Darci counts up the cash register to find total cash of $5,450. Darci would perform the following calculation to determine the amount owed for sales tax:

$$\$5,450 / 1.09 = \$5,000$$

Darci would then proceed to make the same journal entries as noted above in items 1 &2.

As mentioned earlier, the company merely acts as the custodian of the sales tax and must eventually remit the amounts collected to the appropriate tax authority. Assume Darci is required to remit all sales tax collections quarterly. When Darci makes the payment on July 31

for the second quarter sales tax collections, she will debit the liability (sales taxes payable) and credit cash for the amount of sales tax collected in the second quarter. In this example, we assume the amount of sales tax collected on April 1st is the only amount collect for the second quarter. If that is the case, the below entry will be made on July 31st to record the remittance of the sales taxes collected.

Darci Company General Journal			
Date	Accounts	Debit	Credit
Jul. 31	Sales taxes payable	450	
	Cash		450
	(To record remittance of sales tax collected)		

LO3 - Describe the events leading to short-term notes payable.

Short-Term Notes Payable

A more formal relationship between a company and its creditors can be evidenced in a written agreement for repayment known as a ***Notes Payable***. These notes payable can be short-term or long-term depending on the repayment date. The written agreement, or promissory note, includes information such as:

- The parties involved (creditor and payee)
- Date note was created
- Amount due (known as principal or face value)
- Interest rate (stated as an annual rate)
- Repayment date (known as maturity date)

A sample promissory note is shown below.

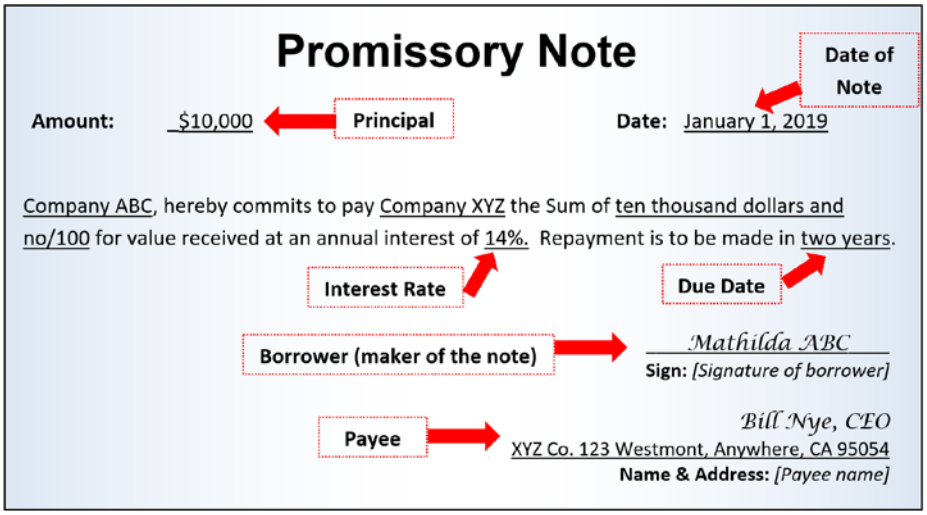


Figure 10-2: Promissory Note with key items identified

At the note's due date (or maturity date), the payee is responsible for remitting full payment. Full payment includes the principal amount plus any interest, the sum of these two amounts are known as the note's ***maturity value***.

Short-term notes payable may arise for many reasons. The ones covered in this chapter are: **(1)** purchase of an asset, **(2)** extension of an account payable by replacing it with a note payable, and **(3)** a cash borrowed from a bank.

(1) Company purchases an asset by issuing a note payable.

Assume company Worshester purchases computer equipment on March 1, with a cost of $10,000. The supplier accepts Worshester's note payable for that amount with 12% interest and due in 10 months. The journal entry Worshester would make on March 1 would be:

Worshester Company General Journal			
Date	Accounts	Debit	Credit
Mar. 1	Computer equipment	10,000	
	Notes payable		10,000
	(To record purchase of computer equipment with $10,000, 12%, 10 month note payable)		

(2) Company extends an account payable by replacing it with a note payable

Assume company Turnip is struggling to pay its existing accounts payable balance with one of its suppliers within the given credit period. On September 1, the supplier agrees to extend the credit period by entering into a promissory note with Turnip. The note will be for the accounts payable balance of $5,000, carry an 18% interest rate and be due date in 180 days. The journal entry Turnip would make on September 1 would be:

Turnip Company General Journal			
Date	Accounts	Debit	Credit
Sep. 1	Accounts payable	5,000	
	Notes payable		5,000
	(To record extension of an accounts payable with a $5,000, 18%, 180 day note payable)		

(3) Company borrows cash from a bank.

Assume company Maya approaches its local bank, Second National Bank, and seeks a $25,000 business loan at the beginning of the year. The bank requires Maya, the borrower, to sign a promissory note for the loan. The note shows the amount borrowed (known as the note's principal), the interest rate (stated on an annual amount) and the due date (known as the note's maturity date). Maya's principal amount is the amount borrowed of $25,000, the interest rate is 10%, and the maturity date will be in 5 years. The journal entry Maya would make on January 1 would be:

Maya Company General Journal			
Date	Accounts	Debit	Credit
Jan. 1	Cash	25,000	
	Notes payable		25,000
	(To record amount borrowed from Second National Bank with a $25,000, 10%, 5-year note payable)		

LO4 - Understand how to compute the maturity date for short-term notes payable.

Short-Term Notes Payable (continued)

Computing Maturity Date

A note's ***maturity date*** is the date at which full payment is due. Often times this date will need to be computed. A note's due date can be expressed in days, months, or years.

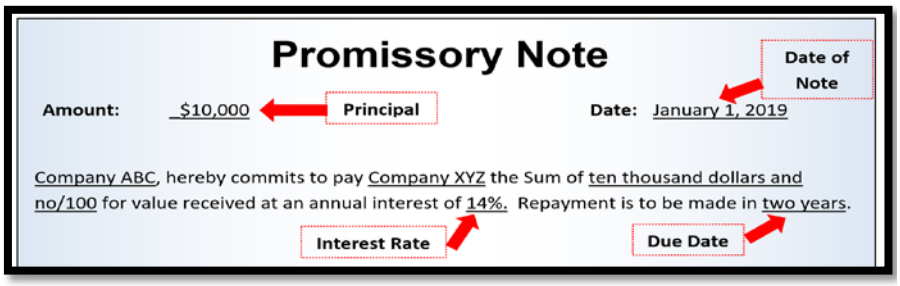
Days -If a note is due in less than a year's time, the term is often expressed in days. When calculating, only count the days *after* the note's date. For example, on June 1, Company TLC enters into a short-term, 90-day, note payable agreement with their bank. When calculating the maturity date, the date the note was created (June 1) will be excluded. Counting **90** days after June 1, indicates that the maturity date will be August 30. The computation is shown below.

Month	Days	Cumulative Total
June	29 (30 – 1)	29
July	31	60
August	30	**90**

Figure 10-3: Computation of Maturity Date

Months –a note's maturity date may also be expressed in months. If this is the case, when computing the maturity date, add the number of months indicated to the date the note was created. For example, assume on July **6**, Company SGE enters into a 5-month note payable. The maturity date of the note would be December **6**. You'll note we use the *same day* of the month as the original note's date.

Years –a note's maturity date may also be expressed in years, as is the case in Figure 10-2 for Company ABC (reshown below). The note stipulates repayment in two years from the note's date. Company ABC enters into its 2-year note payable agreement on January 1, 2019. Therefore, the maturity date would be January 1, 2021.



LO5 – Compute interest expense for short-term notes payable.

Short-Term Notes Payable (continued)

Computing Interest

Interest is the cost of delaying payment and will be remitted to the payee at the note's maturity date. The interest rate is stated as an annual rate. Because of this, we may need to prorate the calculation based on the portion of the year that the note was outstanding. Therefore, the formula to calculate interest is:

Principal of note	x	Interest rate	x	Time expressed as fraction of year	=	Interest

Figure 10-4: Interest Formula

We learned in the last section that a note's maturity date can be expressed in days, months, or years. This affects the interest calculation. Examples of how to calculate interest with these different periods is shown below.

Period	Note	Calculation of Interest						
		Principal	x	Interest Rate	x	Time	=	Interest Expense
Days	90-day, 14%, $6,000	$6,000	x	14%	x	**90/360**	=	$210
Months	6-month, 12%, $9,000	$9,000	x	12%	x	**6/12**	=	$540
Years	1-year, 10%, $12,000	$12,000	x	10%	x	**1/1**	=	$1,200

Tip –

Use 360 days when calculating interest on notes (when expressed in days). This is known as the "bankers rule".

You'll note that **360 days** was used when calculating interest for the first note, since its maturity date was given in days. In this course, we will use 360 days when calculating interest –this simplifies the calculation and is the method widely used in the financial profession.

End of period adjusting entry for accrued interest

Short-term notes payable may require an adjusting journal entry to be prepared at the end of the period in order to ensure compliance with the matching principle (of recording expenses in the period incurred). This entry will be necessary at the end of the period, if the note is still outstanding –meaning the end of the period falls between the note's creation and maturity dates. For example, a 6-month note that is

created on November 1, will require an adjusting entry for its accrued interest since it is still outstanding at December 31. The adjusting entry will record interest expense in the current time period to reflect the cost of borrowing for that time period, and an accrued liability will be recorded for the same amount to show the amount of interest owed for the current time period (which will be paid at maturity). For example, Company LCN enters into a 6-month, 12%, $9,000 note on November 1st with their bank –First Trust. To calculate the amount to accrue at December 31, the interest formula is used (see below).

Principal of note	x	Interest rate	x	Time expressed as fraction of year	=	Interest
$9,000	x	12%	x	2/12	=	$ 180

With the interest calculated for the portion of the year that corresponds to the borrowing (November –December), we can prepare the following journal entry at the company's year-end:

LCN Company General Journal			
Date	Accounts	Debit	Credit
Dec. 31	Interest expense	180	
	Interest payable		180
	(To accrue interest on First Trust note)		

The note matures on May 1 (6 months from November 1). At maturity, the company pays the note's principal and total interest to their lender –First Trust. The following journal entry would be made to record this:

LCN Company General Journal			
Date	Accounts	Debit	Credit
May 1	Note payable	9,000	
	Interest payable	180	
	Interest expense	360	
	Cash		9,540
	(To record payment of First Trust note at maturity, with interest previously accrued)		

The calculation of the interest expense at May 1, is calculated as follows: $9,000 x 12% x 4/12 = $ 360.

Line of credit

Often times, a company will seek out a line of credit with their bank. A ***line of credit***, or *revolving loan*, is a less formal agreement than a promissory note and pre-arranges for the company to borrow up to a specified amount if and when the company should need to. This agreement will have a pre-specified interest rate associated with it and allows the company to obtain cash when needed without having to go through the formal, and longer, process of creating a note payable with the bank each time the company is in need of additional capital. Should a company use the line of credit, the calculations and journal entries covered already would also pertain.

Check your knowledge

4.) What are some of the common situations that lead to notes payable being created? What do they have in common?

5.) What is the formula to calculate interest expense on notes payable?

6.) What is meant my maturity value?

7.) Why is interest accrued on short-term notes payable?

Answers on page 402

LO6 - Describe, calculate and record payroll liabilities.

Payroll Liabilities

Companies that retain employees have payroll responsibilities –paying their employees and ensuring that the appropriate taxes are withheld and paid. These responsibilities, if unpaid or due to another entity (such as a taxing authority) can be sizeable liabilities. For example, Tootsie Roll Industries reported more than $18.5 million for accrued compensation, postretirement health care costs, and other employee benefits in their latest annual SEC filing (or Form 10-K). [1]

Payroll liabilities are composed of the employees' payroll deductions and the employer's payroll contributions.

[1] **Source:** Tootsie Roll Industries. *Form 10-K 2018*

Employee Payroll Deductions

Payroll deductions, also called *withholdings*, are amounts withheld from an employee's gross pay. ***Gross pay*** is the amount of salaries or wages[2] to which employees are entitled before any deductions. ***Net pay***, or *take-home pay*, is the actual cash payment that the employees receive at the end of a pay period after deductions. The payroll deductions can either be required or voluntary. Examples of *required payroll deductions* are (1) federal income taxes[3], (2) state income taxes, (3) Social Security taxes and (4) Medicare taxes[4]. Examples of common *voluntary payroll deductions* are for the employee's contributions to (1) health, vision, and/or dental insurance premiums, (2) life insurance premiums, (3) retirement savings, (4) medical savings, (5) union dues, and/or (6) charitable donations. An employee's paycheck will be for the net amount, so after deducting all required and voluntary payroll deductions from their gross pay.

For example, assume Susanna Collins works at Roe Worldwide and earns a monthly salary of $4,480. Her monthly federal withholding is $823 and state withholding is $448. All her wages are subject to Social Security and Medicare taxes. In addition, Susanna elects to contribute $100 a month toward retirement and $10 a month to the United Way. What would Susanna's net pay be for the month?

	Gross pay		***$ 4,480.00***
	Less:		
Payroll deductions	Federal income tax	$ 823.00	
	State income tax	448.00	
	Social security tax (6.2%)	277.76	
	Medicare tax (1.45%)	64.96	
	Retirement contribution*	100.00	
	Charitable contribution*	10.00	1,723.72
	Net pay		***$ 2,756.28***

Figure 10-5: Calculation of Net Pay

*Voluntary payroll deductions

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[2] Salaries are fixed amounts paid to an employee on a regular basis (for example, monthly). Wages are calculated based on an hourly rate times the actual hours worked each day.

[3] Employers are required to withhold federal, and often state, income taxes from their employees' gross pay. The exact amount to be withheld from each employee will differ based on the information supplied to the employer (through Form W-4).

[4] Social Security and Medicare taxes are also known as FICA (Federal Insurance Contributions Act) taxes. The FICA tax rate is 7.65%, composed of 6.2% for Social Security and 1.45% for Medicare.

The employer is responsible for correctly calculating the amount of the deductions and appropriately withholding them from employee pay. Since the employer is acting as the custodian for these withdrawn amounts, these amounts represent a liability to the company. The amounts withheld are *owed* to other entities -such as the federal and state government, retirement funds, and charitable organizations in the previous example. Therefore, these payroll deductions are considered current liabilities, known as *payroll liabilities*, until paid. The company must record these liabilities at the time of payroll or when accrued, if needed. Based on our calculation of Susanna's pay and withholdings for January, the following journal entry would be needed. *The calculation from Figure 10-5 is presented again for your convenience to easily see how the calculation transfers to the entry.*

Gross pay		***$ 4,480.00***
Less:		
Federal income tax	$ 823.00	
State income tax	448.00	
Social security tax (6.2%)	277.76	
Medicare tax (1.45%)	64.96	
Retirement contribution*	100.00	
Charitable contribution*	10.00	1,723.72
Net pay		***$ 2,756.28***

Figure 10-5: Calculation of Net Pay

Roe Worldwide
General Journal

Date	Accounts	Debit	Credit
Jan. 31	Salaries expense	4,480.00	
	Federal income tax payable		823.00
	State income tax payable		448.00
	Social security tax payable		277.76
	Medicare tax payable		64.96
	Employee retirement contribution payable		100.00
	Employee charitable contribution payable		10.00
	Cash		2,756.28
	(To record employee pay and related withholdings for the month)		

Had the payroll not been paid but instead accrued (at the end of the accounting period for example), the net pay amount would have been recorded as a credit to Salaries Payable instead of Cash.

Employer Payroll Taxes

The employer's payroll contributions usually take the form of required payroll taxes, but can also relate to employee healthcare or retirement programs, known as *fringe benefits*. Therefore, employer contributions may consist of (1) federal unemployment taxes[5], (2) state unemployment taxes[6], (3) Social Security taxes and (4) Medicare taxes[7] and (5) other voluntary programs (known as fringe benefits) such as healthcare or retirement costs. Figure 10-6 summarizes these costs by employee and employer.

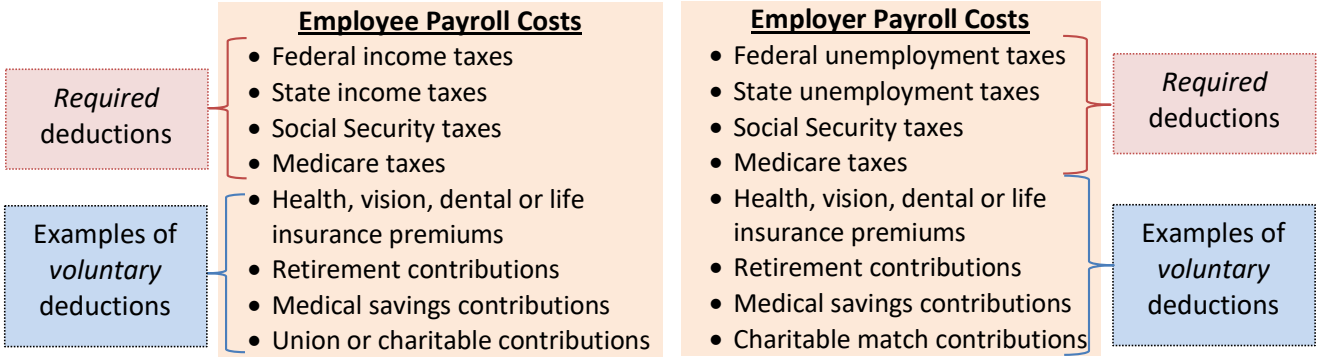

Figure 10-6: Employee and Employer Payroll Costs

The employer will need to record its payroll costs in the same period as employee payroll. These costs current payroll liabilities until remitted to the appropriate party (tax authority or healthcare provider for example). An employer's payroll tax expense is the sum of all the *required* payroll taxes imposed on the employer (see Figure 10-6).

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[5] The Federal Unemployment Tax Act (FUTA) requires a tax on each employee's earnings on the first $7,000 earned. The tax rate varies by employer.

[6] The State Unemployment Tax Act (SUTA) requires a tax on employers to fund state unemployment insurance benefits. The rate paid by the company varies based on their unemployment history.

[7] Employers are required to pay Social Security and Medicare taxes that match the amounts paid by their employees. Therefore, the government collects 15.3% (7.65% from the employee and 7.65% from the employer).

Let's continue the Susanna Collins example -assume Susanna's employer, Roe Worldwide, is subject to a FUTA tax rate of 0.8% and a SUTA tax rate of 5.4%. The employer's payroll tax calculation is:

Federal unemployment tax ($4,480 x 0.8%)	$ 35.84	
State unemployment tax ($4,480 x 5.4%)	241.92	
Social security tax (same as employee)	277.76	
Medicare tax (same as employee)	64.96	
Payroll tax expense		***$ 620.48***

Based on our calculation for Roe Worldwide for January's payroll taxes, the following journal entry would be needed.

Roe Worldwide
General Journal

Date	Accounts	Debit	Credit
Jan. 31	Payroll tax expense	620.48	
	Federal unemployment taxes payable		35.84
	State unemployment taxes payable		241.92
	Social security tax payable		277.76
	Medicare tax payable		64.96
	(To record employer's payroll taxes for Jan.)		

Payroll, payroll withholdings, and employer payroll taxes are classified as current liabilities because they must be paid to employees or the tax authorities in the near future. When this remittance is made, the current liabilities will be debited (to decrease the liabilities) and cash will be credited (to decrease the asset). This reflects the payment of the payroll liabilities with cash transferred to the appropriate taxing authority (federal and/or state). An example is shown below:

Roe Worldwide
General Journal

Date	Accounts	Debit	Credit
Feb. 15	Federal income tax payable	823.00	
	State income tax payable	448.00	
	Social security tax payable ($277.76 + $277.76)	555.52	
	Medicare tax payable ($64.96 + $64.96)	129.92	
	Federal unemployment taxes payable	35.84	
	State unemployment taxes payable	241.92	
	Cash		2,234.20
	(To record payroll taxes remitted to government agencies for January payroll)		

In homework, use the rates covered in the chapter unless otherwise specified.

Try it!

Mona Cee is an employee at Dance Revolution and is paid biweekly. For the January 15th payroll period, Mona worked 28 hours and is paid $25 per hour. Mona's federal income tax withholding is calculated to be $73 and state income tax to be $46. All of Mona's wages are subject to Social Security and Medicare taxes. Dance Revolution is subject to unemployment taxes on all of Mona's wages. Dance Revolution's rate for federal unemployment is 0.8% and 5.4% for state unemployment. Prepare Dance Revolution's journal entry to record (a) payroll and withholdings and (b) the company's payroll tax expense for the January 15th pay period.

Solution:
(a)

Dance Revolution General Journal			
Date	Accounts	Debit	Credit
Jan. 15	Wages expense	700.00	
	Federal income taxes payable		73.00
	State income taxes payable		46.00
	Social security tax payable		43.40
	Medicare tax payable		10.15
	Cash		527.45
	(To record employee pay and withholdings)		

(b)

Dance Revolution General Journal			
Date	Accounts	Debit	Credit
Jan. 15	Payroll tax expense	96.95	
	Federal unemployment taxes payable		5.60
	State unemployment taxes payable		37.80
	Social security tax payable		43.40
	Medicare tax payable		10.15
	(To record payroll taxes)		

Check your knowledge

8.) Explain Social Security and Medicare taxes and how they are calculated.

9.) Identify the types of deductions that are made when calculating employee net pay.

10.) Identify the types of payroll costs for employers.

Answers on page 402

The content covered for this topic were simplified, payroll accounting can be complex and is covered in more detail in more advanced and specialized accounting courses.

Fringe Benefits

Often times, employers will offer extra benefits, known as fringe benefits, over an employee's normal compensation. Examples include health insurance, retirement plans, paid vacation, educational reimbursements, matching charitable contributions, among others types of assistance beyond normal compensation. These benefits are recorded in the period earned (to comply with the matching principle) and normally recorded at the same time as payroll.

Let's return to our Susanna Collins example from the previous sections. Assume Susanna's employer, Roe Worldwide, provides health insurance and matches any employee charitable contribution.

Roe Worldwide General Journal			
Date	Accounts	Debit	Credit
Jan. 31	Employee benefits expense	160.00	
	Health insurance payable (Blue Shield)		150.00
	Charitable organization payable (United Way)		10.00
	(To record costs of employee benefits)		

The employer would remit these amounts in a timely manner, depending on agreements with vendors (health insurance company for example). But the expense must be matched the period in which the benefit is earned by the employee. Once this remittance is made, the liabilities would be decreased (debited) and cash would be decreased (credited).

LO7 - Explain the current portion of long-term debt and how it is record.

Current Portion of Long-Term Debt

Companies often have long-term debt that requires a portion to be paid within the current period –think of loans that may require periodic repayments of principal and interest. In order to accurately show this on the balance sheet, the company will need to prepare a journal entry to reclassify the portion of the long-term debt due within one year. Let's assume Roe Worldwide has a $20,000 long-term loan from their bank. The agreement requires that Roe pay one quarter of the principal (or $5,000) each year. Therefore, the amount required to be paid each year ($5,000) would be considered a current liability and would need to be shown as such in the company's balance sheet. The journal entry to reclassify the long-term portion that will be paid within the current period would be as follows:

Roe Worldwide General Journal			
Date	Accounts	Debit	Credit
Jan. 1	Long-term loan payable	5,000	
	Current portion of long-term loan payable		5,000
	(To reclassify the portion of long-term debt due within the current year)		

This entry decreases the long-term liability and increases the current liability relating to the bank loan. This entry does not change the total amount of debt, it only reclassified the portion due within the year. Any interest charges resulting from this loan would need to be recorded -discussed in the earlier section (short-term notes payable).

Presentation

We have discussed the different types of current liabilities a company may have. As learned in earlier chapters, these liabilities will appear on a company's balance sheet, in their own category "Current liabilities". This distinction helps financial statement users easily assess a company's liquidity, or ability to pay current obligations as they come due. Below is an excerpt from Starbuck's most recent balance sheet showing their current liabilities section:

STARBUCKS CORPORATION
CONSOLIDATED BALANCE SHEETS
(in millions, except per share data)

	Sep 30, 2018
LIABILITIES AND EQUITY	
Current liabilities:	
Accounts payable	$ 1,179.3
Accrued liabilities	2,298.4
Insurance reserves	213.7
Stored value card liability and current portion of deferred revenue	1,642.9
Current portion of long-term debt	349.9
Total current liabilities	5,684.2

Source: Starbucks Corporation. *Form 10-K 2018*

C. Known Current Liabilities vs. Estimated Current Liabilities

LO8 - Distinguish between known and estimated liabilities.

Known current liabilities are those where the payee, amount, and timing of payment are known. Everything covered in this chapter so far, have been examples of known current liabilities. These are different from **estimated current liabilities** where the amount is not known and must be estimated. An example of an estimated current liability may be when a supplier's invoice has not been received by the time the financial statements must be prepared, and therefore, an estimate would be needed as it would comply with generally accepted accounting principles.

LO9 - Understand the different types of current liabilities and the journal entries associated with each.

Contingent Liabilities

A ***contingent liability*** is a *potential liability* that is dependent on a future event. If that future event occurs, then it triggers an obligation for the company. Examples contingent liabilities include warranties, debt guarantees, and pending legal claims. Whether or not a company should report a contingent liability depends on factors such as (1) the likelihood of the future event and (2) whether or not the potential loss can be estimated. For accounting purposes, the likelihood of the future event is categorized as either remote, possible, or probable. With *remote* having the lowest degree of confidence that the future event will transpire and *probable* having the highest degree of confidence that the future event will transpire. Figure 10-7 summarizes these three categories and their accounting treatment.

Likelihood of future event	***Amount can be estimated***	***Amount cannot be estimated***
Remote	No action	No action
Reasonably Possible	Disclose	Disclose
Probable	Record	Disclose

Figure 10-7: Contingent Liabilities: Accounting Treatment

Remote -if the future event is remote, or unlikely to occur, then the potential liability is not recorded (as a journal entry) nor disclosed (in the notes to the financial statements).

Reasonably Possible – a future event that is reasonably possible, or could occur, should be disclosed in the notes to the financial statements to comply with the full disclosure principle. All relevant information should be communicated, see Figure 10-8 for a sample note disclosure of a possible contingent liability.

Tip –

A contingent liability is journalized *only* when the outcome is probable and can be estimated.

Probable –if the future event is probable, or likely to occur, and cannot be estimated then a disclosure is required. If the event is probable and can be estimated, then it should be formally recorded in the company's financial statements. The journal entry would record of an expense or loss on the income statement and a liability on the balance sheet.

Roe Worldwide General Journal			
Date	Accounts	Debit	Credit
Dec. 31	Loss from legal case	50,000	
	Legal settlement payable		50,000
	(To record probable contingent liability)		

This loss would be reported in the Other Losses and Expenses section of the income statement.

Example
Let's assume Susanna Collins sues her former employer, Roe Worldwide, for failure to pay her overtime wages or provide state mandated breaks. Susanna is suing for damages amounting to $25,000 and the case will go to court in March. Roe Worldwide, after consulting with its attorneys, believes Susanna will prevail in the case. Since the company strongly believes Susanna will succeed in her legal case against them, the company must record the estimated loss and contingent liability in the period. Not recording this entry would violate generally accepted accounting principles as well as be unethical as it would mislead investors and creditors. Therefore, Roe would make the following entry:

Roe Worldwide General Journal			
Date	Accounts	Debit	Credit
Mar. 1	Legal settlement expense	25,000	
	Estimated legal settlement payable		25,000
	(To record probable contingent liability)		

If, instead, Roe Worldwide believed that Susanna would possibly not prevail (outcome is uncertain), then the company would make the following disclosure as a note in their financial statements:

Note X: A lawsuit has been commenced during the year against the company related to the failure to pay an employee overtime or provide for state mandated breaks. Legal counsel is uncertain as to the outcome of this legal case. The lawsuit seeks compensation for damages amounting to $25,000.

Figure 10-8: Sample Note Disclosure for Possible Contingent Liability

Because the level of likelihood is difficult to predict, the textbook problems will attempt to use clear language such as remote, possible, or probable. In real scenarios, the company would undergo extensive research and consultation with lawyers or other experts to reasonably predict the likelihood and potential amount. For example, in Barnes & Noble's annual report, the company discloses how contingent liabilities are measured and reported (shown on the following page).

The Company records a liability when it believes that it is both probable that a liability will be incurred, and the amount of loss can be reasonably estimated. The Company evaluates, at least quarterly, developments in its legal matters that could affect the amount of liability that has been previously accrued and makes adjustments as appropriate. Significant judgment is required to determine both probability and the estimated amount of a loss or potential loss. The Company may be unable to reasonably estimate the reasonably possible loss or range of loss for a particular legal contingency for various reasons, including, among others: (i) if the damages sought are indeterminate; (ii) if proceedings are in the early stages; (iii) if there is uncertainty as to the outcome of pending proceedings (including motions and appeals); (iv) if there is uncertainty as to the likelihood of settlement and the outcome of any negotiations with respect thereto; (v) if there are significant factual issues to be determined or resolved; (vi) if the proceedings involve a large number of parties; (vii) if relevant law is unsettled or novel or untested legal theories are presented; or (viii) if the proceedings are taking place in jurisdictions where the laws are complex or unclear. In such instances, there is considerable uncertainty regarding the ultimate resolution of such matters, including a possible eventual loss, if any.

Source: Barnes & Noble, Inc. *Annual Report 2018*

Check your knowledge

11.) Provide examples of common types of known liabilities.

12.) What is a contingent liability? What are some examples of contingent liabilities? When are they recorded?

Answers on page 403

Summary of Chapter 10 Learning Objectives

LO1 – Explain the difference between current and long-term liabilities.

A current, or short-term liability, is a form of debt that is expected to be paid within the longer of one year of the balance sheet date or one operating cycle. A non-current liability, or long-term liability, is a form of debt that is expected to be paid beyond one year of the balance sheet date or the next operating cycle, whichever is longer. A company's operating cycle is the amount of time it takes a company to make a good, or provide a service, and collect cash from its customers for that good or service. Current and non-current liabilities must be shown separately on the balance sheet.

LO2 – Understand the different types of current liabilities and the journal entries associated with each.

Current liabilities result from a company's normal business operations and often include accounts payable, unearned revenue, sales taxes payable, short-term notes payable, and payroll liabilities. Each would result in the increase (credit) in a current liability account.

LO3 – Describe the events leading to short-term notes payable.

Some of the common business situations resulting in a note payable are: purchase of an asset, extension of an account payable, or a cash loan. What all these items have in common is that they result in an obligation for the company to pay a specific amount at a designated future date. All three situations result in a credit to Notes Payable.

LO4 – Understand how to compute the maturity date for short-term notes payable.

A note's maturity date is the date at which full payment is due. A note's due date can be expressed in days, months, or years. When calculating the maturity date for a note that is expressed in days, exclude the date the note is created from your calculation. When calculating the maturity date in months, add the number of months indicated to the date the note was created -use the *same day* of the month as the original note's date. When calculating the maturity date in years, add the number of years indicated to the date the note was created.

Summary of Chapter 10 Learning Objectives (continued)

LO5 – Compute the interest expense for short-term notes payable.

The formula to calculate interest expense on notes payable is Principle x Interest Rate x Time. This amount is then recorded in the same period as incurred in order to comply with generally accepted accounting principles.

LO6 – Describe, calculate and record payroll liabilities.

Employing workers often results in employee and employer payroll liabilities. Employees must have certain items deducted from their gross pay. These items are known as payroll deductions and include (1) federal income tax, (2) state income tax, (3) Social Security taxes, (4) Medicare taxes, and (5) any other voluntary deductions. Employers have their own taxes they are responsible for which arise from employing workers. These taxes are (1) federal unemployment taxes, (2) state unemployment taxes, (3) Social Security taxes, (4) Medicare taxes, and (5) any other voluntary deductions. All these employee and employer items create payroll liabilities for the company until they are remitted to the appropriate agency.

LO7 –Explain the current portion of long-term debt and how it is recorded.

A company will need to prepare a journal entry to reclassify the portion of the long-term debt due within one year. This is due to the fact that companies often have long-term debt that requires a portion to be paid within the current period. The journal entry would debit the long-term liability and credit a current liability (usually entitled "Current portion of long-term debt").

LO8 - Distinguish between known and estimated liabilities.

Known current liabilities are those where the payee, amount, and timing of payment are well-established and documented. Accounts payable, notes payable, sales taxes payable, unearned revenue, and payroll liabilities are types of known current liabilities. An estimated liability occurs when amounts owing can be reasonably estimated, but the invoice has not yet been received at the date financial statements are issued, for example. Examples include warranty liabilities, professional fees, and legal claims.

Summary of Chapter 10 Learning Objectives (concluded)

LO9 – Identify contingent liabilities and their appropriate accounting treatment.

A contingent liability is a potential liability that is dependent on a future event resulting from a past transaction. A contingent liability is disclosed in the notes to the financial statements if the occurrence is possible, or probable but the amount cannot be reliably estimated. Events with a remote likelihood of occurrence are not disclosed or recorded. A contingent liability is only recorded when the occurrence is probable and can be estimated.

E N D O F C H A P T E R M A T E R I A L S

Check your knowledge –answers

Find below sample answers to the "Check your knowledge" questions presented throughout the chapter. Though individual student responses may vary, they should still contain some of the key points presented below.

1.) Current liabilities are those due within one year, or the company's operating cycle, whichever is longer.	6.) Maturity value means the cash amount due at the note's maturity date (or due date). It is the sum of the note's principal plus total interest expense.
2.) All liabilities, regardless if short-term or long-term, share these characteristics. They exist as a present obligation because of a past event and require a future sacrifice by the company to satisfy the obligation.	7.) It may be necessary to accrue interest on notes payable if the note is still outstanding at the end of the period for instance. This helps ensure compliance with the matching principle by recording the interest incurred during the current time period which provides internal and external users with accurate financial statements.
3.) All of a company's liabilities will appear on its balance sheet. Liabilities due within one year, will be presented in the Current Liabilities section of the balance sheet. Those liabilities not due within the year, will be presented in the Long-Term Liabilities section of the balance sheet.	8.) Social Security and Medicare taxes were established in 1937 with the Federal Insurance Contributions Act (FICA). The act requires both employee and employer to make equal contributions to the fund. The contribution is 7.65% for each party (6.2% for Social Security and 1.45% for Medicare). The calculation of Social Security is covered in more advanced and accounting courses, for the purpose of this book we assume 7.65% of for each party (employee and employer) of gross employee wages.
4.) Some of the common business situations resulting in a note payable are: purchase of an asset, extension of an account payable, or a cash loan. What all these items have in common is that they result in an obligation for the company to pay a specific amount at a designated future date. All three situations result in a credit to Notes Payable.	9.) The calculation of net pay begins with gross pay and then deducts payroll withholdings to arrive at net pay. Payroll withholdings fall into two categories –required or voluntary. Examples of required withholdings include (1) federal income taxes, (2) state income taxes, (3) Social Security taxes and (4) Medicare taxes. Examples of common voluntary payroll deductions include (1) health, vision, and/or dental insurance premiums, (2) life insurance premiums, (3) retirement savings, (4) medical savings, (5) union dues, and/or (6) charitable donations.
5.) The formula to calculate interest expense on notes payable is Principle x Interest Rate x Time (or PIT). The interest rate is expressed as an annual rate.	10.) Employer costs consist of their required payroll taxes as well as any voluntary contributions they may make (such as healthcare or retirement programs). The required payroll taxes for employers are (1) federal unemployment taxes, (2) state unemployment taxes, (3) Social Security taxes and (4) Medicare taxes.

Check your knowledge –answers (continued)

11.) Known current liabilities (also called definitely determinable liabilities) are those where the payee, amount, and timing of payment are known. Examples include notes payable, accounts payable, unearned revenue, payroll liabilities, and sales taxes payable.	12.) A contingent liability is a potential liability that is dependent on a future event resulting from a past transaction. For example, the company may incur warranty costs in the future from previous sales if the product is defective. In this example, the potential liability is the amount of those future repair costs; the future (contingent) event is the product breaking, and the past transaction is the sale. Other examples of contingent liabilities would be pending litigation or the guaranteeing of another party's debt (where the company is responsible for payment should the borrower default). Contingent liabilities are only recorded if the amount can be estimated with reasonable certainty and the outcome is probable.

Multiple-Choice Review

1. Normally, which items would be considered current liabilities?
   a.) accounts payable, interest payable, bank loan payable
   b.) salaries & wages payable, unearned revenue, and mortgage payable
   c.) unearned revenue, interest payable, and salaries & wages payable
   d.) land, land improvements, buildings, and equipment

2. Current liabilities, are debts expected to be paid or extinguished within:
   a.) one month
   b.) one year
   c.) two years
   d.) five years

3. Jenkins Company has a $6,000 note payable. The terms of the promissory note stipulate a maturity date of 90 days and indicates a 15% interest rate. The maturity value of this note would be:
   a.) $6,000
   b.) $6,225
   c.) $6,900
   d.) none of the above

4. If the Jenkins' note is created on December 1, the interest expense to be recognized from the note at December 31 would be:
   (Round to two decimals)
   a.) $72
   b.) $225
   c.) $900
   d.) none of the above

5. Why must interest be accrued on short-term notes payable?
   a.) to calculate the amount of cash to be paid out at year-end
   b.) to comply with the matching principle
   c.) to compare the interest payment to competitors
   d.) the accruing of interest at year-end is optional

6. Stylish Boutique shows $763 in their cash register at the end of the day. The tax rate for the area is 9%. Which statement is correct?
   a.) The company will debit cash for $700
   b.) The company will debit sales taxes payable for $763
   c.) The company will credit sales revenue for $763
   d.) The company will credit sales taxes payable for $63

Multiple-Choice Review (continued)

7. Employee benefits should be recorded when paid.
   a.) this statement is true since the exact amounts of the benefits may not be known before they are paid.
   b.) this statement is false since it would violate the matching principle that requires employee benefits be recorded in the period in which the benefit is earned by the employee.
   c.) this statement is true since only cash transactions can be recorded.
   d.) this statement is false since employee benefits are never recorded.

8. An employee earns $5,000 of wages for January. The employee's federal and state income taxes to be withheld during the period are $625 and $325, respectively. The wages are subject to FICA and unemployment taxes (*use rates provided in the chapter).* What is the employer's payroll tax expense for January?
   a.) $950
   b.) $1,642.50
   c.) $692.50
   d.) $0

9. Using the information from the previous problem, what would be the employee's net pay for January?
   a.) $4,050
   b.) $3,667.50
   c.) $3,357.50
   d.) $5,000

10. Known liabilities will be:
    a.) presented on the balance sheet
    b.) disclosed in the notes to the financial statements
    c.) presented on the income statement
    d.) ignored

11. Uma Company is being sued by Bill Company. Uma believes Bill will probably prevail in the lawsuit. Bill is suing Uma for $250,000 in damages. Uma Company should:
    a.) ignore the contingent liability and make no provision for it.
    b.) disclose the contingent liability in the notes to its financial statements.
    c.) record the estimated liability in the financial statements.
    d.) record the estimated liability but use an off-balance sheet approach to avoid it from appearing on the financial statements.

Answers to Multiple-Choice Review

1. c.
2. b.
3. b.

