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Introduction to Financial Accounting

U.S. GAAP Adaptation

D. Annand & H. Dauderis

Adapted by T. Jensen & D. Marchand



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2021-A

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by D. Annand and H. Dauderis
adapted by T. Jensen and D. Marchand

Version 2021 – Revision A

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Introduction to Financial Accounting: Adapted for U.S. GAAP

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Chapter 1

Introduction to Financial Accounting

Accounting involves a process of collecting, recording, and reporting a business's economic activities to users. It is often called the language of business because it uses a unique vocabulary to communicate information to decision makers. To understand accounting, we first look at the basic forms of business organizations. The concepts and principles that provide the foundation for financial accounting are then discussed. With an emphasis on the corporate form of business organization, we will examine how we communicate to users of financial information using financial statements. Finally, we will review how financial transactions are analyzed and then reported on financial statements.

Chapter 1 Learning Objectives

LO1 – Define accounting.

LO2 – Identify and describe the forms of business organization.

LO3 – Identify and explain the Generally Accepted Accounting Principles (GAAP).

LO4 – Identify, explain, and prepare the financial statements.

LO5 – Analyze transactions by using the accounting equation.

Concept Self-Check

Use the following as a self-check while working through Chapter 1.

1. What is accounting?
2. What is the difference between internal and external users of accounting information?
3. What is the difference between managerial and financial accounting?
4. What is the difference between a for-profit business organization and a not-for-profit business organization?
5. What are the three types of business organizations?

2 ■ Introduction to Financial Accounting

6. What is a publicly held corporation? A privately held corporation?
7. What does the term *limited liability* mean?
8. Explain how ethics are involved in the practice of accounting.
9. Describe what GAAP refers to.
10. Identify and explain the six qualitative characteristics of GAAP.
11. Describe the accounting assumptions and principles that support the GAAP qualitative characteristics.
12. How is financial information communicated to external users?
13. What are the four financial statements?
14. Which financial statement measures financial performance? Financial position?
15. What information is provided in the statement of cash flows?
16. Explain how retained earnings and dividends are related.
17. What are the three primary components of the balance sheet?
18. Equity consists of what two components?
19. How are assets financed?
20. Identify and explain the three types of activities a business engages in.
21. What are *notes to the financial statements*?
22. What is the accounting equation?
23. What are the distinctions among calendar, interim, and fiscal year ends?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

1.1 Accounting Defined

LO1 – Define accounting.

Accounting is the process of identifying, measuring, recording, and communicating an organization's economic activities to users. Users need information for decision making. **Internal users** of accounting information work for the organization and are responsible for planning, organizing, and operating the entity. The area of accounting known as **managerial accounting** serves the decision-making needs of internal users. External users do not work for the organization and include investors, creditors, labor unions, and customers. **Financial accounting** is the area of accounting that focuses on external reporting and meeting the needs of external users. This book addresses financial accounting. Managerial accounting is covered in other books.

1.2 Business Organizations

LO2 – Identify and describe the forms of business organization.

An **organization** is a group of individuals who come together to pursue a common set of goals and objectives. There are two basic types of business organizations: *for-profit* and *not-for-profit*. A **for-profit business organization** sells products and/or services for profit. A **not-for-profit business organization** serves charitable, religious, scientific or educational purposes. It exists to meet various societal needs and does not have profit as a goal. Regardless of type, all businesses, record, report, and, most importantly, use accounting information for making decisions.

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

Sole Proprietorship

A **sole 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 entity. This means, for example, that from an income tax perspective, the profits of a sole proprietorship are taxed as part of the owner's personal income tax return. **Unlimited liability** is another characteristic of a sole proprietorship meaning that if the business could not pay its debts, the owner would be responsible even if the business's debts were greater than the owner's personal resources.

Partnership

A **partnership** is a business owned by two or more individuals. Like the sole proprietorship, it is not a separate legal entity and its owners are typically subject to unlimited liability.

Corporation

A **corporation** is a business owned by one or more owners. The owners are known as *stockholders*. A **stockholder** owns shares of stock in the corporation. **Shares** of stock are units of ownership in a corporation. For example, if a corporation has 1,000 shares of stock, there may be three stockholders where one has 700 shares, another has 200 shares, and the third has 100 shares. The number of shares held by a stockholder represents how much of the corporation they own. A corporation can have different types of shares; this topic is discussed in a later chapter. When there is only one type of share, it is usually called **common stock**.

A corporation's stock can be privately held or available for public sale. A corporation that holds its stock privately and does not sell them to the public is known as a **privately held corporation**. Privately held corporations are also referred to as closely held corporations. A corporation that sells its stock publicly, typically on a stock exchange, is called a **publicly held corporation**. Publicly held corporations are also referred to as publicly traded corporations or issuers.

Unlike the sole 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 what they invested in the corporation.

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.

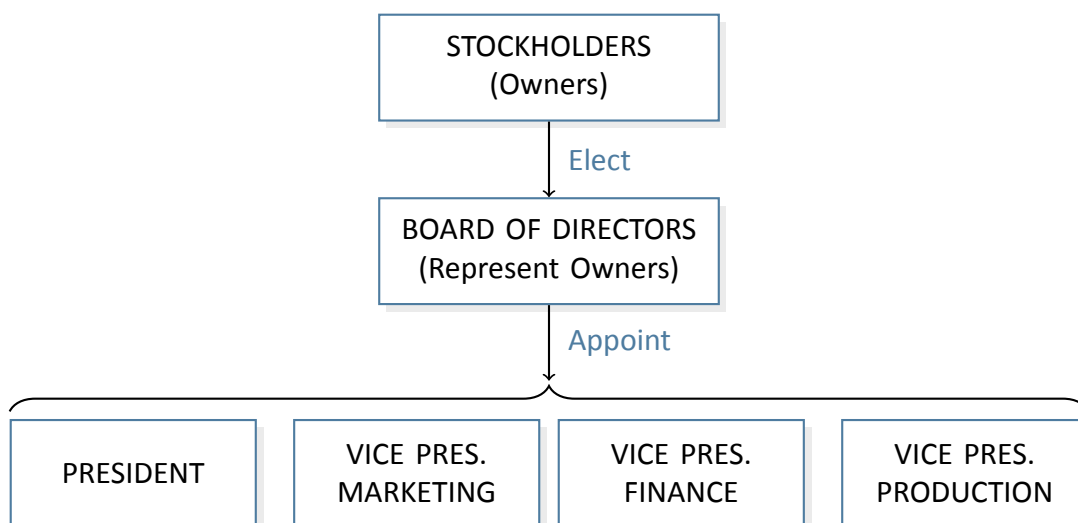


Figure 1.1: Generalized Form of a Corporate Organization

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. Unlike stockholders, directors can be held personally liable if a company fails.

The focus of these chapters will be on the corporate form of business organization. The sole proprietorship and partnership organizations will be discussed in more detail in Chapter 13.

1.3 Generally Accepted Accounting Principles (GAAP)

LO3 – Identify and explain the 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 in the United States as **Generally Accepted Accounting Principles (GAAP)**.

In 1934 Congress created the **Securities and Exchange Commission (SEC)**. The SEC was given broad powers to oversee the financial markets and accounting standard-setting bodies. The SEC recognizes the **Financial Accounting Standards Board (FASB)** as the designated accounting standard-setter for publicly held corporations. The SEC relies on FASB to develop the accounting standards that all publicly held corporations in the United States must follow. The official pronouncements made by FASB are called **Accounting Standards Codification**. These pronouncements are the single source of U.S. GAAP. Outside of the United States many countries have adopted **International**

Financial Reporting Standards (IFRS). IFRS are the accounting standards issued by the **International Accounting Standards Board (IASB)**. *The focus in this book will be on U.S. GAAP for publicly held corporations.*

Accounting practices are guided by GAAP which are comprised of qualitative characteristics. These characteristics are intended to enhance decision usefulness of information. As already stated, relevance and faithful representation are the primary qualitative characteristics. Comparability, verifiability, timeliness, and understandability are enhancing qualitative characteristics.

Information that possesses the quality of:

- **relevance** has the ability to make a difference in the decision-making process.
- **faithful representation** is complete, neutral, and free from error.
- **comparability** tells users of the information that businesses utilize similar accounting practices.
- **verifiability** means that others are able to confirm that the information faithfully represents the economic activities of the business.
- **timeliness** is available to decision makers in time to be useful.
- **understandability** is clear and concise.

Table 1.1 lists the four basic assumptions that underlie GAAP.

Accounting Assumption	Explanation/Example
Economic Entity Assumption	An assumption that all economic events can be identified with a specific economic entity. Requires a distinction between the economic activities of the company and those of the owners. Example: A business owner keeps separate accounting records for business transactions and for personal transactions.
Going Concern Assumption	An assumption that a business will continue to operate indefinitely. Example: All indications are that Business X will continue so it is reported to be a 'going concern'. Business Z is being sued for \$20,000,000 and it is certain that it will lose. The \$20,000,000 loss will force the business to close. Business Z must not only disclose the lawsuit but it must also indicate that there is a 'going concern' issue.

1.3. Generally Accepted Accounting Principles (GAAP) ■ 7

Accounting Assumption	Explanation/Example
Time Period Assumption	<p>An assumption that the economic life of a company can be divided into artificial time periods for financial reporting.</p> <p>Example: Business X has selected March 31st as its fiscal year end. The business will report all activities of the business to external users that cover the time period from April 1st to March 31st of the following year.</p>
Monetary Unit Assumption	<p>An assumption that the measurement used in reporting to external users is nominal units of money and that no adjustment for inflation or deflation is necessary.</p> <p>Example: Land was purchased in 1940 for \$5,000. It is maintained in the accounting records at \$5,000 and is not adjusted.</p>

Table 1.1: Accounting Assumptions

Table 1.2 lists the basic recognition, measurement, and disclosure principles that underlie GAAP.

Accounting Principle	Explanation/Example
Revenue Recognition Principle	<p>Requires that revenues be recorded when earned, which is not necessarily when cash is received.</p> <p>Example: A sale occurred on March 5. The customer received the product on March 5 but will pay for it on April 5. The business records the sale on March 5 when the sale occurred even though the cash is not received until April 5.</p>
Matching Principle	<p>Requires that expenses be reported when incurred, which is not necessarily when cash has been paid. Sometimes referred to as the expense recognition principle.</p> <p>Example: Supplies were purchased March 15 for \$700. They will be recorded as an asset on March 15 and expensed as they are used.</p>
Historical Cost Principle	<p>Requires that each economic transaction be recorded and based on the acquisition (original) cost.</p> <p>Example: The business purchases a delivery truck advertised for \$75,000 and pays \$70,000. The truck must be recorded at the cost of \$70,000, the amount actually paid.</p>

Accounting Principle	Explanation/Example
Full Disclosure Principle	<p>Requires that accounting information communicate sufficient information to allow users to make knowledgeable decisions.</p> <p>Example: A business is applying to the bank for a \$1,000,000 loan. The business is being sued for \$20,000,000 and it is certain that it will lose. The business must tell the bank about the lawsuit even though the lawsuit has not yet been finalized.</p>

Table 1.2: Accounting Principles

Note: Some of the assumptions and principles discussed above may be challenging to understand because related concepts have not yet been introduced. Therefore, most of these assumptions and principles will be discussed again in more detail in a later chapter.

1.4 Financial Statements

LO4 – Identify, explain, and prepare the 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 stockholders' equity, balance sheet, and statement of cash flows. Each of these is introduced in the following sections using an example based on a fictitious corporate organization called Big Dog Carworks Corp.

The Income Statement

An **income statement** 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, 2015 by Bob "Big Dog" Baldwin in order to repair automobiles.

At January 31, the income statement shows total revenues of \$10,000 and various expenses totaling \$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, 2015		
<i>Revenues</i>		
Repair revenues		\$10,000
<i>Expenses</i>		
Rent expense	\$1,600	
Salaries expense	3,500	
Supplies expense	2,000	
Fuel expense	700	
Total expenses	7,800	
Net income		\$2,200

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

The net income is transferred to the statement of stockholders' equity.

The Statement of Stockholders' Equity

The **statement of stockholders' 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. The type of ownership unit purchased by Big Dog's stockholders is known as common stock. Other types of shares will be discussed in a later chapter. When a corporation sells its shares, the corporation is said to be **issuing shares**.

In the statement of stockholders' 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. Additionally, \$200 of dividends were distributed, so these are subtracted from retained earnings. Big Dog's retained earnings were therefore \$2,000 at January 31, 2015 as shown in the statement of stockholders' equity below.

Big Dog Carworks Corp.
Statement of Stockholders' Equity
For the Month Ended January 31, 2015

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

	Common Stock	Retained Earnings	Total Equity
Opening balance	\$ -0-	\$ -0-	\$ -0-
Stock 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, 2015.

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, 2015 and dividends of \$1,000 were given 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, 2015 is shown below.

Big Dog Carworks Corp.
Balance Sheet
At January 31, 2015

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

Assets		Liabilities	
Cash	\$ 3,700	Accounts payable	\$ 700
Accounts receivable	2,000	Unearned revenue	400
Prepaid insurance	2,400	Notes payable	6,000
Equipment	3,000	Total liabilities	<u>\$ 7,100</u>
Truck	8,000		
		Equity	
		Common stock	\$10,000
		Retained earnings	2,000
		Total equity	<u>12,000</u>
Total assets	<u>\$19,100</u>	Total liabilities and equity	<u>\$19,100</u>

Total assets (\$19,100 here) always equal Total liabilities (\$7,100) plus 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, 2015 will provide a benefit until December 31, 2015 so is a prepaid asset. The equipment and truck were purchased on January 1, 2015 and will provide benefits for 2015 and beyond so are assets.

What Is a Liability?

A **liability** is an obligation to pay an asset in the future. 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 Equity?

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 balance sheet, net assets are \$12,000, calculated as total assets of \$19,100 minus total liabilities of \$7,100. This means that although there are \$19,100 of assets, only \$12,000 are owned by the stockholders and the balance, \$7,100, are financed by debt. Notice that net assets and total equity are the same value; both are \$12,000. Equity consists of common stock and retained earnings. Common stock represents how much the stockholders have invested in the business. Retained earnings is the sum of all net incomes earned by a corporation over its life, less any dividends distributed to stockholders.

In summary, the balance sheet is represented by the equation: $\text{Assets} = \text{Liabilities} + \text{Equity}$. Assets are the investments held by a business. The liabilities and equity explain how the assets have been financed, or funded. Assets can be financed through liabilities, also known as **debt**, or equity. Equity represents amounts that are owned by the owners, the stockholders, and consists of common stock and retained earnings. Investments made by stockholders, namely common stock, are used to finance assets and/or pay down liabilities. Additionally, retained earnings, comprised of net income less any dividends, also represent a source of financing.

The Statement of Cash Flows (SCF)

Cash is an asset reported on the balance sheet. Ensuring there is sufficient cash to pay expenses and liabilities as they come due is a critical business activity. The **statement of cash flows (SCF)** explains how the balance in cash changed over a period of time by detailing the sources (inflows) and uses (outflows) of cash by type of activity: operating, investing, and financing, as these are the three types of activities a business engages in. **Operating activities** are the day-to-day activities involved in selling products and/or services to generate net income. Examples of operating activities include the purchase and use of supplies, paying employees, fueling equipment, and renting space for the business. **Investing activities** are the buying of assets needed to generate revenues. For example, when an airline purchases airplanes, it is investing in assets required to help it generate revenue. **Financing activities** are the raising of money needed to invest in assets. Financing can involve issuing common stock (receiving cash or other assets in exchange for stock in the corporation) or borrowing. Figure 1.2 summarizes the interrelationships among the three types of business activities.