Principal	$6,000
Interest	.15
Time (90 days /360 days)	.25

Interest Due: $6,000 X .15 X .25 = $225

Maturity Value = Principal + Interest
$6,225 = $6,000 + $225

4. a.

Principal	$6,000
Interest	.15
Time (30 days /360 days)	.08

Interest Due: $6,000 X .15 X .08 = $72

Jenkins Company General Journal			
Date	Accounts	Debit	Credit
Dec. 31	Interest expense	72	
	Interest payable		72
	(To accrue interest expense on note)		

5. b.
6. d. ($763 cash /1.09 tax rate = $700 sales revenue)

Stylish Boutique General Journal			
Date	Accounts	Debit	Credit
XXX. X	Cash	763	
	Sales revenue		700
	Sales taxes payable		63
	(To record sales and related tax)		

7. b.
8. c. ($40 FUTA + $270 SUTA + $310 SS + $72.50 Medicare = $692.50)
   Remember that the federal and state income taxes are not part of the *employer*'s payroll tax expense but are withheld from the *employee*.
9. b. ($5,000 - $625 - $325 - $310 -$ 72.50 = $3,667.50)
10. a.
11. c.

Comprehension Problems

Classify liabilities as current or long-term (LO1)

CP 10-1

Identify whether the below items would generally be classified as a current or long-term liability.

1.) Accounts payable
2.) Unearned revenue
3.) Mortgage payable
4.) Salaries payable
5.) Bank loan due in 5 years
6.) Social Security taxes payable

Classify liabilities as current or long-term (LO1)

CP 10-2

Lunes Company has the following liability items and experiences a 3-month operating cycle. Identify whether each liability item would be classified as current or long-term.

a.) Notes payable due in 15 months
b.) Interest payable due in 3 months
c.) Federal unemployment taxes payable
d.) Bank loan due in 10 years
e.) Sales taxes payable
f.) Portion of long-term debt (due in 18 months)

Assume, instead, Lunes Company has an 18-month operating cycle. How would that affect your answers from the first requirement?

Recording and adjusting unearned revenues (LO2)

CP 10-3

Ballet Masters Inc. receives $10,200,000 cash from advance ticket sales for an 8-show run of *Sleeping Beauty.* Prepare the journal entry on October 1 to record the advance ticket sales. Then prepare the adjusting entry needed at December 31, assuming two of the performances have been held.

Recording sales taxes (LO2)

CP 10-4

Lelani Company sells $2,600 of merchandise for cash on November 1. The applicable sales tax for the area is 9.25%. Prepare the journal entry on November 1. Assume Lelani must remit any collected sales tax by December 15, prepare the journal entry to record this remittance.

Recording sales taxes from gross receipts (LO2)

CP 10-5

Lana Company counts its cash register at the end of the day on May 1. The cash amounts to $3,672.00. Prepare the journal entry Lana should record on May 1 to segregate the sales revenue from the sales tax. The applicable tax rate is 8%.

Situations that create notes payable (LO3)

CP 10-6

Bear Company replaces its past-due account with Luxus Company with a $4,000 note payable. The same day, Bear Company takes out a $10,000 cash loan from First National Bank. Lastly, Bear Company purchases $2,000 of furniture from Twilight Company. All events occurred the same day, March 1. Prepare the journal entries for Bear Company to record the above events.

Computing maturity date (LO4)

CP 10-7

Compute the maturity date for the following notes:

(a) A 60-day note created March 1, 2020.
(b) A 10-month note created April 1, 2020.
(c) A 2-year note created July 1, 2020.
(d) A 45-day note created November 1, 2020.

Computing interest on short-term notes (LO5)

CP 10-8

Goldie Corporation takes out a $10,000 cash loan from its bank by signing a 16%, 9-month promissory note on May 1, 2020. How much is the total interest expense on this note? What is the maturity value and maturity date of this note?

Short-term notes payable transactions (LO5)

CP 10-9

Goldie Corporation takes out a $10,000 cash loan from its bank by signing a 16%, 9-month promissory note on May 1, 2020.

a.) Prepare the journal entry to record the cash proceeds received from the loan on May 1, 2020.
b.) Prepare any adjusting entry needed at December 31, 2020.
c.) Prepare the journal entry to record the maturity of the note.

Round to whole dollars

Recording payroll tax liabilities (LO6)

CP 10-10

Paragon Corporation has one employee Mr. Smith. Mr. Smith's earnings for the week ended July 31 amounted to $1,890. His federal and state income taxes are $226.80 and $68.40, respectively. Assume that all of Mr. Smith's wages are subject to Social Security and Medicare and that the employer is levied unemployment taxes on all employee wages. Use tax rates provided in the chapter.

a.) Calculate Mr. Smith's net pay for the July 31st pay period.
b.) Prepare the journal entry to record Mr. Smith's payroll assuming Mr. Smith is paid on July 31.
c.) Prepare the journal entry to record the employer's payroll taxes.

Round to two decimal places

Recording contingent liabilities (LO9)

CP 10-11

ClaimsRUs Corp. is the defendant in three lawsuits. Identify the accounting treatment for each claim**.**

Claim 1: It is possible that the lawsuit will be successful. Damages are estimated at $1.5 million.

Claim 2: It is probable that this lawsuit will be successful. Damages cannot be reasonably estimated as yet.

Claim 3: It is probable that this lawsuit will be successful. Damages are estimated at $1 million.

Problems

Recording sales taxes (LO2)

P 10–1

On July 5, Smith Corporation sells merchandise for $5,000 to Customer A for cash, this inventory had a cost of $3,800. The sales tax rate is 8%. Assume that the perpetual inventory method is used and that all sales taxes must be remitted by the end of the month.

a.) Prepare the necessary entries to record the sale to Customer A.
b.) Prepare the entry to record the remittance of the sales taxes.
c.) How much sales tax expense will Smith Corporation report on its income statement for this transaction?

Short-term notes payable transactions (LO5)

P 10–2

Fructose Inc. signs a 12-month, 15% promissory note with its bank in exchange for a $20,000 business loan. This promissory note was created on September 1, 2020.

On October 1st of the year, Fructose Inc. accepted a 120-day, 12%, $6,000 note payable from Saccharine Corp. in exchange for its past-due accounts payable balance.

a.) Prepare the entries to record each of the above transactions.
b.) Prepare the journal entry to accrue interest on the two notes.
Use one compound entry and round the time factor to two decimals.
c.) Prepare journal entries to record each note's maturity.
Round the time factor to two decimals and final answer to whole dollars.

Recording payroll tax liabilities (LO6)

P 10–3

Rudy and Tudy are hourly workers at Baker's Dozen Bakery. For the biweekly pay period ended January 15, Rudy earns worked a total of 35 hours and Tudy worked 40 hours. Rudy's pay rate is $22 an hour and Tudy's pay rate is $26 an hour. Federal income tax to be withheld is calculated at $85 for Rudy and $115 for Tudy. State income tax withheld for Rudy and Tudy amount to $50 and $68, respectively. All of Rudy's and Tudy's wages are subject to Social Security and Medicare taxes. Baker's Dozen is subject to unemployment taxes on all of Rudy and Tudy's compensation. Their federal unemployment tax rate is 0.8% and their state unemployment tax rate is 5.4%.

a.) Prepare the journal entry to record employee wages and withholdings for the January 15th pay period. *Prepare one aggregated entry.*

b.) Prepare the employer's journal entry to record payroll taxes relating to the January 15th payroll. *Prepare one aggregated entry.*

c.) Assume Baker's Dozen pays for health and dental insurance for its employees. The cost to the employer is $110 per employee for health insurance (payable to Aetna Healthcare) and $20 per employee for dental insurance (payable to Delta Dental). Both Rudy and Tudy participate in these programs. *Prepare one aggregated entry.*

CHAPTER ELEVEN

Long-Term Liabilities

A corporation often incurs long-term debt in order to finance certain aspects of its operations. This type of financing is known as debt financing. Common examples of debt financing include bonds, loans, and capital leases. This chapter focuses on debt financing through the use of bonds payable.

Chapter 11 Learning Objectives

LO1 – Explain the different types of long-term liabilities.

LO2 – Describe the nature of bonds and the rights of bondholders.

LO3 – Describe how bonds, premiums and discounts are recorded in the accounting records and disclosed on the balance sheet.

LO4 – Describe and calculate how bond premiums and discounts are amortized.

LO5 – Understand the situations when a bond can be redeemed and the journal entries involved.

LO6 – Describe the other types of long-term liabilities a company may utilize when financing their operations.

LO7 – (Appendix 1) Explain and compute the present value of future amounts (such as bonds).

LO8 – (Appendix 2) Describe the effective interest method of amortization and how it differs from the straight-line method.

A. Long-Term Liabilities

LO1 – Explain the different types of long-term liabilities.

Long-term liabilities, or *non-current liabilities*, are obligations the company expects to pay in more than one year's time. A corporation often incurs long-term liabilities to acquire property, plant, and equipment. These borrowing are repayable over many years. There are three main types of non-current borrowings:

1. **Bonds** pay *only interest* at regular intervals to *bondholders*. The original investment is repaid to bondholders when the bond *matures* (or comes due), usually after a number of years. Bonds issued by a company are generally purchased by many investors, including individuals, financial institutions, and other corporations. Bonds are the most common type of long-term liabilities for corporations. Therefore, bonds will be the focus on this chapter and are discussed in detail in the following section.

2. **Loans** are sums of money lent for interest. They differ from bonds in that they are repaid in equal payments on a regular basis, often monthly. The repayments usually consist of both *interest* and *principal* paid to creditors. Such payments are said to be *blended*. That is, each payment contains repayment of a certain amount of the original amount of the loan (the principal), as well as interest on the remaining principal balance. Loans are usually received from only one or a small number of financial institutions. After obtaining a loan, a company often purchases long-lived assets from a third party with the cash proceeds. The loan in turn may be *secured* by these purchased assets to reduce the risk of non-repayment to the lender. If the loan is not repaid, the lender can seize and legally sell the secured assets, and retain the funds owed to it. For instance, a *mortgage* is a loan secured by specified real estate of the company, usually land with buildings on it.

3. A **finance lease** is similar to a loan in that a series of cash payments are also made over a period of time. However, instead of payments to the bank, the payments are made to a leasing company, called the *lessor*. The payments give the *lessee* (the company making the payments) the right to use a long-lived asset owned by the leasing company for a specified period of time.

B. The Nature of Bonds and the Rights of Bondholders

LO2 – Describe the nature of bonds and the rights of bondholders.

A *bond* is a debt instrument generally issued to many investors that requires future repayment of the original amount at a fixed date, as well as periodic interest payments during the intervening period. A contract called a **bond indenture** is prepared between the corporation and the future bondholders. It specifies the terms with which the corporation will comply, such as how much interest will be paid and when. Another of these terms may be a restriction on further borrowing by the corporation in the future. A **trustee** is appointed to be an intermediary between the corporation and the bondholder. The trustee administers the terms of the indenture.

Ownership of a bond certificate carries with it certain rights. These rights are printed on the actual certificate and vary among bond issues. Individual bondholders always acquire two rights.

The right to receive the face value of the bond at a specified date in the future, called the **maturity date**, and

The right to receive periodic interest payments, usually semi-annually, at a specified percent of the bond's face value.

Every corporation is legally required to follow a well-defined sequence in **authorizing** a bond issue. The bond issue is presented to the board of directors by management and must be approved by shareholders. Legal requirements must be followed and disclosure is required in the financial statements of the corporation.

Shareholder approval is an important step because bondholders are creditors with a prior claim on the assets of the corporation if liquidation occurs. Further, dividend distributions may be restricted during the life of the bonds. Affected shareholders usually need to approve this. These restrictions are reported to the reader of financial statements through note disclosure.

There are as well several additional considerations related to the decision to issue bonds.

Cash Required in the Immediate and the Foreseeable Future

Most bond issues are sold in their entirety when market conditions are favorable. However, more bonds can be authorized in a particular bond issue than will be immediately sold. Authorized bonds, like authorized common stock, can be issued whenever cash is required.

Important Terms of the Bonds

The interest rate of the bonds, their maturity date, and other important provisions — such as convertibility into common stock and restrictions on future dividend distributions of the corporation — are also considered. The success of a bond issue often depends on the proper combination of these and other similar features.

Assets of the Corporation to Be Pledged

Whether long-lived assets like property, plant, and equipment are pledged as security is an important consideration for bondholders because it helps to safeguard their investments. It is important to the corporation because the pledging of all these assets may restrict future borrowings. The total amount of authorized bonds is usually a fraction of the pledged assets, for example, 50%. The difference represents a margin of safety to bondholders. The value of these assets can shrink substantially but still permit reimbursement of bondholders should the company be unable to pay the bond interest or principal, and need to sell the pledged assets.

Bond Characteristics and Terminology

There are three main categories of bond terms. These are shown in Figure 11–1.

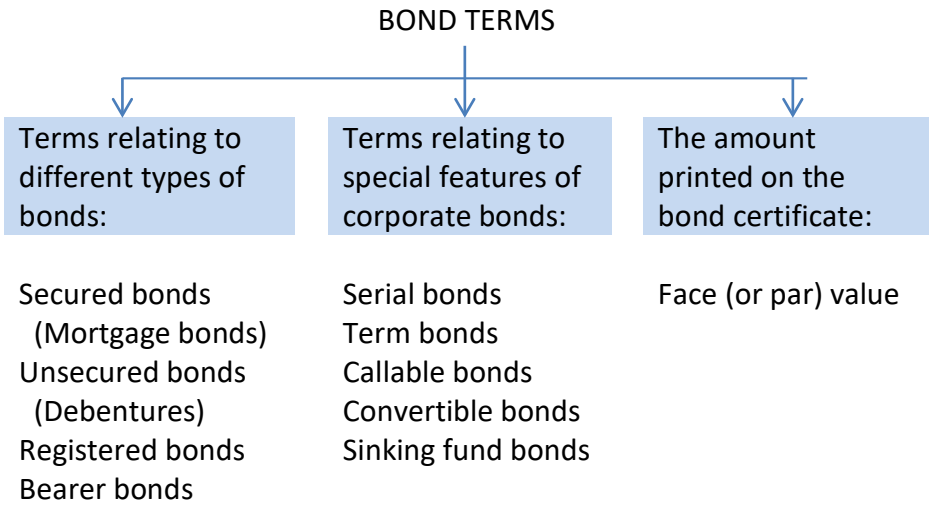


Figure 11–1: Bond Terms

Each corporation issuing bonds has unique financing needs and attempts to satisfy various borrowing situations and investor preferences. Many types of bonds have been created to meet these varying needs. Some of the common types are described below.

Secured bonds are backed by physical assets of the corporation. These are usually long-lived assets. When real property is legally pledged as security for the bonds, they are called **mortgage bonds**.

Unsecured bonds are commonly referred to as **debentures**. A debenture is a formal document stating that a company is liable to pay a specified amount with interest. The debt is not backed by any collateral. As such, debentures are usually only issued by large, well-established companies. Debenture holders are ordinary creditors of the corporation. These bonds usually command a higher interest rate because of the added risk for investors.

Registered bonds require the name and address of the owner to be recorded by the corporation or its trustee. The title to **bearer bonds** passes on delivery of the bonds to new owners and is not tracked. Payment of interest is made when the bearer clips coupons attached to the bond and presents these for payment.

Special features can be attached to bonds in order to make them more attractive to investors.

When **serial bonds** are issued, the bonds have differing maturity dates, as indicated on the bond contract. Investors are able to choose bonds with a term that agrees with their investment plans. For example, in a $30 million serial bond issue, $10 million worth of the bonds may mature each year for three years. This differs from **term bonds**, where there is only one maturity date. On the maturity date, the principal (or par value) will be due to the bondholders.

The issue of **callable bonds** with a call provision permits the issuing corporation to redeem, or call, the bonds before their maturity date. The bond indenture usually indicates the price at which bonds are callable. Corporate bond issuers are thereby protected in the event that market interest rates decline below the bond contract interest rate. The higher interest rate bonds can be called to be replaced by bonds bearing a lower interest rate.

Some bonds allow the bondholder to exchange bonds for a specified type and amount of the corporation's common stock. Bonds with this feature are called **convertible bonds**. This feature permits bondholders to enjoy the security of being creditors while having the option to become stockholders if the corporation is successful.

When **sinking fund bonds** are issued, the corporation is required to deposit funds at regular intervals with a trustee. This feature ensures the availability of adequate cash for the redemption of the bonds at maturity. The fund is called "sinking" because the transferred assets are tied up or "sunk," and cannot be used for any purpose other than the redemption of the bonds.

The corporation issuing bonds may be required to restrict its Retained Earnings, thereby limiting the amount of dividends that can be paid and protecting bondholders.

Investors consider the interest rates of bonds as well as the quality of the assets, if any, that are pledged as security. The other provisions in a bond contract are of limited or no value if the issuing corporation is in financial difficulties. A corporation in such difficulties may not be able to sell its bonds, regardless of the attractive provisions attached to them.

Each bond has an amount printed on the face of the bond certificate. This is called the **face value** of the bond; it is also commonly referred to as the **par-value** of the bond. When the cash received is the same as a bond's face value, the bond is said to be issued at *par.* A common face value of bonds is $1,000, although bonds of other denominations exist. A $30 million bond issue can be divided into 30,000 bonds, for example. This permits a large number of individuals and institutions to participate in corporate financing.

C. The Bond Accounting Process

LO3 – Describe how bonds, premiums and discounts are recorded in the accounting records and disclosed on the balance sheet.

Assume that Big Dog Carworks Corp. decides to issue $30 million of 7% bonds to finance its expansion. The bonds are repayable three years from the date of issue, January 1, 2019. The amount of authorized bonds, their interest rate, and their maturity date can be shown in the general ledger as follows:

GENERAL LEDGER

Bonds Payable – Long-term Acct. No. 272

Date 2019		Description	P.R.	Debit	Credit		Balance
Jan.	1	Memorandum: Authorized to issue $30M of 7%, 3 yr. bonds, due Jan. 1, 2022.					

If the bonds are also sold at face value the same day, the journal entry would be:

2019			
Jan. 1	Cash	30,000,000	
	Bonds Payable, 7%		30,000,000
	To record the issuance of 7% bonds at par.		

If the cash proceeds received from the bond issuance are equal to the bond's par value, the bond is said to have been issued at par or at 100.

Although different bond issues may be combined and disclosed on the balance sheet as one amount, the characteristics of each bond issue are disclosed in a note the financial statements. This includes the interest rate and maturity date of the bond issue. Also disclosed in a note are any restrictions imposed on the corporation's activities by the terms of the bond indenture and the assets pledged, if any.

Corporate bonds normally pay interest semiannual (every six months). Let's assume the first interest payment would occur on June 30, 2019. The journal entry to record this interest payment to bondholders would be:

2019			
Jun. 30	Bond Interest Expense	1,050,000	
	Cash		1,050,000
	To record semi-annual interest payment to bondholders ($30M x 7% x 6/12 months).		

You'll note that the calculation for bond interest uses the same formula (Principal x Interest Rate x Time) as when the interest was calculated on short-term notes payable in the previous chapter. The same journal entry would be made at the next semi-annual interest date of December 31, 2019 and every six months until bond's maturity (in 2022).

The partial balance sheet of BDCC at December 31, 2019 would show:

BDCC
Balance Sheet (partial)
December 31, 2019

Liabilities

Long-term liabilities	
Bonds payable, 7% (Note X)	30,000,000

Note X could state:

> On January 1, 2019 the corporation was authorized to issue $30M of bonds. The terms of the bond indenture are administered by a trustee, Fidelity Mutual. The bonds bear interest at 7% per year on the face value. Interest is paid semiannual on June 30 and December 31 of each year. The bonds are secured by a mortgage on some of the corporation's properties. The bonds are non-convertible and non-callable. Dividends may not be paid to shareholders until bond interest has been paid to bondholders. The corporation issued the entire bond issue at face value on January 1, 2019.

Discounts and Premiums on Bonds

Bonds are normally issued at either a discount or premium, not par as shown in the prior example. This occurs when the bond's stated, or *contract*, interest rate differs from the market interest rate, or rate that investors demand for their loaned capital.

Bond Discount

A bond will be sold at a ***discount*** when the bond's contract interest rate is lower than the market interest rate. This means the company will receive cash less than the par value of the bond on the sale date.

For example, PB&J Company issues $1,000,000 of bonds, with a 7% contract rate and a maturity date of 5 years. At the time of the issuance there are bonds with similar terms, features, and risk are earning an 8% return. Potential investors, or *bondholders*, would bid down the bond price to the point at which the price paid will equal the interest payments and return of the original investment as if the bond actually yielded 8% (this calculation is discussed in Appendix 1). Given this data, the bonds will sell for at 95.9445. A bond's selling price is normally stated this way and is interpreted as a percentage of par value. Therefore, the cash received is $959,445 ($1,000,000 x 95.9445%). The difference between the selling price ($959,445) and the par value of the bond ($1,000,000) is the amount of the bond's discount ($40,555). The journal entry to record the issuance of the bond on January 1, 2020 would be:

2020			
Jan. 1	Cash	959,445	
	Discount on Bonds Payable	40,555	
	Bonds Payable		1,000,000
	To record the issuance of a 7%, 5-year bond at a discount		

The $40,555 amount of the discount is recorded to a *contra liability* account called "Discount on Bonds Payable". This amount will be *deducted* from to the par value of the bonds recorded in the long-term liabilities section of the balance sheet. The balance sheet for PB&D Company would show the following just after issuance on January 1:

PB&J Company
Balance Sheet (partial)
January 1, 2020

Liabilities

Long-term liabilities	
Bonds payable, 7%	1,000,000
Less: Discount on bonds payable	40,555
Carrying value of bonds	959,455

LO4 – Describe and calculate how bond discounts and premiums are amortized.

Bond Discount -Amortization

Semi-annual interest payments still need to be made on the bond. But an additional item will need to be recorded –the amortization of the bond discount. After all, the difference between the issue price and the par value (amount of the discount) represents an additional cost of borrowing. This cost must be recorded in compliance with the matching principle (or expense recognition principle). Therefore, companies are required to charge the discount to expense throughout the bond's life. This process is known as *amortization*. Two methods can be used to conduct this amortization, or allocation. (1) the straight-line method or (2) the effective-interest rate method. The straight-line method will be covered in the chapter and the effective interest rate method is covered in Appendix 2 of the chapter. Both methods achieve the same goal, matching the expense of borrowing associated with the bonds over the bond's life.

The formula for straight-line amortization of a bond discount is:

Bond Discount	/	Number of Interest Periods	=	Bond Discount Amortization

Assuming PB&J Company uses the straight-line method when amortizing their bond discounts, the following journal entry would be made at the first semi-annual interest payment date of June 30, 2020:

2020			
Jun. 30	Bond Interest Expense	39,056	
	Discount on Bonds Payable		4,056
	Cash		35,000
	To record semi-annual interest payment to bondholders ($1M x 7% x 6/12 months) and amortize bond discount relating to the period ($40,555/10 periods).		

You'll note that amortizing a bond discount increases bond interest expense. The balance of the Discount on Bonds Payable account, however, will decrease. At the end of the bond's life the Discount account balance should reach $0. To see this progression, compare the partial balance sheet from January 1 to June 30, 2020.

PB&J Company
Balance Sheet (partial)
January 1, 2020

Liabilities	
Long-term liabilities	
Bonds payable, 7%	1,000,000
Less: Discount on bonds payable	40,555
Carrying value of bonds	959,445

PB&J Company
Balance Sheet (partial)
June 30, 2020

Liabilities	
Long-term liabilities	
Bonds payable, 7%	1,000,000
Less: Discount on bonds payable	36,499
Carrying value of bonds	963,501

The difference between the two partial balance sheets is in the unamortized Discount balance and carrying value. The Discount on Bonds Payable has decreased from January 1 by the amount amortized on June 30th ($4,055).

The straight-line method of amortization has been illustrated in the chapter. Both the straight-line and effective-interest rate method will recognize the same *total* amount of interest expense over the life of the bonds. A company may select the straight-line method to amortize bond discounts or premiums. However, if the amount of interest recognized in each period is materially different from the amount computed under the effective-interest rate method, GAAP will require the use of the effective-interest rate method.

Bond Premium

A bond is sold at a **premium** when it is sold for more than its face value. This usually results when the bond interest rate is higher than the market interest rate at the date of issue. A premium will result when the cash received from the sale of the bond is greater than the par value of the bond.

For example, Guinevere Company issues $1,000,000, 8%, 5-year bonds. At the time of the issuance there are bonds with similar terms, features, and risk are earning an 6% return. Potential investors, or *bondholders*, would bid up the bond price as they are interested in a bond that offers a higher interest payment. Therefore, assume the bonds sell above their par value at 1.085302 (calculation will be discussed in Appendix 1). The cash received will be $1,085,302 ($1,000,000 x 1.085302%). The difference between the selling price ($1,085,302) and the par value of the bond ($1,000,000) is the amount of the bond's premium ($85,302). The journal entry to record the issuance of the bond on January 1, 2020 would be:

2020			
Jan. 1	Cash	1,085,302	
	Bonds Payable		1,000,000
	Premium on Bonds Payable		85,302
	To record the issuance of an 8%, 5-year bond at a premium		

The $85,302 amount of the premium is recorded to an *adjunct liability* account called "Premium on Bonds Payable". This amount will be *added* to the par value of the bonds recorded in the long-term liabilities section of the balance sheet. The balance sheet for Guinevere Company would show the following just after issuance:

Guinevere Company
Balance Sheet (partial)
January 1, 2020

Liabilities

Long-term liabilities	
Bonds payable, 8%	1,000,000
Add: Premium on bonds payable	85,302
Carrying value of bonds	1,085,302

Bond Premium-Amortization

Semi-annual interest payments are required on the corporate bond. When a discount or premium exists, an additional item will need to be recorded –the amortization of the bond premium. After all, the difference between the issue price and the par value (amount of the premium) represents a reduction in the cost of borrowing. This reduction must be recorded in compliance with the matching principle (or expense recognition principle). Therefore, companies are required to charge the premium to expense throughout the bond's life. This process is known as *amortization*. As with the bond discount amortization, two methods can be used to achieve this amortization - the straight-line method or the effective-interest rate method. The straight-line method will be shown.

The formula for straight-line amortization of a bond premium is:

Bond Premium	/	Number of Interest Periods	=	Bond Premium Amortization

Guinevere Company uses the straight-line method when amortizing their bond premiums or discounts. Therefore, the following journal entry would be made at the first semi-annual interest payment date of June 30, 2020:

2020			
Jun. 30	Bond Interest Expense	31,470	
	Premium on Bonds Payable	8,530	
	Cash		40,000
	To record semi-annual interest payment to bondholders ($1M x 8% x 6/12 months) and amortize bond discount relating to the period ($85,302/10 periods).		

You'll note that amortizing a bond premium decreases bond interest expense –reducing the overall cost of borrowing. The balance of the Premium on Bonds Payable account will decrease as well -reaching $0 at the end of the bond's life. An amortization schedule can be prepared to illustrate this decrease to the premium account, increase in the bond's carrying value and impact to semi-annual interest expense (see Figure 11-2).

Guinvere Company
Issuance of $1,000,000 Bonds Payable for $1,085,302
Amortization Table (Straight-Line Method)

	A	B	C	D	E
Interest Period	(P x I x T) Cash Interest Payment	(D / Periods) Premium Amortization	(A - C) Interest Expense	(D - B) Unamortized Premium	(Par + D) Ending Carrying Value
0	-	-	-	$ 85,302	$ 1,085,302
1	$ 40,000	$ 8,530	$ 31,470	76,772	1,076,772
2	40,000	8,530	31,470	68,242	1,068,242
3	40,000	8,530	31,470	59,712	1,059,712
4	40,000	8,530	31,470	51,182	1,051,182
5	40,000	8,530	31,470	42,652	1,042,652
6	40,000	8,530	31,470	34,122	1,034,122
7	40,000	8,530	31,470	25,592	1,025,592
8	40,000	8,530	31,470	17,062	1,017,062
9	40,000	8,530	31,470	8,532	1,008,532
10	40,000	8,532 *	31,468	-	1,000,000
		$ 85,302			

* *rounded*

The carrying value of the bond at the end of its life should equal its par value.

Figure 11–2 Amortization Table for Bond Premium

PB&J Company
Issuance of $1,000,000 Bonds Payable for $959,445
Amortization Table (Straight-Line Method)

	A	B	C	D	E
Interest Period	(P x I x T) Cash Interest Payment	(D / Periods) Discount Amortization	(A + C) Interest Expense	(D - B) Unamortized Discount	(Par - D) Ending Carrying Value
0	-	-	-	$ 40,555	$ 959,445
1	$ 35,000	$ 4,056	$ 39,056	36,499	963,501
2	35,000	4,056	39,056	32,443	967,557
3	35,000	4,056	39,056	28,387	971,613
4	35,000	4,056	39,056	24,331	975,669
5	35,000	4,056	39,056	20,275	979,725
6	35,000	4,056	39,056	16,219	983,781
7	35,000	4,056	39,056	12,163	987,837
8	35,000	4,056	39,056	8,107	991,893
9	35,000	4,056	39,056	4,051	995,949
10	35,000	4,051 *	39,051	-	1,000,000
		$ 40,555			

* *rounded*

The carrying value of the bond at the end of its life should equal its par value.

Figure 11–3 Amortization Table for Bond Discount

LO5 – Understand the situations when a bond can be redeemed and the journal entries involved.

Bond Redemption

When a bond matures it is said to be ***redeemed***. A bond issue can be redeemed at its maturity date or before. Also, the bond can be redeemed in whole, or in part, before its maturity date. As discussed above, there are several different possibilities:

1. The bonds can be repurchased on the open market if the purchase is financially advantageous to the issuer.

2. A **call provision** is sometimes included in a bond indenture permitting early redemption at a specified price, usually higher than face value. The issuer may decide to exercise this call provision if it is financially advantageous.

3. The bondholder may be able to exercise a **conversion provision** if one was provided for in the bond indenture; in this case, the bonds can be converted into specified shares at the option of the bondholder.

Whenever bonds are retired before their maturity date, the amount payable to bondholders is the face amount of the bonds or the amount required by the call provision. Any unamortized premium or discount must be removed from the accounts.

Let's assume Dakota Company issued $100,000, 12%, 3-year bonds on January 1, 2019. When the bonds were originally issued, they sold at a premium of $10,485. Suppose at the end of the first year, the company decides to retire ½, or $50,000 of face value bonds. The company pays cash at 97 (that is, for $50,000 x 97% = $48,500) to retire these bonds on December 31, 2019. Account balances just before retirement are as follows:

2019	Bonds Payable		Premium on Bonds		
Jan. 1		100,000		10,485.00	
Jun. 30			1,747.50		
Dec. 31			1,747.50		
				6,990.00	Bal.

Since $50,000 of the bonds is redeemed, only half of the $6,990 premium balance ($3,495) is removed from the accounting records. The journal entry would be:

2019			
Dec. 31	Bonds Payable, 12%	50,000	
	Premium on Bonds	3,495	
	Cash		51,000
	Gain on Retirement		4,995
	To record retirement of 12% bonds at 97.		

In this case, retirement results in a gain.

Under different market conditions, a loss may result. If ½ of the outstanding bonds are redeemed at 109, cash of $54,500 would be received ($50,000 x 109%) and this journal entry would be recorded:

2019			
Dec. 31	Bonds Payable, 12%	50,000	
	Premium on Bonds	3,495	
	Loss on Retirement	1,005	
	Cash		54,500
	To record retirement of 12% bonds at 109.		

The BDCC retirement occurred on an interest payment date, December 31, 2022. If the retirement had occurred between interest payment dates, accrued interest also would be paid to the bondholders (this topic is covered in later accounting classes).

D. Other Long-Term Liabilities

LO6 – Describe the other types of long-term liabilities a company may utilize when financing their operations.

Mentioned earlier were the other types of long-term liabilities a company have in addition to corporate bonds –loans payable and capital leases.

Loans Payable

Loans payable are a long-term debt that can be used by a corporation to finance its operations.

Assume BDCC obtained a $100,000, 10% loan on January 1, 2019 from First Bank to acquire a piece of production equipment. When the loan proceeds are deposited into the bank account of BDCC, the company would make the following journal entry:

2019			
Jan. 1	Cash	100,000	
	Loan-Payable – First Bank		100,000
	To record 10% loan from First Bank		

When the equipment is purchased (assumed here to be the same day), this journal entry would be made:

2019			
Jan. 1	Equipment	100,000	
	Cash		100,000
	To record purchase of equipment with loan proceeds		

BDCC will depreciate this long-lived asset as usual over its estimated useful life, as discussed in a previous chapter. Interest is calculated on the unpaid balance of the loan. This balance decreases over the life of the loan because each payment contains part interest and part principal payments. In the example above, assume the $100,000 loan is repayable in three annual blended payments of $40,211. Each payment is made on December 31, commencing in 2019. While the payments remain the same each year, the amounts of interest paid decrease while the amount of principal repaid increases.

Figure 11-4 illustrates this effect. Note particularly columns B, C, and D.

Year ended Dec. 31	A Beginning loan balance	B Interest expense (A x 10%)	C Reduction of principal ($40,211 – B)	D Ending loan balance (A – C)
2019	$100,000	$10,000	$30,211	$69,789
2020	69,789	6,979	33,232	36,557
2021	36,557	3,654	36,557	-0-
			$100,000	

Interest expense decreases with each loan payment because the remaining principal (A) has decreased. Principal repaid plus interest each year (B + C) always totals $40,211, the amount of each payment

Figure 11-4 Effect of blended interest and principal payments

Figure 11-4 can be used to construct the journal entries to record the loan payments at the end of each year:

2019			
Dec. 31	Interest Expense (col. B)	10,000	
	Loan Payable (col. C)	30,211	
	Cash		40,211
2020			
Dec. 31	Interest Expense (col. B)	6,979	
	Loan Payable (col. C)	33,232	
	Cash		40,211
2021			
Dec. 31	Interest Expense (col. B)	3,654	
	Loan Payable (col. C)	36,557	
	Cash		40,211

The amounts in Figure 11-4 can also be used to present the related information on the financial statements of BDCC at each year-end. Recall that assets and liabilities need to be classified as current and non-current on the statement of financial position. Current liabilities are amounts paid within one year of the statement of financial position date. Part of the loan payable to First Bank will be paid in the upcoming year. Therefore, it needs to be classified as a current liability on the statement of financial position even though the full amount of

the loan outstanding is reported in a single general ledger account called Loan Payable – First Bank. The amount of the total loan outstanding at December 31, 2019, 2020, and 2021 and the current and non-current portions are shown in Figure 11-5:

A	B	C	D
Year ended Dec. 31	Ending loan balance per general ledger (Fig. 9-2, Col. D)	Current portion (Fig. 9-2, col. C)	(B – C) Non-current portion
2019	$69,788	$33,232	$36,557
2020	36,557	36,557	-0-
2021	-0-	-0-	-0-

Figure 11-5 Allocation of current and non-current portions of loan principal

The balance sheet presentation would be as follows at each year-end:

	2019	2020	2021
Current liabilities			
Current portion of borrowings	$33,232	$36,557	$ -0-
Non-current liabilities			
Borrowings (Note X)	36,557	-0-	-0-

Details of the loan would be disclosed in a note to the financial statements. Only the principal amount of the loan is reported on the statement of financial position. The interest expense portion is reported on the income statement as an expense. Because these payments are made at BDCC's year-end (December 31), no interest payable is accrued or reported on the statement of financial position in this example.

Capital Leases

After obtaining a long-term loan, a company often purchases long-lived assets from a third party with the cash proceeds. The mechanics of recording a capital, or *finance lease*, are much the same as that of a loan. The value of the finance lease is determined by calculating the amount of a similar loan that could be paid off, given the period of time, interest rate, and amount of payments stated in the lease agreement, and the fair value of the leased asset.

For instance, assume that on January 1, 2019 Big Dog Carworks Corp. agrees to pay First Leasing Company annual payments of $40,211 on December 31 for the next three years for the use of a large truck that could be purchased elsewhere for $100,000. BDCC is responsible for insuring, maintaining, and repairing the truck, though title to the truck remains with the leasing company.

Even though BDCC does not legally own the truck, the substance of the lease agreement is the same is if the company received a 10% loan from a bank and then purchased the truck from a third party (recall the example above). As a result, BDCC is required under GAAP to record the finance lease as a liability and the truck as a long-lived asset on its statement of financial position. When the lease agreement is signed on January 1, 2019 the following journal entry is made:

2019			
Jan. 1	Truck	100,000	
	Finance Lease		100,000
	To record First Leasing Company lease of a truck		

When each of the three payments is made on December 31 of 2019, 2020, and 2021, much the same journal entries are recorded as in the previous bank loan example:

2019			
Dec. 31	Interest Expense	10,000	
	Finance Lease	30,211	
	Cash		40,211
2020			
Dec. 31	Interest Expense	6,979	
	Finance Lease	33,232	
	Cash		40,211
2021			
Dec. 31	Interest Expense	3,654	
	Finance Lease	36,557	
	Cash		40,211

The balance sheet presentation of the capital lease liability would also be similar. The same current and non-current portions would be presented each year as in the bank loan example above.

Appendix 1: Present Value Calculations

LO7 – Explain and compute the present value of future amounts (such as bonds).

Interest is the time value of money. If you borrow $1 today for one year at 10% interest, its future value in one year is $1.10 ($1 x 110% = $1.10). The increase of 10 cents results from the interest on $1 for the year. Conversely, if you are to pay $1.10 one year from today, the **present value** is $1 – the amount you would need to invest today at 10% to receive $1.10 in one year's time ($1.10/110% = $1). The exclusion of applicable interest in calculating present value is referred to as **discounting**.

If the above $1.10 amount at the end of the first year is invested for an additional year at 10% interest, its future value would be $1.21 ($1.10 x 110%). This consists of the original $1 investment, $.10 interest earned in the first year, and $.11 interest earned during the second year. Note that the second year's interest is earned on both the original $1 and on the 10 cents interest earned during the first year. This increase provides an example of **compound interest** – interest earned on interest.

The following formula can be used to calculate this:

$$F = P \times (1+i)^n$$

where F = future value, P = present value, i = the interest rate, and n = number of periods.

Substituting the values of our example, the calculation would be, F = $\$1[(1 + .1)^2]$, or $1.21.

If the **future value** of today's $1 at 10% interest compounded annually amounts to $1.21 at the end of 2 years, the present value of $1.21 to be paid in 2 years, discounted at 10%, is $1. The formula to calculate this is just the inverse of the formula shown above, or

$$P = \frac{F}{(1 + i)^n}$$

Substituting the values of our example,

$$P = \frac{\$1.21}{(1 + .1)^2} = \$1$$

That is, the present value of $1.21 received two years in the future is $1. The present value is always less than the future value, since an amount received today can be invested to earn a return (interest) in

the intervening period. Calculating the present value of amounts payable or receivable over several time periods is explained more thoroughly below.