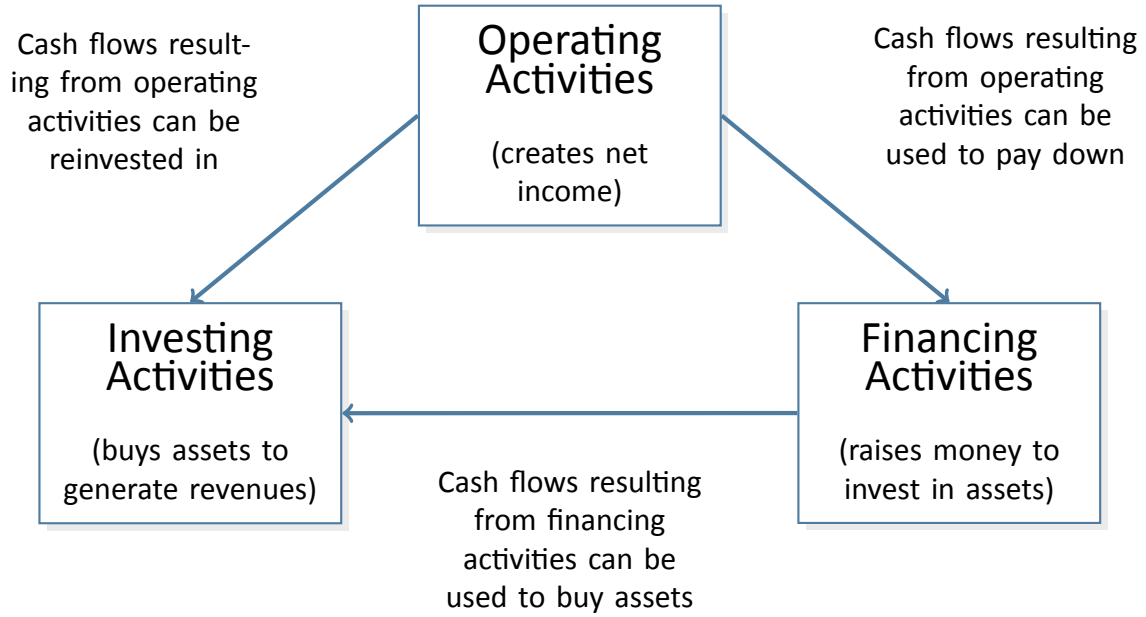


Figure 1.2: Relationships Among the Three Types of Business Activities

The statement of cash flows for Big Dog is shown below.

Big Dog Carworks Corp.
Statement of Cash Flows
For the Month Ended January 31, 2015

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

Operating activities:		
Net income	\$ 2,200	
Adjustments:		
Increase in accounts receivable	(2,000)	
Increase in prepaid insurance	(2,400)	
Increase in accounts payable	700	
Increase in unearned revenues	400	
Net cash used by operating activities	(1,100)	\$(1,100)
Investing activities:		
Purchase of equipment	\$(3,000)	
Purchase of truck	(3,000)	
Net cash used by investing activities	(6,000)	(6,000)
Financing activities:		
Issued shares of stock	\$10,000	
Borrowed from bank	3,000	
Payment on bank loan	(2,000)	
Paid dividends	(200)	
Net cash provided by financing activities	10,800	10,800
Net increase in cash	3,700	3,700
Cash balance, January 1		-0-
Cash balance, January 31		\$3,700

This agrees with the Cash amount shown on the Balance Sheet at January 31, 2015.

The statement of cash flows is useful because cash is one of the most important assets of a corporation. Information about expected future cash flows are therefore important for decision makers. For instance, Big Dog's bank manager needs to determine whether the remaining \$6,000 loan can be repaid, and also whether or not to grant a new loan to the corporation if requested. The statement of cash flows helps inform those who make these decisions.

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 later.

1.5 Transaction Analysis and Double-entry Accounting

LO5 – Analyze transactions by 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:

$$\begin{array}{l} \text{ASSETS} \\ \text{(economic resources} \\ \text{owned by an entity)} \end{array} = \begin{array}{l} \text{LIABILITIES} \\ \text{(creditors' claims} \\ \text{on assets)} \end{array} + \begin{array}{l} \text{EQUITY} \\ \text{(owners' claims} \\ \text{on assets)} \end{array}$$

When financial transactions are recorded, combined effects on assets, liabilities, and 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 Balance Sheet of Big Dog at January 31, 2015, as follows:

ASSETS	=	LIABILITIES	+	EQUITY
Cash + Accounts + Prepaid + Equipment + Truck Receivable Insurance	=	Accounts + Unearned + Notes Payable Revenue Payable	+	Common + Retained Stock 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 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 2015.

			Effect on the Accounting Equation		
Transaction Number	Date	Description of Transaction	ASSETS	= LIABILITIES	+ EQUITY
1	Jan.1	Big Dog Carworks Corp. issued 1,000 shares to Bob Baldwin, the owner or shareholder, for \$10,000 cash. The asset <u>Cash</u> is increased while the equity item <u>Common stock</u> is also increased. The impact on the equation is: CASH → +10,000 COMMON STOCK → +10,000			
2	Jan.2	Big Dog Carworks Corp. borrowed \$3,000 from the bank and deposited the cash into the business's bank account. The asset <u>Cash</u> is increased and the liability <u>Notes payable</u> is also increased. The impact on the equation is: CASH → +3,000 NOTES PAYABLE → +3,000			
3	Jan.2	The corporation purchased \$3,000 of equipment for cash. There is an increase of the asset <u>Equipment</u> and a decrease to another asset, <u>Cash</u> . The impact on the equation is: EQUIPMENT → +3,000 CASH → -3,000			
4	Jan.2	The corporation purchased a tow truck for \$8,000, paying \$3,000 cash and incurring an additional bank loan for the balance. The asset <u>Cash</u> is decreased while the asset <u>Truck</u> is increased and the liability <u>Notes payable</u> is also increased. The impact on the equation is: CASH → -3,000 TRUCK → +8,000 NOTES PAYABLE → +5,000			

1.5. Transaction Analysis and Double-entry Accounting ■ 17

			Effect on the Accounting Equation		
Transaction Number	Date	Description of Transaction	ASSETS	=	LIABILITIES + EQUITY
5	Jan.5	<p>Big Dog Carworks Corp. paid \$2,400 for a one-year insurance policy, effective January 1.</p> <p>Here the asset <u>Prepaid Insurance</u> is increased and the asset <u>Cash</u> is decreased. The impact on the equation is:</p> <p>PREPAID INSURANCE → +2,400 CASH → -2,400</p> <p>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 equity.</p>			
6	Jan.10	<p>The corporation paid \$2,000 cash to the bank to reduce the loan outstanding.</p> <p>The asset <u>Cash</u> is decreased and there is a decrease in the liability <u>Notes payable</u>. The impact on the equation is:</p> <p>NOTES PAYABLE → -2,000 CASH → -2,000</p>			
7	Jan.15	<p>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.</p> <p>The asset <u>Cash</u> is increased by \$400 and a liability, <u>Unearned revenue</u>, 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 a liability). The impact on the equation is:</p> <p>CASH → +400 UNEARNED REVENUE → +400</p>			

			Effect on the Accounting Equation		
Transaction Number	Date	Description of Transaction	ASSETS	=	LIABILITIES + EQUITY
8	Jan.20	<p>Automobile repairs of \$10,000 were made for a customer; \$8,000 of repairs were paid in cash and \$2,000 of repairs will be paid in the future. <u>Cash</u> and <u>Accounts receivable</u> 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 equity. The impact on the equation is:</p> <p>CASH → +8,000 ACCOUNTS RECEIVABLE → +2,000 REPAIR REVENUE → +10,000</p> <p>This activity increases assets and net income.</p>			
9	Jan.31	<p>The corporation paid operating expenses for the month as follows: \$1,600 for rent; \$3,500 for salaries; and \$2,000 for supplies expense. The \$700 for truck operating expenses (e.g., oil, gas) was on credit. There is a decrease in the asset <u>Cash</u>. Expenses cause net income to decrease and a decrease in net income causes equity to decrease. There is an increase in the liability <u>Accounts payable</u>. The impact on the equation is:</p> <p>RENT EXPENSE → -1,600 SALARIES EXPENSE → -3,500 SUPPLIES EXPENSE → -2,000 TRUCK OPERATING EXPENSE → -700 CASH → -7,100 ACCOUNTS PAYABLE → +700</p>			
10	Jan.31	<p>Dividends of \$200 were paid in cash to the only shareholder, Bob Baldwin. Dividends cause retained earnings to decrease. A decrease in retained earnings will decrease equity. The impact on the equation is:</p> <p>DIVIDENDS → -200 CASH → -200</p>			

These various transactions can be recorded in the expanded accounting equation as shown below:

Trans.	ASSETS					=	LIABILITIES			+	EQUITY								
	Cash	+	Acc. Rec.	+	Prepaid Insur.	+	Equip.	+	Truck	=	Acc. Pay.	+	Unearned Revenue	+	Notes Pay.	+	Common Stock	+	Retained Earnings
1.	+10,000																+10,000		
2.	+3,000														+3,000				
3.	-3,000					+3,000													
4.	-3,000							+8,000							+5,000				
5.	-2,400				+2,400														
6.	-2,000														-2,000				
7.	+400												+400						
8.	+8,000		+2,000																+10,000
9.	-7,100									+700									-1,600
																			-3,500
																			-2,000
																			-700
10.	-200																		-200
	3,700	+	2,000	+	2,400	+	3,000	+	8,000	=	700	+	400	+	6,000	+	10,000	+	2,000

These numbers are used to prepare the Income Statement.

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

Figure 1.3: Transactions Worksheet for January 31, 2015

Column totals are used to prepare the Balance Sheet.

ASSETS = \$19,100

LIABILITIES + EQUITY = \$19,100

Transactions summary:

1. Issued common stock for \$10,000 cash.
2. Received a bank loan for \$3,000.
3. Purchased equipment for \$3,000 cash.
4. Purchased a truck for \$8,000; paid \$3,000 cash and incurred a bank loan for the balance.
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 \$8,000 cash and \$2,000 on credit.
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.

The transactions summarized in Figure 1.3 were used to prepare the financial statements described earlier, and reproduced in Figure 1.4 below.

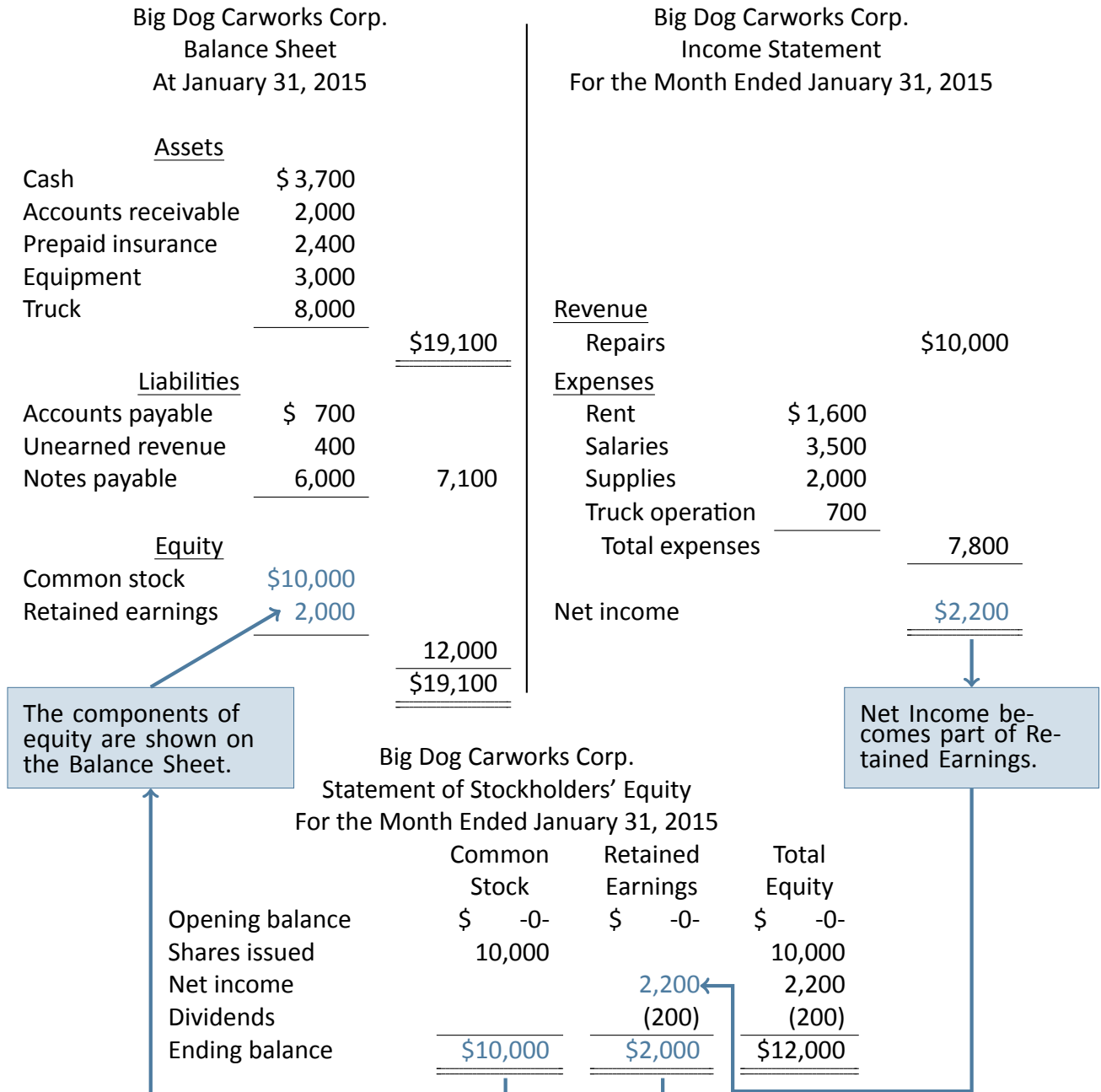


Figure 1.4: Financial Statements of Big Dog Carworks Corp.

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. 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. Some companies' year-ends do not follow the calendar year (year ending December 31). This may be done so that the fiscal year coincides with their *natural year*. A **natural year** ends when business operations are at a low point. For example, a ski resort may have a fiscal year ending in late spring or early summer when business operations have ceased for the season.

Corporations listed on **stock exchanges** are generally required to prepare **interim financial statements**, usually every three months, primarily for the use of stockholders or creditors. Because these types of corporations are large and usually have many owners, users require more up-to-date financial information.

The relationship of the interim and year-end financial statements is illustrated in Figure 1.5.

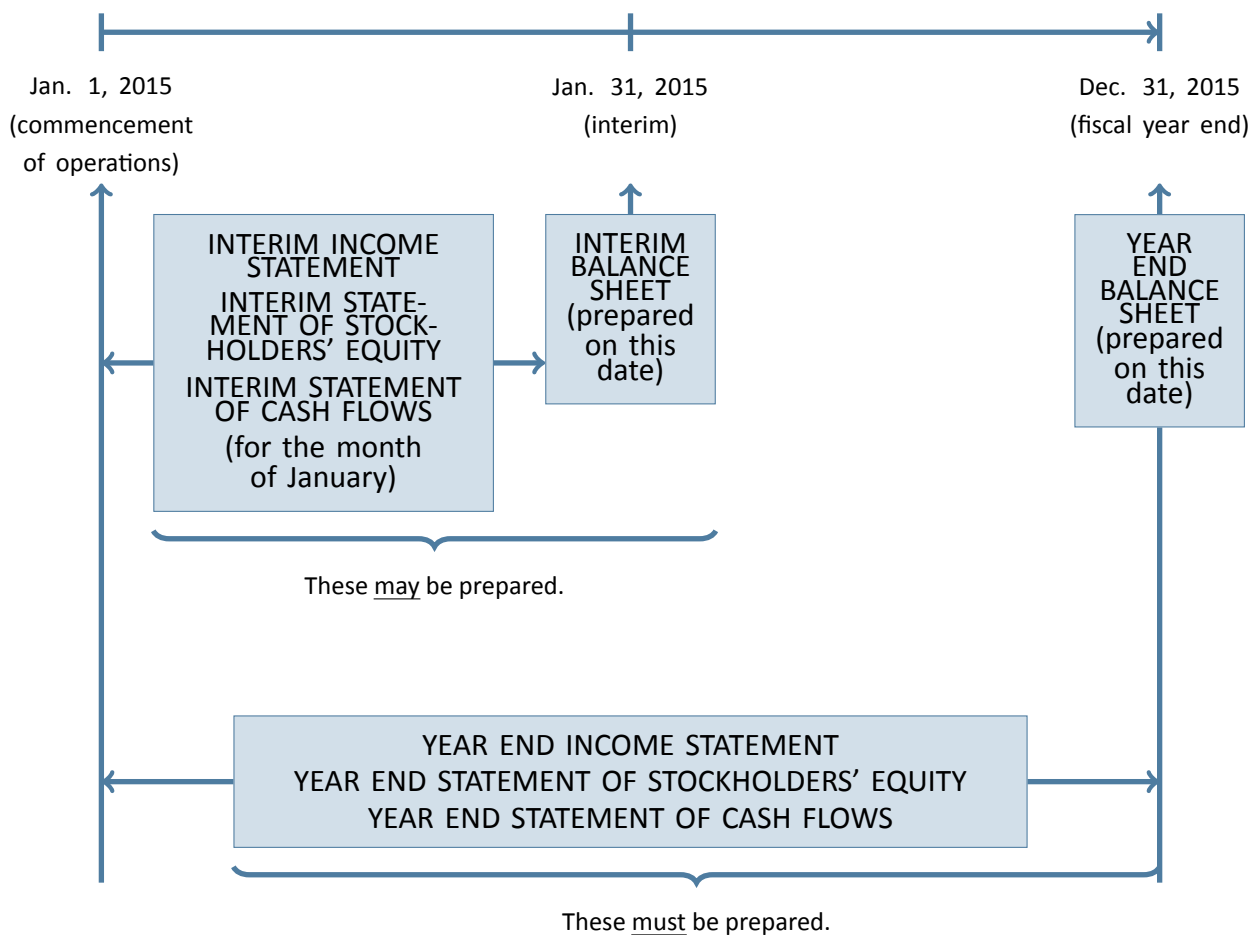


Figure 1.5: Relationship of Interim and Year-end Financial Statements

Summary of Chapter 1 Learning Objectives

L01 – 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. Financial accounting focuses on external reporting to meet the needs of external users.

L02 – Identify and describe the forms of business organization.

The three forms of business organizations are a sole proprietorship, partnership, and corporation.

The following chart summarizes the key characteristics of each form of business organization.

Characteristic	Sole Proprietorship	Partnership	Corporation
Separate legal entity	No	No	Yes
Business income is taxed as part of the business	No ¹	No ²	Yes
Unlimited liability	Yes	Yes	No
One owner permitted	Yes	No	Yes ³
Board of Directors	No	No	Yes

L03 – Identify and explain the Generally Accepted Accounting Principles (GAAP).

GAAP are the accounting standards that govern financial accounting and reporting. GAAP must be followed in the United States when a company distributes its financial statements to external users.

L04 – Identify, explain, and prepare the financial statements.

The four financial statements are: income statement, statement of stockholders' equity, balance sheet, and statement of cash flows. The income statement reports financial performance by de-

¹Business income is added to the owner's personal income and the owner pays tax on the sum of the two.

²Business income is added to the owner's personal income and the owner pays tax on the sum of the two.

³A corporation can have one or more owners.

tailing revenues less expenses to arrive at net income/loss for the period. The statement of stockholders' equity shows the changes during the period to each of the components of equity: common stock and retained earnings. The balance sheet identifies financial position at a point in time by listing assets, liabilities, and equity. Finally, the statement of cash flows details the sources and uses of cash during the period based on the three business activities: operating, investing, and financing.

L05 – Analyze transactions by using the accounting equation.

The accounting equation, $A = L + E$, describes the asset investments (the left side of the equation) and the liabilities and 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.

Discussion Questions

1. What are generally accepted accounting principles (GAAP)?
2. When is revenue recognized?
3. How does the matching principle more accurately determine the Net Income of a business?
4. What are the qualities that accounting information is expected to have? What are the limitations on the disclosure of useful accounting information?
5. What are assets?
6. To what do the terms *liability* and *equity* refer?
7. Explain the term *financial transaction*. Include an example of a financial transaction as part of your explanation.
8. Identify the three forms of business organization.
9. What is the business entity concept of accounting? Why is it important?
10. What is the general purpose of financial statements? Name the four financial statements?
11. Each financial statement has a title that consists of the name of the financial statement, the name of the business, and a date line. How is the date line on each of the four financial statements the same or different?
12. What is the purpose of an income statement? a balance sheet? How do they interrelate?

13. Define the terms *revenue* and *expense*.
14. What is net income? What information does it convey?
15. What is the purpose of a statement of stockholders' equity? a statement of cash flows?
16. Why are financial statements prepared at regular intervals? Who are the users of these statements?
17. What is the accounting equation?
18. Explain double-entry accounting.
19. What is a year-end? How does the timing of year-end financial statements differ from that of interim financial statements?
20. How does a fiscal year differ from a calendar year?

Exercises

EXERCISE 1–1 (LO1,2,3) Matching

Ethics	Managerial accounting
Financial accounting	Partnership
GAAP	Separate legal entity
Limited liability	Unlimited liability

Required: Match each term in the above alphabetized list to the corresponding description below.

- a. _____ The owners pay tax on the business's net income.
 - b. _____ Accounting standards followed by publicly traded companies in the United States.
 - c. _____ Rules that guide us in interpreting right from wrong.
 - d. _____ Accounting aimed at communicating information to external users.
 - e. _____ Accounting aimed at communicating information to internal users.
 - f. _____ The business is distinct from its owners.
 - g. _____ The owner(s) are not responsible for the debts of the business.
 - h. _____ If the business is unable to pay its debts, the owner(s) are responsible.
-

EXERCISE 1–2 (LO3) Accounting Assumptions and Principles

Economic entity	Full disclosure	Historical Cost	Revenue Recognition
Time Period	Going concern	Monetary unit	Matching

Required: Identify whether each of the following situations represents a violation or a correct application of GAAP, and which principle is relevant in each instance.

- a. A small storage shed was purchased from a home supply store at a discount sale price of \$5,000 cash. The clerk recorded the asset at \$6,000, which was the regular price.
- b. One of the business partners of a small architect firm continually charges the processing of his family vacation photos to the business firm.
- c. An owner of a small engineering business, operating as a sole-proprietorship from his home office, also paints and sells watercolor paintings in his spare time. He combines all the transactions in one set of books.
- d. ABS Consulting received cash of \$6,000 from a new customer for consulting services that ABS is to provide over the next six months. The transaction was recorded as a credit to revenue.
- e. Tyler Inc. is being sued and believes they will lose the lawsuit and be required to pay \$1,000,000 in fines. The company chooses to avoid providing this information to its stockholders until the case has been settled.
- f. An owner of a small car repair shop purchased shop supplies for cash of \$2,200, which will be used over the next six months. The transaction was recorded as a debit to shop supplies (asset) and will be expensed as they are used.
- g. At the end of its current fiscal year Business X would like to show its stockholders an increased value in net income and decides to extend its fiscal year-end by thirty days.
- h. XYZ is in deep financial trouble and recently was able to obtain some badly needed cash from an investor who was interested in becoming an equity partner. However, a few days ago, the investor unexpectedly changed the terms of his cash investment in XYZ company from the proposed equity partnership to a long-term loan. XYZ does not disclose this to their bank, who they recently applied to for an increase in their overdraft line-of-credit.

EXERCISE 1–3 (LO4) Calculating Missing Amounts

	Assets	=	Liabilities	+	Equity
a.	50,000	=	20,000	+	?
b.	10,000	=	?	+	1,000
c.	?	=	15,000	+	80,000

Required: Calculate the missing amounts in **a**, **b**, and **c** above. Additionally, answer each of the questions in **d** and **e** below.

d. Assets are financed by debt and equity. The greatest percentage of debt financing is reflected in **a**, **b**, or **c**?

e. The greatest percentage of equity financing is reflected in **a**, **b**, or **c**?

EXERCISE 1–4 (LO4) Calculating Missing Amounts

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

	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
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

EXERCISE 1–5 (LO4) Calculating Missing Amounts

	Assets	=	Liabilities	+	Equity
Balance, Jan. 1, 2015	\$50,000		\$40,000		?
Balance, Dec. 31, 2015	40,000		20,000		?

Required: Using the information above, calculate net income under each of the following assumptions.

- During 2015, no common stock was issued and no dividends were declared.
- During 2015, no common stock was issued and dividends of \$5,000 were declared.
- During 2015, common stock of \$12,000 was issued and no dividends were declared.
- During 2015, common stock of \$8,000 was issued and \$12,000 of dividends were declared.

EXERCISE 1–6 (LO4) Identifying Assets, Liabilities, Equity Items

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

- | | |
|------------------------|------------------------|
| a. Accounts payable | k. Dividends |
| b. Accounts receivable | l. Interest receivable |
| c. Notes payable | m. Retained earnings |
| d. Building | n. Interest revenue |
| e. Cash | o. Interest payable |
| f. Common stock | p. Interest expense |
| g. Notes payable | q. Prepaid insurance |
| h. Office supplies | r. Insurance expense |
| i. Prepaid insurance | s. Insurance revenue |
| j. Utilities expense | t. Machinery |

EXERCISE 1–7 (LO4) Calculating Financial Statement Components

The following information is taken from the records of Jasper Inc. at January 31, 2015, after its first month of operations. Assume no dividends were declared in January.

Cash	\$33,000	Equipment	\$30,000
Accounts receivable	82,000	Notes payable	15,000
Unused supplies	2,000	Accounts payable	27,000
Land	25,000	Common stock	?
Building	70,000	Net income	40,000

Required:

- Calculate total assets.
- Calculate total liabilities.
- Calculate common stock.
- Calculate retained earnings.
- Calculate total equity.

EXERCISE 1–8 (LO4) Net Income, Shares Issued

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

Required: Using the alphabetized information above for EDW Inc. after its first month of operations, complete the income statement, statement of stockholders' equity, and balance sheet using the templates provided below.

EDW Inc.
Income Statement
Month Ended March 31, 2015

Revenues:		
Service revenue		\$
Expenses:		
Wages expense	\$	
Miscellaneous expense		
Insurance expense		
Office supplies expense		
Net income		\$

EDW Inc.
Statement of Stockholders' Equity
Month Ended March 31, 2015

	<i>Common Stock</i>	<i>Retained Earnings</i>	<i>Total Equity</i>
Opening balance	\$	\$	\$
Shares issued			
Net income			
Ending balance	\$	\$	\$

EDW Inc.
Balance Sheet
March 31, 2015

Assets		Liabilities	
Cash	\$	Accounts payable	\$
Accounts receivable			
Equipment		Equity	
		Common stock	\$
		Retained earnings	
Total assets	\$	Total equity	
		Total liabilities and equity	\$

EXERCISE 1–9 (LO4) Net Income, Dividends

Accounts receivable	\$17,000	Machinery	\$14,000
Accounts payable	3,000	Notes payable	18,000
Advertising expense	5,000	Retained earnings	6,000
Cash	9,000	Salaries expense	64,000
Dividends	2,000	Service revenue	81,000
Insurance expense	7,000	Common stock	10,000

Required: Algonquin Inc. began operations on August 1, 2013. After its second year, Algonquin Inc.'s accounting system showed the information above. During the second year, no additional shares were issued. Complete the income statement, statement of stockholders' equity, and balance sheet using the templates provided below.

Algonquin Inc. Income Statement Year Ended July 31, 2015			Algonquin Inc. Statement of Stockholders' Equity Year Ended July 31, 2015			
Revenues:			Common	Retained	Total	
Service revenue		\$	Stock	Earnings	Equity	
Expenses:			Opening balance	\$ 10,000	\$ 6,000	\$ 16,000
Advertising expense	\$		Net income			
Insurance expense			Dividends			
Salaries expense			Ending balance	<u>\$</u>	<u>\$</u>	<u>\$</u>
Net income		<u>\$</u>				

Algonquin Inc. Balance Sheet July 31, 2015			
Assets		Liabilities	
Cash	\$	Accounts payable	\$
Accounts receivable		Notes payable	
Machinery		Total liabilities	<u>\$</u>
		Equity	
		Common stock	\$
		Retained earnings	
		Total equity	<u>\$</u>
Total assets	<u>\$</u>	Total liabilities and equity	<u>\$</u>

EXERCISE 1–10 (LO4) Net Income, Dividends, Shares Issued

Required: Refer to EXERCISE 1–9. Use the same information EXCEPT assume that during the second year, additional shares were issued for cash of \$3,000. Complete the income statement, statement of stockholders' equity, and balance sheet using the templates provided below.

Algonquin Inc. Income Statement Year Ended July 31, 2015			Algonquin Inc. Statement of Stockholders' Equity Year Ended July 31, 2015			
Revenues:				Common Stock	Retained Earnings	Total Equity
Service revenue		\$	Opening balance	\$	\$	\$
Expenses:			Shares issued			
Advertising expense	\$		Net income			
Insurance expense			Dividends			
Salaries expense			Ending balance			
Net income		<u>\$</u>		<u>\$</u>	<u>\$</u>	<u>\$</u>

Algonquin Inc. Balance Sheet July 31, 2015			
Assets		Liabilities	
Cash	\$	Accounts payable	\$
Accounts receivable		Notes payable	
Machinery		Total liabilities	<u>\$</u>
		Equity	
		Common stock	\$
		Retained earnings	
		Total equity	<u></u>
Total assets	<u>\$</u>	Total liabilities and equity	<u>\$</u>

EXERCISE 1–11 (LO4) Net Loss

Accounts receivable	\$1,600	Rent payable	\$2,500
Cash	6,000	Retained earnings	4,000
Equipment rental expense	9,400	Common stock	6,400
Fees earned	12,000	Truck	22,000
Fuel expense	500	Wages expense	3,400
Notes payable	18,000		

Required: Wallaby Inc. began operations on February 1, 2014. After its second month, Wallaby Inc.'s accounting system showed the information above. During the second month, no dividends were declared and no additional shares were issued. Complete the income statement, statement of stockholders' equity, and balance sheet using the templates provided below.

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Wallaby Inc. Income Statement Month Ended March 31, 2015		Wallaby Inc. Statement of Stockholders' Equity Month Ended March 31, 2015			
Revenues:			Common Stock	Retained Earnings	Total Equity
Fees earned	\$	Opening balance	\$ 6,400	\$ 4,000	\$ 10,400
Expenses:					
Equipment rental expense	\$	Net loss			
Wages expense		Ending balance	<u>\$</u>	<u>\$</u>	<u>\$</u>
Fuel expense					
Net loss	<u>\$</u>				

Wallaby Inc. Balance Sheet March 31, 2015			
<i>Assets</i>		<i>Liabilities</i>	
Cash	\$	Rent payable	\$
Accounts receivable		Notes payable	<u> </u>
Truck		Total Liabilities	\$
		<i>Equity</i>	
		Common stock	\$
		Retained Earnings	<u> </u>
		Total equity	<u> </u>
Total assets	<u>\$</u>	Total liabilities and equity	<u>\$</u>

EXERCISE 1–12 (LO4) Correcting Financial Statements

A junior bookkeeper of Adams Ltd. prepared the following incorrect financial statements at the end of its first month of operations.

Adams Ltd. Income Statement For the Month Ended January 31, 2015		
Service Revenue		\$3,335
Expenses:		
Accounts payable	\$300	
Land	1,000	
Miscellaneous expenses	<u>335</u>	<u>1,635</u>
Net income		<u>\$1,700</u>

Balance Sheet			
	Assets		Liabilities and Equity
Cash	\$1,000	Rent expense	\$300
Repairs expense	500	Common stock	3,000
Salaries expense	1,000	Retained earnings	1,700
Building	2,500		
	<u>\$5,000</u>		<u>\$5,000</u>

Required: Prepare a corrected income statement, statement of stockholders' equity, and balance sheet.

EXERCISE 1–13 (LO4) Income Statement

Below are the December 31, 2015, year-end accounts balances for Mitch's Architects Ltd. This is the business's second year of operations.

Cash	\$23,000	Common stock	\$ 30,400
Accounts receivable	24,000	Retained earnings	5,000
Office supplies inventory	2,000	Consulting fees earned	150,000
Prepaid insurance	7,000	Office rent expense	60,000
Truck	40,000	Salaries and benefits expense	40,000
Office equipment	15,000	Utilities expense	12,000
Accounts payable	30,000	Insurance expense	5,000
Unearned consulting fees	15,000	Supplies and postage expense	2,400

Additional information:

- a. Included in the common stock account balance was an additional \$10,000 of shares issued during the current year just ended.
- b. Included in the retained earnings account balance was dividends paid to the stockholders of \$1,000 during the current year just ended.

Required: Use these accounts to prepare an income statement similar to the example illustrated in Section 1.4.

EXERCISE 1–14 (LO4) Statement of Stockholders' Equity

Required: Using the data in EXERCISE 1–13, prepare a statement of stockholders' equity similar to the example illustrated in Section 1.4.

EXERCISE 1–15 (LO4) Balance Sheet

Required: Using the data in EXERCISE 1–13, prepare a balance sheet similar to the example illustrated in Section 1.4.

EXERCISE 1–16 (LO4) Financial Statements with Errors

Below are the May 31, 2015, year-end financial statements for Gillespie Corp., prepared by a summer student. There were no common stock transactions in the year just ended.