Future Cash Flows

The following example illustrates how the prices of $100,000 of bonds issued by Big Dog Carworks Corp. were derived. Recall the three scenarios:

1. Big Dog Carworks Corp. issues $100,000 of 3-year, 12% bonds on January 1, 2019 when the market rate of interest is also 12%. Interest is paid semi-annually.
2. BDCC's bonds are issued at a premium ($110,485) because the market rate of interest is 8% at the date of issue for similar bonds offered in the market.
3. BDCC's bonds are issued at a discount ($90,574). The market rate of interest is 16%.

There are two steps to calculate the present value of the bonds, because there are two types of future cash amounts that relate to the bond issue. The bond *principal* will be repaid at the end of three years, and *interest* payments will be received every six months for three years. The present value of each of these must be calculated and totaled to arrive at the present value of the bonds at the date of issue.

In the examples below, it will be shown that the resulting amount equals the issue price of the bonds in each scenario described above. First, the present value of the repayment of the bond principal at the end of three years for each of the three scenarios will be calculated.

Present Value of Bond Principal to be Repaid at End of Three Years

The present value of a single future amount — $100,000 in this case — can be calculated using table A below. Since semi-annual interest payments are made, the 6-month rate is used. This is half the annual rate, or 6% (12% x ½). Therefore, the "6%" column below is used, rather than the 12% column. Also, because there are 6 interest payment periods over the 3-year life of the bond, the "6 period" row is used instead of the "3 period" row. The intersection of this row and column is 0.704961 (see Table A). This represents the present value of $1 to be received six periods hence, assuming an interest rate of 6% per period.

Table A

Present Value of $1

$$P = \frac{1}{1 + i^n}$$

	Rate Per Period (i)							
Period (n)	3%	4%	5%	6%	7%	8%	9%	10%
1	0.970874	0.961538	0.952381	0.943396	0.934579	0.925926	0.917431	0.909091
2	0.942596	0.924556	0.907029	0.889996	0.873439	0.857339	0.841680	0.826446
3	0.915142	0.888996	0.863838	0.839619	0.816298	0.793832	0.772183	0.751315
4	0.888487	0.854804	0.822702	0.792094	0.762895	0.735030	0.708425	0.683013
5	0.862609	0.821927	0.783526	0.747258	0.712986	0.680583	0.649931	0.620921
6	0.837484	0.790315	0.746215	0.704961	0.666342	0.630170	0.596267	0.564474
7	0.813092	0.759918	0.710681	0.665057	0.622750	0.583490	0.547034	0.513158
8	0.789409	0.730690	0.676839	0.627412	0.582009	0.540269	0.501866	0.466507
9	0.766417	0.702587	0.644609	0.591898	0.543934	0.500249	0.460428	0.424098
10	0.744094	0.675564	0.613913	0.558395	0.508349	0.463193	0.422411	0.385543
11	0.722421	0.649581	0.584679	0.526788	0.475093	0.428883	0.387533	0.350494
12	0.701380	0.624597	0.556837	0.496969	0.444012	0.397114	0.355535	0.318631
13	0.680951	0.600574	0.530321	0.468839	0.414964	0.367698	0.326179	0.289664
14	0.661118	0.577475	0.505068	0.442301	0.387817	0.340461	0.299246	0.263331
15	0.641862	0.555265	0.481017	0.417265	0.362446	0.315242	0.274538	0.239392
16	0.623167	0.533908	0.458112	0.393646	0.338735	0.291890	0.251870	0.217629
17	0.605016	0.513373	0.436297	0.371364	0.316574	0.270269	0.231073	0.197845
18	0.587395	0.493628	0.415521	0.350344	0.295864	0.250249	0.211994	0.179859
19	0.570286	0.474642	0.395734	0.330513	0.276508	0.231712	0.194490	0.163508
20	0.553676	0.456387	0.376889	0.311805	0.258419	0.214548	0.178431	0.148644
	Selected values presented							

Scenario 1: The Bond Contract Interest Rate (10%) Is the Same as the Market Interest Rate (10%)

The present value of $100,000 principal to be received three years from now is $100,000 x 0.751315 = $75,131.50.

Scenario 2: The Market Interest Rate Is 8% (per Year)

Again, since semi-annual interest payments are made, the 6-month rate is half the annual rate. Therefore, the compounding rate this time is 4% (8% x ½); there are 6 periods of interest payments.

According to table A, the present value of $1 compounded at 4% for 6 periods is 0.790315 (see table). The present value of the principal

amount of the bonds is therefore calculated as: $100,000 x 0.790315 = $79,032.

Scenario 3: The Market Interest Rate Is 16% (per Year)

For these semi-annual interest payments, the 6-month rate is 8% (16% x ½); there are also 6 periods of interest payments.

According to table A, the present value of $1 compounded at 8% for 6 periods is 0.630170 (see bolded amount in 8% column). The present value of the principal amount of the bonds is therefore calculated as: $100,000 x 0.630170 = $63,017.

Present Value of Six Interest Payments to be Made Semi-annually for Three years

The present value of the interest payments can be calculated using table B. This formula is just the sum of the present value of each of the six interest payments made at varying points over the three-year life of the bonds. In this instance, interest of $6,000 is paid semi-annually for 6 periods on the bonds. Since BDCC's payments are made semi-annually, the rate used is half the prevailing market rate of interest.

Table B

Present Value of a Series of Payments of $1

$$P = \left[\frac{1 - \frac{1}{1 + i^n}}{i} \right]$$

	Rate Per Period (i)							
Period (n)	3%	4%	5%	6%	7%	8%	9%	10%
1	0.970874	0.961538	0.952381	0.943396	0.934579	0.925926	0.917431	0.909091
2	1.913470	1.886095	1.859410	1.833393	1.808018	1.783265	1.759111	1.735537
3	2.828611	2.775091	2.723248	2.673012	2.624316	2.577097	2.531295	2.486852
4	3.717098	3.629895	3.545951	3.465106	3.387211	3.312127	3.239720	3.169865
5	4.579707	4.451822	4.329477	4.212364	4.100197	3.992710	3.889651	3.790787
6	5.417191	5.242137	5.075692	4.917324	4.766540	4.622880	4.485919	4.355261
7	6.230283	6.002055	5.786373	5.582381	5.389289	5.206370	5.032953	4.868419
8	7.019692	6.732745	6.463213	6.209794	5.971299	5.746639	5.534819	5.334926
9	7.786109	7.435332	7.107822	6.801692	6.515232	6.246888	5.995247	5.759024
10	8.530203	8.110896	7.721735	7.360087	7.023582	6.710081	6.417658	6.144567
11	9.252624	8.760477	8.306414	7.886875	7.498674	7.138964	6.805191	6.495061
12	9.954004	9.385074	8.863252	8.383844	7.942686	7.536078	7.160725	6.813692
13	10.634955	9.985648	9.393573	8.852683	8.357651	7.903776	7.486904	7.103356
14	11.296073	10.563123	9.898641	9.294984	8.745468	8.244237	7.786150	7.366687
15	11.937935	11.118387	10.379658	9.712249	9.107914	8.559479	8.060688	7.606080
16	12.561102	11.652296	10.837770	10.105895	9.446649	8.851369	8.312558	7.823709
17	13.166118	12.165669	11.274066	10.477260	9.763223	9.121638	8.543631	8.021553
18	13.753513	12.659297	11.689587	10.827603	10.059087	9.371887	8.755625	8.201412
19	14.323799	13.133939	12.085321	11.158116	10.335595	9.603599	8.950115	8.364920
20	14.877475	13.590326	12.462210	11.469921	10.594014	9.818147	9.128546	8.513564
	Selected values presented							

Scenario 1: The Market Interest Rate Is 12% (per Year)

According to table B, the sum of the present values of six regular payments of $1 compounded at 6% (l2% x ½) for six periods is 4.917324 (see bolded amount in 6% column). The total present value of the six, $6,000 interest payments made over the three-year life of the BDCC bonds under scenario 1 is therefore $6,000 x 4.917324 = $29,504.

Scenario 2: The Market Interest Rate Is 8% (per Year)

Again using table B, the sum of the present values of six regular interest payments of $1 compounded at 4% (8% x ½) for 6 periods is 5.242137 (see bolded amount in 4% column). The total present value

of the six, $6,000 interest payments made over the three-year life of the BDCC bonds under scenario 2 is therefore $6,000 x 5.242137 = $31,453.

Scenario 3: The Market Interest Rate Is 16% (per Year)

The sum of the present values of six regular interest payments of $1 compounded at 8% (16% x ½) for 6 periods is 4.622880 according to table B. The total present value of the six, $6,000 interest payments made over the three-year life of the BDCC bonds under scenario 3 is therefore $6,000 x 4.622880 = $27,737.

Calculating the Total Present Value of the BDCC bonds

The total present value of the $100,000 BDCC bonds issued under each of the three scenarios is the sum of the present value of the principal and interest payments derived above.

Scenario 1: The Bond Contract Interest Rate (12%) Is the Same as the Market Interest Rate (12%)

In this case, the bonds are sold at face value. An investor is willing to pay face value because the present value of the future cash payments is $100,000 – the sum of the present value of the principal and interest payments of the bonds:

1. The $100,000 bond face value is due at the end of six periods. The present value of this cash flow is calculated as $100,000 x 0.704961 (table A)	$70,496
2. The semi-annual $6,000 interest is to be received for six periods in total. The present value of this cash flow is calculated as $6,000 x 4.917324 (table B)	29,504
Total present value of these bonds is	$100,000

When the bond contract interest rate is the same as the market interest rate, the present value of all cash flows is the same as the bond's face value. In actual practice, however, the market interest rate may be different from the bond indenture interest rate because of the time that elapses between the creation of the indenture and the time

the bonds are actually sold on the bond market. Scenarios 2 and 3 deal with this situation.

Scenario 2: The Bond Contract Interest Rate (12%) Is Greater than the Market Interest Rate (8%)

Here the bonds are sold at a premium. An investor is willing to pay more than face value because the present value of the future cash flow amounts to $110,485, calculated as follows:

1. The $100,000 bond face value is due at the end of six periods. The present value of this cash flow is calculated as $100,000 x 0.790315 (table A)	$79,032
2. The semi-annual $6,000 interest is to be received for six periods in total. The present value of this cash flow is calculated as $6,000 x 5.242137 (table B)	31,453
Total present value of these bonds is	$110,485

Therefore, when the bond contract interest rate is greater than the market interest rate, the present value of principal and interest payments is greater than the face value of the bonds, other things being equal. This excess amount of $10,485 ($110,485 – 100,000) is the premium that was assumed in the original scenario 2 example in the main part of the chapter.

Scenario 3: The Bond Contract Interest Rate (12%) Is Less than the Market Interest Rate (16%)

In this case, the bonds are sold at a discount. An investor will pay less than face value because the present value of future cash flow amounts to only $90,754.

1. The $100,000 bond face value is due at the end of six periods. The present value of this cash flow is calculated as $100,000 x 0.630170 (table A)	$63,017
2. The semi-annual $6,000 interest is to be received for six periods in total. The present value of this cash flow is calculated as $6,000 x 4.622880 (table B)	27,737
Total present value of these bonds is	$90,754

Therefore, when the bond contract interest rate is less than the market interest rate, the present value of all cash flows is less than the face value of the bonds. This difference, calculated as $9,246 ($100,000 - $90,754) in this example, is the discount used in the original scenario 3 discussed earlier in the chapter.

Appendix 2: The Effective Interest Method of Amortization

LO8 – Describe the effective interest method of amortization and how it differs from the straight-line method.

As also discussed earlier, the bond premium or discount is amortized over the bond life remaining from the date of the bond's issue. The straight-line method allocates an equal amount of amortization to each semi-annual interest period. The simplicity of this method makes it appropriate as an introduction to the bond accounting process.

However, U.S. GAAP requires the use of the **effective interest** amortization method when the interest expense materially differs from the interest expense amount calculated using the straight-line method. Under this method, the amount of amortization calculated differs from one period to another but produces a more appropriate rate of interest expense when it is recognized in the income statement.

The calculation is facilitated through the preparation of an amortization table. To illustrate, assume that Big Dog Carworks Corp. uses this method of amortization and again issues 8%, three-year bonds with a face value of $100,000 on January 1, 2019. The issue price is $110,485.

Calculating Interest Expense and Premium Amortization

The amortization table shown in Figure 10–5 is prepared:

Issue of $100,000 Bonds Payable for $110,485
Amortization Table
Using Market Interest Rate of 8%

		A	B	C	D	E
Year	*Six-month period ending*	*Beginning bond carrying amount*	*Using 8% market rate to calculate six-month interest expense* ([½ of 8% = 4%] x A)	*Actual cash interest paid*	(B - C) *Periodic premium amortization*	(A - D) *Ending bond carrying amount*
2019	Jun. 30	$110,485	(4% x $110,485) = $4,419	$6,000	$1,581	$108,904
	Dec. 31	108,904	(4% x 108,904) = 4,356	6,000	1,644	107,260
2020	Jun. 30	107,260	(4% x 107,260) = 4,290	6,000	1,710	105,550
	Dec. 31	105,550	(4% x 105,550) = 4,222	6,000	1,778	103,772
2021	Jun. 30	103,772	(4% x 103,772) = 4,151	6,000	1,849	101,923
	Dec. 31	101,923	(4% x 101,923) = 4,077	6,000	1,923	100,000

Note the use of a constant interest rate under this method.

This amount is the interest expense for each 6-month period.

This amount is the amortization for each 6-month period.

Figure 10–5 Effective Interest Method of Bond Amortization

The calculation begins with the $110,485 issue amount in period 1 (January 1 to June 30, 2019). The objective of this amortization method is to reduce this carrying amount to the face value of $100,000 over the life of the bonds; the decrease is shown in column E of the table.

In this case, the market interest rate of 8% is expressed as an annual rate. Because BDCC makes semi-annual interest payments, the six-month rate is 4% (half of the 8% annual rate), which is the rate used in column B for each semi-annual period. (For convenience, all column B calculations are rounded to the nearest dollar.)

The calculation in column D provides the premium amortization amount for each period. In period 1, for example, the difference

between the $4,419 market rate interest expense (column B) and the $6,000 actual bond contract interest paid (column C) determines the premium amortization of $1,581 (column B – column C). Columns E and A show the decreasing carrying amount of the bonds during their three-year life.

The advantage of the effective interest method is that it calculates interest expense at a constant 4% each period. Interest expense (column B) decreases each period. From a theoretical point of view, it is preferable to show a financing interest expense that decreases (column B) as the amount of bonds outstanding decreases (column A). This produces a constant rate of borrowing.

Recording Interest Payments and Premium Amortization

Journal entries to record interest payments and amortization of the premium are made every June 30 and December 31 in the same manner as for straight-line amortization shown in section C. The actual interest paid to bondholders amounts to $6,000 each semi-annual period; the amount of premium amortization for each period is taken from column D of the amortization table. These are the entries for June 30, 2019.

	Payment of interest:			*Amortization of premium:*		
Jun. 30	Interest Expense	6,000		Bond Premium	1,581	
	Cash		6,000	Interest Expense		1,581
	To record semi-annual bond interest.			*To record amortization of bond premium.*		

The entries for each remaining period are similar; only the amounts used for premium amortization differ, as shown in column D of the amortization table. After posting the June 30 entries, the following balances result:

Bonds Payable	
	100,000

Premium on Bonds	
	10,485
1,581	
	8,904

Bond Int. Expense	
6,000	
	1,581
4,419	

The bond carrying amount at June 30 is $108,904 ($100,000 + 8,904). This is the amount that appeared in column E of the amortization table.

$4,419 is the balance that was calculated in column B of the amortization table.

Note that the effective interest rate based on the income statement interest expense and the opening bond carrying value shown on the balance sheet is 4% ($4,419/110,485, rounded).

Calculating Interest Expense and Discount Amortization

The following amortization table is prepared for the BDCC issue of $100,000 face value bonds at a discount for $90,754. The calculation begins with the $90,754 carrying amount in column A. The objective is to increase this carrying amount to the face value of $100,000 over the three-year life of the bond at a constant interest rate; this increase appears in column E.

The annual market interest rate in this case is 16%. Half this rate — 8% — is used in the column B calculations, since interest payments are made semi-annually. (For convenience, all column B calculations are rounded to the nearest dollar.) The calculation in column D provides the amortization amount. In period 1, for example, the difference between the $7,260 market rate interest expense (column B) and the $6,000 actual bond contract interest paid (column C) determines the discount amortization of $1,260 (column B – column C).

Issue of $100,000 Bonds Payable for $90,754
Amortization Table
Using Market Interest Rate of 16%

		A	B	C	D	E
Year	*Six-month period ending*	*Beginning bond carrying amount*	*Using 8% market rate to calculate six-month interest expense* ([½ of 16% = 8%] x A)	*Actual cash interest paid*	(B - C) *Periodic discount amortization*	(A .- D) *Ending bond carrying amount*
2019	Jun. 30	$90,754	(8% x $90,754) = $7,260	$6,000	$1,260	$ 92,014
	Dec. 31	92,014	(8% x 92,014) = 7,361	6,000	1,361	93,375
2020	Jun. 30	93,375	(8% x 93,375) = 7,470	6,000	1,470	94,845
	Dec. 31	94,845	(8% x 94,845) = 7,588	6,000	1,588	96,433
2021	Jun. 30	96,433	(8% x 96,433) = 7,715	6,000	1,715	98,148
	Dec. 31	98,148	(8% x 98,148) = 7,852	6,000	1,852	100,000

Columns E and A show the increasing carrying amount of the bonds during their three-year life. The effective interest method calculates interest expense at a constant 8% of each period's bond carrying amount. To achieve this, interest expense (column B) increases each period as the bond carrying amount increases.

Recording Interest Payments and Discount Amortization

Journal entries to record interest payments and amortization are made each June 30 and December 31 in the same manner as for the straight-line method (shown in section C). The actual interest paid to bondholders amounts to $6,000 each semi-annual period; the amount of discount amortization is taken directly from column D of the amortization table. These are the entries for period 1, January 1 to

Payment of interest:

Jun. 30 Interest Expense 6,000
Cash 6,000
To record semi-annual bond interest.

Amortization of discount:

Interest Expense 1,260
Bond Discount 1,260
To record amortization of bond discount.

June 3

The entries for each remaining period are similar; only the amounts used for discount amortization differ, as shown in column D of the

amortization table. After the posting of the June 30 entries, the following balances result:

Bonds Payable	
	100,000

Discount on Bonds	
9,246	
	1,260
7,986	

Bond Int. Expense	
6,000	
1,260	
7,260	

The bond carrying amount at June 30 is $92,014 ($100,000 – 7,986). This is the amount that appeared in column E of the amortization table.

$7,260 is the balance that was calculated in column B of the amortization table.

Comparison of the Effective Interest Method with the Straight-Line Method

A comparison of the two amortization methods can be made using the data applicable to the issue of BDCC's bonds at a discount; $100,000 face value bonds are issued for $90,754, resulting in a discount of $9,246 ($100,000 - $90,754). Under the straight-line method, this $9,246 discount is amortized in equal amounts over the 3-year life of the bonds. The discount is calculated for 6 -month periods, because amortization is recorded at the time that semi-annual interest payments are made. To recap: the straight-line method amortization is calculated as follows:

Discount	$9,246 (a)
Number of 6 -month periods remaining	6 (b)
Amortization (a/b)	$1,541

As explained in section C of this chapter, amortization of a discount increases interest expense. Therefore, the $1,541 is added to the $6,000 interest payment to calculate the $7,541 interest expense applicable to each 6 -month period. Under the straight-line method, the effective interest rate varies from period to period.

Under the effective interest method, the amortization of the $9,246 discount each period varies, but the effective interest rate is a constant 4%. Note that the total interest expense of $45,246 for the three-year period is the same under both methods.

	Effective Interest Method				Straight-Line Method		
Year	*Six-month period ending*	*Bond carrying amount (A)*	*Interest expense (B)*	*(B/A) %*	*Bond carrying amount (A)*	*Interest expense (B)*	*(B/A) %*
2019	Jun. 30	$90,754	$ 7,260	8	$90,754	$ 7,541	8.3
	Dec. 31	92,014	7,361	8	92,295	7,541	8.2
2020	Jun. 30	93,375	7,470	8	93,836	7,541	8.7
	Dec. 31	94,845	7,588	8	95,377	7,541	9.0
2021	Jun. 30	96,433	7,715	8	96,918	7,541	7.8
	Dec. 31	98,148	7,852	8	98,459	7,541	7.7
			$45,246			$45,246	

Under this method, the interest percentage is constant.

Under this method, the interest percentage varies.

This comparison involved the issue of bonds at a discount. A comparison for bonds issued at a premium would indicate a similar difference in the calculation of a periodic financing charge. Under the straight-line method, however, the percentage of financing charge would increase in the case of a premium, rather than decrease as shown here.

Summary of Chapter 11 Learning Objectives

LO1 – Explain the different types of long-term liabilities.

A long-term liability is a form of debt that is expected to be paid beyond one year of the balance sheet date or the next operating cycle, whichever is longer. Companies may take out long-term liabilities as a means to finance their business operations, this is known as debt financing. Common forms of debt financing include: bonds payable, loans payable, and capital leases.

LO2 – Describe the nature of bonds and the rights of bondholders.

A bond is a debt security that necessitates periodic interest payments during its life as well as a future repayment of the borrowed amount. A bond indenture is the contract that binds the corporation to the bondholders; it specifies the terms with which the corporation must comply and may restrict further borrowing by the corporation. A bondholder has the rights to receive the face value of the bond at a specified maturity date in the future; to receive periodic interest payments at a specified per cent of the bond's face value; and in some cases, to have the corporation pledge assets to protect the bondholder's investment.

LO3 – Describe how bonds, premiums, and discounts are recorded in the accounting records and disclosed on the balance sheet.

If the bond contract interest rate is the same as the prevailing market interest rate, the bond will sell "at par". If the bond contract interest rate is higher than the prevailing market interest rate, the bond will sell at a premium. If the bond contract interest rate is lower than the prevailing market interest rate, the bond will sell at a discount. Premiums and discounts are recorded separately from the bonds payable in the accounting records.

LO4 – Describe and calculate how bond premiums and discounts are amortized.

Premiums and discounts are amortized over the remaining life of the bonds. Under GAAP, an unamortized premium (discount) is added to (deducted from) the face value of the bond so that the liability is recorded at its carrying amount on the balance sheet.

LO5 – Understand the situations when a bond can be redeemed and the journal entries involved.

Bonds can be redeemed, in whole or in part, at or before it's maturity date. Reasons for redemption before maturity may include the exercises of a call option, convertible option, or simply the company deciding it is financially advantageous to retire this long-term debt at the current time. Regardless of the reason for the redemption, the journal entry will need to remove the liability, any related unamortized discount or premium, record the cash paid, and any gain or loss on the redemption.

LO6 – Describe the other types of long-term liabilities a company may utilize when financing their operations.

A loan is a form of long-term debt that can be used by a corporation to finance its operations. Long-term loans can be secured and are typically obtained from a bank. Loans are often repaid over many years in equal blended payments containing both interest and principal. Finance leases are like loans in that they are generally repaid in equal blended payments over a number of years. However, payments are made to a leasing company (the lessor) for the right to use a long-lived asset owned by the leasing company. Unlike loans and finance leases, bonds pay only interest at regular intervals to bondholders. The original investment is repaid to bondholders when the bond matures (or comes due), usually after a number of years.

LO7 – (Appendix 1) Explain and compute the present value of future amounts (such as bonds).

Present value is the concept and process of calculating a future amount in today's dollars -or what the future amount is worth today. This concept applies to bonds payable as bondholders pay a price today for an amount to be received in the future (interest and par value). When computing the present value, the present value of both the bond's par value and interest payments must be considered.

LO8 – (Appendix 2) Describe the effective interest method of amortization and how it differs from the straight-line method.

Under the straight-line amortization method, any premium or discount is written off in equal amounts over the remaining life of the bond. Under the effective interest method, the price of a bond is determined by combining the present value of the face value to be paid at maturity and interest payments made during the bond's life. Amortization under the effective interest method is calculated by applying the market rate of interest to the carrying amount of the bonds. The difference between this interest and the actual bond contract interest paid is the amortization applicable to the current period. The effective interest method produces a constant interest rate equal to the market rate of interest on the date the bonds were issued.

E N D O F C H A P T E R M A T E R I A L S

Multiple-Choice Review

1. Identify the true statement regarding bond characteristics:
   a.) a serial bond is one that will pay the bond's par value at the end of the bond's life.
   b.) a convertible bond is one that pays no interest.
   c.) unsecured bonds are also called debenture bonds.
   d.) a sinking fund bond will pay the bond's par value at multiple times during the bond's life.

2. The term for the amount to be repaid to bondholders at the bond's maturity is:
   a.) face value
   b.) par value
   c.) principal
   d.) all of the above

3. Hamstead Inc. issues $200,000, 5%, 10-year bonds at January 1, 2020. The company receives cash of $216,351 at issuance. Which statement is correct regarding this bond issuance?
   a.) the bond sold at a discount
   b.) the market rate was lower than the bond's contract rate
   c.) the market rate was higher than the bond's contract rate
   d.) the bond sold at par

4. Using Hamstead's information, what would be the amount to be amortized every interest period? Assume Hamstead uses the straight-line method for any discounts or premiums.
   a.) $16,351.00
   b.) $1,635.10
   c.) $3,270.20
   d.) $817.55

5. The interest rate used to calculate interest payments to bondholders is known as the:
   a.) stated rate
   b.) contract rate
   c.) coupon rate
   d.) all of the above

Multiple-Choice Review (continued)

6. Daphne Inc. issues a $5,000,000 bond at par. The entry to record this will include a:
   a.) debit to Cash for $5,010,000
   b.) debit to Discount on Bonds Payable for $10,000
   c.) debit to Bonds Payable for $5,000,000
   d.) debit to Cash for $5,000,000

7. Sofie Company issues $100,000, 10%, 5-year bonds payable at January 1, 2020. Cash received from issuance totals $98,000. Which journal entry would be made to record interest expense at the first semi-annual interest date?

a)	Bond Interest Expense	10,000	
	Cash		10,000

b)	Bond Interest Expense	10,200	
	Discount on Bonds Payable		200
	Cash		10,000

c)	Bond Interest Expense	5,200	
	Discount on Bonds Payable		200
	Cash		5,000

d)	Bond Interest Expense	4,900	
	Premium on Bonds Payable	100	
	Cash		5,000

8. Using the information for Sofie Company, what will be the bond's carrying value at December 31, 2020?
   a.) $98,400
   b.) $98,000
   c.) $100,000
   d.) No way to know

9. Puck Company redeems its $100,000 par value bonds at 106. The carrying value of the bonds on the redemption date is $104,250. The entry to record the redemption will include a:
   a.) credit of $4,250 to Premium on Bonds Payable
   b.) debit of $6,000 to Loss on Bond Redemption
   c.) debit of $106,000 to Cash
   d.) debit of $1,750 to Loss on Bond Redemption

Answers on the following page

Answers to Multiple-Choice Review

1. c
2. d
3. b
4. d

Bond Premium	/	Number of Interest Periods	=	Bond Premium Amortization
$16,351		20*		$ 817.55

* 10 years x 2 interest payments a year

5. d
6. d
7. c
8. a

Sofie Company
Balance Sheet (partial)
December 31, 2020

Liabilities

Long-term liabilities	
Bonds payable, 10%	1,000,000
Less: Discount on bonds payable	1,600
Carrying value of bonds	98,400

Bond discount is amortized $200 per interest period using the straight line method. $2,000 / 10 interest periods = $200 per period.

Total Discount – Amortized Amount = Discount on bonds payable
$2,000 - $400 ($200 x 2 periods) = $1,600

9. d

	Bond Payable	100,000	
	Premium on Bonds Payable	4,250	
	Loss on Bond Redemption	1,750	
	Cash ($100,000 x 1.06)		106,000

Discussion Questions

1. What is a bond? a bond indenture? Why might a trustee be used to administer a bond indenture?
2. List and explain some bondholder rights.
3. What is the significance of shareholder approval before an issue of bonds?
4. How are different bond issues reported in the financial statements of a corporation?
5. Three main categories of bond terms are identified in this chapter. Identify these categories and list the major terms of each category.
6. What are three reasons why bonds might be redeemed before their maturity date?
7. Why would investors pay a premium for a corporate bond? Why would a corporation issue its bonds at a discount? Explain, using the relationship between the bond contract interest rate and the prevailing market interest rate.
8. How is an unamortized bond premium or discount disclosed in accordance with GAAP?
9. If the bond contract interest rate is greater than that required in the market on the date of issue, what is the effect on the selling price of the bond? Why?
10. What are two different methods used to amortize premiums and discounts? Explain.
11. How is the interest paid to bondholders calculated? How does this practice affect the sale of bonds between interest dates?
12. How is the amortization of bond premium recorded in the accounting records? the amortization of bond discount?
13. (Appendix 1) Distinguish between future value and present value. What is the time value of money? Why is it important?
14. (Appendix 1) How is the actual price of a bond determined? Give an example.
15. (Appendix 2) Explain how the amortization under the effective interest method is calculated. Use an example.
16. (Appendix 2) From a theoretical point of view, why is the effective interest method of amortization more acceptable than the straight-line method? Evaluate the usefulness of the effective interest method from a practical point of view.

Comprehension Problems

Note: Answer problems regarding present value calculations and the effective interest method of amortization only if the appendices were studied in your course. Recall as well that "issuing a $100,000 bond at 105", for example, means that the bond is sold for $100,000 x 105% = $105,000.

CP 11–1

Identify each statement as either true or false.

1.) A sinking fund bond requires the issuing company to set aside assets for the future redemption of the bond. ___
2.) A bond contract is also called a bond indenture. ___
3.) Bearer bonds pay interest and par value to the recorded bondholder. ___
4.) Unsecured bonds are known as debenture bonds. ___
5.) Interest paid to bondholders is calculated using the stated rate. __
6.) Sinking fund bonds and mortgage bonds are examples of debenture bonds. ___
7.) Callable bonds permit the company to redeem the bonds before their maturity date. ___
8.) Bond selling prices are normally stated as a percentage of the bond's par value. ___

CP 11–2

Rosie Company issues $500,000, 4%, 10-year bonds on January 1, 2020. The bonds are issued at par and pay interest semi-annually on June 30 and December 31.

Required:

1.) Prepare the journal entry to record the bond issuance.
2.) Prepare the journal entry to record the semi-annual payments at June 30 and December 31 of 2020.
3.) Prepare the journal entry to record the bond's redemption at maturity.

CP 11–3

Blanca Company has the following independent bond issuances.

a.) Issues $600,000 bonds at 96.
b.) Issues $700,000 bonds at 102.
c.) Issues $200,000 bonds at 100.

Required:
1.) Prepare the journal entries to record the bond issuances under of the independent situations.

CP 11–4

Bad Apples Company issues $600,000, 4%, 5-year bonds at 96 on January 1, 2020.

Required:
1.) Prepare the journal entry to record the bond issuance.
2.) Prepare a partial balance sheet to show how the bonds would be presented at January 1, 2020.
3.) How would your answers change for (1) and (2) if the bonds were issued at 103?

CP 11–5

Gremalin Company issues $700,000, 3%, 10-year bonds at 102 on January 1, 2020.

Required:
1.) Prepare the journal entry to record the bond issuance.
2.) Prepare a partial balance sheet to show how the bonds would be presented at January 1, 2020.
3.) How would your answers change for (1) and (2) if the bonds were issued at 95?

CP 11–6

Complete the following by responding either *premium* or *discount*.

1. If the market rate of interest is 15% and the bond interest rate is 10%, the bonds will sell at a _____.
2. If a bond's interest rate is 10% and the market rate of interest is 8%, the bonds will sell at a _____.
3. In computing the carrying amount of a bond, unamortized _____ is subtracted from the face value of the bond.
4. In computing the carrying amount of a bond, unamortized _____ is added to the face value of the bond.
5. If a bond sells at a _____, an amount in excess of the face value of the bond is received on the date of issuance.
6. If a bond sells at a _____, an amount less than the face value of the bond is received on the date of issuance.

CP 11–7

Snake Company issues $500,000, 7%, 10-year bonds at 98 on January 1, 2020. The bond pays interest semi-annually on June 30 and December 31. The company uses the straight-line method to amortize any bond discounts or premiums. Prepare the journal entries to record:

1.) The issuance of the bond at January 1, 2020.
2.) The semi-annual interest payment and amortization at June 30, 2020.
3.) The semi-annual interest payment and amortization at December 31, 2020.
4.) Show how the bond would be presented at January 1 and December 31 of 2020 by preparing partial balance sheets.

CP 11–8

Butterfly Company issues $700,000, 10%, 10-year bonds at 104 on January 1, 2020. The bond pays interest semi-annually on June 30 and December 31. The company uses the straight-line method to amortize any bond discounts or premiums. Prepare the journal entries to record:

1.) The issuance of the bond at January 1, 2020.
2.) The semi-annual interest payment and amortization at June 30, 2020.
3.) The semi-annual interest payment and amortization at December 31, 2020.
4.) Show how the bond would be presented at January 1 and December 31 of 2020 by preparing partial balance sheets.

CP 11–9

Eagle Company issued $200,000 bonds at a discount. Eagle decides to redeem the bonds on December 31, 2020. On this date, the carrying value of the bonds is $190,000. Eagle redeems the bonds at 98. Prepare the journal entry to record the redemption.

CP 11–10

Lion Company issued $200,000 bonds at a premium. Lion decides to redeem the bonds on December 31, 2020. On this date, the carrying value of the bonds is $209,000. Eagle redeems the bonds at 105. Prepare the journal entry to record the redemption.

CP 11–16 (Appendix 1)

Stymph Corporation issues $300,000, 8%, 5-year bonds. At the time of issuance, investors can find similar bonds with a 10% return. Interest on this bond will be paid semi-annually at June 30 and December 31. Calculate the present value of the bonds.

Problems

P 11–1

Gremlins Company issues $20,000, 10%, 3-year bonds at 94 on January 1, 2020. The bond pays interest semi-annually on June 30 and December 31. The company uses the straight-line method to amortize any bond discounts or premiums.

Required:

1. Prepare the journal entry to record the bond's issuance
2. Prepare the journal entries to record the interest payment and amortization at June 30, 2019.
3. Prepare an amortization table for the bond similar to the one found in the chapter in Figure 11-3.

P 11–2

On January 1, 2020, the date of bond authorization, Nevada Inc. issued a 12%, 3-year bond with a par value of $100,000 at 94. Semi-annual interest is payable on June 30 and December 31. The company uses the straight-line method to amortize any discount or premium.

Required:

1. Prepare journal entries to record the following transactions:
   a. The issuance of the bonds
   b. The interest payment and amortization at June 30, 2020
2. Calculate the amount of interest paid in cash during 2020 and the amount of interest expense that will appear in the 2020 income statement. Are the figures the same or different? Why?
3. Prepare a partial balance sheet at December 31, 2020 showing how the bonds payable should be shown on the balance sheet.
4. Prepare the journal entry to record the redemption of the bonds on December 31, 2022.

P 11–3

On January 1, 2019, the date of bond authorization, Sydney Corp. issued 12%, 3-year bonds with a par value of $200,000 at 112. Semi-annual interest is payable on June 30 and December 31. The company uses the straight-line method to amortize any discount or premium.

Required:

1. Prepare the journal entries to record the following transactions:
   a. The issuance of the bonds
   b. The interest payment and amortization at June 30, 2019

2. Calculate the amount of interest paid in cash during 2019 and the amount of interest expense that will appear in the 2019 income statement. Why are these amounts different?

3. Prepare a partial balance sheet at December 31, 2019 showing how the bonds payable should be shown on the balance sheet.

3. Prepare the journal entry to record the redemption of the bonds on December 31, 2021.

P 11–4

Dove Company has outstanding $1,000,000, 4%, 5-year bonds. Dove decides to redeem the bonds on December 31, 2020. On this date, the carrying value of the bonds is $1,010,000. Prepare the journal entry to record the redemption under each of the following independent situations:

a.) Dove redeems the bonds at 99.
b.) Dove redeems the bonds at 104.
c.) Dove redeems the bonds at 101.

P 11–5 (Appendix 1)

Tower Inc. issues $40,000, 10%, 10-year bonds at January 1, 2020. Interest is paid semi-annually on June 30 and December 31. Compute the bond's present value for each of the independent situations:

a.) The market rate at the date of issuance is 10%
b.) The market rate at the date of issuance is 8%.
c.) The market rate at the date of issuance is 12%.

Required:
Prepare the journal entries to record the bond issuance under each of the independent situations.

CHAPTER TWELVE

Equity Financing

Corporations sometimes finance a large portion of their operations by issuing equity in the form of stock. This chapter discusses in detail the nature of the corporate form of organization, the different types of stock used to obtain funds for business activities, and how these transactions are recorded. It also expands on the concept of dividends.

Chapter 12 Learning Objectives

LO1 – Identify and explain characteristics of the corporate form of organization and classes of stock.

LO2 – Evaluate relative financing effects of bonds, common stock, and preferred stock.

LO3 – Record and disclose preferred and common stock transactions including stock splits.

LO4 – Record and disclose cash dividends.

LO5 – Calculate and explain the book value per stock ratio.

LO6 – (Appendix 1) Record and disclose stock dividends.

LO7 – (Appendix 2) Explain and record restrictions on retained earnings.

A. The Corporate Structure

LO1 – Identify and explain characteristics of the corporate form of organization and classes of stock.

The accounting equation expresses the relationship between assets owned by a corporation and the claims against those assets by creditors and stockholders. Accounting for equity in a corporation requires a distinction between the two main sources of stockholders' equity: common stock and retained earnings**.** Their relationship to the accounting equation is shown in Figure 12-1.

ASSETS = LIABILITIES + STOCKHOLDERS' EQUITY

COMMON STOCK

This is the amount stockholders have paid to purchase ownership interests in a company

RETAINED EARNINGS

This is the total net income earned by a company over its life that has not been distributed to stockholders as dividends.

Figure 12–1 Common stock Versus Retained Earnings

Corporate Characteristics

A unique characteristic of corporations is that they are legally separate from their owners, who are called stockholders. The ownership of a corporation is divided into units called shares or **stock**. If a corporation issues 1,000 shares of stock and you own 100 of them, you own 10% of the company. Corporations can be **privately-held** or **publicly-held**. A privately-held corporation's stock are not issued for sale to the general public. A publicly-held corporation offers its stock for sale to the general public, sometimes on a stock market like the New York Stock Exchange (NYSE) or the National Association of Securities Dealers Automated Quotation System (Nasdaq).

A corporation has some of the same rights and obligations as individuals. For instance, it pays income taxes on its earnings, can enter into legal contracts, can own property, and can sue and be sued. A corporation also has distinctive features. It is separately regulated by law, has an indefinite life, its owners have limited liability, and it can usually acquire capital more easily than an individual. These features are discussed below.

Creation by law

A corporation is formed under state laws. The company selects a state in which to incorporate and then submits articles of incorporation to that state government. This document lists the **classes** or types of stock that the company will issue as well as the total number of shares of each class that can be issued, known as the **authorized** stock.

When approved, the government issues a **certificate of incorporation** or **corporate charter** to the company. Investors then purchase stock from the corporation. The stockholders meet and elect a **board of directors**. The board formulates corporate policy and broadly directs the affairs of the corporation. This includes the appointment of a person in charge of day-to-day operations, often called a president, chief executive officer, or similar title. This person in turn has authority over the employees of the corporation.