Gillespie Corp.
Income Statement
For the Year Ended May 31, 2015

Revenues:	
Service revenue	\$382,000
Unearned service revenue	25,000
Rent revenue	90,000
 Expenses:	
Warehouse rent expense	100,000
Prepaid advertising	17,000
Salaries and benefits expense	110,000
Dividends	10,000
Utilities expense	42,000
Insurance expense	15,000
Shop supplies expense	6,000
Net income	\$197,000

Gillespie Corp.
Statement of Stockholders' Equity
At May 31, 2015

	Common Stock	Retained Earnings	Total Equity
Opening balance	\$ 5,000	\$140,000	\$145,000
Net income		197,000	197,000
Ending balance	\$ 5,000	\$337,000	\$342,000

Gillespie Corp.
Balance Sheet
For the Year Ended May 31, 2015

Assets		Liabilities	
Cash	\$ 50,000	Accounts payable	\$130,000
Accounts receivable	85,000		
Office equipment	45,000	Total liabilities	\$130,000
Building	240,000	Equity	
Shop supplies	52,000	Common stock	\$ 5,000
		Retained earnings	337,000
		Total equity	342,000
Total assets	\$472,000	Total liabilities and equity	\$472,000

Required: Using the data above, prepare a corrected set of financial statements similar to the examples illustrated in Section 1.4.

EXERCISE 1–17 (LO4) Determining Missing Financial Information

Required: Complete the following calculations for each individual company:

- a. If ColorMePink Ltd. has a retained earnings opening balance of \$50,000 at the beginning of the year, and an ending balance of \$40,000 at the end of the year, what would be the net income/loss, if dividends paid were \$20,000?
- b. If ForksAndSpoons Ltd. has net income of \$150,000, dividends paid of \$40,000 and a retained earnings ending balance of \$130,000, what would be the retained earnings opening balance?

- c. If CupsAndSaucers Ltd. has a retained earnings opening balance of \$75,000 at the beginning of the year, and an ending balance of \$40,000 at the end of the year, what would be the dividends paid, if the net loss was \$35,000?

EXERCISE 1–18 (LO4,5) Equity – What Causes it to Change

	Assets	=	Liabilities	+	Equity	
Balances at April 1, 2015	\$100,000		\$60,000		\$40,000	
					?	Shares issued in April
					?	April net income(loss)
					?	Dividends paid in April
Balances at April 30, 2015	<u>\$180,000</u>	=	<u>\$130,000</u>	+	<u>?</u>	

Required: Using the information provided above, calculate the net income or net loss realized during April under each of the following independent assumptions.

- a. No shares were issued in April and no dividends were paid.
- b. \$50,000 of shares were issued in April and no dividends were paid.
- c. No shares were issued in April and \$4,000 of dividends were paid in April.

EXERCISE 1–19 (LO4,5) Equity – What Causes it to Change

	Assets	=	Liabilities	+	Equity
Balances at June 1, 2015	\$160,000		\$100,000		\$60,000
					<input style="width: 50px;" type="text" value="?"/> Shares issued in June
					<input style="width: 50px;" type="text" value="?"/> June net income(loss)
					<input style="width: 50px;" type="text" value="?"/> Dividends paid in June
Balances at June 30, 2015	<u>\$200,000</u>	=	<u>\$90,000</u>	+	<u>?</u>

Required: Using the information provided above, calculate the dividends paid in June under each of the following independent assumptions.

- a. In June no shares were issued and a \$70,000 net income was earned.
- b. \$40,000 of shares were issued in June and a \$90,000 net income was earned.
- c. In June \$130,000 of shares were issued and an \$80,000 net loss was realized.

EXERCISE 1–20 (LO5) Impact of Transactions on the Accounting Equation

The following list shows the various ways in which the accounting equation might be affected by financial transactions.

	Assets	=	Liabilities	+	Equity
1.	(+)				(+)
2.	(+)		(+)		
3.	+)(-)				
4.	(-)				(-)
5.	(-)		(-)		
6.			(+)		(-)
7.			(-)		(+)
8.			+)(-)		
9.					+)(-)

Required: Match one of the above to each of the following financial transactions. If the description below does not represent a financial transaction, indicate 'NT' for 'No Transaction'. The first one is done as an example.

- a. 3 Purchased a truck for cash.
- b. Issued common stock for cash.
- c. Incurred a bank loan as payment for equipment.
- d. Made a deposit for electricity service to be provided to the company in the future.
- e. Paid rent expense.
- f. Signed a new union contract that provides for increased wages in the future.
- g. Wrote a letter of complaint to the State Governor about a mail strike and hired a messenger service to deliver letters
- h. Received a collect telegram from the State Governor; paid the messenger.
- i. Billed customers for services performed.
- j. Made a cash payment to satisfy an outstanding obligation.
- k. Received a payment of cash in satisfaction of an amount owed by a customer.
- l. Collected cash from a customer for services rendered.
- m. Paid cash for truck operation expenses.
- n. Made a monthly payment on the bank loan; this payment included a payment on part of the loan and also an amount of interest expense. (*Hint: This transaction affects more than two parts of the accounting equation.*)
- o. Issued shares in the company to pay off a loan.

Problems

PROBLEM 1–1 (LO4,5) Preparing Financial Statements

Following are the asset, liability, and equity items of Dumont Inc. at January 31, 2015, after its first month of operations.

ASSETS		=	LIABILITIES		+	EQUITY	
Cash	\$1,300		Notes payable	\$8,000		Common stock	\$2,000
Accounts receivable	2,400		Accounts payable	1,000		Service revenue	7,500
Prepaid expenses	550					Advertising expense	500
Unused supplies	750					Commissions expense	720
Truck	9,000					Insurance expense	50
						Interest expense	80
						Rent expense	400
						Supplies expense	100
						Telephone expense	150
						Wages expense	2,500

Required:

1. Prepare an income statement and statement of stockholders' equity for Dumont's first month ended January 31, 2015.
2. Prepare a balance sheet at January 31, 2015.

PROBLEM 1–2 (LO4) Preparing Financial Statements

Laberge Sheathing Inc. began operations on January 1, 2015. The office manager, inexperienced in accounting, prepared the following statement for the business's most recent month ended August 31, 2015.

Laberge Sheathing Inc. Financial Statement Month Ended August 31, 2015			
Cash	\$400	Accounts payable	\$7,800
Accounts receivable	3,800	Common stock	3,200
Unused supplies	100	Service revenue	2,000
Equipment	8,700	Retained earnings	4,000
Advertising expense	300		
Interest expense	500		
Maintenance expense	475		
Supplies used	125		
Wages expense	2,600		
	\$17,000		\$17,000

Required:

1. Prepare an income statement and statement of stockholders' equity for the month ended August 31, 2015, and a balance sheet at August 31, 2015. No shares were issued in August.
2. Using the information from the balance sheet completed in Part 1, calculate the percentage of assets financed by equity.

PROBLEM 1–3 (LO5) Transaction Analysis

The following transactions of Larson Services Inc. occurred during August 2015, its first month of operations.

- 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
 3 Signed a contract with a customer to do a \$15,000 job beginning in November
 4 Paid \$600 for a one-year truck insurance policy effective August 1
 5 Collected fees of \$2,000 for work to be performed in September
 7 Billed a client \$5,000 for services performed today
 9 Paid \$250 for supplies purchased and used today
 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 that ran the first two weeks of August
 20 Paid \$250 of the amount owing regarding the credit purchase of August 12
 25 Paid the following expenses: rent for August, \$350; salaries, \$2,150; telephone, \$50; truck operation, \$250
 28 Called clients for payment of the balances owing from August 7
 31 Billed a client \$6,000 for services performed today
 31 \$500 of the amount collected on August 5 has been earned as of today

Required:

1. Create a table like the one below by copying the headings shown.

ASSETS					=	LIABILITIES			+	EQUITY	
Cash	+ Acct. Rec.	+ Ppd. Exp.	+ Unused Supplies	+ Truck	=	Acct. Pay.	+ Unearned Revenue	+ Notes Pay.	+	Common Stock	+ Retained Earnings

2. Use additions and subtractions in the table created in Part 1 to show the effects of the August transactions. For non-transactions that do not impact the accounting equation items (such as August 3), indicate 'NE' for 'No Effect'.
3. Total each column and prove the accounting equation balances.

PROBLEM 1–4 (LO4) Preparing Financial Statements

Required: Refer to your answer for Problem 1–3. Prepare an income statement and a statement of stockholders' equity for the month ended August 31, 2015. Label the revenue earned as Fees Earned. Prepare a balance sheet at August 31, 2015.

PROBLEM 1–5 (LO5) Transaction Analysis and Table

The following transactions occurred for Olivier Bondar Ltd., an restaurant management consulting service, during May, 2016:

- May 1 Received a check in the amount of \$5,000 from TUV Restaurant Ltd., for a restaurant food cleanliness assessment to be conducted in June.
- May 1 Paid \$5,000 for office rent for the month of May.
- May 2 Purchased office supplies for \$3,000 on account.
- May 3 Completed a consultation project for McDanny's Restaurant and billed them \$27,000 for the work.
- May 4 Purchased a laptop computer for \$3,000 in exchange for a note payable due in 45 days.
- May 5 Olivier Bondar was a little short on cash, so the manager made an application for a bank loan in the amount of \$20,000. It is expected that the bank will make their decision regarding the loan next week.
- May 6 Received an invoice from the utilities company for electricity in the amount of \$300.
- May 10 Bank approved the loan and deposited \$20,000 into Olivier Bondar's bank account. First loan payment is due on June 10.
- May 11 Paid for several invoices outstanding from April for goods and services received for a total of \$8,000. The breakdown of the invoice costs are: telephone expense \$500; advertising expense \$3,000; office furniture \$2,000; office supplies \$2,500.
- May 13 Paid employee salaries owing from May 1 to May 13 in the amount of \$3,000.
- May 14 Completed consulting work for a client and invoiced \$18,000.
- May 15 Received \$25,000 cash for work done and invoiced in April.
- May 18 Hired a new employee who will begin work on May 25. Salary will be \$2,500 every two weeks.
- May 21 Placed an order request for new shelving for the office. Catalogue price is \$2,500.
- May 27 Paid employee salaries owing from May 14 to May 27 in the amount of \$3,500.
- May 29 The bookkeeper was going to be away for two weeks, so the June rent of \$5,000 was paid.
- May 31 Reimbursed \$50 in cash to an employee for use of his personal vehicle for company business on May 20.
- May 31 Shelving unit ordered on May 21 was delivered and installed. Total cost was \$3,000, including labor.

Required: Create a table with the following column headings and opening balances. Below the opening balance, number each row from 1 to 18:

	Cash	Accounts receivable	Office supplies	Prepaid expenses	Office furniture	Equipment	Accounts payable	Unearned revenue	Note payable	Common stock	Retained earnings
Open Bal	+10,000	+25,000	+2,000	0	+15,000	+25,000	+35,000	0	0	+8,000	+34,000
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
Bal											

Using the table as shown in Figure 1.3 of the text, complete the table for the 18 items listed in May and total each column. If any of the items are not to be recorded, leave the row blank.

PROBLEM 1–6 (LO5) Transaction Analysis and Table

Required: Using the data from the table in PROBLEM 1–5, prepare the balance sheet as at May 31, 2016.

Chapter 2

The Accounting Process

Chapter 2 looks more closely at asset, liability, and equity accounts and how they are affected by double-entry accounting, namely, debits and credits. 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 – Prepare a trial balance and explain its use.
- LO4 – Record transactions in a general journal and post in a general ledger.
- LO5 – Define the accounting cycle.

Concept Self-Check

Use the following as a self-check while working through Chapter 2.

1. What is an asset?
2. What is a liability?
3. What are the different types of equity accounts?
4. What is retained earnings?
5. How are retained earnings and revenues related?
6. Why are T-accounts used in accounting?

7. How do debits and credits impact the T-account?
8. What is a chart of accounts?
9. Are increases in equity recorded as a debit or credit?
10. Are decreases in equity recorded as a debit or credit?
11. Does issuing shares and revenues cause equity to increase or decrease?
12. Are increases in the common stock account recorded as a debit or credit?
13. Are increases in revenue accounts recorded as debits or credits?
14. Do dividends and expenses cause equity to increase or decrease?
15. Are increases in the dividend account recorded as a debit or credit?
16. Are increases in expense accounts recorded as debits or credits?
17. How is a trial balance useful?
18. What is the difference between a general journal and a general ledger?
19. Explain the posting process.
20. What is the accounting cycle?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

2.1 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 equity item. Accounts are maintained in a **ledger** also referred to as the **books**. We now review and expand our understanding of asset, liability, and 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** 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 a promise to pay an amount on a specific future date plus a predetermined amount of interest.
- **Office supplies** are supplies to be used in the future. If the supplies are used before the end of the accounting period, they are an expense instead of an asset.
- **Merchandise inventory** are items to be sold in the future.
- **Prepaid insurance** represents an amount paid in advance for insurance. The prepaid insurance will be used in the future.
- **Prepaid rent** represents an amount paid in advance for rent. The prepaid rent will be used in the future.
- **Land** cost must be in a separate account from any building that might be on the land. Land is used over future periods.
- **Buildings** indirectly help a business generate revenue over future accounting periods since they provide space for day-to-day operating activities.

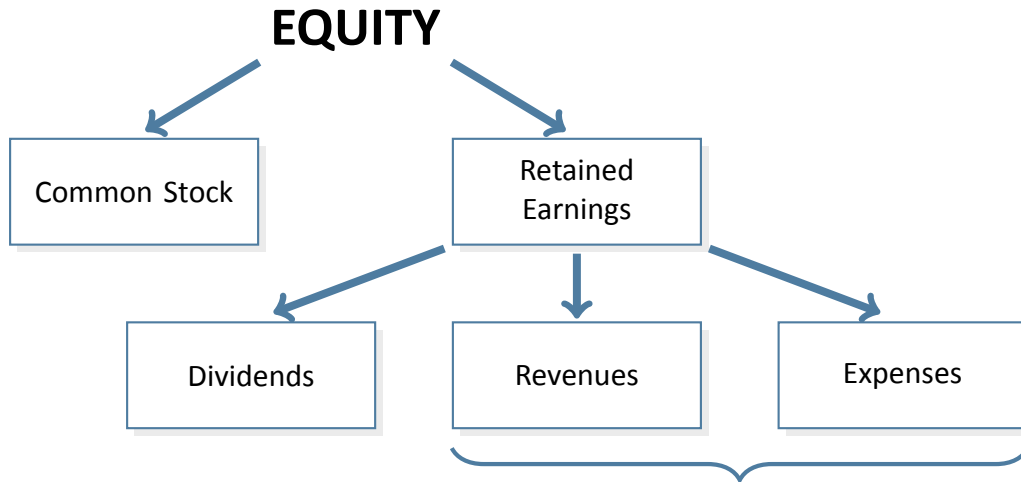
Liability Accounts

As explained in Chapter 1, a liability is an obligation to pay for an asset in the future. The primary purpose of liabilities is to finance investing activities that include the purchase of assets like land, buildings, and equipment. Liabilities are also used to finance operating activities involving, for example, accounts payable, unearned revenues, and wages payable. A separate account is created for each liability. Examples of liability accounts are reviewed below.

- **Accounts payable** are debts owed to creditors 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.
- **Short-term notes payable** are a debt owed to a bank or other creditor that is normally paid within one year. Notes payable are different than accounts payable in that notes involve interest.
- **Long-term notes payable** are a debt owed to a bank or other creditor that is normally paid beyond one year. Like short-term notes, long-term notes involve interest.
- **Unearned revenues** are payments received in advance of the product or service being provided. In other words, the business owes a customer the product/service.

Equity Accounts

Chapter 1 explained that equity represents the net assets owned by the owners of a business. In a corporation, the owners are called stockholders. Equity is traditionally one of the more challenging concepts to understand in introductory financial accounting. The difficulty stems from there being different types of equity accounts: common stock, retained earnings, dividends, revenues, and expenses. Common stock represents the investments made by owners into the business and causes 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 equity to increase, along with expenses and dividends, which cause equity to decrease. Figure 2.1 summarizes equity accounts.

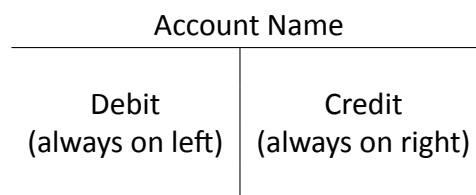


Recall that revenues less expenses equals net income/net loss. Net income/net loss is not an account but is the result of subtracting expenses from revenues.

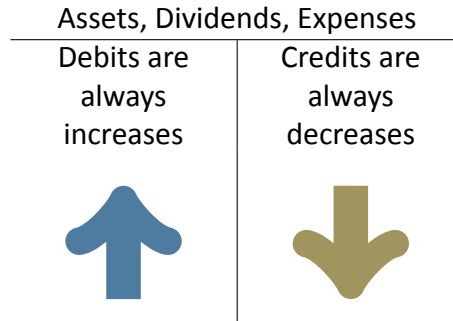
Figure 2.1: Composition of Equity Accounts

T-accounts

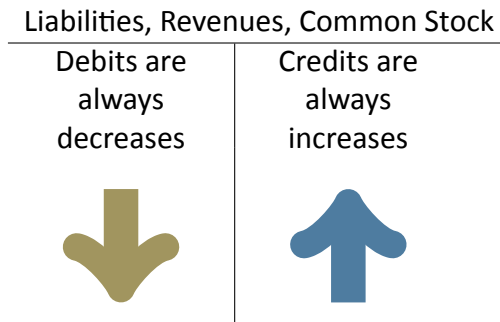
A simplified account, called a **T-account**, is often used as a teaching/learning tool to show increases and decreases in an account. It is called a T-account because it resembles the letter *T*. As shown in the T-account below, the left side records **debit** entries and the right side records **credit**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



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*, *dividends*, and *expenses*, increases are recorded by debits and decreases by credits. This guideline is shown in the following T-account.



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



Another way to illustrate the debit and credit rules is based on the accounting equation. Remember that dividends, expenses, revenues, and common stock are equity accounts.

	Assets	=	Liabilities	+	Equity
Increases are recorded as:	Debits		Credits		Credits ¹
Decreases are recorded as:	Credits		Debits		Debits ²

The following summary shows how debits and credits are used to record increases and decreases in various types of accounts.

ASSETS DIVIDENDS EXPENSES	LIABILITIES COMMON STOCK REVENUE
<hr/> Increases are DEBITED. Decreases are CREDITED.	<hr/> Increases are CREDITED. Decreases are DEBITED.

¹Revenues and the issuance of common stock are equity accounts. They cause equity to increase so increases in these account types are recorded as credits.

²Expenses, and Dividends are equity accounts. They cause equity to decrease. Decreases in equity are always recorded as debits so as expenses and dividends are realized, they are debited.

This summary will be used in a later section to illustrate the recording of debits and credits regarding the transactions of Big Dog Carworks Corp. introduced in Chapter 1.

The **account balance** is determined by adding and subtracting the increases and decreases in an account. Two assumed examples are presented below.

Cash		Accounts Payable	
10,000	3,000	700	5,000
3,000	3,000		
400	2,400		
8,000	2,000		
	7,100		
	200		
Balance	3,700		4,300 Balance

The \$3,700 debit balance in the Cash account was calculated by adding all the debits and subtracting the sum of the credits. The \$3,700 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.

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. Accounts Payable is a liability and because liabilities increase with credits, the normal balance in Accounts Payable is a credit as shown in the T-account above.

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 begin with the digit '1', Liability accounts with the digit '2'. Each business will have a unique chart of accounts that corresponds to its specific needs. 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 accounts
500-599	Revenue accounts
600-699	Expense accounts

2.2 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	+	EQUITY³
Increases are:	Debits		Credits		Credits
Decreases are:	Credits		Debits		Debits

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

In this section, the following debit and credit summary will be used to record the transactions of Big Dog Carworks Corp. into T-accounts.

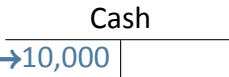
ASSETS	LIABILITIES
DIVIDENDS	COMMON STOCK
EXPENSES	REVENUE
Increases are DEBITED.	Increases are CREDITED.
Decreases are CREDITED.	Decreases are DEBITED.

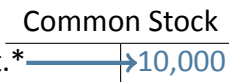
Transaction 1

Jan. 1 – Big Dog Carworks Corp. issued 1,000 shares to Bob Baldwin, a stockholder, for a total of \$10,000 cash.

Analysis:

³The issuance of common stock and revenues cause equity to increase; as indicated above, increases in equity are recorded as credits. Dividends and expenses cause equity to decrease; decreases in equity are recorded as debits.

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

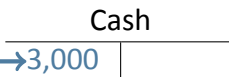
Credit: Common Stock, an equity account, is increased resulting in a credit.* 

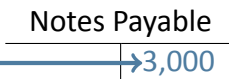
**Note: An alternate analysis would be that the issuance of shares causes equity to increase and increases in equity are always recorded as a credit.*

Transaction 2

Jan. 2 – Borrowed \$3,000 from the bank.

Analysis:

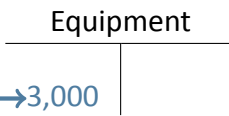
Debit: An asset account, Cash, is increased resulting in a debit. 

Credit: A liability account, Notes Payable, is increased resulting in a credit. 

Transaction 3

Jan. 3 – Equipment is purchased for \$3,000 cash.

Analysis:

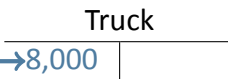
Debit: One asset is acquired in exchange for another asset. An asset account, Equipment, is increased resulting in a debit. 

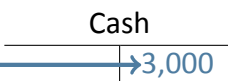
Credit: The account, Cash, also an asset, is decreased resulting in a credit. 

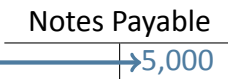
Transaction 4

Jan. 3 – A truck was purchased for \$8,000; Big Dog paid \$3,000 cash and incurred a \$5,000 bank loan for the balance.

Analysis:

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

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

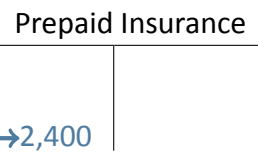
Credit: A liability account, Notes Payable, is increased resulting in a credit. 

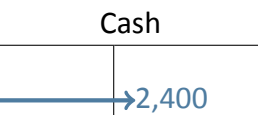
Note: Transaction 4 involves one debit and two credits. Notice that the total debit of \$8,000 equals the total credits of \$8,000 which satisfies the double-entry accounting rule requiring that debits ALWAYS equal credits.

Transaction 5

Jan. 5 – Big Dog Carworks Corp. paid \$2,400 cash for a one-year insurance policy, effective January 1.

Analysis:

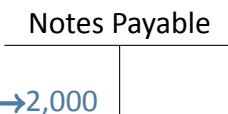
Debit: An asset account, Prepaid Insurance, is increased resulting in a debit. Because the insurance provides future benefit, it is recorded as an asset until it is used. 

Credit: Payment of the insurance results in a decrease in the asset account, Cash, resulting in a credit. 

Transaction 6

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

Analysis:

Debit: This payment decreases the liability, Notes Payable, resulting in a debit. 

Credit: The payment also decreases the asset, Cash, resulting in a credit. 

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.

Analysis:

Debit: An asset, Cash, is increased at the time the cash is received resulting in a debit.	→	400	Cash
Credit: Since the revenue relating to this cash receipt is not earned as of this date, a liability account, Unearned Repair Revenue, is credited because Big Dog ‘owes’ the customer \$400 of work.	→	400	Unearned Repair Revenue

Transaction 8

Jan. 31 – A total of \$10,000 of automotive repair services is performed for a customer who paid \$8,000 cash. The remaining \$2,000 will be paid in 30 days.

Analysis:

Debit: An asset, Cash, is increased resulting in a debit.	→	8,000	Cash
Debit: An asset, Accounts Receivable, is increased resulting in a debit.	→	2,000	Accounts Receivable
Credit: An equity, Repair Revenue, is increased resulting in a credit.	→	10,000	Repair Revenue

Transaction 9

Jan. 31 – Operating expenses of \$7,100 were paid in cash: Rent expense, \$1,600; salaries expense, \$3,500; and supplies expense of \$2,000. \$700 for truck operating expenses (e.g., oil, gas) were incurred on credit.

Analysis:

Debit: This transaction increases four expense accounts resulting in a debit to each.	Rent Expense
→	1,600
→	Salaries Expense
→	3,500
→	Supplies Expense
→	2,000
→	Truck Operating Expense
→	700

Note: Each expense is recorded in an individual account.

Credit: An asset, Cash, is decreased resulting in a credit.	Cash
→	7,100
→	Accounts Payable
→	700

Transaction 10

Jan. 31 – Dividends of \$200 were paid in cash to the only stockholder, Bob Baldwin.

Analysis:

Debit: Dividends, an equity account, is increased resulting in a debit.	Dividends
→	200

Note: An alternate analysis would be that dividends cause equity to decrease and that decreases in equity are always recorded as a debit.

Credit: An asset, Cash is decreased resulting in a credit.	Cash
→	200

After the January transactions of Big Dog Carworks Corp. have been recorded in the T-accounts, each account is totaled and the difference between the debit balance and the credit balance 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 equity are added. Notice that total assets of \$19,100 equal the sum of total liabilities of \$7,100 plus equity of \$12,000.

ASSETS		LIABILITIES		EQUITY		
Cash		Notes Payable		Common Stock	Dividends	Repair Revenue
(1) 10,000	(3) 3,000	(6) 2,000	(2) 3,000	(1) 10,000	(10) 200	(8) 10,000
(2) 3,000	(4) 3,000		(4) 5,000			
(7) 400	(5) 2,400					
(8) 8,000	(6) 2,000		Bal. 6,000			
	(9) 7,100					
	(10) 200					
Bal. 3,700						
Accounts Receivable		Accounts Payable				Rent Expense
(8) 2,000			(9) 700			(9) 1,600
Prepaid Insurance		Unearned Repair Revenue				Salaries Expense
(5) 2,400			(7) 400			(9) 3,500
Equipment						Supplies Expense
(3) 3,000						(9) 2,000
Truck						Truck Operation Expense
(4) 8,000						(9) 700
19,100 ¹		7,100 ²		12,000 ³		

1. 3,700 + 2,000 + 2,400 + 3,000 + 8,000 = 19,100

2. 6,000 + 700 + 400 = 7,100

3. 10,000 - 200 + 10,000 - 1,600 - 3,500 - 2,000 - 700 = 12,000

2.3 The Trial Balance

LO3 – Prepare a trial balance and explain its use.

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 report 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, 2015. Assume that the account numbers are those assigned by the business.

Big Dog Carworks Corp.
Trial Balance
At January 31, 2015

<i>Acct. No.</i>	<i>Account</i>	<i>Debit</i>	<i>Credit</i>
101	Cash	\$3,700	
110	Accounts receivable	2,000	
161	Prepaid insurance	2,400	
183	Equipment	3,000	
184	Truck	8,000	
201	Accounts payable		\$ 700
210	Unearned revenue		400
247	Notes payable		6,000
320	Common stock		10,000
330	Dividends	200	
450	Repair revenue		10,000
654	Rent expense	1,600	
656	Salaries expense	3,500	
668	Supplies expense	2,000	
670	Truck operation expense	700	
		\$27,100	\$27,100

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, 2015 can now be prepared from the trial balance figures. First, an income statement is prepared.

Big Dog Carworks Corp.
Trial Balance
At January 31, 2015

Acct. No.	Account	Debit	Credit
101	Cash	\$ 3,700	
110	Accounts receivable	2,000	
161	Prepaid insurance	2,400	
183	Equipment	3,000	
184	Truck	8,000	
201	Accounts payable		\$ 700
210	Unearned revenue		400
247	Notes payable		6,000
320	Common stock		10,000
330	Dividends	200	
450	Repair revenue		10,000
654	Rent expense	1,600	
656	Salaries expense	3,500	
668	Supplies expense	2,000	
670	Truck operation expense	700	
		<u>\$27,100</u>	<u>\$27,100</u>

Big Dog Carworks Corp.
Income Statement
For the Month Ended January 31, 2015

Revenues		
Repair revenue		\$10,000
Expenses		
Salaries expense	\$ 3,500	
Supplies expense	2,000	
Rent expense	1,600	
Truck operation expense	700	
Total expenses	<u>7,800</u>	
Net income		<u>\$ 2,200</u>

Common Stock and Dividends are transferred to the Statement of Stockholders' Equity. Dividends is part of Retained Earnings because it is a distribution of Net Income.

Net Income is transferred to the Statement of Stockholders' Equity as part of Retained Earnings.

Big Dog Carworks Corp.
Statement of Stockholders' Equity
For the Month Ended January 31, 2015

	Common Stock	Retained Earnings	Total Equity
Balance at beginning of period	\$ -0-	\$ -0-	\$ -0-
Issued shares of stock	10,000		10,000
Net income		2,200	2,200
Dividends		(200)	(200)
Ending balance	<u>\$10,000</u>	<u>\$2,000</u>	<u>\$12,000</u>

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

Big Dog Carworks Corp.
Trial Balance
At January 31, 2015

Acct. No.	Account	Debit	Credit
101	Cash	\$ 3,700	
110	Accounts receivable	2,000	
161	Prepaid insurance	2,400	
183	Equipment	3,000	
184	Truck	8,000	
201	Accounts payable		\$ 700
210	Unearned revenue		400
247	Notes payable		6,000
320	Common stock		10,000
330	Dividends	200	
450	Repair revenue		10,000
654	Rent expense	1,600	
656	Salaries expense	3,500	
668	Supplies expense	2,000	
670	Truck operation expense	700	
		<u>\$27,100</u>	<u>\$27,100</u>

These accounts are used to prepare the Balance Sheet.

Big Dog Carworks Corp.
Balance Sheet
At January 31, 2015

Assets	
Cash	\$ 3,700
Accounts receivable	2,000
Prepaid insurance	2,400
Equipment	3,000
Truck	8,000
Total assets	<u><u>\$19,100</u></u>
Liabilities	
Accounts payable	\$ 700
Unearned repair revenue	400
Notes payable	6,000
Total liabilities	<u>\$ 7,100</u>
Equity	
Common stock	\$10,000
Retained earnings	2,000
Total equity	<u>12,000</u>
Total liabilities and equity	<u><u>\$19,100</u></u>

The Common Stock and Retained Earnings balances are transferred to the Balance Sheet from the Statement of Stockholders' Equity

NOTE: Pay attention to the links between financial statements.

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

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

The balance sheet SUMMARIZES equity by showing only account balances for common stock and retained earnings. To obtain the details regarding these equity accounts, we must look at the income statement and the statement of stockholders' equity.

2.4 Using Formal Accounting Records

LO4 – Record transactions in a general journal and post in 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**, or just **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**, or just **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 column titled 'R' (for Reference) 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. A dash is often used by accountants in place of .00.
4. The name of the account to be credited is on the second line of the description column and is indented. Accounts to be credited are always indented in this way in the journal. The amount of the credit is recorded in the credit column. Again, a dash may be used in place of .00.

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	Description	R	Debit	Credit	
2015					
1	Cash	101	1 000 0 -		
	Common Stock	320		1 000 0 -	
	To record the issuance of common stock.				
2	Cash	101	3 000 0 -		
	Notes Payable	201		3 000 0 -	
	To record receipt of a bank loan.				
2	Equipment	183	3 000 0 -		
	Cash	101		3 000 0 -	
	To record the purchase of equipment for cash.				
3	Truck	184	8 000 0 -		
	Notes Payable	201		5 000 0 -	
	Cash	101		3 000 0 -	
	To record the purchase of a tow truck; paid cash and incurred additional bank loan.				
5	Prepaid Insurance	161	2 400 0 -		
	Cash	101		2 400 0 -	
	To record payment for a one-year insurance policy.				
10	Notes Payable	201	2 000 0 -		
	Cash	101		2 000 0 -	
	To record payment on bank loan.				
15	Cash	101	4 00 0 -		
	Unearned Repair Revenue	247		4 00 0 -	
	To record receipt of payment for services not performed: \$300 for February, \$100 for March.				
31	Cash	101	8 000 0 -		
	Accounts Receivable	110	2 000 0 -		
	Repair Revenue	450		1 000 0 -	
	To record repaid revenue earned in January.				
31	Rent Expense	654	1 600 0 -		
	Salaries Expense	656	3 500 0 -		
	Supplies Expense	668	2 000 0 -		
	Truck Operation Expense	670	7 00 0 -		
	Cash	101		7 100 0 -	
	Accounts Payable	210		7 00 0 -	
	To record cash payment of expenses for the month.				
31	Dividends	330	2 00 0 -		
	Cash	101		2 00 0 -	
	To record distribution of dividends.				