A stockholder or group of stockholders who control more than 50% of the voting stock of a corporation are able to elect the board of directors and thus direct the affairs of the company. In a large public corporation with many stockholders, minority stockholders with similar ideas about how the company should be run sometimes delegate their votes to one person who will vote on their behalf by signing a **proxy statement**. This increases their relative voting power, as many other stockholders may not participate in stockholders' meetings.

Stockholders usually meet annually to vote for a board of directors—either to re-elect the current directors or to vote in new directors. The board meets regularly, perhaps monthly or quarterly, to review the operations of the corporation and to set policies for future operations. The board may decide to distribute some assets of the corporation as a dividend to stockholders. It may also decide that some percentage of the assets of the corporation legally available for dividends should be made unavailable; in this case, a **restriction** is created. Accounting for such restrictions is discussed in an appendix of this chapter.

Wherever it is incorporated, a company is generally subject to the following regulations:

1. It must provide timely financial information to investors.
2. It must file required reports with the government.
3. It cannot distribute profits arbitrarily but must treat all shares of the same stock class alike.
4. It is subject to special taxes and fees.

Despite these requirements, a corporation's advantages usually outweigh its disadvantages when compared to other forms of business such as a proprietorship or partnership. These features of a corporation are described further below. Proprietorships and partnerships were discussed in chapter 1.

Indefinite life

A corporation has an existence separate from that of its owners. Individual stockholders may die, but the corporate entity continues. The life of a corporation comes to an end only when it is dissolved, becomes bankrupt, or has its charter revoked for failing to follow laws and regulations.

Limited liability

The corporation's owners are liable only for the amount that they have invested in the corporation. If the corporation fails, its assets are used to pay creditors. If insufficient assets exist to pay all debts, there is no further liability on the part of stockholders. This situation is in direct contrast to a proprietorship or a partnership. In these forms of organization, creditors have full recourse to the personal assets of the proprietorship or partners if the business is unable to fulfil its financial obligations. For the protection of creditors, the limited liability of a corporation must be disclosed in its name. The words "Limited," "Incorporated," or "Corporation" (or the abbreviations Ltd., Inc., or Corp.) are often used as the last word of the name of a company to indicate this corporate form.

Ease of acquiring capital

Issuing stock allows many individuals to participate in the financing of a corporation. Both small and large investors are able to participate because of the relatively small cost of a stock, and the ease with which ownership can be transferred—stock are simply purchased or sold. Large amounts of capital can be raised by a

corporation because the risks and rewards of ownership can be spread among many investors.

A corporation only receives money when shares of stock are first issued. Once a stock is issued, it can be bought and sold a number of times by various investors. These subsequent transactions between investors do not affect the corporation's balance sheet.

Income taxes on earnings

Because corporations are considered separate legal entities, they pay income taxes on their earnings. To encourage risk-taking and entrepreneurial activity, certain types of corporations may be taxed at rates that are lower than other corporations and individual stockholders' income tax rates. This can encourage research and development activity or small-company start-ups, for instance.

Classes of stock

There are many types of stock, with differences related to voting rights, dividend rights, liquidation rights, and other preferential features. The rights of each stockholder depend on the class or type of stock held.

Every corporation issues **common stock**. The rights and privileges usually attached to common stock are outlined below.

- The right to participate in the management of the corporation by voting at stockholders' meetings (this participation includes voting to elect a board of directors; each stock normally corresponds to one vote).
- The right to receive dividends when they are declared by the corporation's board of directors.
- The right to receive assets upon liquidation of the corporation.
- The right to appoint auditors through the board of directors.

For other classes of stock, some or all of these rights are usually restricted. The articles of incorporation may also grant the stockholders the **pre-emptive** right to maintain their proportionate interests in the corporation if additional stock is issued.

If the company is successful, common stockholders may receive dividend payments. As well, the value of common stock may increase. Common stockholders can submit a proposal to raise any matter at an annual meeting and have this proposal circulated to other stockholders at the corporation's expense. If the corporation intends to make fundamental changes in its business, these stockholders can often require the corporation to buy their stock at their fair value. In addition, stockholders can apply to the courts for an appropriate remedy if they believe their interests have been unfairly disregarded by the corporation.

Some corporations issue different classes of stock in order to appeal to as large a group of investors as possible. This permits different risks to be assumed by different classes of stockholders in the same company. For instance, a corporation may issue common stock but divide these into different classes like class A and class B common stock. When dividends are declared, they might only be paid to holders of class A stock.

Stockholders who hold **preferred stock** are entitled to receive dividends before common stockholders. This stock usually does not have voting privileges. Preferred stockholders typically assume less risk than common stockholders. In return, they receive only a limited (but more predictable) amount of dividends. Issuing preferred stock allows a corporation to raise additional capital without requiring existing stockholders to give up control. Other characteristics of preferred stock and dividend payments are discussed later in this chapter.

The stock of a corporation can have a different status at different points in time. They can be **unissued** or **issued**, issued and **outstanding**, or issued and reacquired by the corporation (called **treasury stock**). The meaning of these terms is summarized in Figure 12-2:

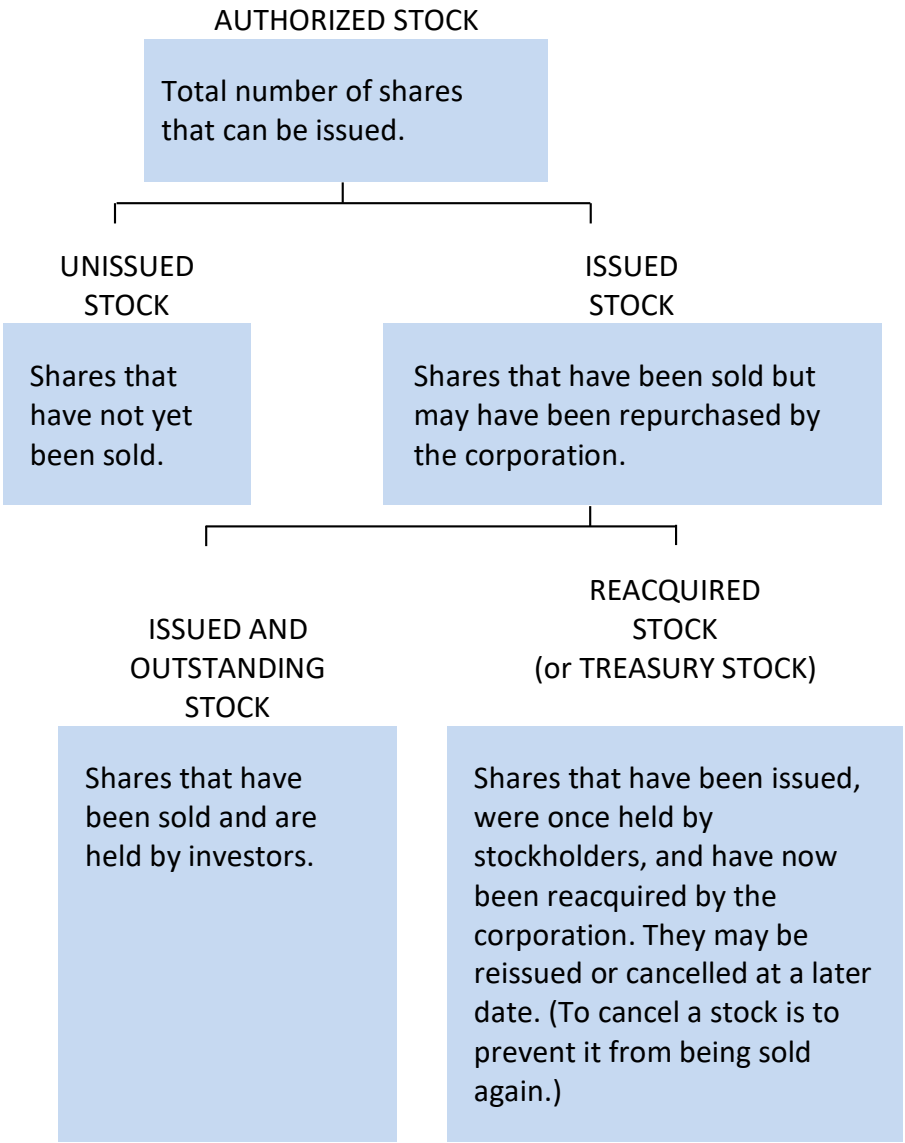


Figure 12–2 Status of Stock

B. The Debt Versus Equity Financing Decision

LO2 – Evaluate relative financing effects of bonds, common stock, and preferred stock.

Many factors influence management in its choice between the issue of debt and the issue of common stock. One of the most important considerations is the potential effect of each of these financing methods on the present stockholders.

Consider the example of Old World Corporation, which has 100,000 shares of common stock outstanding, is profitable, and growing steadily. Assume Old World requires $30 million in cash to finance a new plant.

Management is currently reviewing three financing options:

1. Borrow $30 million due in three years at an interest rate of 12%.
2. Issue 300,000 shares of preferred stock at $100 each (dividend $8 per stock paid annually)
3. Issue an additional 200,000 shares of common stock at $150 each.

Management estimates that the new plant should result in income before interest and income taxes of $6 million. The income tax rate is 50%. Management has prepared the following analysis to compare and evaluate each financing option.

	Plan 1	*Plan 2*	*Plan 3*
	Issue debt	*Issue preferred stock*	*Issue common stock*
Income before interest and income taxes	$ 6,000,000	$ 6,000,000	$ 6,000,000
Less: Interest expense ($30M x 12%)	(3,600,000)	-0-	-0-
Income before income taxes	$ 2,400,000	$ 6,000,000	$ 6,000,000
Less: Income taxes (50%)	(1,200,000)	(3,000,000)	(3,000,000)
Net income	1,200,000	3,000,000	3,000,000
Less: Preferred dividends (300,000 x $8 per stock)	-0-	(2,400,000)	-0-
Net income available to common stockholders	$ 1,200,000	$ 600,000	$ 3,000,000
Number of common stock outstanding	100,000	100,000	300,000
Earnings per common stock	$ 12	$ 6	$ 10

Plan 1, the issue of debt, has several advantages for existing common stockholders.

Advantage 1: Earnings per stock

If the additional long-term financing were acquired through the issuance of debt, the corporate earnings per stock (EPS) on each common stock would be $12. This EPS is greater than the EPS earned through financing with either preferred stock or additional common stock. On this basis alone, the issue of debt is more financially attractive to existing common stockholders.

Advantage 2: Control of the corporation

Creditors have no vote in the affairs of the corporation. If additional common stock were issued, there might be a loss of corporate control by existing stockholders because ownership would be distributed over a larger number of stockholders, or concentrated in the hands of one

or a few new owners. In the Old World case, issuing common stock would increase the number threefold from 100,000 to 300,000 stock.

Advantage 3: Income taxes expense

Interest expense paid on debt is deductible from income for income tax purposes. Dividend payments are distributions of retained earnings, and are thus paid out of after-tax income. As a result, dividends are not deductible again for tax purposes. With a 50% income tax rate, the after-tax interest expense to the corporation is only 6% (12% x 50%). The effective interest rate on preferred stock in this example is somewhat higher, at 8% ($8/$100).

Debt Financing Disadvantages

There are also some disadvantages in long-term financing with debt that must be carefully reviewed by management and the board of directors. The most serious disadvantage is the possibility that the corporation might earn less than $6 million before interest expense and income taxes. The interest expense is a fixed amount. It must be paid to creditors at specified times, unlike dividends. If actual income before interest and income taxes decreased by only $400,000, net income under plan 1 would fall to $1,000,000. Earnings per stock would then be the same as that of plan 3 ($10 per common stock).

Another disadvantage is the fact that debt must be repaid at maturity, whether or not the corporation is financially able to do so. Stock does not have to be repaid.

C. Recording Stock Transactions

LO3 – Record and disclose preferred and common stock transactions including stock splits.

The value of a company's stock may be calculated in several different ways depending on whether the stock is par value, no-par value, or stated value. **Par value** stock is recorded at the amount stated in the corporate charter below which stock cannot be sold upon initial offering. **No-par value** stock has no value assigned to it and therefore is recorded at the price for which it is issued. **Stated value** is no-par stock to which the directors assigned a "stated" value per share.

Par value stock

To illustrate the issuance of par value stock. Assume Bear Necessities Corporation issues 200 shares of its $2 par value common stock on January 9, 2019 when the market price is $8 per share. The entry to record this would be:

2019			
Jan. 9	Cash	1,600	
	Common Stock ($2 par)		400
	Paid-in capital in excess of par, c/s		1,200
	To record the issuance of 200 shares of $2 par value common stock at $8 per stock.		

Note that cash is debited for the full amount received from the sale ($8 x 200 shares = $1,600). Common stock is recorded at the total par value ($2 x 200 shares = $400). And the paid-in capital account is recorded for the difference, or excess of cash over the stock's par value. The **paid-in capital in excess of par value, common stock** account is a stockholder's equity account and will appear in the stockholder's equity section on the company's balance sheet right after Common Stock (shown below).

Stockholders' Equity

Paid-in capital		
Common stock	$ 400	
Paid-in capital in excess of par, common stock	1,200	
Total paid-in capital		$1,600
Retained earnings		480,000
Total stockholders' equity		$481,600

In reality, par value stock is less common today. Therefore, the rest of the chapter will focus on no-par and stated value stock.

No-par & stated value stock

To demonstrate the issuance and financial statement presentation of stock, assume that New World Corporation is authorized to issue common stock consisting of an unlimited number of voting, no par common stock and 100,000 non-voting preferred stock.

Transaction 1: On January 1, 2019, New World sells 1,000 shares common stock to its first stockholders for $10 per stock, or $10,000 cash.

New World would record the following entry:

2019			
Jan. 1	Cash	10,000	
	Common Stock		10,000
	To record the issuance of 1,000 shares of common stock at $10 per stock.		

Transaction 2: On February 1, 2019, 2,500 shares of preferred stock are issued to the owner of land and buildings that have a fair value of $35,000 and $50,000, respectively. The journal entry to record this transaction is:

2019			
Jan. 1	Land	35,000	
	Building	50,000	
	Preferred Stock		85,000
	To record the issuance of 2,500 shares of preferred stock in exchange for land and buildings.		

Usually, one or more individuals decide to form a corporation. Before the corporation is created, they may use their own funds to pay for legal and government fees, travel and promotional costs, and so on. When the corporation is legally formed, it is not unusual for the corporation to issue stock to these organizers for these amounts. These start-up expenditures are referred to as **organization costs** and are usually expensed unless they are a large amount, in which case they are capitalized.

Transaction 3: On March 1, 2019, 500 shares of common stock are issued to the organizers of New World to pay for their services, valued at $5,000. The journal entry to record this transaction is:

2019			
Jan. 1	Organization Expense	5,000	
	Common Stock		5,000
	To record the issuance of 500 shares of common stock in exchange for organization efforts.		

Assuming no further stock transactions, and net income of $480,000 earned during the first year of operations, the stockholders' equity section of the New World Corporation balance sheet would show the following at December 31, 2019:

Stockholders' Equity	
Common stock (Note X)	$ 100,000
Retained earnings	480,000
Total stockholders' equity	$580,000

The relevant note to the financial statements would state:

Note X

The authorized common stock of New World Corporation consists of an unlimited number of no par-value common stock and 100,000 no par-value, non-voting preferred stock. Preferred stock take precedence when dividends are declared and upon repayment of capital. Common stock represents one vote each at stockholders' meetings of New World Corporation.

During the year, 1,500 shares of common stock were issued to founding stockholders for a stated value of $10 per stock. This represented 100% of total common stock issued. 2,500 shares of preferred stock were issued for a stated value of $34 per stock in consideration for land and buildings used in the company's operations. This represented 100% of total preferred stock issued. Information related to number of shares outstanding is as follows:

	Common stock	*Preferred stock*	*Total stock*
Shares outstanding at January 1, 2019	-0-	-0-	-0-
Stock issued during 2019	1,500	8,500	10,000
Shares outstanding at December 31, 2019	1,500	8,500	10,000

The statement of changes in equity would show:

	Common stock	*Preferred stock*	*Retained earnings*	*Total equity*
Balance at Jan. 1, 2019	$ -0-	$ -0-	$ -0-	$ -0-
Stock issued	15,000	85,000		100,000
Net income			480,000	480,000
Balance at Dec. 31, 2019	$15,000	$85,000	$480,000	$580,000

Transaction 4: Corporate legislation permits a company to reacquire some of its stock, provided that the purchase does not cause insolvency. A company can repurchase and then cancel the repurchased stock. When repurchased stock are cancelled, they are no longer issued and no longer outstanding. A company can also repurchase stock and then hold them in treasury. Treasury stock are issued but not outstanding. A company give treasury stock to employees as an incentive or bonus, for instance.

Assume that New World Corporation decides to repurchase 200 shares of common stock on December 1, 2020 and hold them in treasury. Assume that the price of each share $10. The journal entry to record the repurchase is:

2020			
Dec. 1	Treasury stock	2,000	
	Cash		2,000
	To record the repurchase of 200 shares common stock at $10 per stock to be held in treasury.		

Assuming 2020 net income of $200,000 and no further transactions, the stockholders' equity section of the New World Corporation balance sheet would show the following at December 31, 2020:

Stockholders' Equity

	2020	*2019*
Common stock (Note X)	$100,000	$100,000
Retained earnings	680,000	480,000
Treasury stock (200 shares)	(2,000)	-0-
Total stockholders' equity	$778,000	$580,000

The relevant note to the financial statements would state:

Note X

The authorized common stock of New World Corporation consists of an unlimited number of no par-value common stock and 100,000 no par-value, non-voting preferred stock. Preferred stock take precedence when dividends are declared and upon repayment of capital. A share of common stock represents one vote each at stockholders' meetings of New World Corporation.

During the year, 200 shares of common stock with a stated value of $10 per stock were repurchased by the corporation and are held as treasury stock. This represents 13.3% of

common stock issued as of December 31, 2020. Information related to number of shares outstanding is as follows (bolded for illustration purposes):

Information is disclosed for the current and prior year when comparative financial statements are prepared.

	Common stock	*Preferred stock*	*Treas. stock*
Shares outstanding at January 1, 2019	-0-	-0-	-0-
Stock issued during 2019	1,500	8,500	-0-
Shares outstanding at December 31, 2019	1,500	8,500	-0-
Shares reacquired and held as treasury stock during 2020		**-0-**	**(200)**
Shares outstanding at December 31, 2020	1,500	2,500	(200)

The statement of changes in equity would show (bolded for illustrative purposes):

	Common stock	*Preferred stock*	*Retained earnings*	*Treas. stock*	*Total equity*
Balance at Jan. 1, 2019	$ -0-	$ -0-	$ -0-	$ -0-	$ -0-
Stock issued	15,000	85,000			100,000
2019 net income			480,000		480,000
Balance at Dec. 31, 2019	15,000	85,000	480,000	$ -0-	580,000
Shares reacquired and held as treasury stock during 2020				**(2,000)**	**(2,000)**
2020 net income			200,000		200,000
Balance at Dec. 31, 2020	$15,000	$85,000	$680,000	**$ (2,000)**	$778,000

The repurchase of stock does not affect issued common stock ($15,000 + $85,000) but the number of shares outstanding decreases by 200 shares.

Stock Splits

A corporation may find its stock is selling at a high price on a stock exchange, perhaps putting them beyond the reach of many investors. To increase the marketability of a corporation's stock, management may opt for a **stock split**. A stock split increases the number of shares issued and outstanding, and lowers the cost of each new share. The originally-issued shares are exchanged for a larger number of new shares.

Assume that on December 1, 2021 New World Corporation declares a 3-for-1 common stock split. This results in three new shares of common stock replacing each currently-issued and outstanding share of common stock. The number of issued and outstanding shares has

now been tripled. The market price of each share will decrease to about one-third of its former market price. Since there is no change in the dollar amount of common stock, no journal entry is required to record the stock split. Instead, a memorandum entry would be recorded in the general ledger indicating the new number of shares issued and outstanding, as follows:

GENERAL LEDGER

Common Stock Acct. No. 320

Date 2021		Description	P.R.	Debit	Credit		Balance
Jan.	1	Memorandum: Because of a 3-for-1 split, the issued and outstanding shares of common stock increased respectively from 1,500 and 1,300, to 4,500 and 3,900 shares.					

The dollar amount shown on the balance sheet and statement of changes in equity will not change. The only change is an increase in the number of issued and outstanding shares. After the stock split, the stockholders' equity section of the New World Corporation balance sheet and statement of changes in equity would be unchanged.

This would be added to the usual note to the financial statements:

> The company holds 600 issued shares of common stock as treasury stock. On December 1, 2021 the company declared a 3:1 stock split on common stock. The effect of this was as follows:

	Before stock split	*After stock split*
Number of common stock shares outstanding	1,300	3,900
Stated value per outstanding common stock	$10	$3.33
Total stated value of outstanding common stock	$13,000	$13,000

The total stated value is not affected by the stock split.

D. Cash Dividends

LO4 – Record and disclose cash dividends.

Both creditors and stockholders are interested in the amount of assets that can be distributed as dividends. The paid-in capital accounts are not available for distribution as dividends. Legally, dividends are limited to the amount of retained earnings unless a corporation is

dissolved. Stockholders are prevented from withdrawing their initial investment as this would shift all risk to the creditors. This restriction protects creditors. For example, assume total assets are $40,000; total liabilities $39,000; and total stockholders' equity $1,000, consisting of $900 in common stock and $100 of retained earnings. The maximum dividends that could be declared in this situation is $100, the balance in retained earnings.

Dividend Policy

Sometimes the board of directors may choose not to declare any dividends. There may be financial conditions in the corporation that make the payment impractical.

Consideration 1: There may not be adequate cash

Corporations regularly reinvest their earnings in assets in order to make more profits. In this way, growth occurs and reliance on creditor financing can be minimized. As a result, there may not be enough cash on hand to declare and pay a cash dividend. The assets of the corporation may be tied up in property, plant, and equipment, for instance.

Consideration 2: A policy of the corporation may preclude dividend payments

Some corporations pay no dividends. Instead, they reinvest their earnings in the business. Stockholders generally benefit because the market price for the corporation's stock should rise. A statement to this effect can alert investors. This type of dividend policy is often found in growth-oriented corporations.

Consideration 3: No legal requirement that dividends have to be paid

The board of directors may decide that no dividends should be paid. Legally, there is no requirement to do so. If stockholders are dissatisfied, they can elect a new board of directors or sell their stock.

Consideration 4: Dividends may be issued in stock of the corporation rather than in cash

Stock dividends may be issued to conserve cash or to increase the number of shares to be traded on the stock market. Stock dividends are discussed in Appendix 1 of this chapter.

Dividend Declaration

Dividends can be paid only if they have been officially declared by the board of directors. The board must pass a formal resolution authorizing the dividend payment. Notices of the dividend are then published. Once a dividend declaration has been made public, the dividend becomes a liability and must be paid. An example of a dividend notice by Nouveau Corporation is shown in Figure 12-3.

Nouveau Corporation
Dividend Notice

On May 25, 2019 the board of directors of Nouveau Corporation declared a cash dividend of $0.50 per share on common stock outstanding (3,900). The dividend will be paid on June 26, 2019 to stockholders of record on June 7, 2019.

By order of the board

[signed]
Lee Smith
Secretary
May 25, 2019

Figure 12–3 An Example of a Dividend Notice

There are three dates associated with a decision to pay dividends. Usually dividends are declared on one date, the **date of declaration** (May 25, 2019 in this case); they are payable to stockholders on a second date, the **date of record** (June 7, 2019); and the dividend is paid on a third date, the **date of payment** (June 26, 2019).

Date of Declaration

The dividend declaration provides an official notice of the dividend. It specifies the amount of the dividend as well as which stockholders will receive the dividend. The liability for the dividend is recorded in the books of the corporation at its declaration date.

The following entry would be made in the general ledger of Nouveau Corporation on May 25, 2019, the date of declaration:

2019			
May 25	Cash Dividends	1,950	
	Dividends Payable		1,950
	To record $0.50 per common stock cash dividend declared; 3,900 shares x $0.50/stock = $1,950.		

Date of Record

Stockholders who own stock on the date of record will receive the dividend even if they have sold the stock before the dividend is actually paid. No journal entry is made in the accounting records at the date of record.

Date of Payment

When the dividend is paid it is recorded as:

2019			
Jun. 26	Dividends Payable	1,950	
	Cash		1,950
	To record payment of dividend May 25.		

Preferred Stockholder Dividends

Preferred stock is offered to attract investors who have lower tolerance for risk than do common stockholders. Preferred stockholders are content with a smaller but more predictable stock of a corporation's profits. For instance, preferred stockholders are entitled to dividends before any dividends are distributed to common stockholders. Also, most preferred stock specifically states what amount of dividends their holders can expect each year. For example, owners of $8 preferred stock would be paid a dividend of $8 per year for each stock held. These dividends are often paid even if the corporation experiences a net loss in a particular year.

Preferred stock may also have other dividend preferences, depending on what rights have been attached to preferred stock at the date of incorporation. Two additional preferences can be

- the accumulation of undeclared dividends from one year to the next — referred to as **cumulative dividends**.
- the participation of preferred stock with common stock in dividend distributions beyond the usual preferred dividends — referred to as a **participating** feature of preferred stock.

Cumulative Dividend Preferences

Cumulative preferred stock require that any unpaid dividends accumulate from one year to the next and are payable from future earnings when a dividend is eventually declared by a corporation.

These accumulated dividends must be paid before any dividends are paid on common stock. The unpaid dividends are called **dividends in arrears**. Dividends in arrears are not recorded as a liability on the balance sheet of the company until they have been declared by the board of directors. However, disclosure of dividends in arrears must be made in a note to the financial statements.

If a preferred stock is **non-cumulative**, a dividend not declared by the board of directors in any one year is never paid to stockholders.

Participating Dividend Preferences

A **participating** feature is sometimes added to preferred stock to make them more attractive to investors. Under certain circumstances, this feature permits the preferred stock to receive a portion of the earnings of the corporation in excess of a stipulated rate. The extent of this participation can be **limited** (partially participating) or **unlimited** (fully participating). Non–participating preferred stock do not receive a stock of additional dividends.

The relationship among these preferred stock characteristics is shown in Figure 12–4:

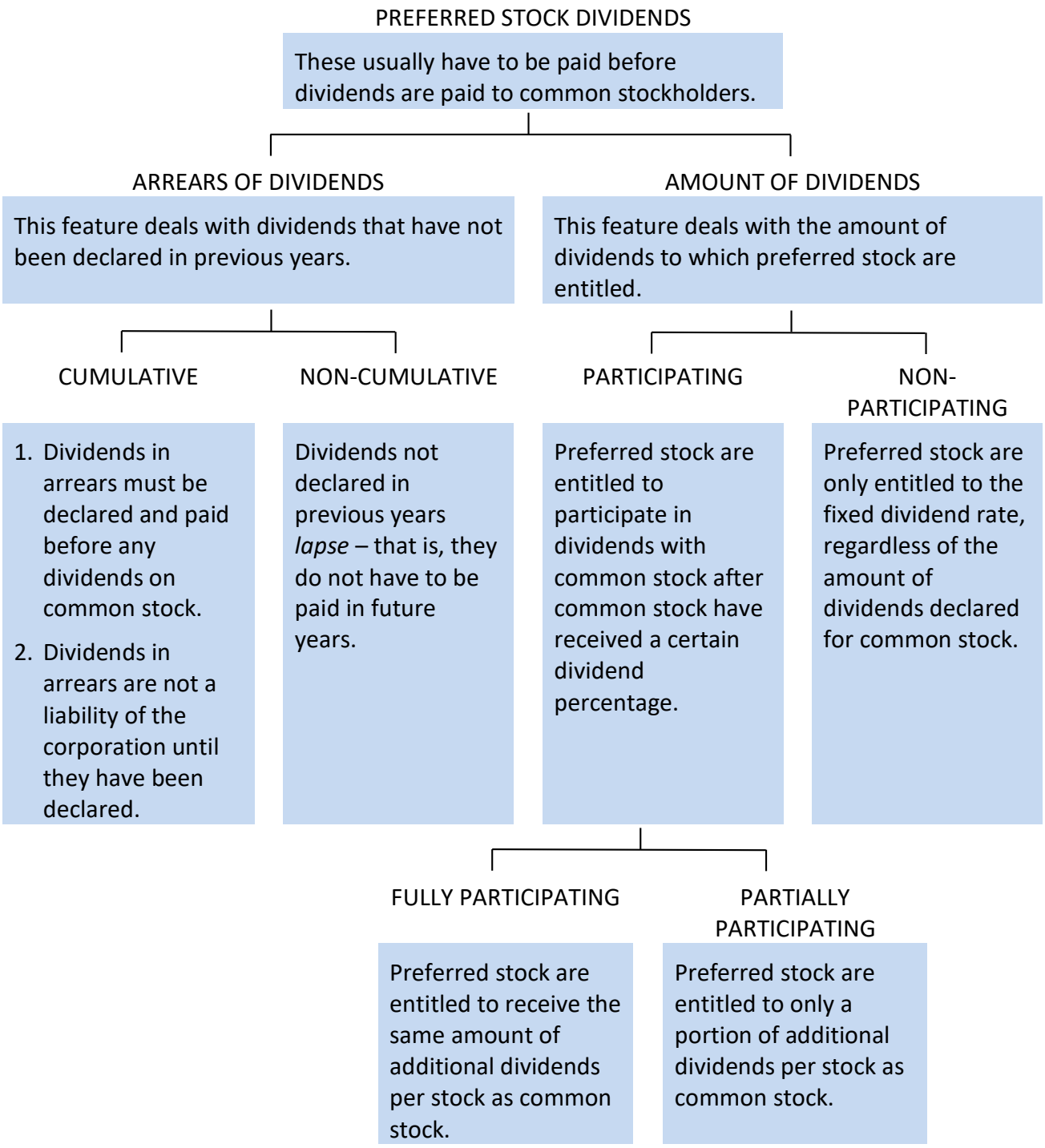


Figure 12–4 The Relationships Among Dividend Types

Assume that Bernard Williams Inc. declared dividends totalling $92,000 when the stockholders' equity section of its balance sheet disclosed the following information:

Stockholders' Equity	
Preferred stock, $10 stated value, $8 dividends, cumulative, non-participating	
Authorized—3,000 stock	
Issued and outstanding—2,000 stock	$200,000
Common stock, $1 stated value	
Authorized—350,000 stock	
Issued and outstanding—300,000 stock	300,000
Total stockholders' equity	$500,000

A note to the balance sheet indicates that there are two years of preferred dividends in arrears. If a $92,000 cash dividend is declared, the preferred stockholders are entitled to $16,000 dividends per year (2,000 stock x $8) whenever dividends are declared. Because these stock have a cumulative preference, they are also entitled to dividends in arrears. The dividend distribution would be calculated as:

Stockholder preference to dividends		*Dividend distribution*		
		To preferred	*To common*	*Balance*
	Total dividends declared			$92,000
1st preference	Arrears ($16,000 x 2 years)	$ 32,000	$ -0-	60,000
2nd preference	Current year – preferred	16,000	-0-	44,000
	Balance to common	-0-	44,000	-0-
	Total	$ 48,000	$ 44,000	

The cumulative preference has resulted in the payment to preferred stockholders of dividends unpaid in the previous two years; this amounts to $32,000. For the current year, preferred stockholders receive another $16,000 for a total of $48,000. Because the preferred stock is non-participating, the remainder of the $92,000 dividend ($44,000) is paid to common stockholders.

E. Book Value

LO5 – Calculate and explain the book value per stock ratio.

The **book value** of a stock is the amount of net assets represented by one stock. When referring to common stock, book value represents the amount of net assets not claimed by creditors and preferred stockholders. When referring to preferred stock, book value represents the amount that preferred stockholders would receive if the corporation were liquidated.

Book value per preferred stock =

$$\frac{\text{Paid-in capital for preferred stock plus dividends in arrears}}{\text{Number of preferred stock outstanding}}$$

Book value per common stock =

$$\frac{\text{Total equity less (stated capital for preferred stock plus dividends in arrears)}}{\text{Number of common stock outstanding}}$$

Calculation of the Book Value of Stock

The calculation of the book value of preferred and common stock can be illustrated by using the following data:

Stockholders' Equity	
Preferred stock	
Authorized—5,000 stock	
Issued and outstanding—1,000 stock	$ 10,000
Common stock	
Authorized—200,000 stock	
Issued and outstanding—60,000 stock	20,000
Retained earnings	105,000
Total stockholders' equity	$135,000

Note: There are $5,000 dividends in arrears on preferred stock.

Book value is calculated as:

Preferred stock		*Common stock*	
Dividends in arrears	$ 5,000	Total stockholders' equity	$135,000
Plus: Paid-in capital	10,000	*Less:* Preferred claims (a)	15,000
Balance (a)	$15,000	Balance	$120,000
Stock outstanding (b)	1,000	Stock outstanding	60,000
Book value per stock (a/b)	$15	Book value per stock	$2

Comparison of book value with market value provides insight into investors' evaluations of the corporation. For instance, if the book value of one common stock of Corporation A is $20 and its common stock are traded on a public stock exchange for $40 per stock (market value), it is said to be trading for "two times book value." If Corporation B is trading for three times book value, investors are indicating that the future profit prospects for corporation B are higher than those for Corporation A. They are willing to pay proportionately

more for stock of Corporation B than Corporation A, relative to the underlying book values.

Some stock regularly sells for less than their book value on various stock exchanges. This does not necessarily mean they are a bargain investment. The market price of a stock is related to such factors as general economic outlook and perceived potential of the company to generate earnings.

Appendix 1: Stock Dividends

LO6 – Record and disclose stock dividends.

A **stock dividend** is a dividend payable to stockholders in stock of a corporation, rather than in cash. In this way, the declaring corporation is able to retain cash in the business and reduce the need to finance its activities through borrowing.

Accounting for Stock Dividends

Assume that the Sherbrooke Corporation declares a 10% stock dividend to common stockholders. The dividend is declared on July 15, 2019 payable to stockholders of record as of July 31, 2019. The stock dividends were issued on August 5, 2019. At the time of the dividend declaration, the stockholders' equity of the corporation consisted of the following:

Stockholders' Equity	
Common stock, par value $5	
Authorized — 20,000 stock	
Issued and outstanding — 5,000 stock	$ 25,000
Retained earnings	200,000
Total stockholders' equity	$225,000

Assume that at the date of dividend declaration, the common stock of the corporation is trading on the stock exchange at $6.

In this case, the stock dividend is expressed as a percentage of the outstanding common stock. The dividend amounts to 500 stock (5,000 outstanding stock x 10%). This means that an individual investor owning 1,000 stock receives 100 new stock when the dividend is issued.

The market price of the stock is used to record a stock dividend. This market price is usually the closing market price per stock on the day preceding the declaration of the dividend. Since the stock are recorded

at market value, the amount transferred from retained earnings to common stock is $3,000 (500 stock x $6 market value).

The $3,000 transfer to common stock means that this amount becomes a part of paid-in capital and the assets represented by the $3,000 are no longer available for the payment of future cash dividends. After the transfer has been recorded, stockholders' equity appears as shown in Figure 12–5 below.

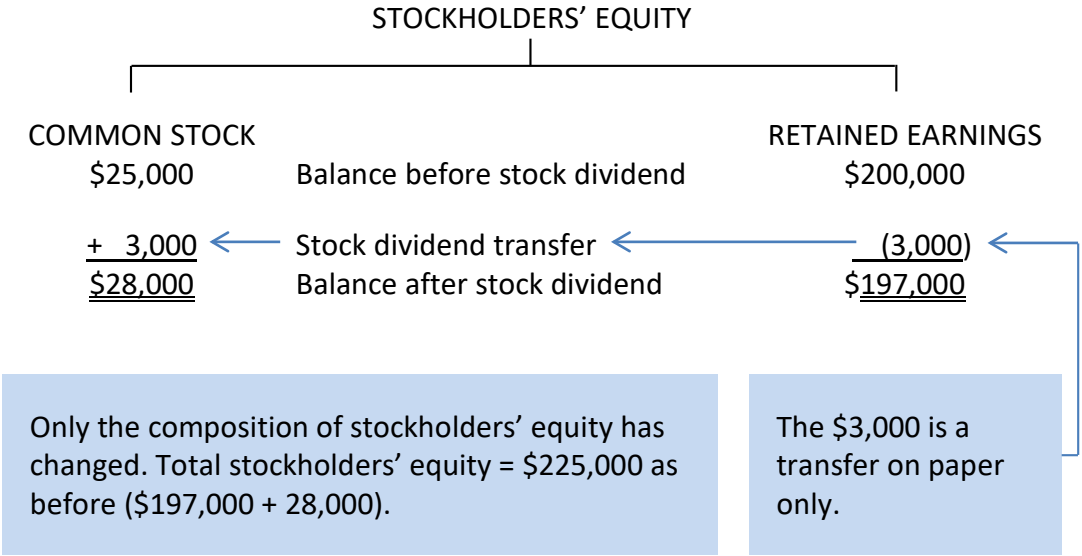


Figure 12–5 Stockholders' Equity After Dividend Transfer

This transfer reduces retained earnings and increases common stock by the same $3,000 amount. Total stockholders' equity remains unchanged, however. This is different from the distribution of a cash dividend, which reduces both retained earnings and cash and results in a *lower* amount of total stockholders' equity.

Two journal entries at different dates are required to record the stock dividend. The original dividend declaration would be recorded as follows:

2019			
July 15	Stock Dividends	3,000	
	Stock Dividends Distributable		2,500
	Paid-in capital in excess of par, c/s		500
	To record the declaration of a 10% common stock dividend (5,000 x 10% x $6)		

The effect of this entry is to transfer $3,000 from retained earnings to common stock. No assets are paid by the corporation when the

additional stock are issued as a stock dividend, and therefore *the total stockholders' equity remains unchanged at* $225,000.

As with cash dividends, there is no effect on the accounting records on July 31 (individual stockholders of record are determined at that date).

When the stock dividend is actually issued, the following entry would be made:

2019			
Aug. 5	Stock Dividends Distributable	2,500	
	Common Stock		2,500
	To record the issuance of the common stock dividend.		

At the December 31 year-end of the corporation, the Stock Dividend account would be closed to the Retained Earnings account in the same way a Cash Dividend account is closed. The closing entry for a stock dividend would be:

2019			
Dec. 31	Retained Earnings	3,000	
	Stock Dividends		3,000
	To close the Stock Dividends account.		

Assume that the retained earnings of $200,000 include $20,000 of net income earned in the 2019 year. The statement of changes in equity at December 31, 2019 would show (bolded for illustrative purposes):

	Common stock	*Retained earnings*	*Total equity*
Balance at beginning of year	$25,000	$180,000	$205,000
Net income		20,000	20,000
Common stock dividend declared	3,000	**(3,000)**	
Balance at end of tear	$28,000	$197,000	$225,000

Is There Any Change in the Investor's Percentage of Corporate Ownership?

Since a stock dividend is issued to all stockholders of a particular class, each stockholder has a larger number of stock. However, ownership percentage of the company remains the same for each stockholder, as illustrated in the following example.