Figure 2.2: General Journal Transactions for BDCC in January

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 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.

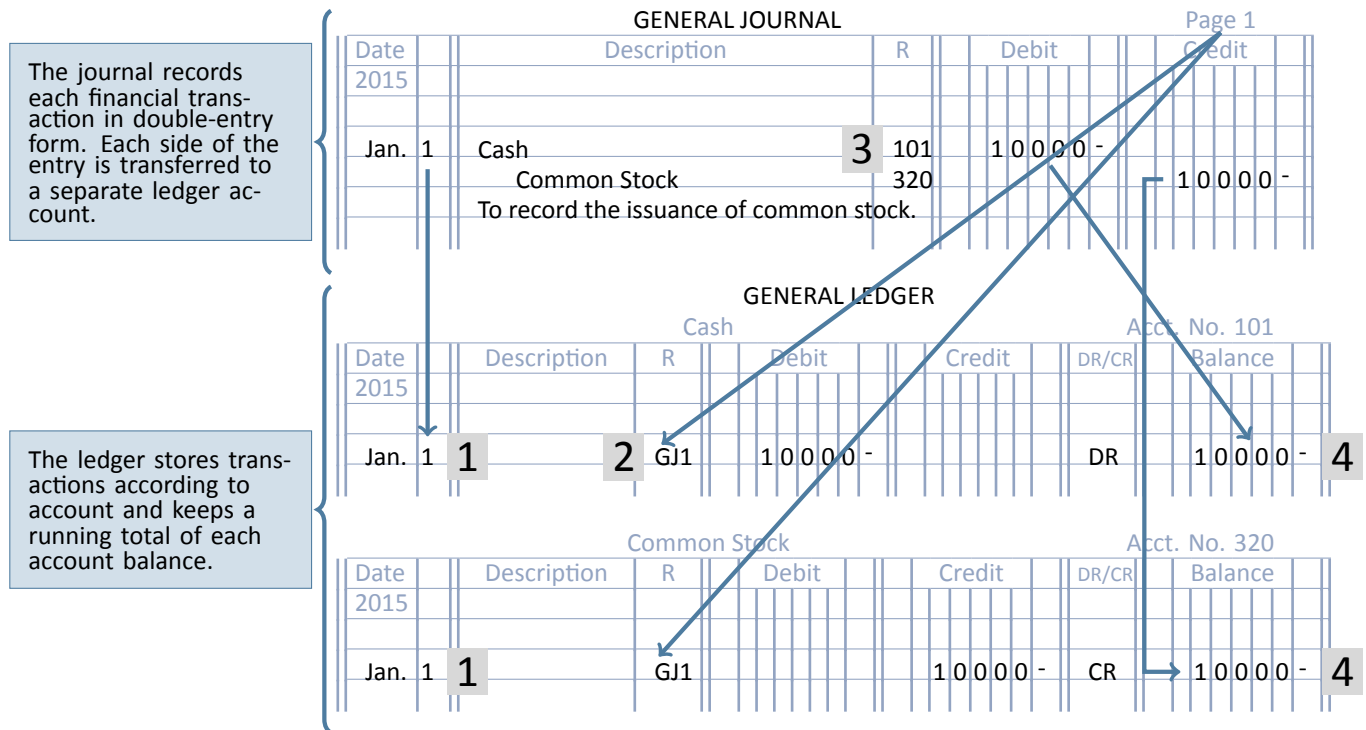


Figure 2.3: Illustration of a Transaction Posted to Two Accounts in the General Ledger

1. The date and amount are posted to the appropriate ledger account. Here the entry debiting Cash is posted from the journal to the Cash ledger account. The entry crediting the common stock account is then posted from the journal to the common stock ledger account.
2. The journal page number is recorded in the reference (R) column of each ledger account as a cross reference. In this case, the posting has been made from general journal page 1; the reference is recorded as GJ1.

3. The appropriate ledger account number is recorded in the reference (R) column of the journal to indicate the posting has been made to that particular account. Here the entry debiting Cash has been posted to Account No. 101. The entry crediting common stock has been posted to Account No. 320.
4. After posting the entry, a balance is calculated in the Balance column. A notation is recorded in the column to the left of the Balance column indicating whether the balance is a debit or credit. A brief description can be entered in the Description column but this is generally not necessary since the journal includes a detailed description for each journal entry.

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 ledger account can be used in working through exercises and problems. Both formats are used to explain and illustrate concepts in subsequent chapters.

2.5 The Accounting Cycle

LO5 – Define the accounting cycle.

In the preceding sections, the January transactions of Big Dog Carworks Corp. were used to demonstrate the steps performed to convert economic data into financial information. This conversion was carried out in accordance with the basic double-entry accounting model. These steps are summarized in Figure 2.4.

Step 1: Transactions are analyzed and journalized.
Journalizing consists of analyzing transactions as they occur to see how they affect the accounting equation. Then, the transactions are recorded chronologically in the general journal.

Step 2: Transactions are summarized by account.
Posting consists of transferring debits and credits from the general journal to the appropriate general ledger accounts.

Step 3: The equality of debits and credits is proved.
 A trial balance is prepared, listing account numbers and names along with account balances to prove the equality of the debits and credits.

Step 4: The summarized transactions are communicated.
Preparing the financial statements consists of using the balances listed in the columns of the trial balance to prepare the income statement, statement of stockholders' equity, and balance sheet.

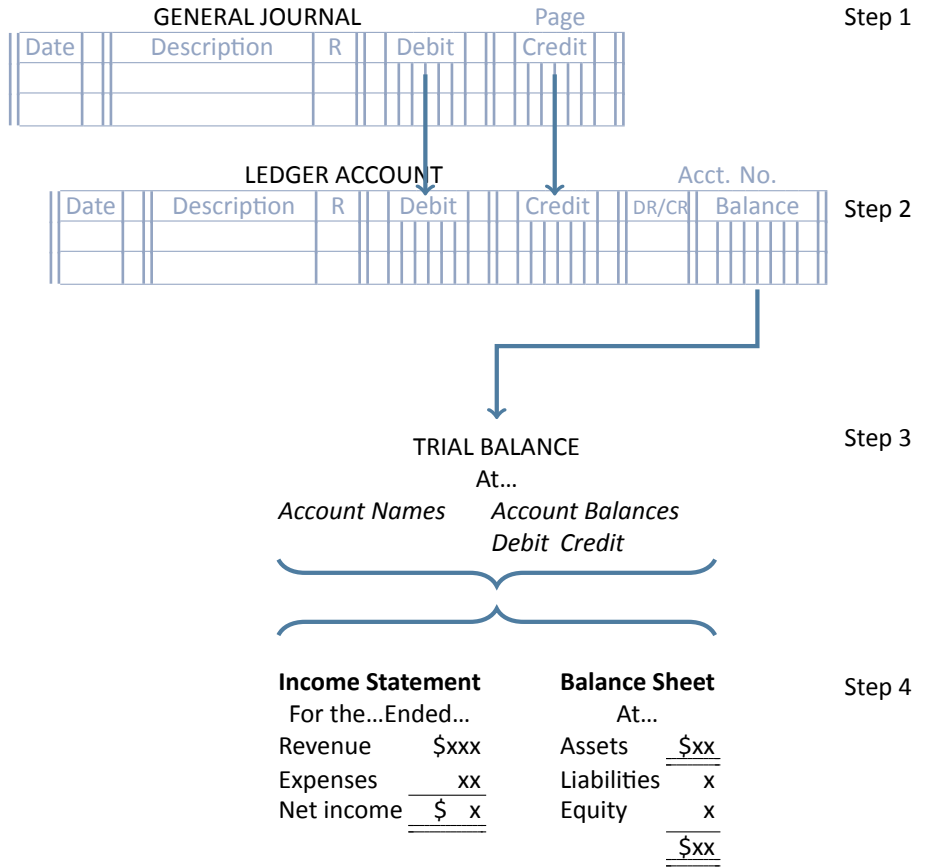


Figure 2.4: Illustrating the Steps in the Accounting Cycle

The sequence just described, beginning with the journalizing of the 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 and these will be introduced in Chapter 3.

Summary of Chapter 2 Learning Objectives

L01 – Describe asset, liability, and equity accounts, identifying the effect of debits and credits on each.

Assets are resources that have future economic benefits such as cash, receivables, prepaids, and machinery. Increases in assets are recorded as debits and decreases as credits. Liabilities represent an obligation to pay an asset in the future and include payables and unearned revenues. Increases in liabilities are recorded as credits and decreases as debits. Equity represents the net assets owned by the owners and includes common stock, retained earnings, dividends, revenues,

and expenses. Increases in equity, caused by the issuance of shares of stock and revenues, are recorded as credits, and decreases in equity, caused by dividends and expenses, are recorded as debits. The following summary can be used to show how debits and credits impact the types of accounts.

L02 – Analyze transactions using double-entry accounting.

Double-entry accounting requires that each transaction be 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: $\text{Assets} = \text{Liabilities} + \text{Equity}$.

L03 – Prepare a trial balance and explain its use.

To help prove the accounting equation is in balance, a trial balance is prepared. The trial balance is an internal report that 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 in the preparation of financial statements.

L04 – Record transactions in a general journal and post in a general ledger.

The recording of financial transactions was introduced in this chapter using T-accounts, an illustrative tool. 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.

L05 – Define the accounting cycle.

Analyzing 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 involved in the accounting cycle will be introduced in Chapter 3.

Discussion Questions

1. Why is the use of a transactions worksheet impractical in actual practice?
2. What is an 'account'? How are debits and credits used to record transactions?
3. Some tend to associate "good" and "bad" or "increase" and "decrease" with credits and debits. Is this a valid association? Explain.
4. The pattern of recording increases as debits and decreases as credits is common to asset and expense accounts. Provide an example.
5. The pattern of recording increases and credits and decreases as debits is common to liabilities, equity, and revenue accounts. Provide an example.
6. Summary of rules for using Debit and Credits:
7. What is a Trial Balance? Why is it prepared?
8. How is a Trial Balance used to prepare financial statements?
9. A General Journal is often called a book of original entry. Why?
10. The positioning of a debit-credit entry in the General Journal is similar in some respects to instructions written in a computer program. Explain, using an example.
11. What is a General Ledger? Why is it prepared?
12. What is a Chart of Accounts? How are the accounts generally arranged and why?
13. List the steps in the accounting cycle.

Exercises

EXERCISE 2-1 (LO1) Accounts

Below is a list of various accounts:

a.	b.			
		Unearned consulting fees		Vehicles
		Prepaid insurance		Depreciation expense
		Office supplies		Interest income
		Notes receivable		Interest expense
		Insurance fee revenue		Furniture
		Unearned insurance fee revenue		Utilities payable
		Salary and benefits expense		Unearned rent revenue
		Small tools and supplies		Retained earnings
		Service fees earned		Salaries and benefits payable
		Service fees revenue		Compensation expense
		Notes payable		Interest earned
		Buildings		Meals and mileage expense
		Rent payable		Unearned service fees
		Common stock		Equipment

Required:

- a. Identify each account as either an asset (A), liability (L), equity (E), revenue (R), or expense (E).
- b. Identify whether the normal balance of each account is a debit (DR) or credit (CR).

EXERCISE 2–2 (LO1) Accounts

Required: Using the list from EXERCISE 2–1, identify if a debit or credit is needed to decrease the normal balance of each account.

EXERCISE 2–3 (LO2)

Required: Record the debit and credit for each of the following transactions (transaction 1 is done for you):

	Assets		Liabilities		Equity	
	<i>Debit</i> (increase)	<i>Credit</i> (decrease)	<i>Debit</i> (decrease)	<i>Credit</i> (increase)	<i>Debit</i> (decrease)	<i>Credit</i> (increase)
1. Purchased a \$10,000 truck on credit.	10,000			10,000		
2. Borrowed \$5,000 cash from the bank.						
3. Paid \$2,000 of the bank loan in cash.						
4. Paid \$600 in advance for a one-year insurance policy.						
5. Received \$500 in advance from a renter for next month's rental of office space.						

EXERCISE 2-4 (LO2)

Required: Record the debit and credit in the appropriate account for each of the following transactions (transaction 1 is done for you):

	<i>Debit</i>	<i>Credit</i>
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 repairs completed today.		
5. Paid this month's rent.		
6. Collected the amount billed in transaction 4 above.		
7. Collected cash for repairs completed today.		
8. Paid for the equipment purchased in transaction 2 above.		
9. Signed a union contract.		
10. Collected cash for repairs to be made for customers next month.		
11. Transferred this month's portion of prepaid insurance that was used to Insurance Expense.		

EXERCISE 2-5 (LO2) Using T-accounts

Below are various transactions for the month of August, 2016, for BOLA Co. This is their first month of operations.

1. Issued common stock in exchange for \$13,000 cash.
2. Received an invoice from the utilities company for electricity in the amount of \$200.

3. Bank approved a loan and deposited \$10,000 into the company's bank account.
4. Paid employee salaries in the amount of \$2,000.
5. Received repair services worth \$5,000 from a supplier in exchange for a note due in thirty days.
6. Completed \$7,000 of service work for a customer on account.
7. Purchased \$1,000 of equipment, paying cash.
8. Rent of \$5,000 cash was paid for the current month's rent.
9. Made a payment of \$1,500 cash as a loan payment regarding item (3). The payment covered \$150 for interest expense and the balance of the cash payment was to reduce the loan balance owing.
10. Reimbursed \$25 in cash to an employee for use of his personal vehicle for company business for a business trip earlier that day.
11. Received a cash of \$5,000 regarding the service work for item (6).
12. Vehicle worth \$30,000 purchased in exchange for \$10,000 cash and \$20,000 note due in six months.
13. Paid the full amount of the utilities invoice regarding item (2).
14. Purchased \$3,000 of furniture on account.
15. Completed \$2,000 of service work for a customer and collected cash.
16. Received a check in the amount of \$2,000 from a customer for service work to be done in two months.
17. Purchased office supplies for \$3,000 on account.
18. Completed a project for a customer and billed them \$8,000 for the service work.
19. Purchased a laptop computer for \$2,500 in exchange for a note payable.
20. September rent of \$5,000 was paid two weeks in advance, on August 15.

Required: Create a separate T-account for each asset, liability, equity, revenue and expense account affected by the transactions above. Record the various transactions debits and credits into the applicable T-account (similar to the two T-accounts shown in Section 2.1, under the heading T-accounts, for Cash and Accounts payable). Calculate and record the ending balance for each T-account. (Hint: Include the reference to the transaction number for each item in the T-accounts, to make it easier to review later, if the accounts contain any errors.)

EXERCISE 2–6 (LO3) Preparing a Trial Balance

Required: Using the T-accounts prepared in EXERCISE 2–5, prepare an August 31, 2016, trial balance for the company based on the balances in the T-accounts.

EXERCISE 2–7 (LO3) Preparing Financial Statements

Required: Using the trial balance in EXERCISE 2–6, prepare the August 31, 2016, income statement, statement of stockholders' equity and the balance sheet for the company based on the balances in the T-accounts.

EXERCISE 2–8 (LO2)

Required: Post the following transactions to the appropriate accounts:

- (1) Issued common stock for \$5,000 cash (posted as an example).
- (2) Paid \$900 in advance for three months' rent, \$300 for each month.
- (3) Billed \$1,500 to customers for repairs completed today.
- (4) Purchased on credit \$2,000 of supplies to be used next month.
- (5) Borrowed \$7,500 from the bank.
- (6) Collected \$500 for the amount billed in transaction (3).
- (7) Received a \$200 bill for electricity used to date (the bill will be paid next month).
- (8) Repaid \$2,500 of the bank loan.
- (9) Used \$800 of the supplies purchased in transaction (4).
- (10) Paid \$2,000 for the supplies purchased in transaction (4).
- (11) Recorded the use of one month of the rent paid for in transaction (2).

Cash	Bank Loan	Common Stock	Repair Revenue
(1) 5,000		(1) 5,000	
Accounts Receivable	Accounts Payable		Electricity Expense
Prepaid Rent			Rent Expense
Supplies			Supplies Expense

EXERCISE 2–9 (LO3)

The following Trial Balance was prepared from the books of Cross Corporation at its year-end, December 31, 2015. 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.

<i>Account Title</i>	<i>Account Balances</i>	
	<i>Debits</i>	<i>Credits</i>
Cash	\$120,400	
Commissions earned	5,000	
Common stock		\$170,000
Accounts payable	30,000	
Insurance expense	100	
Land		8,000
Building		120,000
Rent expense		1,000
Accounts receivable		26,000
Unused supplies	6,000	
Supplies expense		300
Loan payable		80,000
Salaries expense		3,000
Telephone expense	200	
Totals	<u>\$161,700</u>	<u>\$408,300</u>

Required: Prepare a corrected Trial Balance showing the accounts in proper order and balances in the correct column. List expenses in alphabetical order. Total the columns and ensure total debits equal total credits.

EXERCISE 2–10 (LO4)

Required: Prepare journal entries for each of the following transactions:

- (a) Issued common stock for \$3,000 cash.
- (b) Purchased \$2,000 of equipment on credit.
- (c) Paid \$400 cash for this month’s rent.
- (d) Purchased on credit \$4,000 of supplies to be used next month.
- (e) Billed \$2,500 to customers for repairs made to date.
- (f) Paid cash for one-half of the amount owing in transaction (d).
- (g) Collected \$500 of the amount billed in transaction (e).
- (h) Sold one-half of the equipment purchased in transaction 2 above for \$1,000 in cash.

EXERCISE 2–11 (LO2,4)

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, 2015. Do not include amounts. For instance, the first entry would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		XX	
	Common stock			XX
	(1) To record issuance of common stock			

Cash		Notes Payable		Common Stock		Repair Revenue	
1	2		11		1		3
3	5						4
8	10						
11							
Accounts Receivable		Accounts Payable		Electricity Expense			
4		10	2	9			
			6				
			7				
Prepaid Expense		Rent Expense					
5	9	7					
Unused Supplies		Supplies Expense					
2	8	6					

EXERCISE 2-12 (LO2,3,4)

The following journal entries were prepared for Elgert Corporation for its first month of operation, January 2015.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan. 1	Cash		10,000	
	Common stock			10,000
	To record the issuance of common stock.			
5	Rent expense		200	
	Cash			200
	To record the payment of rent for the month.			
9	Unused 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 operation 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	
	Unused supplies			200
	To record supplies used during the month.			

Required:

- a. Prepare necessary General Ledger T-accounts and post the transactions.
- b. Prepare a Trial Balance at January 31, 2015.
- c. Prepare an Income Statement and Statement of Stockholders’ Equity for the month ended January 31, 2015 and a Balance Sheet at January 31, 2015.

EXERCISE 2–13 (LO4) Correcting Errors in Journal Entries

Below are transactions that contain errors in the journal entry.

- 1. Received an invoice from a supplier for advertising in the amount of \$150.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Advertising expense		1,500	
	Cash			1,500

2. Paid employee salaries in the amount of \$2,200.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		2,200	
	Salaries expense			2,200

3. Received repair services worth \$1,500 from a supplier in exchange for a note due in sixty days.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Prepaid repairs		1,500	
	Note payable			1,500

4. Received \$5,000 from a customer for work to be completed the following month.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts receivable		5,000	
	Revenue			5,000

5. Rent of \$5,000 cash was paid for the current month's rent.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		500	
	Rent expense			500

6. Received a check in the amount of \$4,000 from a customer for service work to be started in three months.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash		4,000	
	Revenue			4,000

7. Completed a project for a customer and billed them \$8,000 for the service work.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts payable		8,000	
	Revenue			8,000

8. Rent of \$10,000 for the next six months was paid in advance.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Rent expense		10,000	
	Cash			10,000

Required: Record the correcting journal entries. (Hint: One method is to reverse the incorrect entry and record the correct entry and a second method is to record the correcting amounts to the applicable accounts only.)

Problems

PROBLEM 2–1 (LO3)

The following account balances are taken from the records of Fox Creek Service Limited at October 31, 2015 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
Notes payable	5,000	Telephone expense	250
Cash	1,000	Truck	9,000
Common stock	2,000	Truck operation	
Commissions expense	4,500	Expense	1,250
Equipment	7,000	Wages expense	4,000
		Wages payable	1,500

Required:

1. Prepare a Trial Balance at October 31, 2015.
 2. Prepare an Income Statement and Statement of Stockholders' Equity for the year ended October 31, 2015.
 3. Prepare a Balance Sheet at October 31, 2015.
-

PROBLEM 2–2 (LO1,2,3,4)

The following ledger accounts were prepared for Davidson Tool Rentals Corporation during the first month of operation ending May 31, 2015. No journal entries were prepared in support of the amounts recorded in the ledger accounts.

Cash		101		Accounts Payable		210		Common Stock		320		Service Revenue		470	
May 1	5,000	May 11	1,000	May 22	600	May 11	1,000		May 1	5,000		May 5	3,000		
6	2,000	16	500			23	150					6	2,000		
10	1,500	20	300			24	1,100					18	2,500		
15	1,200	22	600												
21	800	28	400												
		29	3,500												
Accounts Receivable		110		Advertising Expense		610		Commissions Expense		615		Rent Expense		654	
May 5	3,000	May 10	1,500	May 31	250	May 24	1,100	May 28	400	May 29	3,500	May 30	100	May 30	100
18	2,500	15	1,200												
Prepaid Advertising		160		Salaries Expense		656		Supplies Expense		668		Telephone Expense		669	
May 16	500	May 31	250	May 23	150										
Unused Supplies		173													
May 20	300	May 30	100												
Equipment		183													
May 11	2,000	May 21	800												

Required:

1. Reconstruct the transactions that occurred during the month and prepare journal entries to record these transactions, including appropriate descriptions. Include accounts numbers (Reference) using the Chart of Accounts provided. Calculate the balance in each account.
2. Total the transactions in each T-account above. Prepare a Trial Balance in proper order (list assets, liabilities, equity, revenue, then expenses) at May 31, 2015.

PROBLEM 2–3 (LO1,2,4)

The following balances appeared in the General Ledger of Fenton Table Rentals Corporation at April 1, 2015.

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

The following transactions occurred during April:

- (a) Collected \$2,000 cash owed by a customer.
- (b) Billed \$3,000 to customers for tables rented to date.
- (c) Paid the following expenses: advertising, \$300; salaries, \$2,000; telephone, \$100.
- (d) Paid half of the accounts payable owing at April 1.
- (e) Received a \$500 bill for April truck repair expenses.
- (f) Collected \$2,500 owed by a customer.
- (g) Billed \$1,500 to customers for tables rented to date.
- (h) Transferred \$500 of prepaid rent to rent expense.
- (i) Counted \$200 of supplies on hand at April 30; recorded the amount used as an expense.

Required: Prepare journal entries to record the April transactions.

PROBLEM 2–4 (LO1,2,4)

The following transactions occurred in Thorn Accounting Services Inc. during August 2015, 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 August 1.
- 5 Collected \$2,000 fees in cash from a client for work performed today (recorded as Fees Earned).
- 7 Billed \$5,000 fees to clients for services performed to date (recorded as Fees Earned).
- 9 Paid \$250 for supplies used to date.
- 12 Purchased \$500 of supplies on credit (recorded as Unused Supplies).
- 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 (recorded as Fees Earned).
- 31 Transferred the amount of August's truck insurance (\$50) to Insurance Expense.
- 31 Counted \$100 of supplies still on hand (recorded the amount used as Supplies Expense).

Required: Prepare journal entries to record the August transactions.

PROBLEM 2–5 (LO4) Challenge Question – Errors in the Trial Balance

Below is the trial balance for Cushio Corp. which contains a number of errors:

Cushio Corp. Trial Balance At August 31, 2016		
	Incorrect Debit	Credit
Cash	\$102,000	
Accounts receivable	59,730	
Prepaid expenses	2,000	
Office supplies inventory	5,500	
Equipment	115,000	
Accounts payable		\$ 74,500
Unearned revenue		50,000
Common stock		25,000
Retained earnings		50,500
Revenue		245,000
Repairs expense	1,000	
Rent expense	25,000	
Advertising expense	24,500	
Salaries expense	115,000	
	\$449,730	\$445,000

The following errors were discovered:

1. Cushio collected \$5,000 from a customer and posted a debit to Cash but did not post a credit entry to accounts receivable.
2. Cushio completed service work for a customer for \$5,000 and debited accounts receivable but credited unearned revenue.
3. Cushio received cash of \$583 from a customer as payment on account and debited cash for \$583, but incorrectly credited accounts receivable for \$853.
4. Cushio did not post an invoice of \$500 received for repairs.
5. Cushio purchased equipment for \$5,000 on account and posted the transaction as a debit to accounts payable and a credit to equipment.
6. Cushio purchased advertising services for cash of \$6,000 that will be published in the newspapers over the next six months. This transaction was posted as a debit to advertising expense and a credit to cash for \$6,000.

Required: Prepare a corrected trial balance. (Hint: Using T-accounts would be helpful.)

PROBLEM 2–6 (LO4) Challenge Question – Transactions, Trial Balance, and Financial Statements

Stellar Services Ltd. is an engineering firm that provides electrical engineering consulting services to various clients. Below are the account balances in its General Ledger as at December 31, 2015 which is its first month of operations. All accounts have normal balances as explained in the text.

Stellar Services Ltd.
Trial Balance
At December 31, 2015

Cash	\$150,000
Accounts receivable	85,000
Office supplies	7,000
Prepaid expenses	–
Office equipment	–
Furniture	15,000
Equipment	45,000
Vehicle	19,000
Building/warehouse	–
Land	–
Accounts payable	115,000
Unearned service revenue	–
Notes payable	20,000
Common stock	108,000
Retained earnings	90,000
Service revenue	25,000
Salaries expense	32,000
Utilities expense	4,500
Repairs expense	500

Listed below are activities for Stellar Services Ltd. for the month of January, 2016:

- a. Stellar ordered \$3,500 in new software from a software supplier. It will be paid when it is ready to install in three weeks.
- b. Paid \$12,000 for a two-year insurance policy to begin February 1, 2016.
- c. Paid one half of the outstanding accounts payable.
- d. Hired a new employee who will start up February 1, 2016. His salary will be \$2,500 every two weeks.

- e. Received cash of \$200,000 from a client for a \$1,000,000 consulting contract. Work will commence in April.
- f. Booked a conference room at a hotel for a presentation to potential customers scheduled for February 15. The \$600 rental fee will be paid February 1.
- g. Met with a client's lawyer about a fire that destroyed a portion of the client's building. The client is planning to sue Stellar for \$300,000 based on some previous consulting services Stellar provided to the client.
- h. Completed four electrical inspections today on credit for \$3,000 each.
 - i. Collected from two of the credit customers from item h.
 - j. Received \$20,000 from a client in partial payment for services to be provided next year.
 - k. Borrowed \$150,000 from their bank by signing a note payable due on August 31, 2017.
 - l. John Stellar invested \$30,000 cash and engineering equipment with a fair value of \$10,000 in exchange for common stock.
- m. Stellar rented some additional office space and paid \$18,000 for the next six month's rent.
- n. Purchased land and a small warehouse for \$50,000 cash and a long-term note payable for the balance. The land was valued at \$250,000 and the warehouse at \$60,000.
- o. Signed an agreement with a supplier for equipment rental for a special project to begin on February 23, 2016. A deposit for \$300 is to be paid on February 1.
- p. Completed \$30,000 of services for a client which is payable in 30 days.
- q. Purchased \$8,000 of equipment for \$5,000 cash and a trade-in of some old equipment that originally was recorded at \$3,000.
- r. Paid \$1,000 in cash dividends.
- s. Refunded the client \$2,000 due to a complaint about the consulting services provided in item i.
- t. Paid salaries of \$35,000.
- u. Received a bill for water and electricity in the amount of \$1,800 for January, which will be paid on February 15.
- v. Purchased some office equipment for \$5,000 and office supplies for \$2,000 on account.
- w. Placed an order with a supplier for \$10,000 of drafting supplies to be delivered February 10. This must be paid by February 25.

Required:

1. Prepare all required journal entries for January.
2. Prepare the income statement, the statement of stockholders' equity and the balance sheet as at January 31, 2016. (Hint: Using T-accounts would be helpful.)

Chapter 3

Financial Accounting and Adjusting Entries

Chapters 1 and 2 described the recording and reporting of economic 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, ensuring revenues and expenses are reported in the correct accounting period. The preparation of an adjusted trial balance is discussed, as well as its use in completing financial statements. 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. The accounting cycle, the steps performed each accounting period that result in financial statements, is also reviewed.

Chapter 3 Learning Objectives

LO1 – Explain how the timeliness, matching, and recognition GAAP require the recording of adjusting entries.

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 explain its use.

LO4 – Use an adjusted trial balance to prepare financial statements.

LO5 – Identify and explain the steps in the accounting cycle.

LO6 – Explain the use of and prepare closing entries and a post-closing trial balance.

Concept Self-Check

Use the following as a self-check while working through Chapter 3.

1. What is the GAAP principle of timeliness?
2. What is the GAAP principle of matching?

3. What is the GAAP principle of revenue recognition?
4. What are adjusting entries and when are they journalized?
5. What are the four types of adjustments?
6. Why is an adjusted trial balance prepared?
7. How is the unadjusted trial balance different from the adjusted trial balance?
8. What are the four closing entries and why are they journalized?
9. Why is the Dividends account not closed to the income summary?
10. When is a post-closing trial balance prepared?
11. How is a post-closing trial balance different from an adjusted trial balance?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

3.1 The Operating Cycle

LO1 – Explain how the timeliness, matching, and recognition GAAP require the recording of adjusting entries.

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 an **operating cycle** and is illustrated in Figure 3.1.

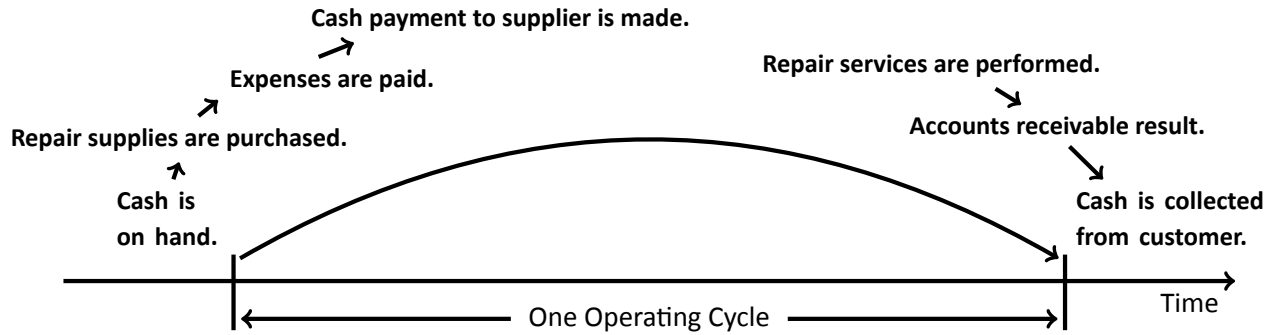


Figure 3.1: One Operating Cycle

Depending on the type of business, an operating cycle can vary in duration from short, such as one week (e.g., a grocery store) to much longer, such as one year (e.g., a car dealership). Therefore, an annual accounting period could involve multiple operating cycles as shown in Figure 3.2.

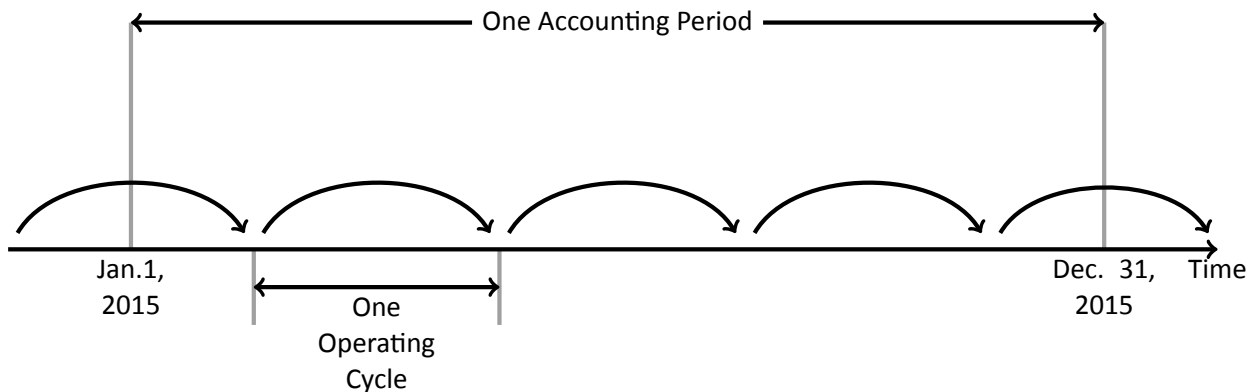


Figure 3.2: Operating Cycles Within an Annual Accounting Period

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 requirement of timeliness, it is necessary to consider how to record and report transactions related to the accounting period's incomplete operating cycles. Two GAAP requirements — recognition and matching — provide guidance in this area, and are the topic of the next sections.