Assume that there are five stockholders in Sherbrooke Corporation, each of whom owns 1,000 stock before the stock dividend. Each of

these stockholders receives a 10 percent stock dividend, that is, 100 new stock. Corporation ownership before and after the stock dividends is as follows:

	Corporate ownership			
	Before stock dividend		*After stock dividend*	
Stockholder	Stock	Percent	Stock	Percent
A	1,000	20%	1,100	20%
B	1,000	20%	1,100	20%
C	1,000	20%	1,100	20%
D	1,000	20%	1,100	20%
E	1,000	20%	1,100	20%
	5,000	100%	5,500	100%

Each stockholder has received 100 new stock but ownership percentage of the company remains at 20 percent. Since total stockholders' equity does not change, the proportion owned by each is still $25,000 ($125,000 total stockholders' equity x 20%).

Appendix 2: Retained Earnings

LO7 – Explain and record restrictions on retained earnings.

Retained earnings represent the net income earned by a company over its life that has not been distributed as dividends to stockholders.

Retained earnings can be either **restricted** or **unrestricted** with respect to dividend distributions, as follows:

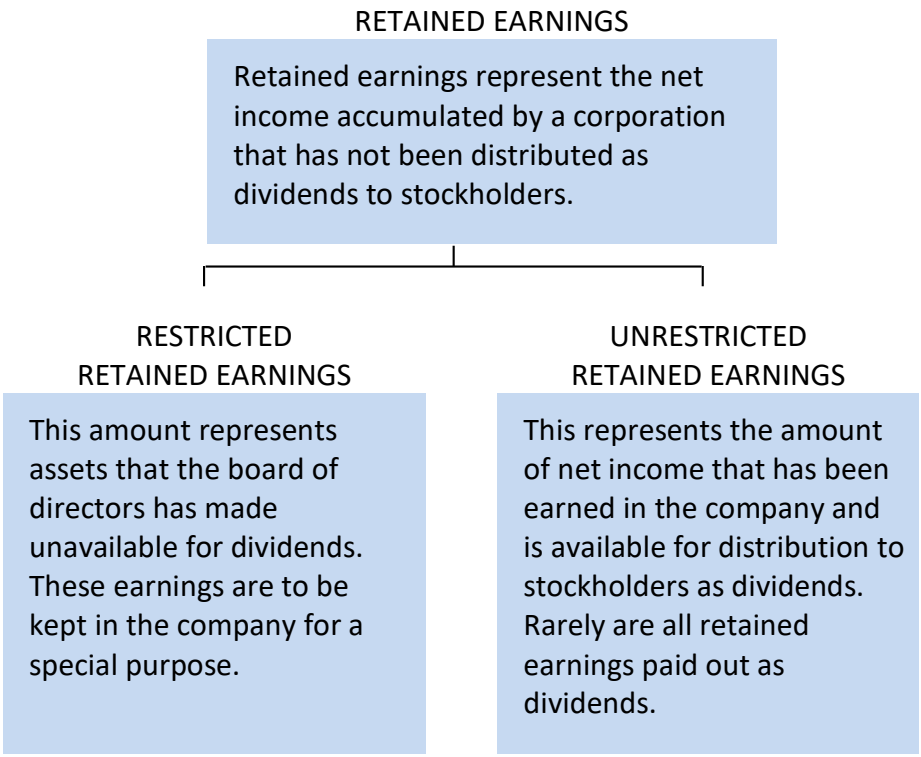


Figure 12–6 Restricted and Unrestricted Retained Earnings

Assume that New World Corporation has retained earnings of $800,000 at December 31, 2020. The board of directors passes a resolution at the 2020 year-end to restrict $70,000 of retained earnings for a plant expansion. The full cycle of the restriction within retained earnings is shown in Figure 12–7.

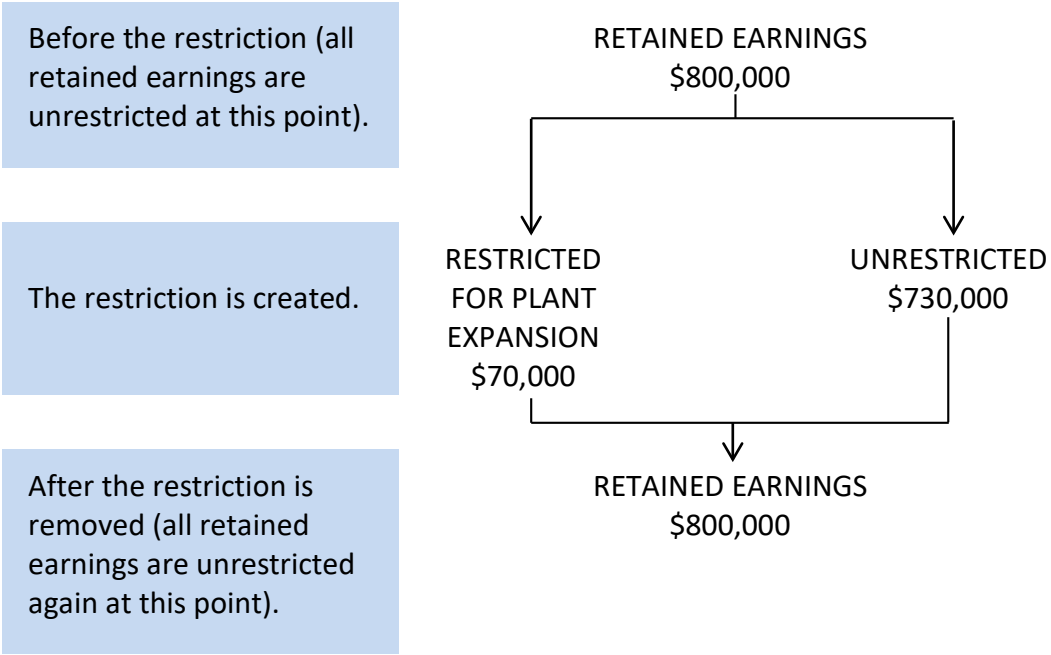


Figure 12–7 Restriction for Plant Expansion: Creation and Removal

As can be seen, the creation of a restriction on retained earnings divides the $800,000 amount into a restricted component of $70,000 and an unrestricted component of $720,000.

The creation of a restriction on retained earnings indicates management's intention to use assets for a particular purpose. It is reported on the financial statements so that investors and creditors are informed that these assets are unavailable for dividends. These restrictions do not in any way alter the total amount of retained earnings or stockholders' equity.

The journal entry to record the creation of the above $70,000 restriction for plant expansion would be:

2020			
Dec. 31	Retained Earnings	70,000	
	Retained Earnings – Restriction for Plant Expansion		70,000
	To record the restriction on retained earnings.		

This restriction records a portion of these earnings in an account specifically designated to indicate its purpose—plant expansion. The restricted amount is still part of retained earnings. It is classified as retained earnings in the stockholders' equity section of the balance sheet at December 31, 2020 as follows:

Stockholders' Equity

	2020	*2019*
Common stock	$ 98,000	$ 98,000
Retained earnings (Note Y)	800,000	760,000
Total stockholders' equity	$898,000	$858,000

The relevant note to the financial statements would state:

Note Y

On December 31, 2020 the board of directors authorized a $70,000 restriction on the retained earnings of the company for plant expansion.

The statement of changes in equity would show (bolded for illustrative purposes):

	Common stock	*Preferred stock*	*Retained earnings*		*Total equity*
			Unrestricted	*Restricted*	
Balance at Jan. 1, 2019	$ 13,000	$ 85,000	$680,000	$ -0-	$778,000
2019 net income			80,000		80,000
Balance at Dec. 31, 2019	13,000	85,000	760,000	-0-	858,000
2020 net income			40,000		40,000
Restriction for plant addition (Note Y)			**(70,000)**	**70,000**	
Balance at Dec. 31, 2020	$ 13,000	$ 85,000	$730,000	70,000	$898,000

It is important to understand that recording a restriction for plant expansion does not set up some kind of cash fund for the expansion. It merely ensures that investors are aware that all the retained earnings of the corporation are not eligible to be paid out as dividends while the restriction is in place and that the assets represented by the restriction will be used for another purpose in the meantime.

When the special restriction account has served its purpose and the requirement for which it was set up no longer exists, the amount in the restriction account is returned to the retained earnings account from which it was created. The entry setting up the restriction is reversed. The construction of the plant is recorded in the normal manner.

Assume that the plant expansion costs $70,000 and is paid in cash on August 31, 2021. The construction and payment is recorded as follows.

2021			
Aug. 31	Plant	70,000	
	Cash		70,000
	To record the payment for plant expansion.		

This journal entry records the actual plant expenditure. It also shows that restricted retained earnings are *not* used to pay for the plant. The expenditure is paid with the asset cash. At August 31, 2021, the entry to reverse the original journal entry and eliminate the restricted amount for plant expansion is made:

2021			
Aug. 31	Retained Earnings – Restriction for Plant Expansion	70,000	
	Retained Earnings		70,000
	To record expiry of the restriction on retained earnings.		

The restriction account is reversed when the plant has been built because dividends are no longer restricted by the need for a plant expansion.

Summary of Chapter 12 Learning Objectives

LO1 – Identify and explain characteristics of the corporate form of organization and classes of stock.

A corporation is a legal entity that is separate from its owners, known as stockholders. The board of directors is responsible for corporate policy and broad direction of the corporation, including hiring the person in charge of day-to-day operations. A corporation has an indefinite life, its stockholders have limited liability, it can acquire capital more easily than a sole proprietorship or partnership, and it pays income taxes on its earnings since it is a separate legal entity. A corporation can issue common and preferred stock. Common stock has voting rights while preferred stock do not. Preferred stock are listed before common stock in the stockholders' equity section of the balance sheet. Preferred stockholders are entitled to receive dividends before common stockholders. Authorized stock are the total number of stock that can be issued or sold. Stock that have been issued can be repurchased by the corporation and either held in treasury for

subsequent sale/distribution or cancelled. Outstanding stock are those that have been issued and are held by stockholders. Stock repurchased by a corporation are not outstanding stock.

LO2 – Evaluate relative financing effects of bonds, common stock, and preferred stock.

One of the most important considerations between the issue of debt or common stock is the potential effect of each of these financing methods on the present stockholders. These include effects on earnings per stock, control of the corporation, and income taxes expense. Differences between projected and actual results can result in wrong decisions.

LO3 – Record and disclose preferred and common stock transactions including stock splits.

Common and preferred stock can be issued for cash or other assets. Organization costs are expensed when incurred and organizers sometimes accept stock in lieu of cash for their work in organizing the corporation. When more than one type of stock has been issued, the stockholders' equity section of the balance sheet must be classified by including a Paid-In Capital section. When a corporations stock are selling at a high price, a stock split may be declared to increase the marketability of the stock. There is no journal entry for a stock split. Instead, a memorandum entry is entered into the records detailing the split. A stock split increases the number of stock but does not change any of the dollar amounts on the financial statements.

LO4 – Record and disclose cash dividends.

Cash dividends are a distribution of earnings to the stockholders and are declared by the board of directors. On the declaration date, cash dividends (or retained earnings) is debited and dividends payable is credited. On the date of record, no journal entry is recorded. Stockholders who hold stock on the date of record are eligible to receive the declared dividend. On the date of payment, dividends payable is debited and cash is credited. Preferred stock may have a feature known as cumulative or non-cumulative. Cumulative preferred stock accumulates undeclared dividends from one year to the next. These unpaid dividends are called dividends in arrears. When dividends are subsequently declared, dividends in arrears must be paid before anything is paid to the other stockholders. Non-cumulative preferred stock does not accumulate undeclared dividends.

LO5 – Calculate and explain the book value per stock ratio.

The book value of a stock is the amount of net assets represented by one stock. Book value per common stock is the amount of net assets not claimed by creditors and preferred stockholders. Preferred book value per stock is the net assets that preferred stockholders would receive if the corporation were liquidated.

LO6 – (Appendix 1) Record and disclose stock dividends.

Stock dividends distribute additional stock to stockholders and are declared by the board of directors. On the declaration date, stock dividends declared (or retained earnings) is debited and common stock dividends distributable, a common stock account, is credited. When the stock dividend is distributed to stockholders, the Common Stock Dividends Distributable account is debited and common stock is credited. Stock dividends cause an increase in the number of stock issued and outstanding but do not affect account balances. Stock dividends simply transfer an amount from retained earnings to paid-in capital within the stockholders' equity section of the balance sheet.

LO7 – (Appendix 2) Explain and record restrictions on retained earnings.

Retained earnings can be restricted by the board of directors for certain purposes, like a plant expansion. These restricted amounts are unavailable for dividends. Restrictions do not affect the total amount of retained earnings or total stockholders' equity. A restriction does not set aside cash to fund the activity. To set up a restriction, the Retained Earnings account is debited and an account (for example, Retained Earnings – Restriction for Plant Expansion) is credited. When the expansion is complete, the entry is merely reversed.

E N D O F C H A P T E R M A T E R I A L S

Multiple-Choice Review

1. Lucy Company issues 5,000 shares of its $2 common stock when the market price is $5 per share. The journal entry to record this will include a:
   a.) debit to cash for $10,000
   b.) credit to paid-in capital in excess of par (PIC) of $10,000
   c.) debit to common stock of $10,000
   d.) credit to paid-in capital in excess of par (PIC) of $15,000

2. Identify the true statement regarding the corporate formation:
   a.) corporations have limited life
   b.) stockholders will have unlimited liability for the corporation's debts.
   c.) corporations must distribute their net income in the form of dividends to stockholders.
   d.) corporations are separate legal entities and must therefore pay income tax on its profits.

3. On May 1, Laney Company purchases 4,000 shares of its own $1 par value stock for $24,000. Which statement is correct:
   a.) cash will be debited for $4,000
   b.) treasury stock will be debited for $24,000
   c.) paid-in capital (PIC) –treasury stock will be credited for $20,000
   d.) cash will be credited for $20,000

4. On May 1, Laney Company purchases 4,000 shares of its own $1 par value stock for $24,000. On October 1, the company reissues 1,000 of these shares when the market price is $7. Which statement is correct regarding the reissuance?
   a.) cash will be debited for $6,000
   b.) treasury stock will be debited $6,000
   c.) paid-in capital (PIC) -treasury stock will be credited for $1,000
   d.) cash will be credited for $7,000

5. The equity section that tracks the events relating to stockholder transactions is:
   a.) Retained earnings
   b.) Paid-in capital
   c.) stated value stock
   d.) preferred stock

Multiple-Choice Review (continued)

6. Cash dividend payments are determined by:
   a.) the company president
   b.) the board of directors
   c.) the owners
   d.) the public

7. Extension Company has 250,000 shares authorized, 100,000 issued, and 75,000 outstanding of its common stock. The company declares a $1 per share cash dividend. The journal entry to record this declaration would be:

a)	Cash Dividends	250,000	
	Cash Dividends Payable		250,000

b)	Cash Dividends	250,000	
	Cash Dividends Payable		100,000
	Retained earnings		150,000

c)	Cash Dividends	100,000	
	Cash Dividends Payable		100,000

d)	Cash Dividends	75,000	
	Cash Dividends Payable		75,000

8. Granny Smith Company has 100,000 shares of $10 par, 10% cumulative preferred stock authorized with 40,000 shares issued and outstanding. The company also has 1,000,000 shares of $1 common stock authorized with 800,000 shares issued and outstanding. If the company declares a $75,000 cash dividend for the year. How much of the dividend goes to the common shareholders?
   a.) $40,000
   b.) $35,000
   c.) $75,000
   d.) No way to know

9. Desiree Company has 50,000 shares of $2 par value common stock issued and outstanding. The company declares a 2-for-1 stock split. The stock split will result in a:
   a.) credit to common stock for $100,000
   b.) debit to cash for $100,000
   c.) a new par value of $1 per share
   d.) a new par value of $4 per share

Answers on the following page

Answers to Multiple-Choice Review

1. d
2. d
3. b
4. c
5. b
6. b
7. d
8. b
9. c

Discussion Questions

1. What are some advantages of the corporate form of organization?
2. What is meant by *limited liability* of a corporation?
3. What rights are attached to common stock? Where are these rights indicated?
4. Describe a typical incorporation process.
5. What is a board of directors and whom does it represent? Are the directors involved in the daily management of the entity?
6. Describe:
   a. two main classes of stock that can be issued by a corporation; and
   b. the different terms relating to the status of a corporation's stock.
7. In what ways can stock be "preferred"? In which ways are they similar to common stock? Different from common stock?
8. Describe the accounting treatment of reacquired stock.
9. Why do corporations sometimes opt for a stock split?
10. Assume a 2-for-1 stock split occurs. Explain
    a. the effect on the total number of issued and outstanding stock; and
    b. the effect on paid-in capital.
11. Identify the major components of the stockholders' equity section of a balance sheet. Why are these components distinguished?
12. What are the main issues a board of directors considers when making a dividend declaration decision?
13. Even if a corporation is making a substantial net income each year, why might the board of directors decide to not pay any cash dividends?
14. Distinguish among the date of dividend declaration, the date of record, and the date of payment.
15. Explain the different dividend preferences that may be attached to preferred stock. Why would preferred stock have these preferences over common stock? Does it mean that purchasing preferred stock is better than purchasing common stock?
16. What are dividends in arrears? Are they a liability of the corporation?
17. What does the book value of stock represent? How is it calculated?
18. A corporate entity has both preferred and common classes of stock. How is the book value of common stock calculated in this case? What is meant by the liquidation value of preferred stock?
19. Of what value is the calculation of book value per stock?

20. If the market price of a stock is less than its book value; is it a bargain? Why or why not?
21. (Appendix 1) What is the difference in accounting between cash dividends and stock dividends? Give a sample journal entry for each.
22. (Appendix 1) How does a stock dividend differ from a stock split?
23. (Appendix 1) Does a stock dividend change an investor's percentage of corporate ownership? Explain, using an example.
24. (Appendix 2) What is the difference between restricted and unrestricted retained earnings? Why would some retained earnings be restricted? Prepare the journal entries used to make a restriction.
25. (Appendix 2) How can retained earnings be said to be reinvested in a corporation?

Comprehension Problems

CP 12–1

Lucy Company issues 5,000 shares of its $2 par value common stock on January 1, 2020.

a.) The market price is $5 per share on the issuance date.
b.) The market price is $2 per share on the issuance date.

Required:
1.) Prepare the journal entries for the above independent events.
2.) How will transaction (a) affect the company's financial statements?

CP 12–2

The following captions are sub–totals appearing in the stockholders' equity section of the balance sheet for Hudson Day Corporation:

Required: For each event listed below, indicate, in the format provided, whether the amount of each subtotal is increased (↑) or decreased (↓). Indicate with an 'x' if there is no change to a particular subtotal. Consider each event to be unrelated to the others.

		Total paid-in capital	*Retained earnings*
1.	Company is incorporated.	X	X
2.	Issued stock with a stated value of $1.		
3.	Split the common stock 2 for 1.		
4.	Recorded net income for the year.		
5.	Reacquired common stock previously outstanding.		
6.	Declared a cash dividend.		
7.	Paid a cash dividend.		
8.	(Appendix 1) Declared a stock dividend.		
9.	(Appendix 2) Created a restriction on retained earnings.		

CP 12-3

Bagan Corporation, a profitable growth company with 200,000 stock of common stock outstanding, is in need of approximately $40 million in new funds to finance required expansion. Currently, there are no other securities outstanding. Management has three options open:

a. Sell $40 million of 12-percent bonds at face value.
b. Sell 10% preferred stock: 400,000 stock at $100 per stock (dividend $10 per stock).
c. Sell another 200,000 common stock at $200 per stock.

Operating income (before interest and income taxes) on completion of the expansion is expected to average $12 million per year; the income tax rate is 50%.

Required:

1. Complete the schedule below and calculate the earnings per common stock.

	12% bonds	*Preferred stock*	*Common stock*
Income before interest and income taxes	$12,000,000	$12,000,000	$12,000,000
Less: Interest expense	_____	_____	_____
Income before taxes			
Less: Income taxes at 50%	_____	_____	_____
Net income			
Less: Preferred dividends	_____	_____	_____
Net income available to common stockholders	_____	_____	_____
Number of common stock outstanding	_____	_____	_____
Earnings per common stock	_____	_____	_____

2. Which financing option is most advantageous to the common stockholders? Why?

CP 12–4

Essential Financial Service Corp. was incorporated on January 1, 2019 to prepare business plans for small enterprises seeking bank financing.

Required: Prepare journal entries to record the following transactions on January 2, 2019:

1. Received an incorporation charter authorizing the issuance of 2,000,000, $1 par value common stock and 10,000, 4%, $2 par value preferred stock.
2. Issued in exchange for incorporation costs 10,000 shares common stock at $1.
3. Issued for cash 1,000 shares of preferred stock at $3 each.
4. Issued for cash 5,000 shares of common stock at $2 each.
5. What is the company's paid-in capital balance after these transactions?

CP 12–5

A tract of land valued at $50,000 has been given to a corporation on July 31, 2019 in exchange for 1,000 preferred stock.

Required:

1. Prepare the journal entry to record the transaction.
2. Where would the transaction be classified in the balance sheet?

CP 12–6

The stockholders' equity section of Gannon Oilfield Corporation's balance sheet at December 31, 2019 is shown below.

Preferred stock	
Authorized—100 stock	
Issued and outstanding—64 stock	$3,456
Common stock	
Authorized—2,000 stock	
Issued and outstanding—800 stock	1,680
Retained earnings	600
Total stockholders' equity	$5,736

Required:

1. What is the average price received for each issued preferred stock?
2. What is the average price received for each issued common stock?
3. What is the total paid-in capital of the company?

CP 12–7

The general ledger accounts of Human Services Corp. have the following amounts recorded during December 2019:

Cash	
30,000	5,000
15,000	8,000
7,000	6,000
4,000	

Land	
10,000	4,000

Building	
12,000	
8,000	

Incorp. Costs	
14,000	

Preferred Stock	
6,000	15,000
	14,000

Common Stock	
5,000	30,000
	22,000
	7,000

Required: Reconstruct the transactions that occurred during December and prepare the journal entries to record these transactions, including descriptions. The transactions and related journal entries do not need to be listed in a particular order.

CP 12–8

Strada Controls Inc. has 100,000 shares of common stock outstanding on January 1, 2019. On May 25, 2019, the board of directors declared a semi-annual cash dividend of $1 per stock. The dividend will be paid on June 26, 2019 to stockholders of record on June 7, 2019.

Required: Prepare journal entries for
1. the declaration of the dividend;
2. the date of record;
3. the payment of the dividend.

CP 12–9

Landers Flynn Inc. has 1,000, 14%, $10 shares of cumulative preferred stock outstanding. Dividends were not paid last year. The corporation also has 5,000 shares of common stock outstanding. Landers Flynn declared a $14,000 cash dividend to be paid in the current year.

Required: Calculate the amount of dividends received by
1. the preferred stockholders;
2. the common stockholders.

CP 12–10

The following information is extracted from the stockholders' equity section of the balance sheet of Gibson Clothing Inc. at December 31, 2019:

Preferred stock, stated value $10, non-cumulative	
Issued and outstanding — 5,000 stock	$ 20,000
Common stock, stated value $2	
Issued and outstanding — 20,000 stock	40,000
Retained earnings	150,000
Total stockholders' equity	$210,000

Additional information:
a. There are $2,000 of dividends in arrears on the preferred stock.
b. The liquidation value of the preferred stock is $25,000.

Required: Calculate the book value of preferred and common stock.

CP 12–11

The stockholders' equity section of Pembina Valley Manufacturing Limited's balance sheet at December 31, 2019 is shown below.

Preferred stock, non-cumulative	
Authorized — 500 stock	
Issued and outstanding — 300 stock	$ 300
Common stock	
Authorized — 100 stock	
Issued and outstanding — 20 stock	500
Retained Earnings	192
Total stockholders' equity	$992

Note: There is $30 of dividends in arrears on the preferred stock. The liquidation value of preferred stock is $300.

Required:

1. Calculate the book value per stock of
   a. the preferred stock; and
   b. the common stock.
2. Assume that the common stock was split 2 for 1 on January 2, 2020 and that there was no change in any other account at that time. Calculate the new book value of common stock immediately following the stock split.

CP 12–12

The following note appeared on the balance sheet of Sabre Rigging Limited:

> As of December 31, 2019, dividends on the cumulative preferred stock were in arrears for three years to the extent of $15 per stock or $15,000 in total.

Required:

1. Does the amount of the arrears appear as a liability on the December 31, 2019 balance sheet? Explain your answer.
2. Why might the dividends be in arrears?
3. The comptroller of Sabre Rigging projects net income for the 2020 fiscal year of $35,000. When the company last paid dividends, the directors allocated 50 percent of current year's net income for dividends. If dividends on preferred stock are resumed at the end of 2020 and the established policy of 50 percent is continued, how much will be available for dividends to the common stockholders if the profit projection is realized?

CP 12–13

On May 1, Lester Company purchases 4,000 shares of its own $1 par value stock for $24,000. On October 1, the company reissues 1,000 of these shares when the market price is $7. On October 31, the company reissues 500 shares when the market price is $5. Finally, on December 1, the company reissues 1,000 shares when the market price is $4.50.

Required:

1.) Prepare the journal entries to record the transactions.

2.) What is the balance in the Treasury Stock account?

CP 12–14

Nursery Company has the following transactions in the year:
May 1: Purchases 4,000 shares of its own $1 par value stock for $12,000.
October 1: Reissues 1,000 of these shares when the market price is $4.
November 1: Reissues 1,000 shares when the market price is 1.50.

Required:
1.) Prepare the journal entries for the above transactions.
2.) How will the above transactions impact the company's financial statements at year-end?

CP 12–15

Granny Smith Company has 100,000 shares of $10 par, 10% cumulative preferred stock authorized with 40,000 shares issued and outstanding. The company also has 1,000,000 shares of $1 common stock authorized with 800,000 shares issued and outstanding. On December 1, the company declares a $75,000 cash dividend for the year.

Required:

1.) How much of the dividend goes to the preferred shareholders?
2.) How much of the dividend goes to the common shareholders?
3.) Prepare the journal entry to record the declaration on December 1.
4.) Prepare the entries if the date of record is December 15 and the date of payment is December 31.
5.) If the preferred dividend had been participating how much would each shareholder receive?

CP 12–16 (Appendix 1)

The stockholders' equity section of Lakeview Homes Corporation's balance sheet at December 31, 2019 is reproduced below:

Stockholders' Equity	
Common stock	
Authorized 10,000 stock	
Issued 5,000 stock	$ 20,000
Retained earnings	100,000
Total stockholders' equity	$120,000

On January 15, 2019, Lakeview Homes declared a 10 percent stock dividend to holders of common stock. At this date, the common stock of the corporation was trading on the stock exchange at $10 each. The stock dividend was issued February 15, 2019

Required: Prepare the journal entries to record the stock dividend.

CP 12–17 (Appendix 1)

Arrow Streaming Corporation has 10,000 shares of common stock outstanding at January 1, 2019 with a stated value of $100,000. On April 1, Arrow Streaming declared a 10 percent stock dividend, payable on April 15 to stockholders of record on April 10. The market value of Arrow's stock on April 1 was $15. On June 1, the company declared a $2 cash dividend per stock to common stockholders of record on June 10, and paid the dividend on June 30. Assume the year-end of the corporation is December 31.

Required: Prepare journal entries for the above transactions, including closing entries.

CP 12–18 (Appendix 1)

Blitz Power Tongs Inc. received a charter that authorized it to issue an unlimited number of common stock. The following transactions were completed during 2019:

Jan.	5	Issued 10 common stock shares for a total of $150 cash.
	12	Exchanged 50 stock of common stock for assets listed at their fair values: machinery — $100; building — $100; land — $50.
Feb.	28	Declared a 10% stock dividend. Market value is $7 per stock. Net income to date is $60.
Mar.	15	Issued the stock dividend.
Dec.	31	Closed the 2019 net income of $200 from the Income Summary account in the general ledger to the Retained Earnings account.
Dec.	31	Declared a $1 per stock cash dividend.

Required

1. Prepare journal entries for the 2019 transactions, including closing entries.
2. Prepare the stockholders' equity section of the balance sheet at
   a. January 31, 2019
   b. February 28, 2019
   c. December 31, 2019.

CP 12–19 (Appendix 2)

Acme Corporation has $100,000 of common stock outstanding and $200,000 of retained earnings at December 31, 2019. The board of directors passes a resolution at that date to restrict $80,000 of retained earnings for a plant expansion.

Required:

1. Record the restriction in journal entry form.
2. Show the stockholders' equity section of the balance sheet and appropriate note disclosure at December 31, 2019.
3. Record the construction of the building when completed on June 30, 2020 for a cost of $90,000, paid in cash.
4. Record the journal entry to record the lifting of the restriction on July 31, 2020.

P 12–20 (Appendices 1 and 2)

Stetson Auto Inc. was incorporated on January 1, 2019 and commenced operations at that date. A $2,000 common stock dividend was declared and paid on October 31, 2019. The following information was taken from the company's records at December 31, 2019:

Common stock, stated value $1	
Issued and outstanding—10,000 stock	$ 10,000
Restriction—plant addition	150,000
Revenues (total for 2019)	2,575,000
Expenses (total for 2019)	2,000,000
Cash dividends declared	23,000

Required: Prepare the stockholders' equity section of Stetson Auto's balance sheet at December 31, 2019 and the statement of changes in stockholders' equity for the year then ended.

Problems

P 12–1

The board of directors of Megalopolis Inc. has approved management's recommendation to expand the production facilities. The firm currently manufactures only heavy machinery, but plans are being developed for diversifying the corporation's activities through the production of smaller and more versatile equipment. The directors are considering the following financing methods raise $2 million of additional capital:

a. Sell $2 million of 12% bonds at face value.
b. Sell $8 preferred stock: 20,000 stock at $100 a stock (no other preferred stock are outstanding).
c. Sell another 50,000 stock of common stock at $40 a stock (currently 40,000 common stock are outstanding).

Income before interest and income taxes is expected to average $1,000,000 per year following the expansion; the income tax rate is 50%.

Required:
1. Calculate the earnings per common stock for each alternative.
2. As representatives of common stockholders, which financing method most likely meets the board of directors' needs?
3. What other factors should the board of directors consider?

P 12–2

Crystal Clear Electronics Inc. was incorporated on January 1, 2019 and was authorized under its charter to issue the following stock — 20,000 non-cumulative, non-voting, $5 par value, 5% preferred stock and 500,000 shares of $1 par-value, voting common stock.

Required:
1. Prepare journal entries to record the following 2019 transactions:
   a. Issued 3,000 preferred stock for $6 cash each on January 2.
   b. Issued 2,000 common stock for $2 cash each on January 2.
   c. Issued 5,000 preferred stock for $5 cash each on January 12.
   d. Issued 1,000 common stock for $1 cash each on August 1.
2. Prepare the stockholders' equity section of the balance sheet at December 31, 2019.

P 12–3

Following is the stockholders' equity section of Critter Contracting Inc. shown before and after a stock split on April 15, 2019.

Before split		**After split**	
Stockholders' Equity		*Stockholders' Equity*	
Common stock		Common stock	
Authorized — 5,000 stock		Authorized— ? stock	
Issued and outstanding—		Issued and outstanding —	
1,000 stock	$100,000	? stock	$?

On April 15, the board of directors authorized a 5 for 1 stock split.

Required:

1. Complete the stockholders' equity section of the balance sheet after the split.
2. Record a memorandum indicating the new number of stock.
3. If the market value per stock was $40 before the split, what would be the approximate market value after the split? Why?

P 12–4

Relevant financial information for Gearing Gravel Limited at January 1, 2019 is as follows:

5% Preferred stock, non-cumulative, non-voting	
Authorized — 1,000 stock	
Issued and outstanding — 10 stock	$ 50,000
Common stock, voting	
Authorized — unlimited	
Issued and outstanding — 200 stock	10,000
Retained earnings	100,000
Total stockholders' equity	$160,000

During the year, total cash dividends of $3,000 were declared. Net income for the year amounted to $20,000. 100 common stock shares were issued on February 28, 2019 for $5,000. 20 common stock shares were reacquired on December 31 for $1,000 and held as treasury stock.

Required: Prepare the statement of changes in equity for the year ended December 31, 2019 and the related note to the financial statements.

P 12–5

Required: For each event listed below, indicate, in the format provided, whether the amount of each sub–total is increased (↑) or decreased (↓). Indicate with an 'x' if there is no change to a particular subtotal. Consider each event to be unrelated to the others, unless otherwise indicated.

	Assets	*Liabilities*	*Stockholders' Equity*
1. Commons stock were issued for cash.	↑	X	↓
2. Declared a cash dividend.			
3. Common stock split 3:1.			
4. Calculated book value of common stock.			
5. Paid cash dividend related to item 2 above.			
6. (Appendix 2) Recorded a restriction of retained earnings.			

P 12–6

The following information relates to River Valley Produce Limited as at December 31, 2019:

Stockholders' Equity		
Paid-in capital		
Preferred stock, $8, stated value $100, non-voting		
Authorized — 1,000 stock		
Issued and outstanding — 150 stock	$15,000	
Common stock, stated value $5, voting		
Authorized — 10,000 Stock		
Issued and outstanding — 4,800 stock	24,000	
Total common stock		$ 39,000
Retained earnings		40,000
Total stockholders' equity		$79,000

The following transactions occurred during 2020:

a. Reacquired 400 common stock at $10 each; held as treasury stock.
b. Split the common stock 2 for 1.
c. Issued an additional 200 shares of common stock for $3 cash each.
d. Transferred net income of $19,500 from the Income Summary account in the general ledger to the Retained Earnings account.
e. The board authorized a $5,000 of retained earnings to be restricted for plant expansion.*

*complete only if Appendix 2 is covered

Required:

1. Prepare journal entries for the 2020 transactions.
2. Prepare the statement of changes in equity for the year ended December 31, 2020.
3. What amount of is available for distribution to stockholders as of December 31, 2020?

P 12–7

The following is the stockholders' equity section of the balance sheet of Tridon Construction Limited at December 31, 2019.

Stockholders' Equity	
Common Stock, voting	
Authorized — 500 stock	
Issued and outstanding — 300 stock	$3,070
Retained earnings	500
Total stockholders' equity	$3,570

Required:

1. What is the stated value per common stock? the book value per common stock?
2. On December 31, 2019 the Tridon Construction common stock traded at $24. Why is the market value different from the book value of commons stock?

P 12–8 (Appendix 1)

The stockholders' equity section of the balance sheet of TWR Contracting Inc. at December 31, 2019 showed the following amounts:

Stockholders' Equity	
Preferred stock, $.60, non-voting, cumulative, non-participating	
Issued and outstanding — 40 stock	$ 400
Common stock, voting	
Issued and outstanding — 2,000 stock	2,000
Retained earnings	900
Total stockholders' equity	$3,300

The following transactions occurred during 2020:

Feb.	15	Declared the regular $0.30 per stock semi-annual cash dividend on its preferred stock and a $0.05 per stock cash dividend on the common stock to holders of record March 5, payable April 1.
Apr.	1	Paid the dividends declared on February 15.
May	1	Declared a 10 percent stock dividend to common stockholders of record May 15 to be issued June 15, 2018. The market value of the common stock at May 1 was $2 per stock.
June	15	Issued the dividends declared on May 1.
Aug.	15	Declared the regular semi–annual cash dividend on preferred stock and a cash dividend of $0.05 on the common stock to holders of record August 31, payable October 1.
Oct.	1	Paid the dividends declared on August 15.
Dec.	15	Declared a 10 percent common stock dividend to common stockholders of record December 20 to be issued on January 15, 2021. The market value of the common stock at December 15 was $3 per stock.
Dec.	31	Net income for the year ended December 31, 2020 was $1,400.

Required:

1. Prepare journal entries to record the 2020 transactions, including closing entries. Show calculations. Descriptions are not necessary.
2. Prepare the statement of changes in equity for the year ended December 31, 2020.

P 12–9 (Appendices 1 and 2)

At December 31, 2019, the stockholders' equity section of the balance sheet for the Apex Auto Corporation totalled $2,000,000. Following are the balances of various general ledger accounts at that date.

Preferred stock, $.40, cumulative	Issued 50,000 stock	$500,000
Common stock	Issued 50,000 stock	750,000
Retained earnings—unrestricted		750,000

The following transactions occurred during 2020.

Mar.	20	A cash dividend of $0.20 per preferred stock was declared, payable April 1 to stockholders of record on March 25.
Apr.	1	Payment of previously declared dividend on preferred stock was made.
June	15	The regular semi-annual cash dividend on common stock of $0.40 per stock was declared, payable July 10 to stockholders of record on July 1.
July	10	Payment of the previously-declared dividend on common stock was made.
Aug.	1	10,000 common stock were issued for $200,000 cash.
Nov.	15	The board of directors met and restricted an additional $75,000 for the plant extension.*
Dec.	15	The regular semi-annual dividend of $0.40 per common stock was declared payable December 31, 2020.
Dec.	31	A cash dividend totalling $25,000 was paid.

*complete only if Appendix 2 is covered

Required:

1. What amount of cash dividends would be distributed to common stockholders on December 31, 2020?
2. Prepare journal entries for the 2020 transactions. Ignore closing entries. Descriptions are not necessary.
3. Prepare the statement of changes in equity for the year ended December 31, 2020 assuming net income for the year amounted to $165,000.

CHAPTER THIRTEEN

The Statement of Cash Flows

Information about the amount of cash received and paid out during an accounting period is not shown on the balance sheet, income statement, or statement of changes in equity. This information is disclosed on the **statement of cash flows (SCF)**. This chapter discusses the purpose of the statement of cash flows, the steps in preparing the SCF, as well as how to interpret various sections of the statement of cash flows.

Chapter 13 Learning Objectives

LO1 – Explain the purpose of the statement of cash flows.

LO2 – Prepare a statement of cash flows.

LO3 – Interpret a statement of cash flows.

A. Financial Statement Reporting

LO1 – Explain the purpose of the statement of cash flows.

Cash flow is an important factor in determining the success or failure of a corporation. It is quite possible for a profitable business to be short of cash. A company can have liquidity issues because of large amounts of cash tied up in inventory and accounts receivable, for instance. Conversely, an unprofitable business might have sufficient cash to pay its bills if it has access to enough bank financing or if it can issue additional shares.

The **statement of cash flows** provides a summary of where cash came from during the accounting period and how cash was used. The SCF explains why cash on hand at the end of the accounting period is different from the cash on hand at the beginning of the period by accounting for the effect of *operating, investing and financing* activities on a company's cash resources.

Cash flow information is useful to management when making decisions such as purchasing equipment, plant expansion, paying down long–term debt, or declaring dividends. The SCF is useful to external users when evaluating a corporation's financial performance.

Providing information that helps readers assess the timing, amount, and uncertainty of future cash flows is a primary objective of financial reporting. Using the SCF, analysts examine the relationship among the various sources and uses of cash during the period to help predict future cash flows.

The SCF, together with the income statement, provides a somewhat limited means of assessing future cash flows because these statements are based on historical rather than prospective data. Nevertheless, the ability to generate cash from past operations is often an important indication of whether the enterprise will have difficulty meeting obligations as they fall due, paying dividends, paying for recurring operating costs, or surviving adverse economic conditions.

"Cash" consists of anything a bank will accept for deposit. However, for SCF purposes, cash can also include **cash equivalents**—assets that can be quickly converted into a known amount of cash. These will be converted to a known amount of cash within three months of acquisition and are not subject to significant risk of changes in value.

Conversely, there are examples of "negative" cash, like bank overdrafts. An overdraft occurs when a corporation is allowed to pay out more cash from its bank account than it has on deposit, with the

understanding that the overdraft situation is temporary and limited to a predetermined amount. Another example is a demand bank loan. This is a short-term loan that provides cash to a company when needed. However, the bank can require that the loan be repaid at any time.

Because of differences in the nature of each entity and industry, management judgement is required to determine what assets constitute cash and cash equivalents for a particular firm. This decision needs to be disclosed on the SCF or in a note to the financial statements. For instance, the following note disclosure could be made:

Note X

Cash and cash equivalents consist of cash on deposit and short-term investments held for the purposes of meeting cash commitments within three months from their date of acquisition, net of demand bank loans. Cash and cash equivalents reported on the statement of cash flows are comprised of the following:

($000s)

	2019	*2018*
Cash on deposit	$20	$30
Short-term investments	37	33
Less: Demand bank loan	(1)	(2)
	$56	$61

Cash flows result from a wide variety of a corporation's activities as cash is received and disbursed over a period of time. Because the income statement is based on accrual accounting that matches expenses with revenues, net income usually is not the same as cash receipts and disbursements occurring during the same time period. The statement of cash flows converts accrual-based net income into cash flow from operating activities.

B. Preparing the Statement of Cash Flows

LO2 – Prepare a statement of cash flows.

The statement of cash flows is classified into three sections: operating activities, financing activities, and investing activities. A simplified example is shown in Figure 13–1 below:

The SCF covers a period of time, like the income statement.

The SCF is divided into three areas.

These amounts agree to cash reported on the balance sheet.

Sample Company		
Statement of Cash Flows		
For the Year Ended December 31, 2019		
Cash flows from operating activities		
List of cash inflows and outflows	$ X	
Net cash provided by operating activities		$ XX
Cash flows from investing activities		
List of cash inflows and outflows	X	
Net cash provided by investing activities		XX
Cash flows from financing activities		
List of cash inflows and outflows	X	
Net cash provided by financing activities		XX
Net increase (decrease) in cash		XX
Cash at beginning of period		XX
Cash at end of period		$ XX

A noncash investing and financing activities section may be required.

Figure 13–1 Sample Corporation Statement of Cash Flows

Cash flow from operating activities is generated from the principal activities that produce revenue for a corporation, such as selling products, and most of the expenses reported on the income statement, which are necessary to carry out these activities. Changes to non-cash working capital accounts like accounts receivable also affect cash generated by operating activities, as will be explained later in the chapter.

Cash flows from investing activities involve increases and decreases in long–term asset accounts. These include outlays for the acquisition of property, plant, and equipment, as well as cash proceeds from their disposal.

Cash flows from financing activities occur when there are changes to debt or stockholders' equity accounts, like when long-term borrowings are repaid or stock is issued.

Noncash investing and financing activities result from investing or financing activities that that did not involve cash. Examples might include the purchase of land with stock or the trade-in of an old vehicle for a new one. These items are reported in a separate schedule or note to the financial statements in order to comply with the full disclosure principle.

When preparing the statement of cash flows, several items are needed:

1. Comparative balance sheet
2. Income statement
3. Additional information

How each item is used to prepare the statement of cash flows is discussed in the following section.

I: Operating activities

To arrive at the amount of cash flows provided by the company's operating activities, the company's accrual basis net income must be converted to cash basis net income. This can be achieved by using one of two methods -the direct method or the indirect method of reporting net cash flows from operating activities. The methods only differ in *how* they calculate the amount, the total amount of cash for operating activities will be the **same** regardless of which method is used.

The **direct method** will list all cash receipts and disbursements resulting from the company's operating activities individually on the statement of cash flows. FASB prefers the direct method to be used.

The **indirect method** arrives at operating cash flows through a series of adjustments to the company's accrual based net income. It does not individually report all cash receipts and disbursements as the direct method does, but will still arrive at the same net cash amount for operating activities. FASB permits use of the indirect method.

Since FASB permits the use of the indirect method, and is less time-consuming to calculate, the vast majority of companies use the indirect

method when reporting operating cash flows. For this reason, the indirect method will be illustrated in this chapter.

As mentioned earlier, the indirect method of calculating operating cash flows requires a series of adjustments to be made to the company's accrual basis net income. These adjustments to net income can be summarized into three steps:

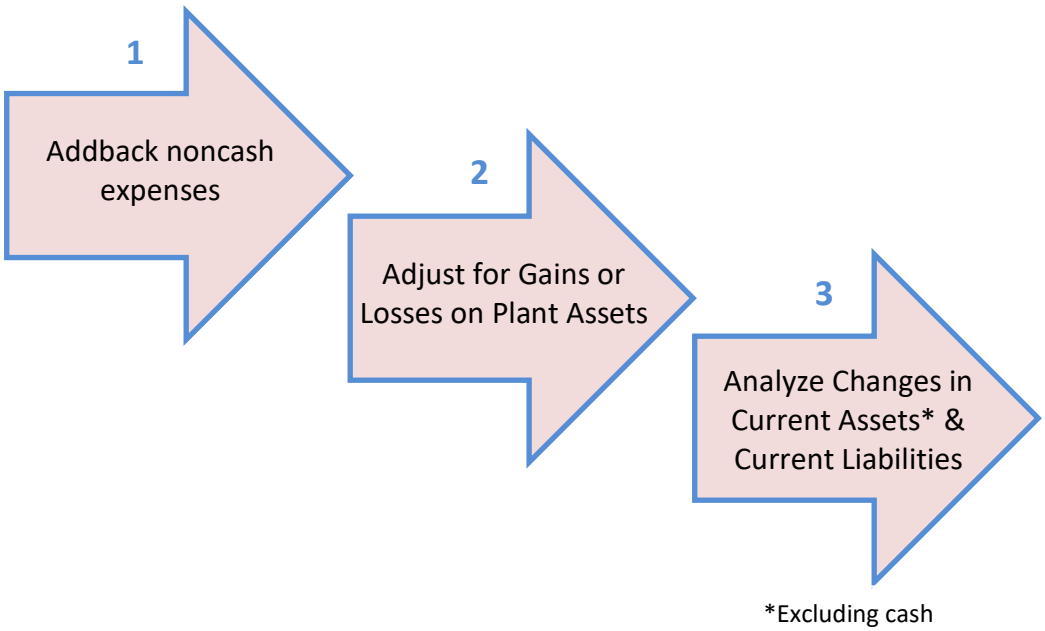


Figure 13–2 Adjustments to Report Operating Cash Flows Using the Indirect Method

Illustration –Operating activities

Consider the balance sheet, income statement and statement of changes in equity of Sample Corporation:

Sample Corporation
Balance sheet
At December 31
($000s)

	2019	*2018*
Assets		
Current		
Cash	$ 27	$ 150
Accounts receivable	375	450
Merchandise inventory	900	450
Prepaid expenses	20	10
	1,322	1,060
Property, plant, and equipment		
Land	210	290
Buildings	1,200	400
Machinery	990	700
Less: Accumulated depreciation	(540)	(300)
	1,860	1,090
Total assets	$3,182	$2,150
Liabilities		
Current		
Accounts payable	$ 235	$ 145
Dividends payable	25	30
Income taxes payable	40	25
	300	200
Non-current borrowings	1,000	500
	1,300	700
Stockholders' Equity		
Common stock	1,210	800
Retained earnings	672	650
	1,882	1,450
Total liabilities and stockholders' equity	$3,182	$2,150

Sample Corporation
Income Statement
For the Year Ended December 31, 2019
($000s)

Sales		$1,200
Cost of goods sold		674
Gross profit		526
Operating expenses		
Selling, general, and administration	$115	
Depreciation	260	375
Income from operations		151
Other items		
Gain on disposal of land	24	
Loss on disposal of machinery	(10)	14
Income before interest expense and income taxes		165
Interest expense		50
Income before income taxes		115
Income taxes		35
Net income		$ 80

Sample Corporation
Statement of Changes in Equity
For the Year Ended December 31, 2019
($000s)

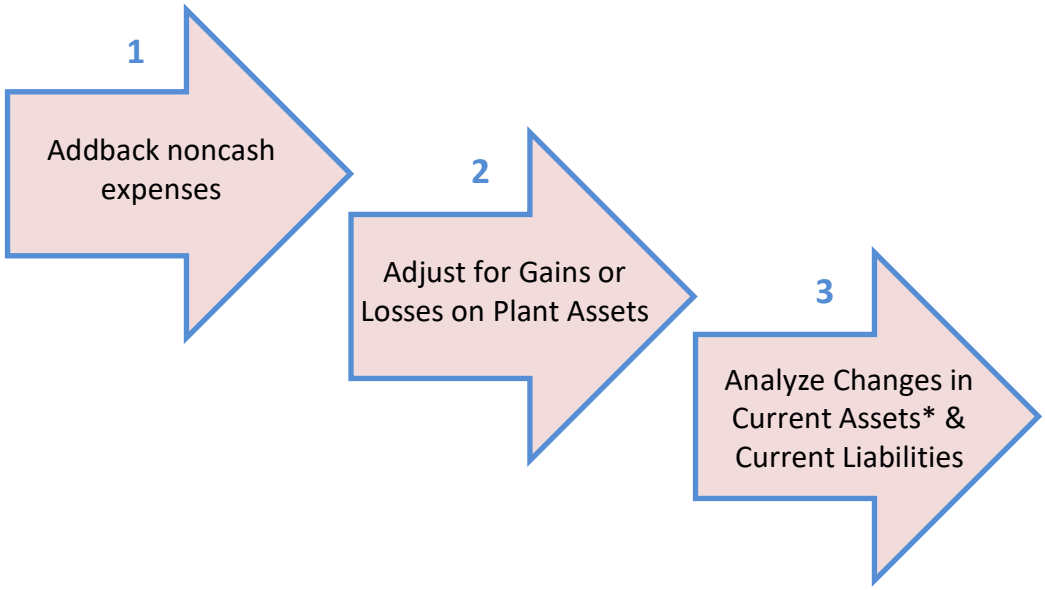
	Common stock	*Retained earnings*	*Total equity*
Balance at Jan. 1, 2019	$ 800	$650	$1,450
Common shares issued	410	-	410
Net income	-	80	80
Dividends declared	-	(58)	(58)
Balance at Dec. 31, 2019	$1,210	$672	$1,882

Additional Information:

Transaction	*Description ($000s)*
1	Land costing $80 was sold for $104.
2	A building was purchased for $800 cash.
3	Machinery was purchased for $350 cash.
4	Machinery costing $60 with accumulated depreciation of $20 was sold for $30 cash.

5 Depreciation expense of $260 was recorded during the year.
6 Sample Company received $500 cash from a long-term bank loan.
7 Shares were issued for $410 cash.
8 $58 of dividends were declared and paid during the year.

Assuming the indirect method is to be used, we remember that net income needs to be converted from accrual basis to cash basis. The accrual basis net income (found on the income statement) must be adjusted for the following items:

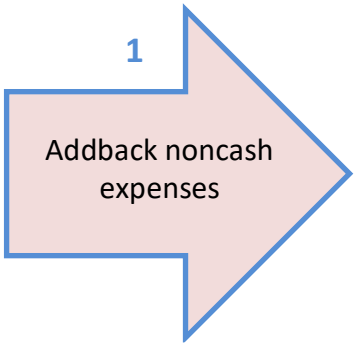


*Excluding cash

Adjustment 1: Beginning with the first adjustment, it will be necessary to scan the company's income statement for **noncash expenses** –these are expenditures recorded but no cash was disbursed. Common examples of noncash expenses include depreciation, depletion, and amortization. From reviewing Sample Company's income statement, we see that Depreciation expense amounted to $260. This item will, therefore, be *added back* to the company's net income of $80 (this figure is also acquired from the income statement) since cash was not paid for the depreciation expense.

The calculation for the first adjustment in arriving at the company's operating cash flow is summarized below.

Net Income $ 80



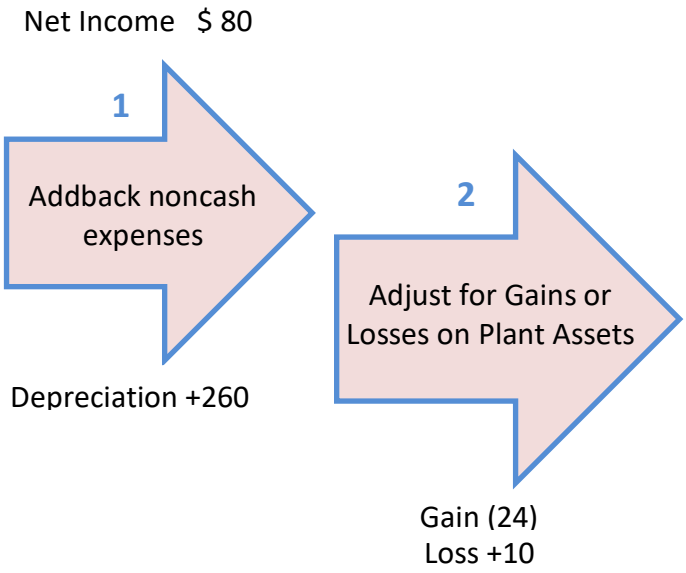
Depreciation +260

Since no other noncash expenses are present, we may proceed to the second adjustment, Adjusting for Gains or Losses on Plant Asset Disposals.

Adjustment 2: Any gains or losses resulting from the disposal of plant assets must be addressed when preparing the operating section of the SCF. The effects of the gain or loss must be cancelled. The reason this cancellation is needed is due to the fact that these are nonoperating items and must therefore not be shown in the operating section but in the investing section of the SCF. This cancellation is achieved by adding back a loss and subtracting a gain on the disposal of plant assets.

Upon reviewing Sample Company's income statement, we see that the company experienced a gain and a loss relating to the disposal of plant assets during the period. The treatment will be to subtract the gain of $24 and add the loss of $10.

The calculation for the second adjustment in arriving at the company's operating cash flow is summarized below.



Since no other gains or losses are present, we may proceed to the third adjustment, analyzing changes in noncash current asset and current liabilities accounts.

Adjustment 3: The indirect method assumes that all operating activities of the company can be captured through analysis of their noncash current asset and current liability accounts. That transactions affecting these accounts are relevant to the calculation of cash flow from operating activities because they affect expense and revenue items on the income statement. Since we are moving from accrual basis to cash basis net income we shall have to adjust for all accrual/prepaid items. For ***noncash current assets***, these adjustments can be accomplished by *subtracting from net income all increases to noncash current asset accounts* and *adding to net income all decreases to noncash current asset accounts*. For ***current liabilities***, these adjustments can be accomplished *by adding to net income all increases in current liability accounts* and *subtracting from net income all decreases to current liability accounts*. This concept is more simply illustrated in Figure 13-3.

	Change in account balance	
	Increase	**Decrease**
Current Assets*	Subtract from net income	Add to net income
Current Liabilities	Add to net income	Subtract from net income

*Excluding cash

Figure 13–3 Adjusting for noncash current assets and current liabilities

In order to prepare the adjustment, first the change in the account balance must be calculated. This is done by comparing the prior year's noncash current asset and current liability account balance to the current year's. To facilitate this, the comparative balance sheet is used. A third column has now been added to the previously provided comparative balance sheet for Sample Company to calculate the change in account balance.

Sample Corporation
Balance Sheet
At December 31
($000s)

	2019	*2018*	Change Incr/(Decr)
Assets			
Current			
Cash	$ 27	$ 150	N/A
Accounts receivable	375	450	(75)
Merchandise inventory	900	450	450
Prepaid expenses	20	10	10
	1,322	1,060	
Property, plant, and equipment			
Land	210	290	
Buildings	1,200	400	
Machinery	990	700	
Less: Accumulated depreciation	(540)	(300)	
	1,860	1,090	
Total assets	$3,182	$2,150	
Liabilities			
Current			
Accounts payable	$ 235	$ 145	90
Dividends payable	25	30	(5)
Income taxes payable	40	25	15
	300	200	
Non-current borrowings	1,000	500	
	1,300	700	
Stockholders' Equity			
Common stock	1,210	800	
Retained earnings	672	650	
	1,882	1,450	
Total liabilities and stockholders' equity	$3,182	$2,150	

Decrease in Accounts Receivable –The accounts receivable account decreased by $75 (from $450 to $375) during the year. This means that the cash receipts were $75 greater than the sales revenue shown on the income statement. Therefore, the proper treatment would be to add the difference ($75) to the period's net income when trying to arrive at cash flows from operating activities. This also follows the matrix shown in Figure 13-3.

Increase in Merchandise Inventory **–**The inventory account increased by $450 (from $450 to $900) during the year. This means that the purchases exceeded the cost of goods sold during the period. Therefore, the cost of goods sold expense shown on the period's income statement does not show true cash expenditures for inventory purchases and the amount must be deducted from net income to arrive at net cash provided by operating activities.

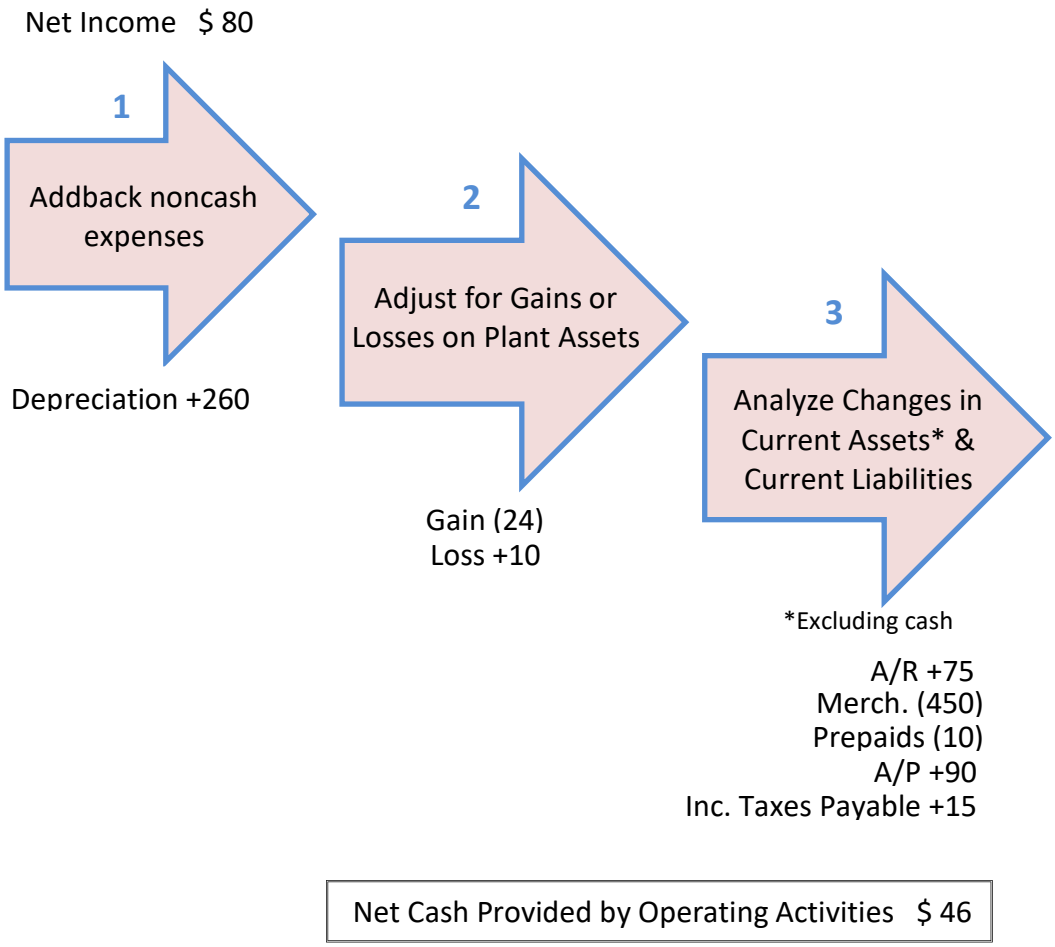
Increase in Prepaid Expenses –The prepaid expense account increased by $10 (from $10 to $20) during the year. This means that cash prepayments for future expenses were greater than the related expenses reported on an accrual basis. To arrive at net cash provided by operating activities, the company must therefore deduct from net income the $10 increase in prepaid expenses.

Increase in Accounts Payable –The accounts payable balance increased by $90 (from $145 to $235) during the period. This means that the goods received from suppliers exceeded the amount paid to suppliers in cash. As shown in Figure 12-3 this means the amount of the increase will be added to net income to arrive at net cash from operating activities.

Decrease in Dividends Payable –The dividends payable account decreased by $5 (from $30 to $25) during the period. This means the amount of dividends paid out in cash exceeded dividends declared for the period. However, the criteria for inclusion are whether adjustments through these accounts at some point affect items on the income statement. As a result, changes to the related Dividends Payable account are not considered operating activities. (Payment of dividends directly affects the Retained Earnings account, not a net income account.) The Dividends Payable account is therefore not analyzed at this point, but in a later section.

Increase in Income Taxes Payable –The income taxes payable account increased by $15 (from $25 to $40) during the period. This means the company has accrued more income tax expense than it has paid in the period. Therefore, the income tax expense reported on the income statement is greater than the cash paid for income tax. So the necessary adjustment to arrive at net cash from operating activities will require an increase to net income of $15.

A summary of the adjustments for changes in noncash current asset and current liability accounts can be found below.



Sample Company's net cash provided by operating activities amounts to $46 for the period. This amount has been calculated using the steps outlined in Figures 13-2 and 13-3. Now that the adjustments and end figure are known, the activity must be reported in the proper format.

Sample Company Statement of Cash Flows For the Year Ended December 31, 2019 ($000s)		
Cash flows from operating activities		
Net income		$ 80
Adjustments to reconcile net income to net cash provided by operating activities		
1 Depreciation expense	$ 260	
2 Gain on disposal of plant asset	(24)	
2 Loss on disposal of plant asset	10	
3 Decrease in accounts receivable	75	
3 Increase in merchandise inventory	(450)	
3 Increase in prepaid expenses	(10)	
3 Increase in accounts payable	90	
3 Increase in income taxes payable	15	(34)
Net cash provided by operating activities		46

Figure 13–4 Operating section of the SCF using the Indirect Method

Though the calculations to arrive at net cash provided by operating activities is different under the direct and indirect methods, the end result is *identical*. Both methods would result in $46 for cash provided by operating activities. *The direct and indirect methods are only relevant for the operating section on the statement of cash flows.*

II: Investing activities

The investing section follows the operating section on the statement of cash flows and lists items that affect long-term assets. Common examples include the purchase or sale of plant assets, the purchase or sale of short-term financial investments, loans made to other parties and their collection of principal and interest. FASB requires that the interest collected on these loans be recorded in the operating section of the SCF.

When preparing the investing section, you will continue to rely on the comparative balance sheet as well as the additional information provided by the company. When reviewing the comparative balance sheet, attention will be paid to the long-term assets section. You will analyze and explain any differences and determine the presentation for those differences on the statement of cash flows.

Using the data provided by Sample Company, we see changes in several plant asset accounts:

Sample Corporation
Balance Sheet (Partial)
At December 31
($000s)

	2019	*2018*	Change (Inflow)/ Outflow
Assets			
Current			
Cash	$ 27	$ 150	
Accounts receivable	375	450	
Merchandise inventory	900	450	
Prepaid expenses	20	10	
	1,322	1,060	
Property, plant, and equipment			
Land	210	290	(80)
Buildings	1,200	400	800
Machinery	990	700	290
Less: Accumulated depreciation	(540)	(300)	
	1,860	1,090	
Total assets	$3,182	$2,150	

Referencing items 1-4, (presented below for your convenience), we note that several transactions were responsible for the changes in the plant asset balances.

Transaction	*Description ($000s)*
1	Land costing $80 was sold for $104.
2	A building was purchased for $800 cash.
3	Machinery was purchased for $350 cash.
4	Machinery costing $60 with accumulated depreciation of $20 was sold for $30 cash.

Decrease in Land –The land account decreased by $80 (from $290 to $210) during the year. Transaction 1 helps to explain that this was the result of the land being sold for $104. Since we are preparing the statement of cash flows, only the cash receipt of $104 will appear on the statement. The amount will appear as a positive number in the investing section as all cash receipts are presented as positive figures while cash payments are presented as negative figures. Note that the gain on the sale of $24 ($104 proceeds - $80 cost) was already recorded in the operating section on the statement of cash flows.

Increase in Buildings –The buildings account increased by $800 (from $400 to $1,200) during the year. Transaction 2 identifies that this was due to the purchase of a building with cash. Therefore, a negative $800 will appear in the investing section on the SCF since cash was paid out for this asset.

Increase in Machinery –The machinery account increased by $290 (from $700 to $990) during the year. Transaction 3, clarifies that part of this increase is due to the purchase of machinery for $350. Also, machinery was sold during the year (as described in transaction 4) with a cost of $60. These transactions to the machinery account explain the $290 increase ($350 purchase less $60 sale). The amount of the cash paid for the new machinery ($350) as well as the cash proceeds received from the machinery sale ($30) will appear in the investing section on the SCF as separate items.

Combining the investing activities referenced above, will expect to see net cash *used* [1]*by* investing activities to be $1,016 ($104 -800 -350

[1] A net cash outflow for the category is denoted by using the term "used by" since cash outflows exceeded cash inflows

+30). Now that the adjustments and end figure are known, we can add this activity to our Statement of Cash Flows.

Sample Company Statement of Cash Flows For the Year Ended December 31, 2019 ($000s)		
Cash flows from operating activities		
Net income		$ 80
Adjustments to reconcile net income to net cash provided by operating activities		
Depreciation expense	$ 260	
Gain on disposal of plant asset	(24)	
Loss on disposal of plant asset	10	
Decrease in accounts receivable	75	
Increase in merchandise inventory	(450)	
Increase in prepaid expenses	(10)	
Increase in accounts payable	90	
Increase in income taxes payable	15	(34)
Net cash provided by operating activities		46
Cash flows from investing activities		
Proceeds from sale of land	104	
Purchase of building	(800)	
Purchase of machinery	(350)	
Proceeds from sale of machinery	30	
Net cash used by investing activities		(1,016)

Investing section

Figure 13–5 Statement of Cash Flows –Investing Activities

III: Financing activities

Cash flows from financing activities occur when there are changes to debt or stockholders' equity accounts. These accounts include bonds payable, notes payable, preferred stock, common stock, treasury stock, and retained earnings.

When preparing the financing section, you will continue to rely on the comparative balance sheet as well as the additional information provided by the company. When reviewing the comparative balance sheet, attention will be paid to the long-term liabilities section and stockholder's equity section. You will analyze and explain any differences and determine the presentation for those differences on the statement of cash flows.

Using the data provided by Sample Company, we see changes in several of these accounts:

Sample Corporation
Balance Sheet (Partial)
At December 31
($000s)

	2019	*2018*	Change (Inflow)/ Outflow
Liabilities			
Non-current borrowings	1,000	500	500
	1,300	700	
Stockholders' Equity			
Common stock	1,210	800	410
Retained earnings	672	650	22
	1,882	1,450	
Total liabilities and stockholders' equity	$3,182	$2,150	

Referencing items 6-8, (presented below for your convenience), we note that several transactions were responsible for the changes in the balances.

6 Sample Company received $500 cash from a long-term bank loan.
7 Shares were issued for $410 cash.
8 $58 of dividends were declared and paid during the year.

Increase in Non-Current Borrowings –The borrowing account increased by $500 (from $500 to $1,000) during the year. Transaction 6 shown above stated that Sample Corporation received this amount in cash from a long-term bank loan. Since this represents a cash inflow to the company the $500 will appear as a positive number in the financing section on the statement of cash flows. As with the investing section, cash receipts will be presented as positive figures while cash payments will be presented as negative figures.

Increase in Common Stock –The common stock account increased by $410 (from $800 to $1,210) during the year. Transaction 7 explains this was due to the issuance of stock for cash. Since this transaction also represents a cash flow to the company the $410 will appear as a positive number in the financing section of the statement of cash flows.

Increase in Retained Earnings –The retained earnings account increased by $22 (from $650 to $672) during the year. We should note that this change is a result of several items, (1) net income of $80 during the year and (2) payment of dividends of $58 (detailed in Transaction 8 above). Since the net income is already included on the statement of cash flows (found in the operating section) only the payment of dividends needs to be recorded in the financing section at this point. We want to make sure all dividend payments are included in the financing section. Note 7 states that "$58 of dividends were *declared* and paid during the year". If you'll remember from our earlier analysis, the company's dividend payable account decreased during the year. This represents dividends declared in a prior year and paid in the current year. Since the change in the dividend payable account was $5 (from $30 to $25), that $5 represents dividends *paid* during the year and must be added to the $58. So total dividends paid in 2019 will amount to $63 ($58 + $5). This amount will be shown as a negative amount as it represents a cash outflow for the company.

Combining the financing activities referenced above, will expect to see net cash *provided by*[2] financing activities to be $847 ($500 +410 -63). Now that the adjustments and end figure are known, we can add this activity to our Statement of Cash Flows.

---

[2] A net cash inflow for the category is denoted by using the term "provided by" since cash inflows exceeded cash outflows.

Sample Company		
Statement of Cash Flows		
For the Year Ended December 31, 2019		
($000s)		
Cash flows from operating activities		
Net income		$ 80
Adjustments to reconcile net income to net		
cash provided by operating activities		
Depreciation expense	$ 260	
Gain on disposal of plant asset	(24)	
Loss on disposal of plant asset	10	
Decrease in accounts receivable	75	
Increase in merchandise inventory	(450)	
Increase in prepaid expenses	(10)	
Increase in accounts payable	90	
Increase in income taxes payable	15	(34)
Net cash provided by operating activities		46
Cash flows from investing activities		
Proceeds from sale of land	104	
Purchase of building	(800)	
Purchase of machinery	(350)	
Proceeds from sale of machinery	30	
Net cash used by investing activities		(1,016)
Cash flows from financing activities		
Proceeds from borrowings	500	
Proceeds from stock issuance	410	
Payment of dividends	(63)	
Net cash provided by financing activities		847
Net increase (decrease) in cash		(123)
Cash at beginning of period		150
Cash at end of period		$ 27

Financing section

Computation of cash

Figure 13–6 Statement of Cash Flows

Computation of Cash -The final step is to compute the ending cash balance. This is done by first adding the net cash amounts from all

three sections, and adding that to the beginning cash balance (found on the comparative balance sheet). If prepared correctly, the amount calculated should agree to the ending cash presented on the balance sheet.

An alternative approach for preparing the statement of cash flows is presented for your convenience in the appendix to this chapter.

C. Interpreting the Statement of Cash Flows

LO3 – Interpret a statement of cash flows.

Readers of financial statements need to know how cash has been used by the enterprise. The SCF provides external decision makers such as creditors and investors with this information. The statement of cash flows provides information about an enterprise's financial management policies and practices. It also may aid in predicting future cash flows, which is an important piece of information for investors and creditors.

The *quality* of earnings as reported on the income statement can also be assessed with the information provided by the SCF. The measurement of net income depends on a number of accruals and allocations that may not provide clear information about the cash-generating power of a company. Users will be more confident in a company with a high correlation between cash provided by operations and net income measured under the accrual basis. Recall, for instance, that although Sample Corporation has net income of $80,000 during 2019, its net cash inflow from operations is only $46,000 – chiefly due to the large increase in inventory levels. Although net cash flow from operations is still positive, this discrepancy between net income and cash flow from operations may indicate looming cash flow problems, particularly if the trend continues over time.

Sample Corporation's SCF also reveals that significant net additions to plant and equipment occurred during the year ($1,016,000), financed somewhat by cash flow from operating activities but primarily by financing activities that included the assumption of loans and issue of shares that amounted to $847,000, net of dividend payments.

It appears that a significant plant expansion may be underway, which may affect future financial performance positively. However, the magnitude of this expansion coupled with the payment of the dividends to stockholders has more than offset cash inflows from operating and financing activities, resulting in a net overall decrease in

cash of $123,000. Though the current cash expenditure on plant and equipment may be a prudent business decision, it has resulted in (hopefully temporary) adverse effects on overall cash flow. The large increase in inventory levels is still worrisome, and should be investigated further.

The SCF is not a substitute for an income statement prepared on the accrual basis. Both statements should be used to evaluate a company's financial performance. Together, the SCF and income statement provide a better basis for determining the enterprise's ability to generate funds from operations and thereby meet current obligations when they fall due (liquidity), pay dividends, meet recurring operating costs, survive adverse economic conditions, or expand operations with internally-generated cash.

The SCF highlights the amount of cash available to a corporation, which is important. Excess cash on hand is unproductive. Conversely, inadequate cash decreases liquidity. Cash is the most liquid asset, and its efficient use is one of the most important tasks of management. Cash flow information, interpreted in conjunction with other financial statement analyses, is useful in assessing the effectiveness of the enterprise's cash management policies.

Readers who wish to evaluate the financial position and results of operations of an enterprise also require information on cash flows produced by investing and financing activities. The SCF is the only statement that explicitly provides this information. By examining the relationship among the various sources and uses of cash during the year, readers can also focus on the effectiveness of management's investing and financing decisions and how these may affect future financial performance.

Summary of Chapter 13 Learning Objectives

LO1 – Explain the purpose of the statement of cash flows.

The statement of cash flows is one of the four financial statements. It highlights the net increase or decrease in the cash and cash equivalents balance during the accounting period, and details the sources and uses of cash that caused that change.

LO2 – Prepare a statement of cash flows.

Under the indirect method, the operating activities section of the statement of cash flows begins with net income calculated on the accrual basis and, by adjusting for changes in current assets, current liabilities, adding back depreciation expense, and adjusting for losses or gains on disposal of capital assets, arrives at cash flow from operating activities. The investing activities section analyzes cash inflows and outflows resulting from the sale and purchase of capital assets. The financing activities section discloses the cash inflows and outflows resulting from the assumption or payment of loans, issue or repurchase of shares, and payment of dividends.

LO3 – Interpret a statement of cash flows.

A statement of cash flows contributes to the decision-making process by explaining the sources and uses of cash. The operating activities section can signal potential areas of concern by focusing on differences between accrual net income and cash flow from operating activities. The investing activities section can highlight if cash is being used to acquire assets for generating revenue, while the financing activities section can identify where the cash to purchase those assets might be coming from. Those who use financial statements can focus on the effectiveness of management's investing and financing decisions and how these may affect future financial performance.

E N D O F C H A P T E R M A T E R I A L S

Multiple-Choice Review

1. The operating activities section of a statement of cash flows will show items that:
   a.) help in the financing of the company's operations.
   b.) affect the long-term assets of the company.
   c.) determine the net income of the company.
   d.) all of the above

2. Payments to suppliers for inventory purchases would appear in which section of the statement of cash flows?
   a.) operating activities
   b.) investing activities
   c.) financing activities
   d.) noncash investing and financing activities

3. A company purchases a new delivery truck. This event would appear in which section of the statement of cash flows?
   a.) operating activities
   b.) investing activities
   c.) financing activities
   d.) noncash investing and financing activities

4. Rose Company issues 5-year bonds. This event would appear in which section of the statement of cash flows?
   a.) operating activities
   b.) investing activities
   c.) financing activities
   d.) noncash investing and financing activities

5. MR Company issued 10,000 shares of $5 par value common stock when the market price was $8 per share. The impact of this event on the company's statement of cash flows would be a:
   a.) $50,000 cash inflow in the financing section
   b.) $80,000 cash inflow in the operating section
   c.) $50,000 cash inflow in the investing section
   d.) $80,000 cash inflow in the financing section

Multiple-Choice Review (continued)

6. Using the indirect method, which of the following items would be added back to net income when preparing the statement of cash flows?
   a.) a decrease in accounts payable
   b.) loss on disposal of plant asset
   c.) an increase in inventory
   d.) a gain on disposal of plant asset

7. A piece of equipment with a cost of $180,000 and accumulated depreciation of $160,000 is sold for $30,000 cash. The amount reported as a cash inflow from investing activities is:
   a.) $180,000
   b.) $30,000
   c.) $20,000
   d.) $10,000

8. Avalon Company has the following information for the year.

Net income	$ 150,000	Depreciation expense	4,000
Increase in A/R	6,000	Dividends paid	1,200
Decrease in A/P	2,000	Gain on sale of land	12,000

   Assuming the company uses the indirect method, what is the amount of net cash flows for the operating section?
   a.) $172,000
   b.) $39,000
   c.) $28,000
   d.) $134,000

9. Using Avalon's above information, the financing activities section will show:
   a.) $148,800 net cash provided by financing activities
   b.) $136,800 net cash used by financing activities
   c.) $10,800 net cash provided by financing activities
   d.) $1,200 net cash used by financing activities

10. Zeus Company pays a long-term note payable plus interest with a cash payment of $70,000 toward the principal amount and $6,200 cash for interest. This will appear on the statement of cash flows:
   a.) as a $70,000 cash outflow under financing activities
   b.) as a $76,200 cash outflow under financing activities
   c.) as a $70,000 cash outflow under investing activities
   d.) as a $76,200 cash outflow under investing activities

Answers on the following page

Answers to Multiple-Choice Review

1. b
2. a
3. b
4. c
5. d
6. b
7. b
8. d ($150,000 - $6,000 - $2,000 + $4,000 - $12,000)
9. d
10. a

Discussion Questions

1. Using an example, explain in your own words the function of a statement of cash flows. Why is it prepared? What does it communicate to the reader of financial statements? What is its advantage over a balance sheet? over an income statement?
2. Why are financing and investing activities of a corporation important to financial statement readers?
3. How does an increase in accounts receivable during the year affect the cash flow from operating activities?
4. Is a statement of cash flows really only a summary of cash receipts and disbursements recorded in the corporation's Cash account?
5. What effect does the declaration of a cash dividend have on cash flow? the payment of a dividend declared and paid during the current year? the payment of a dividend declared in the preceding year?
6. Why may a change in the short-term investments account not be recorded on the statement of cash flows?
7. Why is it possible that cash may have decreased during the year, even though there has been a substantial net income during the same period?
8. Describe common transactions that produce cash outflows. Explain how these items are analysed to identify cash flows that have occurred during the year.
9. What is the basic format of a SCF? Prepare a model format.
10. (Appendix) How is the cash flow table method used to prepare a SCF?

Comprehension Problems

CP 13–1

The following transactions were carried out by Crozier Manufacturing Limited.

Required: Indicate into which category each transaction or adjustment is placed in the statement of cash flows: operating (O), investing (I), financing (F) activities, or Noncash Investing and Financing (N) activities.

1.)	____	Crozier makes a payment on a 10-year bank loan.
2.)	____	Crozier issues common stock for cash.
3.)	____	Cash dividends were paid to shareholders.
4.)	____	Equipment was purchased with a 5-year bank loan.
5.)	____	Land was purchased with cash.
6.)	____	Employee wages were paid.
7.)	____	Cash sales made to customers.
8.)	____	Purchased a 12-month insurance policy to take effect next year.

CP 13–2

The following transactions were carried out by Beta Boop Company.

Required: Indicate into which category each transaction or adjustment is placed in the statement of cash flows: operating (O), investing (I), financing (F) activities, or Noncash Investing and Financing (N) activities. Assume the indirect method is used.

1.)	____	A building is purchased for $100,000; $30,000 paid in cash the remainder was paid through a loan.
2.)	____	Depreciation expense on equipment totals $10,000.
3.)	____	Cash dividends were declared and will be paid in the following year.
4.)	____	Amortization on patents total $500.
5.)	____	Land was sold for cash.
6.)	____	$5,000 small business loan obtained.
7.)	____	Customer accounts receivable were collected.
8.)	____	Purchased inventory with cash.
9.)	____	Bonds are retired at their maturity date.
10.)	____	Preferred stock is issued at its par value.

CP 13–3

The following table includes transactions carried out by Ram Horn Corporation, as well as columns for each of the three categories found in the statement of cash flows: operating, investing and financing activities.

Required: For each event shown, indicate whether there is an inflow or outflow of cash in each of the categories, and indicate the amount. If the transaction would not appear on the statement of cash flows, explain why.

	Operating activities In (out)	*Investing activities In (out)*	*Financing activities In (out)*
Example			
1. Retired $100 of non-current debt with cash.			(100)
2. Purchased a building for $90; $60 was borrowed and the rest was paid in cash.			
3. Declared and paid cash dividends of $12 during the year.			
4. Purchased equipment by issuing $20 of common shares.			
5. Paid $50 in cash to pay off a non-current bank loan.			
6. Sold land for $30 cash.			
7. Earned net income of $75.			
8. Purchased equipment costing $15; of this, $5 was paid in cash and the rest with a 90–day note payable.			
9. Amortized a patent by $2.			
10. Assumed $100 of non-current debt and repurchased common shares with the proceeds.			
11. Purchased short-term investments for $5 cash.			

12. Sold a machine that cost $20 for $7 cash; the accumulated depreciation on it was $10. _____ _____ _____

13. Depreciation expense for building and equipment amounted to $8 _____ _____ _____

14. Paid in cash the note payable in transaction 8 above _____ _____ _____

15. Issued $20 of preferred shares for cash _____ _____ _____

16. Purchased a patent for $25 cash _____ _____ _____

17. Prepaid $20 for the next two months of advertising _____ _____ _____

18. Purchased land for $60 cash. _____ _____ _____

CP 13–4

Required: For each of the following items indicate whether it increases, decreases, or has no effect (N/E) on cash flow:

Cash flow			
Inc.	Dec.	N/E	
?			1. Earning net income for the year
			2. Redemption of preferred shares at face value.
			3. Purchase of inventory
			4. Issuing common shares for equipment
			5. Assuming non-current debt
			6. Declaring a cash dividend
			7. Collection of an account receivable
			8. Payment of an account payable
			9. Purchase of land for cash
			10. Issuing common shares for cash
			11. Reclassifying non-current liabilities as current liabilities equal to the amount to be paid in cash next year
			12. Payment of a cash dividend declared last year
			13. Decrease in market value of short-term investments
			14. Calculation of amount owing for income taxes.

CP 13–5

Assume the following balance sheet information:

	2020	*2019*
Assets		
Cash	$ -0-	$100
Short-term investments, (due in 60 days)	100	-0-
	$100	$100
Stockholders' Equity		
Common stock	$100	$100

Required: Calculate the change in cash and cash equivalents during 2020.

CP 13–6

Assume LandCorp. the following income statement and balance sheet information for the year ended December 31, 2019:

Sales	$200
Cost of goods sold	120
Gross profit	80
Operating expenses	
Rent	30
Net income	$50

	2019 *Dr. (Cr.)*	*2018* *Dr. (Cr.)*
Cash	$100	$86
Accounts receivable	60	40
Inventory	36	30
Prepaid rent	10	-0-
Retained earnings	(206)	(156)

Required: Calculate cash flow from operating activities.

CP 13–7

Bandito Company reported net income of $195,000 for 2019. Bandito also reported depreciation expense of $40,000 and a gain of $5,000 on disposal of plant assets. The comparative balance sheet shows an increase in accounts receivable of $15,000 for the year, and $17,000 increase in accounts payable, and a $4,000 decrease in prepaid expenses.

Required:

1.) Prepare the operating activities section of the statement of cash flows for 2019. Use the indirect method.

CP 13–8

Assume the following income statement for the year ended December 31, 2019 and balance sheet at year-end:

Revenue	$ -0-
Gain on sale of equipment	500
Net income	$500

	2019	*2018*
Equipment	$ -0-	$1,000
Accumulated depreciation—equipment	-0-	(600)

No equipment was purchased during the year. Equipment was sold for cash during the year.

Required:

1. Calculate the amount of cash for which the equipment was sold.
2. Prepare the journal entry to record the sale of the equipment.
3. Calculate the cash flow from operating activities and investing activities.

CP 13–9

Roselia Inc.'s balance sheets at December 31, 2020 and 2019, are presented below. Roselia's net income for 2020 was $153,000. Depreciation expense was $24,000.

	2020	*2019*
Current assets		
Cash	$102,000	$91,000
Accounts receivable	41,000	27,000
Inventory	9,000	18,000
Prepaid expenses	12,000	9,000
Total current assets	$164,000	$145,000
Current liabilities		
Accounts payable	$18,000	15,000
Interest payable	5,000	6,000
Total current liabilities	$23,000	$21,000

Required:

1. Calculate the company's net cash provided by operating activities for December, 31, 2020.
2. Prepare net cash provided by operating activities section of the company's statement of cash flows for the year ended December 31, 2020, using the indirect method.

CP 13–10

Assume the following income statement and balance sheet information:

Service revenue (all cash)	$175
Operating expenses	
Salaries (all cash)	85
Net income	$90

	2019	*2018*
	Dr. (Cr.)	*Dr. (Cr.)*
Cash	$1,250	$1,600
Short-term investments	100	200
Borrowings	(600)	(1,000)
Common shares	(200)	(300)
Retained earnings	(550)	(500)

Other information: All dividends were paid in cash. The short-term investments are riskless and will be converted to a known amount of cash in 60 days. No gain or loss occurred when common shares were repurchased.

Required:

1. Calculate cash flow from operating activities.
2. Calculate the amount of dividends paid during the year.
3. Calculate cash flow used by financing activities.

CP 13–11

The comparative balance sheets of Glacier Corporation showed the following at December 31.

	2019	*2018*
Debits		
Cash	$ 10	$ 8
Accounts receivable	18	10
Merchandise inventory	24	20
Land	10	24
Plant and equipment	94	60
	$156	$122
Credits		
Accumulated depreciation	$ 14	$ 10
Accounts payable	16	12
Non-current borrowings	40	32
Common stock	60	50
Retained earnings	26	18
	$156	$122

The income statement for 2019 was as follows:

Glacier Corporation
Income Statement
For the Year Ended December 31, 2019

Sales		$300
Cost of sales		200
Gross profit		100
Operating expenses		
Rent	$77	
Depreciation	6	83
Income from operations		17
Other gains (losses)		
Gain on sale of equipment	1	
Loss on sale of land	(4)	(3)
Net income		$ 14

Additional information:

a. Cash dividends paid during the year amounted to $6.
b. Land was sold during the year for $10. It was originally purchased for $14.

c. Equipment was sold during the year that originally cost $7. Carrying amount was $5.
d. Equipment was purchased for $41.

Required:

1. Prepare a statement of cash flows for the year ended December 31, 2019.
2. Comment on the operating, financing, and investing activities of Glacier Corporation for the year ended December 31, 2019.

Problems

P 13–1

Assume the following income statement information:

Sales (all cash)	$35
Operating expenses	
Depreciation	10
Income before other item	25
Other item	
Gain on sale of equipment	8
Net income	$33

Required:

1. Assume the equipment originally cost $20, had a carrying amount of $4 at the date of disposal and was sold for $12. Prepare the journal entry to record the disposal. What is the cash effect of this entry?
2. Calculate cash flow from operating activities.

P 13–2

Assume the following income statement and balance sheet information:

Service revenue (all cash)	$300
Operating expenses	
Supplies	200
Income before income taxes	100
Income taxes	20
Net income	$ 80

	2019	*2018*
	Dr. (Cr.)	*Dr. (Cr.)*
Cash	$135	$38
Accounts payable	(15)	(6)
Income taxes payable	(20)	(12)
Retained earnings	(100)	(20)

Required: Prepare the cash flow from operating activities section of the Statement of Cash Flows.

P 13–3

Assume the following income statement and balance sheet information:

Revenue	$ -0-
Depreciation expense	(100)
Net loss	$(100)

	2019	*2018*
	Dr. (Cr.)	Dr. (Cr.)
Cash	$350	$650
Machinery	500	200
Accumulated depreciation — machinery	(250)	(150)
Retained earnings	(600)	(700)

No machinery was disposed during the year. All machinery purchases were paid in cash.

Required:

1. Prepare a journal entry to record the depreciation expense for the year. Determine the cash effect.

2. Prepare a journal entry to account for the change in the Machinery balance sheet account. What is the cash effect of this entry?
3. Prepare a statement of cash flows for the year ended December 31, 2019.

P 13–4

The following transactions occurred in the Hubris Corporation during the year ended December 31, 2019.

a.	Net income	$800
b.	Depreciation expense	120
c.	Increase in wages payable	20
d.	Increase in accounts receivable	40
e.	Decrease in merchandise inventory	50
f.	Amortization of patents	5
g.	Payment of non-current borrowings	250
h.	Issuance of common shares for cash	500
i.	Payment of cash dividends	30

Other information: Cash at December 31, 2019 was $1,200.

Required:

1. Prepare a statement of cash flows.

P 13–5

During the year ended December 31, 2019, Wheaton Co. Ltd. reported $20,000 of net income, consisting of $95,000 of revenues, $70,000 of operating expenses, and $5,000 of income taxes expense. Following is a list of transactions that occurred during the year:

a. Depreciation expense, $3,000 (included with operating expenses)
b. Increase in wages payable, $500
c. Increase in accounts receivable, $900
d. Decrease in merchandise inventory, $1,200
e. Amortization of patent, $100
f. Non-current borrowings paid in cash, $5,000
g. Issuance of common shares for cash, $12,500
h. Equipment, cost $10,000, acquired by issuing common shares
i. At the end of the fiscal year, a $5,000 cash dividend was declared, payable one month later

j. Old machinery sold for $6,000 cash; it originally cost $15,000 (one-half depreciated). Loss reported on income statement as ordinary item and included in the $70,000 of operating expenses.
k. Decrease in accounts payable, $1,000.
l. Cash at January 1, 2019 was $1,000; change in cash during the year, $37,900.
m. There was no change in income taxes owing.

Required:
1. Prepare a statement of cash flows.
2. Explain what this statement tells you about Wheaton Co. Ltd.

P 13–6

The following trial balance has been prepared from the ledger of Obelisk Corporation at December 31, 2019, following its first year of operations.

	Debits	*Credits*
Cash	$ 45	
Accounts receivable	100	
Merchandise inventory, ending	60	
Prepaid rent	10	
Equipment	160	
Accumulated depreciation—equipment		$ 44
Land	-0-	
Accounts payable		50
Dividends payable		5
Income taxes payable		8
Borrowings—due 2021		80
Common shares		140
Retained earnings		-0-
Dividends declared	15	
Sales		225
Depreciation	44	
Cost of goods sold	92	
Selling and administrative expenses	39	
Income taxes expense	7	
Gain on sale of land		20
	$572	$572

Additional information:

a. Obelisk assumed $100 of long-term debt during the year.
b. Obelisk issued common shares for equipment, $40. Other equipment was purchased for $120 cash. No equipment was sold during the year.

c. Land costing $30 was purchased, then sold during the year for $50.
d. Some borrowings were repaid during the year for $20 cash.
e. The company declared dividends of $15 during the year.

Required:

1. Calculate retained earnings at December 31, 2019.
2. Prepare a statement of cash flows.
3. Explain what the statement of cash flows tells you about Obelisk Corporation at December 31, 2019.

P 13–7

The balance sheet information of Cormier Limited at December 31 appears below.

	2019	*2018*
Debits		
Cash	$ 40	$ 30
Accounts receivable	38	28
Merchandise inventory	102	106
Prepaid expenses	8	6
Land	-0-	20
Buildings	240	180
Machinery	134	80
Patents, at carrying amount	8	10
	$570	$460
Credits		
Accounts payable	$ 40	$ 44
Income taxes payable	8	6
Accumulated depreciation	76	80
Non-current borrowings	70	60
Common stock	310	240
Retained earnings	66	30
	$570	$460

The following additional information is available:

a. Net income for the year was $56,000; income taxes expense was $20,000.
b. Depreciation recorded on building and machinery was $14,000.

c. Amortization of patents amounted to $2,000.
d. Machinery costing $30,000 was purchased; one-third was paid in cash and a 5-year loan assumed for the balance.
e. Machinery costing $60,000 was purchased, and was paid for by issuing 6,000 common shares.
f. Machinery was sold for $16,000 that originally cost $36,000 (one-half depreciated); loss or gain reported in the income statement.
g. Addition to building was made for $60,000; paid cash.
h. Land costing $20,000 was sold for $24,000 cash during the year. The related gain was reported in the income statement.
i. Cash dividends of $20,000 were paid.
j. No shares were reacquired.

Required:

1. Prepare a statement of cash flows at December 31, 2019.
2. What observations about Cormier can you make from this statement?

CHAPTER FOURTEEN
Financial Statement Analysis

Financial statements can be used by stockholders, creditors, and other interested parties to analyze a corporation's liquidity, profitability, and financial structure compared to prior years and other similar corporations. As part of this analysis, financial evaluation tools are used. Some of these tools are discussed in this chapter.

Chapter 14 Learning Objectives

LO1 – Describe ratio analysis, and explain how liquidity, profitability, leverage, and market ratios are used to analyze and compare financial statements.

LO2 – Describe horizontal and vertical trend analysis, and explain how they are used to analyze financial statements.

A. Introduction to Ratio Analysis

LO1 - Describe ratio analysis, and explain how liquidity, profitability, leverage, and market ratios are used to analyze and compare financial statements.

A common way to evaluate financial statements is through **ratio analysis**. As noted in a previous chapter, a *ratio* is a relationship between two numbers of the same kind. For example, if there are two apples and three oranges, the ratio of the number of apples to the number of oranges is 2:3 (read as "two to three"). A **financial ratio** is a measure of the relative magnitude of two selected numerical values taken from a corporation's financial statements. For instance, the gross profit ratio expresses the numerical relationship between gross profit and sales. If a corporation has a gross profit ratio of 0.25:1, this means that for every $1 of sales, the corporation earns $0.25 on average to cover expenses other than cost of goods sold. Another way of stating this is to say that the gross profit ratio is 25%.[1]

Financial ratios are effective tools for measuring the financial performance of a corporation because they provide a common basis for evaluation—for instance, the amount of gross profit generated by each dollar of sales for different corporations. Numbers that appear on financial statements need to be evaluated in context. It is their relationship to other numbers and the relative changes of these numbers that provide some insight into the financial health of a business.

One of the main purposes of ratio analysis is to highlight areas that require further analysis and investigation. Ratio analysis alone will not provide a definitive financial evaluation. It is used as one analytic tool, which, when combined with informed judgment, offers insight into the financial performance of a business.

For example, one business may have a completely different product mix than another corporation even though both operate in the same broad industry. To determine how well one corporation is doing relative to others, or to identify whether key indicators are changing, ratios are often compared to **industry averages**. To determine trends in one corporation's performance, ratios are often compared to past years' ratios of the same corporation.

To perform a comprehensive analysis, qualitative information about the corporation as well as ratios should be considered. For example,

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[1] Any ratio in the form X:1 can be expressed as a percentage by multiplying both the numerator and denominator by 100. For example, a 0.25:1 ratio would equal 25% [(0.25 x 100)/(1 x 100) = 25/100 = 25%]

although a business may have sold hundreds of refrigerators last year and all of the key financial indicators suggest growth, qualitative information from trade publications and consumer reports may indicate that the trend will be towards the use of significantly different technologies in refrigerators in the next few years. If the corporation does not have the capacity or necessary equipment to produce these new appliances, the present positive financial indicators may not accurately reflect the likely future financial performance of the corporation.

An examination of qualitative factors provides valuable insights and contributes to the comprehensive analysis of a corporation. An important source of qualitative information is also found in the notes to the financial statements, which are an integral part of the corporation's financial statements, and in other information like trade publications, industry statistics, and other information that may be filed with regulatory authorities.

In this chapter, financial ratios will be used to provide insights into the financial performance of Big Dog Carworks Corp. (BDCC). The ratios will focus on financial information contained within the income statement, statement of changes in equity, and Balance Sheet of BDCC for the three years 2021, 2022, and 2023. This information is shown on the following pages. Note that figures in these statements are reported in thousands of dollars (000s).

Big Dog Carworks Corp.
Balance Sheet
At December 31
(In thousands of dollars)

Assets	*2023*	*2022*	*2021*
Current			
Cash	$ 20	$ 30	$ 50
Marketable investments	36	31	37
Accounts receivable	544	420	257
Inventories	833	503	361
	1,433	984	705
Non-current			
Property, plant, and equipment, net	1,053	1,128	712
Total assets	$2,486	$2,112	$1,417
Liabilities			
Current			
Borrowings	$ 825	$ 570	$ 100
Accounts payable	382	295	219
Income taxes payable	48	52	50
	1,255	917	369
Stockholders' Equity			
Common stock	1,063	1,063	963
Retained earnings	168	132	85
	1,231	1,195	1,048
Total liabilities and stockholders' equity	$2,486	$2,112	$1,417

Figure 14–1 BDCC Financial Statements

Big Dog Carworks Corp.
Income Statement
For the Year Ended December 31
(In thousands of dollars)

	2023	*2022*	*2021*
Sales (net)	$3,200	$2,800	$2,340
Cost of goods sold	2,500	2,150	1,800
Gross profit	700	650	540
Operating expenses			
Selling and marketing	212	183	154
Administration	188	193	182
	400	376	336
Income from operations	300	274	204
Finance costs			
Interest	89	61	-0-
Income before income taxes	211	213	204
Income taxes	95	96	92
Net income and comp. income	$ 116	$ 117	$ 112

Big Dog Carworks Corp.
Statement of Changes in Equity
For the Year Ended December 31
($000s)

	2023			*2022*	*2021*
	Comm. stock	*Retained earnings*	*Total equity*	*Total equity*	*Total equity*
Balance, Jan. 1	$1,063	$132	$1,195	$1,148	$ 143
Shares issued					953
Net income		116	116	117	112
Dividends declared		(80)	(80)	(70)	(60)
Balance, Dec. 31	$1,063	$168	$1,231	$1,195	$1,148

Figure 14–1 BDCC Financial Statements (continued)

Assume that 100,000 common shares are outstanding at the end of 2021, 2022, and 2023.

There are four major types of financial ratios: a) *liquidity ratios* that measure the ability of a corporation to satisfy demands for cash as they arise in the near-term (such as payment of current liabilities); b) *profitability ratios* that measure various levels of return on sales, total assets employed, and shareholder investment; c) *leverage ratios* that

measure the financial structure of a corporation, its amount of relative debt, and its ability to cover interest expense; and d) *market ratios* that measure financial returns to Stockholders, and perceptions of the stock market about the corporation's value.

B. Liquidity Ratios: Analyzing Short-term Cash Needs

Liquidity is the ability of a corporation to satisfy demands for cash as they arise in the near-term (such as payment of current liabilities). Initial insights into the financial performance of BDCC can be derived from an analysis of relative amounts of current and non-current borrowings. This analysis is addressed in this section.

Current (Short-term) versus Non-current (Long-term) Debt

Short-term and long-term financing strategies both have their advantages. The advantage of some current debt (repayable within one year of the Balance Sheet date) is that it often does not require interest payments to creditors. For example, accounts payable may not require payment of interest if they are satisfied within the first 30 days they are outstanding. As well, certain debt like trade accounts payable may be unsecured. Current debt also has its disadvantages; payment is required within at least one year, and often sooner. Interest rates on current debt are often higher than on non-current debt. An increase in the proportion of current debt is more risky because it must be renewed and therefore renegotiated more frequently.

The advantages of non-current debt are that payment may be made over an extended period of time. Risk may be somewhat reduced through the use of a formal contractual agreement that is often lacking with current debt. The disadvantages of non-current debt are that interest payments must be made at specified times and the amounts owing may be secured by assets of the corporation.

Analyzing Financial Structure

As a general rule, non-current financing should be used to finance non-current assets.

Note that in BDCC's case, property, plant, and equipment assets amount to $1,053,000 at December 31, 2023 yet the firm has no non-current liabilities. This is unusual.

An analysis of the corporation's Balance Sheet reveals the following:

In thousands of dollars	*2023*	*2022*	*2021*
Current liabilities	$1,255	$917	$369
Non-current liabilities	-0-	-0-	-0-

2023 information indicates that BDCC's management relies solely on short-term creditor financing, part of which is $382,000 of accounts payable that may bear no interest and $825,000 of borrowings that also need to be repaid within one year. The risk is that management will likely need to replace current liabilities with new liabilities. If creditors become unwilling to do this, the ability of BDCC to pay its short-term creditors may be compromised. As a result, the corporation may experience a **liquidity crisis** —the inability to pay its current liabilities as they come due.

Even though a corporation may be earning net income each year (as in BDCC's case), it may still be unable to pay its current liabilities as needed because of a shortage of cash. There can be many negative consequences:

Current liabilities

- Creditors can refuse to provide any further goods or services on account.
- Creditors can sue for payment.
- Creditors can put the corporation into receivership or bankruptcy.

Non-current liabilities

- Non-current creditors can refuse to lend additional cash.
- Creditors can demand repayment of their non-current debts, under some circumstances.

Stockholders' equity

- Stockholders may be unwilling to invest in additional common stock of the corporation.
- Stockholders risk the loss of their investments if the corporation declares bankruptcy.

There are several ratios that can be used to analyze the liquidity of a corporation.

Working Capital

Working capital is the difference between a corporation's current assets and current liabilities at a point in time. BDCC's working capital calculation is as follows:

In thousands of dollars	*2023*	*2022*	*2021*
Current assets			
Cash	$ 20	$ 30	$ 50
Marketable investments	36	31	37
Accounts receivable	544	420	257
Inventories	833	503	361
Total current assets (a)	1,433	984	705
Current liabilities			
Borrowings	825	570	100
Accounts payable	382	295	219
Income taxes payable	48	52	50
Total current liabilities (b)	1,255	917	369
Working capital (a-b)	$ 178	$ 67	$336

In the schedule above, working capital amounts to $178,000 at December 31, 2023. Between 2021 and 2023, working capital decreased by $158,000 ($336,000 – 178,000). BDCC is less liquid in 2023 than in 2021, though its liquidity position has improved since 2022 when it was only $67,000.

In addition to calculating an absolute amount of working capital, ratio analysis can also be used. The advantage of a ratio is that it is usually easier to interpret.

Current Ratio

Is BDCC able to repay short-term creditors? The **current ratio** can help answer this question. It expresses working capital as a proportion of current assets to current liabilities and is calculated as:

$$\frac{\text{Current assets}}{\text{Current liabilities}}$$

The relevant BDCC financial data required to calculate this ratio is taken from the Balance Sheet, as follows:

In thousands of dollars		*2023*	*2022*	*2021*
Current assets	(a)	$1,433	$ 984	$ 705
Current liabilities	(b)	1,255	917	369
Current ratio	(a/b)	1.14:1	1.07:1	1.91:1

This ratio indicates how many current asset dollars are available to pay current liabilities at a point in time. The expression "1.14:1" is read, "1.14 to 1." In this case it means that at December 31, 2023, $1.14 of current assets exist to pay each $1 of current liabilities. This ratio is difficult to interpret in isolation. There are two types of additional information that could help. First, what is the trend within BDCC over the last three years? The ratio declined between 2021 and 2022 (from 1.91 to 1.07), then recovered slightly between the end of 2022 and 2023 (from 1.07 to 1.14). The overall decline may be a cause for concern, as it indicates that in 2023 BDCC had fewer current assets to satisfy current liabilities as they became due.

A second interpretation aid would be to compare BDCC's current ratio to a similar corporation or that of BDCC's industry as a whole. Information is available from various trade publications and business analysts' websites that assemble financial ratio information for a wide range of industries.

Some analysts consider that a corporation should maintain a 2:1 current ratio, depending on the industry in which the firm operates. The reasoning is that, if there were $2 of current assets to pay each $1 of current liabilities, the corporation should still be able to pay its current liabilities as they become due, even in the event of a business downturn. However, no one current ratio is applicable to all entities; other factors—such as the composition of current assets—must also be considered to arrive at an acceptable ratio. This is illustrated below.

Composition of Specific Items in Current Assets

In the following example, both Corporation A and Corporation B have a 2:1 current ratio. Are the corporations equally able to repay their short-term creditors?

		Corp. A	*Corp. B*
Current assets			
Cash		$ 1,000	$10,000
Accounts receivable		2,000	20,000
Inventories		37,000	10,000
Total current assets	(a)	$40,000	$40,000
Current liabilities	(b)	$20,000	$20,000
Current ratio	(a/b)	2:1	2:1

The corporations have the same dollar amounts of current assets and current liabilities. However, they have different current debt-paying abilities because Corporation B has more liquid current assets than does Corporation A. Corporation B has less inventory ($10,000 vs. $37,000) and more in cash and accounts receivable. If Corporation A needed more cash to pay short-term creditors quickly, it would have to sell inventory, likely at a lower-than-normal gross profit. So, Corporation B is in a better position to repay short-term creditors.

Since the current ratio doesn't consider the components of current assets, it is only a rough indicator of a corporation's ability to pay its debts as they become due. This weakness of the current ratio is partly remedied by the ratio discussed below.

Acid-Test Ratio

A more rigid test of liquidity is provided by the **acid-test ratio**; also called the **quick ratio**. To calculate this ratio, current assets are separated into *quick* current assets and *non-quick* current assets.

Quick Current Assets

Cash Marketable investments Receivables	These current assets are considered to be readily convertible into cash.

Non-quick current assets

Inventories Prepaid expenses	Cash cannot be obtained either at all or easily from these current assets.

Inventory and prepaid expenses cannot be converted into cash in a short period of time, if at all. Therefore, they are excluded in the calculation of this ratio. The acid-test ratio is calculated as:

$$\frac{\text{Quick current assets}}{\text{Current liabilities}}$$

The BDCC information required to calculate this ratio is:

In thousands of dollars		*2023*	*2022*	*2021*
Cash		$ 20	$ 30	$ 50
Marketable investments		36	31	37
Accounts receivable		544	420	257
Quick current assets	(a)	$ 600	$481	$344
Current liabilities	(b)	$1,255	$917	$369
Acid-test ratio	(a/b)	0.48:1	0.52:1	0.93:1

This ratio indicates how many quick asset dollars exist to pay each dollar of current liabilities. What is an adequate acid-test ratio? It is generally considered that a 1:1 acid test ratio is adequate to ensure that a firm will be able to pay its current obligations. However, this is a fairly arbitrary guideline and is not appropriate in all situations. A ratio lower than 1:1 can often be found in successful corporations.

In BDCC's case, the 2021 ratio of $0.93 is less than 1:1 but may be reasonable. In 2022, the acid-test ratio of $0.52 seems low. There was only $0.48 of quick assets available to pay each $1 of current liabilities in 2023. This amount also appears inadequate. Of particular concern to financial analysts would be BDCC's declining acid-test ratio trend over the three years.

Additional analysis can also be performed to determine the source of liquidity issues by comparing items on the Balance Sheet with those on the income statement. These are discussed next.

Accounts Receivable Collection Period

Liquidity is affected by management decisions related to trade accounts receivable. Slow collection of receivables can result in a shortage of cash to pay current obligations. The effectiveness of management decisions relating to receivables can be analyzed by calculating the **accounts receivable collection period**. This indicates **t**he average number of days needed to collect an amount due to the corporation. It indicates the efficiency of collection procedures when the collection period is compared with the firm's sales terms (in BDCC's

case, assume the sales terms are *net 30* meaning that amounts are due within 30 days of the invoice date).

The accounts receivable collection period is calculated as:

$$\frac{\text{Average accounts receivable}^{2}}{\text{Net credit sales}} \times 365 \text{ days}$$

The BDCC financial information required to make the calculation is shown below (the 2021 calculation cannot be made because the 2020 accounts receivable amount is not available). Assume all of BDCC's sales are on credit.

In thousands of dollars		*2023*	*2022*
Net credit sales	(a)	$3,200	$2,800
Average accounts receivable [(Opening balance + closing balance)/2]	(b)	$ 482[1]	$ 338[2]
Average collection period [(b/a) x 365 days]		55 days	44 days[3]

[1] ($420 + 544)/2 = $482
[2] ($257 + 420)/2 = $338 (rounded)
[3] Note that the 2021 ratio is excluded. Average balances cannot be calculated since 2020 ending balances are not provided.

When BDCC's 30-day sales terms are compared to the 55-day collection period, it can be seen that an average 25 days of sales (55 days – 30 days) have gone uncollected beyond the regular credit period in 2023. The collection period in 2023 is increasing compared to 2022. Therefore, some over-extension of credit and possibly ineffective collection procedures are indicated by this ratio. Quicker collection would improve BDCC's cash position. It may indicate that older amounts are buried in the total amount of receivables, and should be investigated.

Whether the increase in collection period is good or bad depends on several factors. For instance, more liberal credit terms may generate more sales (and therefore profits) if bad debt expense does not

[2] Average balance sheet amounts are used when income statement amounts are compared to balance sheet amounts in a ratio. This is because the income statement item is assumed to be earned or expended equally over a fiscal year. On the other hand, balance sheet amounts are reported as at the end of each fiscal year. Averaging opening and ending amounts shown on the balance sheet is an attempt to approximate the amount at the midpoint in the fiscal year, to better match SPL amounts with balance sheet amounts.

increase proportionately. The root causes of the change in the ratio need to be investigated.

In BDCC's case, however, the ratio seems to indicate that effectiveness of credit and collection procedures between 2022 and 2023 has declined. This may be problematic.

Number of Days of Sales in Inventory

The effectiveness of management decisions relating to inventory can be analyzed by calculating the **number of days of sales in inventory**. The ratio is calculated as follows:

$$\frac{\text{Average merchandise}}{\text{Cost of goods sold}} \times 365 \text{ days}$$

This measure indicates relative inventory levels compared to cost of goods sold. The BDCC financial data for 2022 and 2023 required to calculate this ratio are shown below.

In thousands of dollars		*2023*	*2022*
Cost of goods sold		$2,500	$2,150
Average inventory [(opening balance + closing balance)/2]	(a)	$ 668 [1]	$432 [2]
Cost of goods sold	(b)	365	365
Number of days sales in inventory [(b/a) x 365 days]		98 days	73 days

[1] ($503 + 833)/2 = $668
[2] ($361 + 503)/2 = $432

The calculation indicates that BDCC is investing more in inventory in 2023 than in 2022. There are 98 days of sales in inventory in 2023 versus 73 days in 2022. The cause of this increase warrants further investigation.

A declining number of days of sales in inventory is usually a sign of good inventory management. It indicates that the average amount of assets tied up in inventory is declining. With lower inventory levels, inventory-related expenses such as rent and insurance are lower because less storage space is often required. However, lower inventory levels can have negative consequences since items that customers want to purchase may not be in inventory, resulting in lost sales.

Having said this, increasing days of sales in inventory is usually a sign of poor inventory management because an excessive investment in

inventory ties up cash that could be used for other purposes. Increasing levels may indicate that inventory is becoming obsolete (consider an electronics company) or deteriorating (consider a corporation that sells perishable groceries). Obsolete or deteriorating inventories may be unsalable. However, the possible positive aspect of more days of sales in inventory is that there can be more sales generated if more items are in stock.

Whether BDCC's increasing days of sales in inventory is positive or negative depends on management's objectives. Is management increasing inventory to provide for increased sales in the next year, or is inventory being poorly managed? Remember that ratio analyzes identify areas that require investigation. This improves investors' overall knowledge of the corporation.

The Revenue Portion of the Operating Cycle

The sale of inventory and resulting collection of receivables are part of a business's operating cycle, as shown in Figure 14–2.

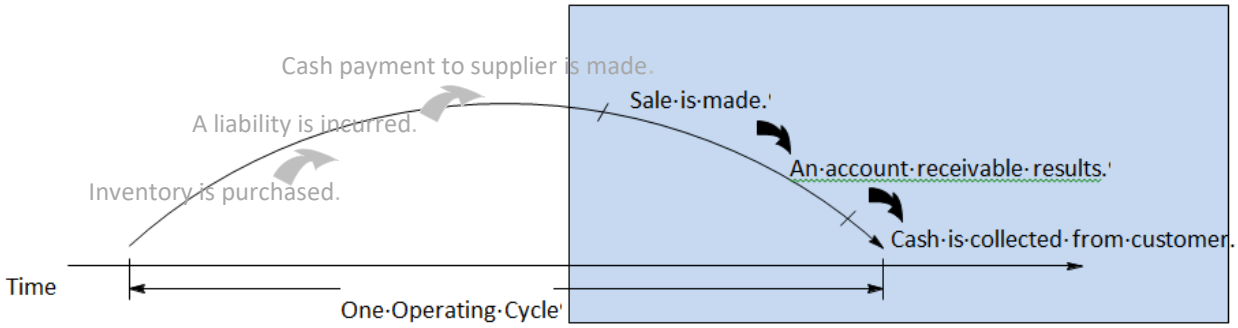

Figure 14–2 The Sales and Collection Portion of the Operating Cycle

A business's **revenue operating cycle** is a subset of the operating cycle and includes the purchase of inventory, the sale of inventory and creation of an account receivable, and the generation of cash when the receivable is collected. The length of time it takes BDCC to complete one revenue operating cycle is an important measure of liquidity and can be calculated by adding the number of days of sales in inventory plus the number of days it takes to collect receivables.

The BDCC financial data required for this calculation follows.

	2023	*2022*
Average number of days of sales in inventory	98 days	73 days
Average number of days to collect receivables	55 days	44 days
Number of days to complete the revenue cycle	153 days	117 days

In 2023, 153 days were required to complete the revenue cycle, compared to 117 days in 2022. So, if accounts payable terms require payment within 60 days, BDCC may find it more difficult to pay trade creditors, and the number of days to complete the revenue cycle for both 2022 (117 days) and 2023 (153 days) are significantly greater than 60 days.

Analysis of BDCC's Liquidity

Reflecting on the results of all the liquidity ratios, it appears that Big Dog Carworks Corp. is growing less liquid. Current assets, especially quick assets, are declining relative to current liabilities. The revenue operating cycle is increasing.

C. Profitability Ratios: Analyzing Operating Activities

Profitability ratios compare various expenses to revenues, and measure how well the assets of a corporation have been used to generate revenue.

Gross Profit Ratio

The **gross profit ratio** indicates the percentage of sales revenue that is left to pay operating expenses, interest on borrowings, and income taxes after deducting cost of goods sold. The ratio is calculated as:

$$\frac{\text{Gross profit}}{\text{Net sales}}$$

BDCC's gross profit ratios for the three years are:

In thousands of dollars		*2023*	*2022*	*2021*
Gross profit	(a)	$ 700	$ 650	$ 540
Net sales	(b)	$3,200	$2,800	$2,340
Gross profit ratio	(a/b)	0.22:1	0.23:1	0.23:1

In other words, for each dollar of sales BDCC has $0.22 of gross profit left to cover operating, interest, and income tax expenses compared to

$0.23 in each of 2022 and 2021. The ratio has not changed significantly from year to year. However, even a small decline in this percentage can affect net income significantly because the gross profit is such a large component of the income statement. Changes in the gross profit ratio should be investigated, as it may impact future financial performance.

Operating Profit Ratio

The **operating profit ratio** is a means to assess relative levels of operating expenses. This ratio indicates the percentage of sales revenue left after deducting cost of goods sold and operating expenses to cover interest and income taxes expenses. In other words, it is calculated as:

$$\frac{\text{Income from operations}}{\text{Net sales}}$$

BDCC's operating profit ratio for the 2021, 2022, and 2023 fiscal years is calculated as follows:

In thousands of dollars		*2023*	*2022*	*2021*
Income from operations	(a)	$ 300	$ 274	$ 204
Net sales	(b)	$3,200	$2,800	$2,340
Operating profit ratio	(a/b)	0.09:1	0.10:1	0.09:1

The results indicate that for each dollar of sales revenue in 2023, the corporation had $0.09 left to cover interest and income tax expenses after deducting cost of goods sold and operating expenses. A review of the corporation's operating expenses (selling, general, and administrative expenses; employee benefits, and depreciation) show that they have all increased. As a result, and despite increasing sales revenue and gross profit, operating income has remained relatively flat. Although it seems reasonable that an increase in operating expenses would follow an increase in sales, the reasons for the operating expense increases should be investigated. Analysis of trends by nature of expense (rather than by function of expense as in this case) could be performed based on additional information that should be disclosed in the notes to the financial statements.

Net Profit Ratio

The **net profit ratio** is the percentage of sales revenue retained by the corporation after payment of operating expenses, interest expenses, and income taxes. It is often used to compare the corporation to

others in the same industry. This ratio is calculated by the following formula:

$$\frac{\text{Net income}}{\text{Net sales}}$$

BDCC's net profit ratios for the three years are calculated as follows:

In thousands of dollars		*2023*	*2022*	*2021*
Net income	(a)	$ 116	$ 117	$ 112
Net sales	(b)	$3,200	$2,800	$2,340
Net profit ratio	(a/b)	0.04:1	0.04:1	0.05:1

The results indicate that for each $1 of sales in 2023, BDCC earned $0.04 of net income. The net profit ratio has been relatively stable over the past three years, but needs to be compared with industry or competitors' averages for a better perspective.

Recall that revenues are generated from a business's assets. The financial strength and success of a corporation depends on the efficient use of these assets. Indicators of how effectively assets are used are discussed next.

Sales to Total Assets Ratio

Are BDCC's sales adequate in relation to its assets? The calculation of the **sales to total assets ratio** helps to answer this question by establishing the number of sales dollars earned for each dollar invested in assets. The ratio is calculated as:

$$\frac{\text{Net sales}}{\text{Average total assets}}$$

BDCC's ratios are calculated as follows:

In thousands of dollars		*2023*	*2022*
Net sales	(a)	$3,200	$ 2,800
Average total assets	(b)	$2,299[1]	$1,765.5[2]
Sales to total assets ratio	(a/b)	1.39:1	1.59:1

[1] ($2,112 + 2,486)/2 = $2,299
[2] ($1,417 + 2,112)/2 = $1,764.5

The ratio has decreased from 2022 to 2023. Each $1 of investment in assets in 2022 generated sales of $1.59 on average. In 2023, each $1 of investment in assets generated only $1.39 in sales. Over the same

period, BDCC's investment in assets increased. The results indicate that the additional assets are not producing revenue as effectively as in the past. It may be too soon to tell whether the increase in assets in 2022 will eventually create greater sales, but more investigation should be considered.

As noted earlier, comparison with industry averages would be useful. A low ratio in relation to other corporations in the same industry may indicate an over-investment in or inefficient use of assets by BDCC. On the other hand, a higher ratio in comparison to other corporations would be a positive indicator despite BDCC's declining trend.

Return on Total Assets Ratio (ROA)

The **return on total assets ratio (ROA)** is designed to measure the efficiency with which all of a corporation's assets are used to produce income from operations. The ratio is calculated as:

$$\frac{\text{Income from operations}}{\text{Average total assets}}$$

Note that expenses need to finance the corporation operations are excluded from the calculation, specifically interest and income taxes. This is because all the assets of the corporation are considered in the ratio's denominator, whether financed by investors or creditors. Average total assets are used in the calculation because the amount of assets used likely varies during the year. Again, the use of averages tends to smooth out such fluctuations.

BDCC's returns on total assets for 2022 and 2023 are calculated as follows:

In thousands of dollars		*2023*	*2022*
Income from operations	(a)	$ 300	$ 274
Average total assets	(b)	$2,299[1]	$1,765.5[2]
Return on total assets ratio	(a/b)	0.13:1	0.16:1

[1] ($2,112 + 2,486)/2 = $2,299
[2] ($1,417 + 2,112)/2 = $1,764.5

The ratios indicate that BDCC earned $0.13 of income from operations for every $1 of average total assets in 2023, a decrease from $0.16 per $1 in 2022. This downward trend indicates that assets are being used less efficiently. However, it may be that the increased investment in assets during 2023 noted above has not yet begun to pay off. On the other hand, although sales are increasing, it is possible that future sales

volume will not be sufficient to justify the increase in assets. More information about the corporation's plans and projections would be useful.

Return on Stockholders' Equity Ratio (ROSE)

The **return on Stockholders' equity ratio** (**ROSE)** measures how much net income was earned compared to the amount Stockholders have invested. Net income is the earnings of the corporation to which Stockholders are entitled, so it is fitting to use this as the numerator. The ratio is calculated as:

$$\frac{\text{Net income}}{\text{Average Stockholders' equity}}$$

The 2022 and 2023 returns on Stockholders' equity ratios for BDCC are calculated as follows (note that the 2021 ratio is excluded; average Stockholders' equity cannot be calculated since 2020 ending balances are not provided):

In thousands of dollars		*2023*	*2022*
Net income	(a)	$ 116	$ 117
Average Stockholders' equity	(b)	$1,213[1]	$1,121.5[2]
Return on Stockholders' equity ratio	(a/b)	0.10:1	0.10:1

[1] ($1,195 + 1,231)/2 = $1,213
[2] ($1,048 + 1,195)/2 = $1,121.5

In both years, Stockholders earned on average $0.10 for every $1 invested in BDCC, or 10%. Industry averages could aid analysis. But if the industry as a whole earned only a 5% return on Stockholders' equity in 2023, BDCC performed better than average in terms of this measure.

D. Leverage Ratios: Analyzing Financial Structure

The accounting equation expresses a relationship between assets owned by an entity and the claims against those assets. Although Stockholders own a corporation, they alone do not finance the corporation; creditors also finance some of its activities. Together, creditor and shareholder capital form the **financial structure** of a corporation.

At December 31, 2023, the Balance Sheet of BDCC shows the following financial structure:

ASSETS	=	LIABILITIES	+	STOCKHOLDERS' EQUITY
$2,486	=	$1,255	+	$1,231

There are several ratios that can be used to analyze financial structure.

Debt to Stockholders' Equity Ratio

The proportion of creditor to Stockholders' claims is called the **debt to Stockholders' equity ratio**, and is calculated by dividing total liabilities by Stockholders' equity. In BDCC's case, these amounts are:

In thousands of dollars		*2023*	*2022*	*2021*
Total liabilities	(a)	$1,255	$ 917	$ 369
Stockholders' equity	(b)	$1,231	$1,195	$1,048
Debt to s/h equity ratio	(a/b)	1.02:1	0.77:1	0.35:1

In other words, BDCC has $1.02 of liabilities for each dollar of Stockholders' equity at the end of 2023, its current fiscal year. The proportion of debt financing has been increasing since 2021. In 2021 there was only $0.35 of debt for each $1 of Stockholders' equity. In 2023, creditors are financing $1.02 for each $1 of shareholder financing. This may be a cause for concern.

On the one hand, management's increasing reliance on creditor financing is good. Issuing additional shares might require existing Stockholders to give up some of their control of BDCC. Creditor financing may also be more financially attractive to existing Stockholders if it enables BDCC to earn more with the borrowed funds than the interest paid on the debt.

On the other hand, management's increasing reliance on creditor financing increases risk because interest and principal have to be paid on this debt. Before deciding to extend credit, creditors often look at the total debt load of a corporation, and therefore the corporation's ability to meet interest and principal payments in the future. An increasing debt to Stockholders' equity ratio could impede borrowing capacity in the future. As well, total earnings of BDCC could be reduced if interest rates rise.

Although there is no single appropriate debt to Stockholders' equity ratio, there are techniques for estimating the optimum balance. These are beyond the scope of introductory financial accounting. For now, it

is sufficient to note that for BDCC the debt to Stockholders' equity ratio has increased considerably over the three-year period. A continuing trend into the future would be generally viewed unfavourably because of the risk to sustainability associated with increased debt financing.

Times Interest Earned Ratio

Creditors are also interested in evaluating a corporation's financial performance in order to project whether the firm will be able to pay interest on borrowed funds and repay debt when it comes due. Creditors are therefore interested in measures such as the **times interest earned ratio**. This ratio indicates the amount by which income from operations could decline before a default on interest may result. The ratio is calculated by the following formula:

$$\frac{\text{Income from operations}}{\text{Interest expense}}$$

Note that income from operations is used again. BDCC's 2022 and 2023 ratios are calculated as follows:

In thousands of dollars		*2023*	*2022*	*2021*
Income from operations	(a)	$300	$274	$204
Interest expense	(b)	$ 89	$ 61	-0-
Times interest earned ratio	(a/b)	3.4:1	4.5:1	n/a

The larger the ratio, the better creditors are protected. BDCC's interest coverage has decreased from 2022 to 2023 (3.37 times vs. 4.49 times), but income from operations would still have to decrease significantly for the corporation to be unable to pay its obligations to creditors. The analysis does indicate, though, that over the past two years interest expense has increased compared to income from operations. Both creditors and investors need to assess corporation plans and projections, particularly those affecting income from operations, to determine whether loans to the corporation are at risk or is the corporation is becoming too reliant on debt financing. As discussed above, it may be that significant investments in assets have not yet generated related increases in sales and income from operations.

E. Market Ratios: Analysis of Financial Returns to Investors

The stock market plays an important role in allocating financial resources among corporations that offer their shares to the public. Investors frequently consider whether to invest or divest in shares of a corporation. There are various ratios that combine market data with an individual corporation's financial statement information to help investors make these decisions. These are called **market ratios**.

Earnings per Share (EPS)

Measures of efficiency can focus on shareholder returns on a per-share basis. That is, the amount of net income earned in a year can be divided by the number of common shares outstanding to establish how much return has been earned for each outstanding share. As noted in a previous chapter, basic and diluted EPS ratios are required disclosures under IFRS for publicly-traded corporations. Basic earnings per share value is calculated as:

$$\frac{\text{Net income – preferred share dividends}}{\text{Weighted-average number of common shares outstanding}}$$

BDCC has no preferred shares and thus no preferred share dividends. Recall that 100,000 common shares are outstanding at the end of 2021, 2022, and 2023. Assume as well that there are no potentially dilutive instruments like unexercised employee stock options.

For BDCC, basic and diluted EPS calculations for the three years are:

In thousands of dollars		*2023*	*2022*	*2021*
Net income	(a)	$116	$117	$112
Number of wtd. avg. common shares outstanding	(b)	100	100	100
Earnings per share	(a/b)	$1.16	$1.17	$1.12

BDCC's EPS has remained relatively constant over the three-year period because both net income and number of outstanding shares have remained fairly stable. Increasing sales levels and the resulting positive effects on net income, combined with unchanged common shares issued, has generally accounted for the slight increase from 2021 to 2022.

Price-earnings (P/E) Ratio

The price at which a common share trades on a stock market is an important measure of a corporation's financial performance. The market price of one share reflects the aggregate of investors' opinions about a corporation's future value compared to alternative investments.

The earnings performance of common shares is often expressed as a **price-earnings (P/E) ratio**. It is calculated as:

$$\frac{\text{Market price per share}}{\text{Earnings per share}}$$

This ratio is used as an indicator of the market's expectation of a corporation's future performance. Assume Corporation A has a current market value of $15 per share and an EPS of $1 per share. It will have a P/E ratio of 15. If Corporation B has a market value of $4 per share and an EPS of $0.50 per share, it will have a P/E ratio of 8. This means that the stock market expects Corporation A to earn relatively more in the future than Corporation B. For every $1 of net income currently generated by Corporation A, investors are willing to invest $15. In comparison, for every $1 of net income generated by Corporation B, investors are willing to pay only $8. Investors therefore perceive shares of Corporation A as more valuable.

Assume that BDCC's average market price per common share was $4 in 2021, $5 in 2022, and $6 in 2023. Its P/E ratio would be calculated as:

In thousands of dollars		*2023*	*2022*	*2021*
Market price per common share	(a)	$6.00	$5.00	$4.00
Earnings per share ratio (see above)	(b)	$1.16	$1.17	$1.12
Price-earnings ratio	(a/b)	5.17	4.27	3.57

BDCC's P/E ratio has increased each year. Although it would be important to compare industry and competitor's P/E ratios, BDCC's increasingly positive ratio indicates of itself that investors are "bullish" on BDCC. That is, the stock market expects BDCC to be increasingly profitable in the coming years compared to similar investment opportunities. Despite a relatively constant EPS ratio from 2021 to 2023, investors are willing to pay more and more for the corporation's common shares. This usually indicates that future financial performance is anticipated to be better than in the past three years.

Dividend Yield

Some investors' primary objective is to maximize dividend revenue from share investments, rather than realize an increasing market price of the shares. This type of investor is interested in information about the earnings available for distribution to Stockholders and the actual amount of cash paid out as dividends rather than the market price of the shares.

The **dividend yield ratio** is a means to determine this. This is calculated as:

$$\frac{\text{Dividends per share}}{\text{Market price per share}}$$

This ratio indicates how large a return in the form of cash from an investment in a corporation's shares has been realized. The relevant information for BDCC over the last three years is shown in the financial statements, as follows:

In thousands of dollars		*2023*	*2022*	*2021*
Dividends declared	(a)	$ 80	$ 70	$ 60
Outstanding common shares	(b)	100	100	100
Dividends (dollars per share)	(a/b)	$0.80	$0.70	$0.60

The dividend yield ratio is therefore:

		2023	*2022*	*2021*
Dividends per share (see above)	(a)	$0.80	$0.70	$0.60
Market price per share (given)	(b)	$6.00	$5.00	$4.00
Dividend yield ratio	(a/b)	0.13:1	0.14:1	0.15:1

The corporation's dividend yield ratio decreased from 2021 to 2023. In 2021, investors received $0.15 for every $1 invested in shares. By 2023, this had decreased to $0.13 for every $1 invested. Though the decline is slight, the trend may concern investors who seek steady cash returns. Also notice that total dividends declared increased from 2021 to 2023 even though net income did not substantially increase, and despite the corporation's poor liquidity position noted earlier. Investors might ask why such high levels of dividends are being paid given this situation.

F. Overall Analysis of BDCC's Financial Statements

Results of ratio analysis are always more useful if accompanied by other information such as overall industry performance, prospects for the general economy, financial ratios of prior years, and qualitative factors such as analysts' opinions and management's plans. A good understanding of the business and specific risks is important to comprehensive financial analysis. Also, specialized industries may use financial ratios that focus on different factors deemed critical to success. Corporations within the same industry may also have differing types of assets, capital structures, costs, revenue sources, and business models.

However, there are some interpretations that can be made about BDCC from the foregoing ratio analyses even in the absence of other information. These results can spur additional, important enquiry.

Although BDCC is experiencing growth in sales, net income has not substantially increased over the three-year period 2021 to 2023. The gross profit ratio is relatively constant. The corporation's increasing operating expenses appear to be an issue, though. The sales to total assets and return on assets ratios have decreased due to a recent investment in property, plant and equipment, and growth in current assets. Yet income from operations has not increased in proportion to this growth in the asset base. It may be premature to make conclusions about management's wisdom of investing in property, plant, and equipment, but more investigation may be warranted, such as management's operational plans.

The most immediate problem facing BDCC is the shortage of working capital and its poor liquidity position. BDCC increased accounts receivable and inventories, but did not experience a proportionate growth in revenue. The corporation should therefore review its credit policies and monitor its investment in inventory to ensure that these current assets only expand in proportion to sales.

Further, the corporation's ability to meet its debt obligations appears to be deteriorating. The ability of income from operations to cover interest expense has declined. The increase in accounts receivable, inventories, and PPE has produced an increase in current liabilities (mainly borrowings). BDCC should investigate alternatives to current borrowings to finance PPE by converting some of this to non-current debt or issuing additional Common stock to refinance some of its current debt obligations.

Despite these challenges, the stock market indicates that it expects BDCC to be increasingly profitable in the future. Perhaps it views the negative indicators noted above as only temporary or easily rectified by management.

The next section provides further insights into BDCC's operations through trend analysis of the corporation's financial statements.

G. Horizontal and Vertical Trend Analysis

LO2 - Describe horizontal and vertical trend analysis, and explain how they are used to analyze financial statements.

Trend analysis is the evaluation of corporation's financial performance based on a restatement of financial statement dollar amounts as percentages. Horizontal analysis and vertical analysis are two types of trend analyses.

Horizontal analysis involves the calculation of percentage changes from one or more years over the base year dollar amount. The base year is typically the older year and is always stated as 100%.

Vertical analysis requires numbers in a financial statement to be restated as percentages of a base dollar amount. For income statement analysis, the base amount used is sales. For Balance Sheet analysis, total assets (or equivalently, total liabilities and Stockholders' equity) are used as the base amounts. When financial statements are converted to percentages, they are called **common-size financial statements**.

Horizontal and vertical analyses of the statements of financial position of Big Dog Carworks Corp. are as follows:

Horizontal Analysis: Balance Sheet

			Change	
	2023	*2022*	*Difference*	*%*
Current assets	$1,433(a)	$ 984(b)	+$449 (a-b)	+45.6[(a-b)/b]
Non-current assets	1,053	1,128	-75	-6.6
Total	$2,486	$2,112(c)	+$374	+17.7
Current liabilities	$1,255	$917	+$338	+36.9
S/H equity	1,231	1,195	+36	+3.0
Total	$2,486	$2,112	+$374	+17.7

Notice the two columns introduced here. Analysis of the last ("%") column indicates a large increase in current assets (45.6%) together with a large increase in current liabilities (36.9%). There was a small decline in PPE assets (6.6%) and a small increase in Stockholders' equity (3%). The percentage change should be interpreted together with the absolute dollar amount of change ("Difference" column) to avoid incorrect conclusions; percentages can sometimes be misleading.

Vertical Analysis (Common-size): Balance Sheet

	% 2023	% 2022	
Current assets	57.6 [1]	46.6	(b/c)
Non-current assets	42.4	53.4	
Total	**100.0**	**100.0**	
Current liabilities	50.5	43.4[2]	
S/H equity	49.5	56.6	
Total	**100.0**	**100.0**	

[1] 1,433/2,486 = 57.6%
[2] 917/2,112 = 43.4%

The common-size balance sheet reveals that the composition of the assets has shifted more to current assets in 2023 (46.6% to 57.6%). Also, the percentage of current liabilities has increased (43.4% to 50.5%), resulting in an overall shift from stockholders' equity financing to debt financing between 2022 and 2023.

Horizontal Analysis: Statements of Profit and Loss

			Change		
	2023	*2022*	*Amount*	*Per Cent*	
Sales	$3,200(a)	$2,800(b)	+$400 (a-b)	+14	([(a-b)/b]
COGS	2,500	2,150	+350	+16	
Gross profit	700	650	+$ 50	+8	
Expenses	584	533	+$ 51	+10	
Net income	$ 116	$ 117	-$ 1	-1	

Although sales and gross profit increased in dollar amounts, net income decreased slightly from 2022 to 2023 (1%). This net decrease resulted because cost of goods sold increased at a faster rate than sales (16% vs. 14%).

Vertical Analysis (Common-Size): Statements of Profit and Loss

	% 2023	% 2022
Sales	**100**	**100**
Cost of goods sold	78[1]	77
Gross profit	22	23
Expenses	18	19[2]
Net income	4	4

[1] 2,500/3,200 = 78%

[2] (1,831 + 193 +61 + 196)/2,800 = 19%

Notice the relative change in the components. For example, cost of goods sold increased in 2023 relative to sales (77% to 78%), while expenses in 2023 relative to sales decreased (19% to 18%). The overall changes were almost offsetting, as net income remained fairly stable.

The calculated percentages become more informative when compared to earlier years. Further analysis is usually undertaken in order to establish answers to the following questions:

Horizontal Analysis:
What caused this change?
Is the change favorable or unfavorable?

Vertical Analysis:
How do the percentages of this corporation compare with other corporations in the same industry? In other industries?

These and similar questions call attention to areas that require further study. One item becomes more apparent as a result of trend analysis. Initially, it was stated that operating expenses were increasing between 2021 and 2023. Based on trend analysis, however, these expenses are actually declining as a percentage of sales. As a result, their fluctuations may not be as significant as first inferred.

H. Summary of Financial Ratios

The ratios covered in this chapter are summarized in Figure 14–3.

Analysis of liquidity:	Calculation of ratio:	Indicates:
1. Working capital	Current assets – current liabilities	The excess of current assets available after covering current liabilities (expressed as a dollar amount).
2. Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	The amount of current assets available to pay current liabilities.
3. Acid-test ratio	$\frac{\text{Quick current assets}}{\text{Current liabilities}}$	Whether the corporation is able to meet the immediate demands of creditors. (This is a more severe measure of liquidity.)
4. Accounts receivable collection period	$\frac{\text{Average acct. rec.}}{\text{Net credit sales}}$ x 365	The average time needed to collect receivables.
5. Number of days of sales in inventory	$\frac{\text{Average inventory}}{\text{Cost of goods sold}}$ x 365	Number of days of sales can be made with existing inventory.
6. Revenue operating cycle	Average number of days to collect receivables + average number of days of sales inventory	Length of time between the purchase of inventory and the subsequent collection of cash.

Analysis of profitability:	Calculation of ratio:	Indicates:
1. Gross profit ratio	Gross profit / Net sales	The percentage of sales revenue that is left to pay operating expenses, interest, and income taxes after deducting cost of goods sold.
2. Operating profit ratio	Income from operations / Net sales	The percentage of sales revenue that is left to pay interest and income taxes expenses after deducting cost of goods sold and operating expenses.
3. Net profit ratio	Net income / Net sales	The percentage of sales left after payment of all expenses.
4. Sales to total assets ratio	Net sales / Average total assets	The adequacy of sales in relation to the investment in assets.
5. Return on total assets (ROA)	Income from operations / Average total assets	How efficiently a corporation uses its assets as resources to earn net income.
6. Return on Stockholders' equity (ROSE)	Net income / Average S/H equity	The adequacy of earnings as a return on owners' investment.

Leverage ratios:	Calculation of ratio:	Indicates:
1. Debt to Stockholders' equity ratio	$\frac{\text{Total liabilities}}{\text{Stockholders' equity}}$	The proportion of creditor financing to shareholder financing.
2. Times interest earned ratio	$\frac{\text{Income from operations}}{\text{Interest expense}}$	The ability of a corporation to pay interest on borrowings.

Market ratios:	Calculation of ratio:	Indicates:
1. Earnings per share	$\frac{\text{Net income – pref. share dividends}}{\text{Avg. number common shares o/s}}$	The amount of net income that has been earned on each common share after deducting dividends to preferred Stockholders.
2. Price-earnings ratio	$\frac{\text{Market price per share}}{\text{Earnings per share}}$	Market expectations of future profitability.
3. Dividend yield ratio	$\frac{\text{Dividends per share}}{\text{Market price per share}}$	The short-term cash return that can be expected from an investment in a corporation's shares.

Figure 14-3: Summary of Financial Statement Ratios

Schematically, the various analytical tools can be illustrated as shown in Figure 14–4.

Liquidity		Profitability		Financial Structure	Market Measures	Trend Analysis
Short-term cash needs	*Current asset performance*	*Returns on sales*	*Returns on balance sheet items*			
Current ratio	A/R collection period	Gross profit ratio	Sales to total assets ratio	Debt to S/H equity ratio	Earnings per share	Horizontal
Acid-test ratio	Number of days of sales in inventory	Operating income ratio	Return on total assets	Times interest earned ratio	Price-earnings ratio	Vertical
	Revenue operating cycle	Net profit ratio	Return on Stockholders' equity		Dividend yield ratio	

Figure 14–4 Categorization of Financial Statement Analytical Tools

Summary of Chapter 14 Learning Objectives

LO1 – Describe ratio analysis, and explain how the liquidity, profitability, leverage, and market ratios are used to analyze and compare financial statements.

Ratio analysis measures the relative magnitude of two selected numerical values taken from a corporation's financial statements and compares the result to prior years and other similar corporations. Financial ratios are an effective tool for measuring: (a) liquidity (current ratio, acid-test ratio, accounts receivable collection period, and number of days of sales in inventory); (b) profitability (gross profit ratio, operating profit ratio, net profit ratio, sales to total assets ratio, return on total assets, and return on stockholders' equity); (c) leverage (debt ratio, stockholders' equity ratio, debt to stockholders' equity ratio, and times interest earned ratio); and (d) market ratios (earnings per share, price-earnings ratio, and dividend yield ratio). Ratios help identify the areas that may require further investigation.

LO2 – Describe horizontal and vertical trend analysis, and explain how they are used to analyze financial statements.

Horizontal analysis involves the calculation of percentage changes from one or more years over a base year dollar amount. The base year is typically the older year and is always 100%. Vertical analysis requires that numbers in a financial statement be restated as percentages of a base dollar amount. For income statement analysis, the base amount used is sales. For balance sheet analysis, total assets (which are always the same as total liabilities and stockholders' equity) are used as the base amounts. When financial statements are converted to percentages, they are called common-size financial statements.

E N D O F C H A P T E R M A T E R I A L S

Multiple-Choice Review

1. An analysis that involves viewing the year over year trend of a company's financial data is known as:
   a.) vertical analysis
   b.) horizontal analysis
   c.) ratio analysis
   d.) all of the above

2. Ratios that measure a company's ability to meet its short-term obligations are known as:
   a.) liquidity ratios
   b.) leverage ratios
   c.) profitability ratios
   d.) market ratios

3. Ratios that measuring a company's share of creditor and shareholder financing are known as:
   a.) liquidity ratios
   b.) leverage ratios
   c.) profitability ratios
   d.) market ratios

4. Ratios that measuring a company's operating success or income are known as:
   a.) liquidity ratios
   b.) leverage ratios
   c.) profitability ratios
   d.) market ratios

5. Quick assets include:
   a.) cash, current receivables, and short-term investments
   b.) cash, inventory, and prepaid assets
   c.) cash, supplies, and market investments
   d.) accounts receivable, prepaid expenses, and inventory

Multiple-Choice Review (continued)

6. Reaper Company had sales of $500,000; sales return & allowances of $20,000; cost of goods sold of $300,000; and net income of $80,000 for the year. What is the company's net profit ratio?
   a.) 37.5%
   b.) 16.0%
   c.) 16.7%
   d.) 36.0%

7. Reaper Company had sales of $500,000; sales return & allowances of $20,000; cost of goods sold of $300,000; and net income of $80,000 for the year. What is the company's gross profit ratio?
   a.) 37.5%
   b.) 16.0%
   c.) 16.7%
   d.) 36.0%

8. Agatha Company has the following balances at year-end:

Cash	$ 15,000	Market investments	4,000
Accounts receivable (due in 30 days)	6,000	Prepaid expenses	1,200
Notes receivable (due in 45 days)	2,000	Inventory	12,000

What is the amount of Agatha's quick assets?
   a.) $40,200
   b.) $39,000
   c.) $28,200
   d.) $27,000

9. If Agatha has the following liability balances, what will be the company's current ratio?

Accounts payable (due in 30 days)	$ 7,000	Salaries and Wages Payable	3,000
Notes Payable (due in 3 years)	20,000	Interest payable	1,500

   a.) 0.86 to 1
   b.) 1.28 to 1
   c.) 3.50 to 1
   d.) 2.35 to 1

Answers on the following page

Answers to Multiple-Choice Review

1. b
2. a
3. b
4. c
5. a
6. c
7. a
8. d (Cash + A/R + N/R + Market Investments)
9. c

Current assets	/	Current liabilities
($15,000 + $6,000 + $2,000 + $4,000 + $1,200 + $12,000)	/	($7,000 + $3,000 + $1,500)
= $40,200	/	= $11,500

= 2.35 to 1

Discussion Questions

1. Ratios need to be evaluated against some base. What types of information can be used?
2. Explain what *liquidity* means. When a corporation is becoming less liquid, what are the implications for Stockholders? for creditors?
3. How is it possible that a corporation earning net income each year is becoming less liquid?
4. What ratios can be calculated to evaluate liquidity? Explain what each one indicates.
5. a. Define working capital. Distinguish between the current ratio and the acid-test ratio.
   b. "The current ratio is, by itself, inadequate to measure liquidity." Discuss this statement.
6. Two firms have the same amount of working capital. Explain how it is possible that one is able to pay off short-term creditors, while the other firm cannot.
7. Management decisions relating to accounts receivable and inventory can affect liquidity. Explain.
8. What is one means to evaluate the management of accounts receivable? inventory?
9. Discuss the advantages and disadvantages of decreasing number of days of sales in inventory.
10. What is the revenue operating cycle? How is its calculation useful in evaluating liquidity?
11. Identify and explain six ratios (and any associated calculations) that evaluate a corporation's profitability. What does each ratio indicate?
12. Why are analysts and investors concerned with the financial structure of a corporation?
13. Is the reliance on creditor financing good or bad? Explain its impact on net income.
14. Discuss the advantages and disadvantages of short-term debt financing compared to long-term debt financing.
15. Identify and explain ratios that evaluate financial returns for investors.
16. Distinguish between horizontal and vertical analysis of financial statements.

Comprehension Problems

CP 14–1

Required: Match the following ratios with the appropriate formula.

Ratio or Rate		*Formula*
_____	Acid-test	a. Income from operations / Interest expense
_____	Current	b. Total liabilities / Stockholders' equity
_____	Return on Stockholders' equity	c. Net income– preferred share dividends / Number of common shares outstanding
_____ _____	Times interest earned	d. Net sales / Average total assets
_____ _____	Earnings per share	e. Market price per share / Earnings per share
_____ _____	Accounts receivable collection period	f. Current assets / Current liabilities
_____	Sales to total assets	g. Average inventory x 365 days / Cost of goods sold
_____	Dividend yield	h. Net income / Net sales
_____	Price-earnings ratio	i. Income from operations / Average total assets
_____	Number of days of sales in Inventory	j. Dividends per share / Market price per share
_____	Debt to s/h equity ratio	k. Net income / Average Stockholders' equity

_____	Net profit ratio	l. $\frac{\text{Quick current assets}}{\text{Current liabilities}}$
_____	Accounts receivable collection period	m. $\frac{\text{Average accounts receivable x 365 days}}{\text{Net credit sales}}$
_____	Return on total assets	n. $\frac{\text{Average accounts receivable x 365 days}}{\text{Net credit sales}}$

CP 14–2

The following information is taken from the partial Balance Sheet of Quail Productions Corp.

	2019	*2018*
Current assets		
Cash	$ 10	$ 15
Marketable investments	35	35
Accounts receivable	200	150
Inventory	600	400
Current liabilities		
Accounts payable	500	400
Borrowings	245	180

Required:

1. Describe the purpose of and calculate the current ratio for each year.
2. Describe the purpose of and calculate the acid-test ratio for both years.
3. What observations can you make from a comparison of the two types of ratios?

CP 14–3

The following information is taken from the records of Black Spruce Co. Ltd.:

	2019	*2018*	*2017*
Sales	$252	$141	$120
Gross profit	63	48	54
Net income	12	5	15

Required: Analyze the gross profit and net profit ratios using the above data. Comment on trends you observe.

CP 14–4

The following information relates to three companies in the same industry:

Corporation	*Latest market price*	*Earnings per share*	*Dividends per share*
A	$35	$11	$-0-
B	40	5	4
C	90	10	6

Required: Explain and calculate the price-earnings and dividend yield ratios. On the basis of only the foregoing information, which company represents the most attractive investment opportunity to you? Explain.

CP 14–5

The following data are taken from the records of Cronkite Corp.:

	2019	*2018*
Sales	$2,520	$1,440
Cost of goods sold	1,890	960
Gross profit	630	480
Other expenses	510	430
Net income	$ 120	$ 50

Required: Perform horizontal analysis on the above date and interpret your results.

CP 14–6

In the left-hand column, a series of independent transactions is listed; in the right-hand column, a series of ratios is listed.

		Effect on ratio		
Transaction	*Ratio*	*Increase*	*Decrease*	*No change*
Declared a cash dividend	Current ratio			
Wrote-off an uncollectible account receivable	Accounts receivable collection period			
Purchased inventory on account	Acid-test ratio			
Issued 10-year bonds to acquire property, plant, and equipment	Return on total assets			
Issued additional shares for cash	Debt to Stockholders' equity ratio			
Declared a share dividend on common shares	Earnings per share			
Purchased supplies on account	Current ratio			
Paid a current creditor in full	Acid-test ratio			
Paid an account payable	Number of days of sales in inventory			

Required: For each transaction indicate whether the ratio will increase, decrease, or remain unchanged. Assume all ratios are greater than 1:1 before each transaction where applicable.

CP 14–7

Consider the following financial statement data:

Balance Sheet	
Cash	$20
Accounts receivable	20
Merchandise inventory	40
Plant, at carrying amount	140
	$220
Accounts payable	$20
Non-current borrowings	60
Common stock (8 shares issued)	80
Retained earnings	60
	$220

Income Statement	
Sales	$100
Cost of goods sold	50
Gross profit	50
Operating expenses	14
Income from operations	36
Less: Interest	6
Income before income taxes	30
Less: Income taxes	10
Net income	$20

Assume that the average of all Balance Sheet items is equal to the year-end figure and that all sales are on credit.

Required:

1. Calculate the following ratios:
   a. Return on total assets (assume interest has been paid)
   b. Return on Stockholders' equity
   c. Times interest earned ratio
   d. Earnings per share
   e. Number of days of sales in inventory
   f. Accounts receivable collection period
   g. Sales to total assets ratio
   h. Current ratio
   i. Acid-test ratio
   j. Debt to Stockholders' equity ratio.
2. Which of these ratios are measures of liquidity?

CP 14–8

Consider the following information:

Salinas Limited
Balance Sheet
At December 31, 2019

Assets		*Liabilities and Stockholders' Equity*	
Cash	$ 72	Accounts payable	$ 60
Accounts receivable	88	Bank loan, non-current	150
Merchandise inventory	100		
Prepaid expenses	40	Preferred stock (10%)	60
PPE, at carrying amount	320	Common stock	250
		Retained earnings	100
Total assets	$620	Total liab and sh. equity	$620

Salinas Limited
Income Statement
For the Year Ended December 31, 2019

Sales		$240
Cost of goods sold		144
Gross profit		96
Operating expenses		
Salaries	$44	
Depreciation	6	50
Income from operations		46
Less: Interest		8
Income before income taxes		38
Less: Income taxes		18
Net income		$ 20

Assume that 80% of sales are on credit, that the average of all Balance Sheet items is equal to the year-end figure, that all preferred share dividends have been paid, and that the number of common shares outstanding is 10.

Required: Calculate the following ratios and percentages

1. Current ratio
2. Return on total assets
3. Sales to total assets
4. Acid-test ratio

5. Times interest earned
6. Earnings per common share
7. Accounts receivable collection period
8. Return on stockholders' equity

CP 14–9

Assume a company has the following financial information:

Cash and short-term investments	$ 6
Prepaid expenses	-0-
Capital assets	90
Total liabilities	40
Stockholders' equity	140
Sales	420
Credit sales	300
Current ratio	2.5:1
Acid-test ratio	1:1
Gross profit ratio	30%

Assume current assets consist of cash, short-term investments, accounts receivable, inventory, and prepaid expenses, and that ending balances are the same as average balances for the year.

Required: Calculate
1. Current liabilities
2. Inventory
3. Accounts receivable collection period
4. Number of days of sales in inventory
5. Revenue operating cycle

CP 14–10

A company began the month of May with $200,000 of current assets, a 2.5 to 1 current ratio, and a 1.25 to 1 acid-test ratio. During the month, it completed the following transactions:

	Effect on current ratio		
Transaction	*Increase*	*Decrease*	*No change*
a. Bought $20,000 of merchandise on account (the company uses a perpetual inventory system)			
b. Sold for $10,000 cash, merchandise that cost $5,000			
c. Collected a $2,500 account receivable			
d. Paid a $10,000 account payable			
e. Wrote off a $1,500 bad debt against the allowance for doubtful accounts			
f. Declared a $1 per-share cash dividend on the 10,000 outstanding common shares			
g. Paid the dividend declared above			
h. Borrowed $10,000 from a bank by assuming a 60-day, 10-per cent loan			
i. Borrowed $25,000 from a bank by placing a 10-year mortgage on the plant			
j. Used the $25,000 proceeds of the mortgage to buy additional machinery.			

Required:

1. Indicate the effect on current ratio assuming each transaction is independent of the others.
2. At the end of May, and taking all the above transactions into account, what was
   a. the current ratio?
   b. the acid-test ratio?

Use the following format (the opening current ratio calculation and effects of the first transaction are provided:

a. Current ratio

In thousands of dollars		*May 1 Bal.*	*a*	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*i*	*j*	*May 31 Bal.*
Current assets	x	200	+20										
Current liabilities	y	80	+20										
Current ratio	x/y	2.5											

b. Acid-test ratio

In thousands of dollars		*May 1 Bal.*	*a*	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*i*	*j*	*May 31 Bal.*
Quick assets	x												
Current liabilities	y												
Acid-test ratio	x/y												

Problems

P 14–1

Consider the following information:

Mammoth Corporation
Balance Sheet
At December 31, 2019

Assets		**Liabilities**	
Current		*Current*	
Cash	$ 100	Accounts payable	$ 300
Accounts receivable	200	Wages payable	50
Merchandise inventory	500	Dividends payable	50
Prepaid expenses	50		400
	850		
Non-current		*Non-current*	
Property, plant, and equipment, net	1,000	Borrowings	800
			1,200
		Stockholders' Equity	
		Common stock	500
		Retained earnings	150
			650
Total assets	$1,850	Total liab and sh. equity	$1,850

Required:

1. Based on this information, calculate the
   a. Current ratio
   b. Acid-test ratio
   c. Debt to Stockholders' equity ratio.
2. What do these ratios tell you about Mammoth Corporation?
3. What other information would help with the financial analysis of Mammoth Corporation?

P 14–2

The following information for 2019 was gathered from the financial statements of Epicentre Corporation.

Balance Sheet
At December 31, 2019

Assets	
Current	
Cash	$ 60
Accounts receivable	140
Merchandise inventory	250
Prepaid expenses	10
	460
PPE, at carrying amount	330
	$790
Liabilities	
Current	
Accounts payable	$100
Borrowings	20
Notes payable	60
	180
Non-current	
Borrowings	140
	320
Stockholders' Equity	
Preferred stock, 10% (8 shares)	120
Common stock (50 shares)	250
Retained earnings	100
	470
	$790

Income Statement
For the Year Ended December 31, 2019

Net sales (all on credit)	$800
Cost of goods sold	600
Gross profit	200
Selling and admin. expenses	100
Income from operations	100
Interest expense	20
Income before income taxes	80
Income taxes	30
Net income	$ 50

Additional information from the December 31, 2018 balance sheet:

Accounts receivable	$180
Merchandise inventory	200
Property, plant, and equipment, net	250
Retained earnings	80
Preferred stock	120
Common stock	250

Required:

1. Compute the following ratios for 2019:

a. Current ratio
b. Acid-test ratio
c. Accounts receivable collection period
d. Number of days of sales in inventory
e. Debt to Stockholders' equity ratio
f. Return on Stockholders' equity
g. Earnings per share (assume all preferred share dividends are paid)

2. Compute dividends paid on common shares for 2019.
3. What do these ratios tell you about Epicentre Corporation?

P 14–3

Belafonte Corporation's books were destroyed in a fire on April 30, 2019. The accountant of the corporation can only remember a few odd pieces of information:

a. The current ratio was 3.75 to 1.
b. Sales for the year were $73,000.
c. Inventories were $20,000 and were equal to property, plant and equipment at carrying amount, and also equal to bonds payable.
d. The accounts receivable collection period was 40 days.
e. The bonds payable amount was 10 times cash.
f. Total current assets were twice as much as common shares.

Required: Using this information, prepare Belafonte Corporation's Balance Sheet at April 30, 2019. Assume balances at April 30, 2019 are the same as average balances for the year then ended, and that besides retained earnings, there are no additional accounts.

P 14–4

Assume you are an accountant analysing Escalade Corporation. Escalade has expanded its production facilities by 200% since 2017. Its income statements for the last three years are as follows:

Escalade Corporation
Statements of Profit and Loss
For the Years Ending December 31

	2020	*2019*	*2018*
Sales	$250	$150	$120
Cost of goods sold	190	100	60
Gross profit	60	50	60
Other expenses	35	34	35
Net income	$ 25	$ 16	$ 25

Required:

1. Prepare a vertical analysis of Escalade Corporation's income statement for the three years.
2. What conclusions can be drawn from this analysis?

P 14–5

The incomplete Balance Sheet of Hook Limited is given below.

Hook Limited
Balance Sheet
At December 31, 2019

Assets		
Current		
Cash	$ 30,000	
Accounts receivable	?	
Merchandise inventory	?	
		$?
Capital assets	?	
Less: Accumulated depreciation	100,000	?
Total assets		$?
Liabilities		
Current		
Accounts payable	$ 50,000	
Estimated liabilities	?	
		$120,000
Non-current		
8% Bonds payable		?
		?
Stockholders' Equity		
Common stock		?
Retained earnings		?
		?
Total liabilities and Stockholders' equity		$?

Additional information for the 2019 year-end:

a. The amount of working capital is $150,000.
b. The issued value of the shares is $10 per share.
c. Market price per share is $15.
d. Price-earnings ratio is 3.
e. Income before payment of interest and income tax is $80,000.
f. The ratio of stockholder's equity to total assets is 0.60 to 1.
g. Income tax expense equals $30,000.
h. The acid-test ratio is 1.5 to 1.
i. The times interest earned ratio is 8 to1.

Required: Complete Hook Limited's Balance Sheet.