Recognition Principle in More Detail

The two basic accounting principles that determine when revenues and expenses are recorded under accrual basis accounting are the **revenue recognition principle** and the **expense recognition**

principle (also called the matching principle).

Revenue Recognition Illustrated

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. Most corporations assume that revenue has been earned at an objectively-determined point in the accounting cycle. For instance, it is often convenient to recognize revenue at the point when a sales invoice has been sent to a customer and the related goods have been received or services performed. This point can occur before receipt of cash from a customer, creating an asset called *Accounts Receivable* and resulting in the following entry:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+		XX	
	Revenue R+ SE+			XX
	To record revenue earned on account.			

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

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash A+		XX	
	Accounts Receivable (A)			XX
	To record cash received from credit customer.			

Revenue is recognized in the first entry (the credit to 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:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash A+		XX	
	Revenue R+ SE+			XX
	To record cash received from customer.			

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

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash A+		XX	
	Unearned Revenue L+			XX
	To record cash received from customer for work to be done in the future.			

Revenue is **not** recognized until the services have been performed. At that time, the following entry is made:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Unearned Revenue (L)		XX	
	Revenue R+ SE+			XX
	To record the earned portion of Unearned Revenue.			

The preceding entry reduces the unearned revenue account by the amount of revenue earned.

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; it forms the basis of GAAP. Recognition of expenses is discussed in the next section.

Expense Recognition Illustrated

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.

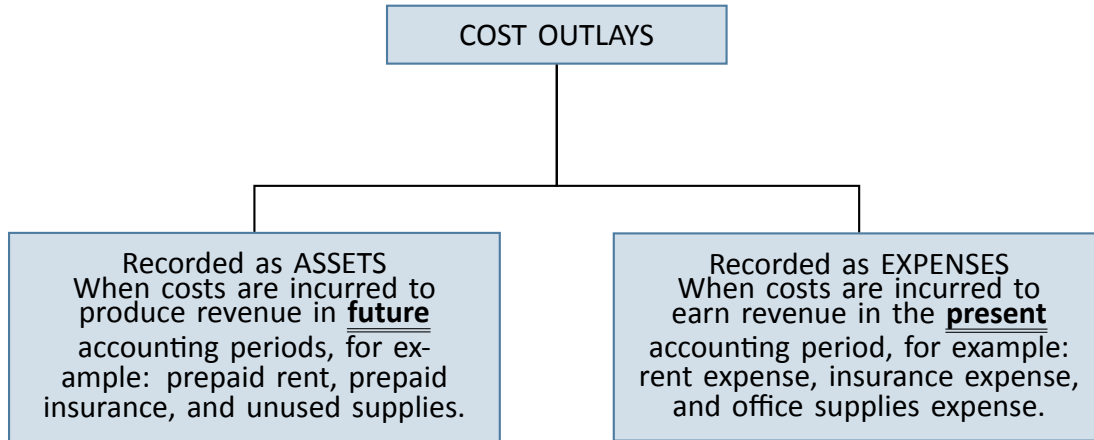


Figure 3.3: The Interrelationship Between Assets and Expense

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:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Utilities Expense E+ (SE)		XX	
	Accounts Payable (or Utilities Payable)			XX
	L+			
	To record January utilities expense to be paid in February.			

The utilities expense is reported in the January income statement.

When the January utilities are paid in February, the following is recorded:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Payable (or Utilities Payable) (L)		XX	
	Cash (A)			XX
	To record payment in February of utilities used in January.			

The preceding entry has no effect on expenses reported on the February 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:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Salaries Expense E+ (SE)		XX	
	Cash (A)			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.

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:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Prepaid Insurance A+		XX	
	Cash (A)			XX
	To record payment of insurance in advance.			

As the prepaid insurance is used, it is appropriate to report an expense on the income statement by recording the following entry:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Insurance Expense E+ (SE)		XX	
	Prepaid Insurance (A)			XX
	To record the use 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.

3.2 Adjusting Entries

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

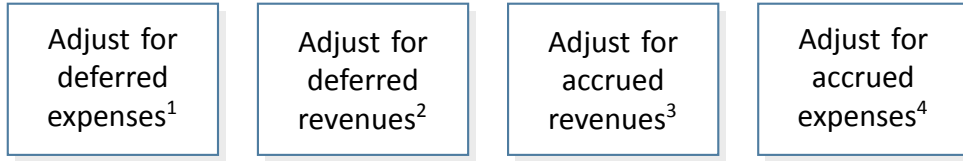
At the end of an accounting period, before financial statements can be prepared, the accounts must be reviewed for potential adjustments. This review is done by using the *unadjusted trial balance*. The **unadjusted trial balance** is a trial balance where the accounts have not yet been adjusted. The trial balance of Big Dog Carworks Corp. at January 31 was prepared in Chapter 2 and appears in Figure 3.4 below. It is an unadjusted trial balance because the accounts have not yet been updated for 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, 2015

Acct.	Account	Debit	Credit
101	Cash	\$3,700	
110	Accounts receivable	2,000	
161	Prepaid insurance	2,400	
183	Equipment	3,000	
184	Truck	8,000	
201	Accounts payable		\$ 700
210	Unearned revenue		400
247	Notes payable		6,000
320	Common stock		10,000
330	Dividends	200	
450	Repair revenue		10,000
654	Rent expense	1,600	
656	Salaries expense	3,500	
668	Supplies expense	2,000	
670	Truck operation expense	700	
		\$27,100	\$27,100

Figure 3.4: Unadjusted Trial Balance of Big Dog Carworks Corp. at January 31, 2015

Adjustments are recorded with *adjusting entries*. The purpose of **adjusting entries** is to ensure both the balance sheet and the income statement faithfully represent the account balances for the accounting period. Adjusting entries help satisfy the matching principle. There are four types of adjusting entries as shown in Figure 3.5, each of which will be discussed in the following sections.



1. A **deferred expense** is an asset created when a payment has been made before the cost has been incurred.
2. A **deferred revenue** is a liability created when a payment has been received before the product or service has been provided.
3. An **accrued revenue** is a revenue that has been earned but has not been collected or recorded.
4. An **accrued expense** is an expense that has been incurred but has not yet been paid or recorded.

Figure 3.5: Four Types of Adjusting Entries

Adjusting Deferred Expense Accounts

A **deferred expense** is created when cash is paid in advance of an expense being recognized. The cash outflow creates an asset that will be expensed in the future as the asset is used up.

Refer to Figure 3.4 which shows an unadjusted balance in the asset account prepaid insurance of \$2,400. Recall from Chapter 2 that Big Dog paid for a 12-month insurance policy that went into effect on January 1 (transaction 5).

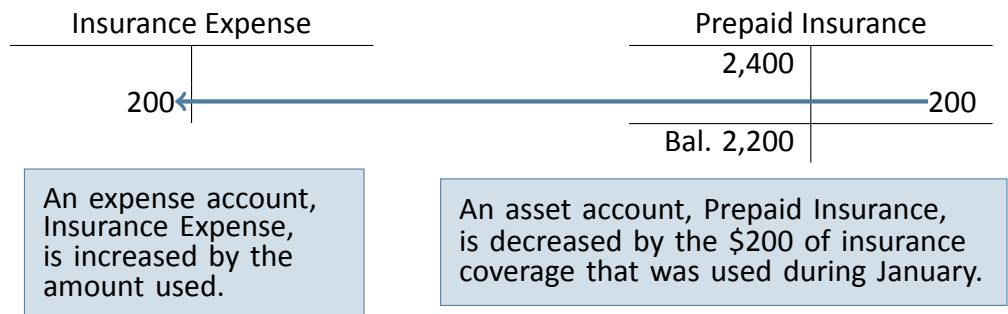
The unadjusted trial balance shows the following balance in the Prepaid Insurance account:	The balance resulted when the journal entry below was recorded:										
<table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td style="border-bottom: 1px solid black; padding: 0 10px;">Prepaid Insurance</td> <td style="padding: 0 10px;"> </td> <td style="padding: 0 10px;">2,400</td> </tr> <tr> <td style="padding: 0 10px;">2,400</td> <td style="padding: 0 10px;"> </td> <td style="padding: 0 10px;"></td> </tr> </table>	Prepaid Insurance		2,400	2,400			<table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 0 10px;">Prepaid Insurance</td> <td style="padding: 0 10px;">2,400</td> </tr> <tr> <td style="padding: 0 10px;">Cash</td> <td style="padding: 0 10px;">2,400</td> </tr> </table>	Prepaid Insurance	2,400	Cash	2,400
Prepaid Insurance		2,400									
2,400											
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:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 31	Insurance Expense E+ (SE)		200	
	Prepaid Insurance (A)			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, 2015. 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.



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 Deferred Expense Accounts – Plant and Equipment

Plant and equipment assets, also known as long-lived assets, are expected to help 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 plant and equipment assets that provide economic benefits for more than one accounting period. Because plant and equipment assets are useful for more than one accounting period, their cost must be spread over the time they are used. 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 this would cause expenses to be overstated in Year 1 and understated in Years 2, 3, 4, and 5. Therefore, the \$100,000 cost must be spread over the asset’s five-year life.

The process of allocating the cost of a plant and equipment asset over the period of time it is expected to be used is called **depreciation**. The amount of depreciation is calculated using the actual cost and an estimate of the asset’s *useful life* and *residual value*. The **useful life** of a plant and equipment asset is an estimate of how long it will actually be used by the business regardless of how long the asset is expected to last. For example, a car might have a manufacturer’s suggested

life of 10 years but a business may have a policy of keeping cars for only 2 years. The useful life for depreciation purposes would therefore be 2 years and not 10 years. The **residual value** is an estimate of what the plant and equipment asset will be sold for when it is no longer used by a business. Residual value can be zero. There are different formulas for calculating depreciation. We will use the **straight-line method of depreciation**:

$$\frac{\text{Cost} - \text{Estimated Residual Value}}{\text{Estimated Useful Life}}$$

The cost less estimated residual value is the total **depreciable cost** of the asset. The straight-line method allocates the depreciable cost equally over the asset's estimated useful life. When recording depreciation expense, our initial instinct is to debit depreciation expense and credit the Plant and Equipment asset account in the same way prepaids were adjusted with a debit to an expense and a credit to the Prepaid asset account. However, crediting the Plant and Equipment asset account is incorrect. Instead, a *contra account* called *accumulated depreciation* must be credited. A **contra account** is an account that is related to another account and typically has an opposite normal balance that is subtracted from the balance of its related account on the financial statements. **Accumulated depreciation** records the amount of the asset's cost that has been expensed since it was put into use. Accumulated depreciation has a normal credit balance that is subtracted from a Plant and Equipment asset account on the balance sheet.

Initially, the concept of crediting Accumulated Depreciation may be confusing because of how we learned to adjust prepaids (debit an expense and credit the prepaid). Remember that prepaids actually get used up and disappear over time. The Plant and Equipment asset account is not credited because, unlike a prepaid, a truck or building does not get used up and disappear. The goal in recording depreciation is to match the cost of the asset to the revenues it helped generate. For example, a \$50,000 truck that is expected to be used by a business for 4 years will have its cost spread over 4 years. After 4 years, the asset will likely be sold (journal entries related to the sale of plant and equipment assets are discussed in Chapter 8).

The adjusting journal entry to record depreciation is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Depreciation Expense E+ (SE)		XX	
	Accumulated Depreciation XA+ (A) . . .			XX
	To adjust for depreciation.			

Subtracting the accumulated depreciation account balance from the Plant and Equipment asset account balance equals the **carrying amount** or **net book value** of the plant and equipment asset that is reported on the balance sheet.

Let's work through two examples to demonstrate depreciation adjustments. Big Dog Carworks Corp.'s January 31, 2015 unadjusted trial balance showed the following two plant and equipment

assets:

Big Dog Carworks Corp.
Unadjusted Trial Balance
At January 31, 2015

Acct.	Account	Debit	Credit
183	Equipment	3,000	
184	Truck	8,000	

The equipment was purchased for \$3,000.

The Equipment general ledger account appears as follows:

The balance resulted when this journal entry was recorded:

Equipment	
3,000	

Equipment	3,000
Cash	3,000

The equipment was recorded as a plant and equipment asset because it has an estimated useful life greater than 1 year. Assume its actual useful life is 10 years (120 months) and the equipment is estimated to be worth \$0 at the end of its useful life (residual value of \$0).

$$\frac{\text{Cost} - \text{Estimated Residual Value}}{\text{Estimated Useful Life}} = \frac{\$3,000 - \$0}{120 \text{ months}} = \$25/\text{month}$$

Note that depreciation is always rounded to the nearest whole dollar. This is because depreciation is based on estimates — an estimated residual value and an estimated useful life; it is not exact. The following adjusting journal entry is made on January 31:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 31	Depreciation Expense, Equipment E+ (SE)		25	
	Accumulated Depreciation, Equipment			25
	XA+ (A)			
	To adjust for one month of depreciation on the equipment.			

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

Equipment	Accumulated Depreciation – Equipment	Depreciation Expense – Equipment
3,000	25 ←	→ 25

The Equipment account remains unchanged by the adjusting entry.

A contra account, Accumulated Depreciation, is increased by \$25.

Depreciation Expense is increased by \$25, the amount of the equipment’s cost that has been allocated to expense.

For financial statement reporting, the asset and contra asset accounts are combined. The net book value of the equipment on the balance sheet is shown as \$2,975 (\$3,000 – \$25).

BDCC also shows a truck for \$8,000 on the January 31, 2015 unadjusted trial balance.

The Truck general ledger accounts appears as:

The journal entry to record the purchase of the truck was:

Truck		
8,000	Truck	8,000
	Notes payable	5,000
	Cash	3,000

Assume the truck has an estimated useful life of 80 months and a zero estimated residual value. At January 31, one month of the truck cost has expired since it was put into operation in January. Using the straight-line method, depreciation is calculated as:

$$\frac{\text{Cost} - \text{Estimated Residual Value}}{\text{Estimated Useful Life}} = \frac{\$8,000 - \$0}{80 \text{ months}} = \$100/\text{month}$$

The adjusting entry recorded on January 31 is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 31	Depreciation Expense, Truck E+ (SE)		100	
	Accumulated Depreciation, Truck XA+ (A)			100
	To adjust for one month of depreciation on the truck.			

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.

For financial statement reporting, the asset and contra asset accounts are combined. The net book value of the truck on the balance sheet is shown as \$7,900 (\$8,000 – \$100).

If depreciation adjustments are not recorded, assets on the balance sheet would be overstated. Additionally, expenses would be understated on the income statement causing net income to be overstated. If net income is overstated, retained earnings on the balance sheet would also be overstated.

It is important to note that land is a long-lived asset. However, it is **not depreciated** because it does not get used up over time. Therefore, land is often referred to as a non-depreciable asset.

Adjusting Deferred Revenue Accounts

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:

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

Unearned Repair Revenue		Cash		400
400		Unearned Repair Rev.	400	400

This advance payment was originally recorded as unearned, since the cash was received **before** repair services were performed. 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 January 31 is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 31	Unearned Repair Revenue (L)		300	
	Repair Revenue R+ SE+			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		Repair Revenue												
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"></td> <td style="text-align: right; width: 50%;">400</td> </tr> <tr> <td style="text-align: left; border-right: 1px solid black;">300</td> <td></td> </tr> <tr> <td style="width: 50%;"></td> <td style="text-align: right; border-top: 1px solid black;">Bal. 100</td> </tr> </table>		400	300			Bal. 100	→	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"></td> <td style="text-align: right; width: 50%;">10,000</td> </tr> <tr> <td style="text-align: left; border-right: 1px solid black;">300</td> <td></td> </tr> <tr> <td style="width: 50%;"></td> <td style="text-align: right; border-top: 1px solid black;">Bal. 10,300</td> </tr> </table>		10,000	300			Bal. 10,300
	400													
300														
	Bal. 100													
	10,000													
300														
	Bal. 10,300													
A liability account, Unearned Repair Revenue, is decreased by the \$300 adjustment.		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 if the adjustment was not recorded.

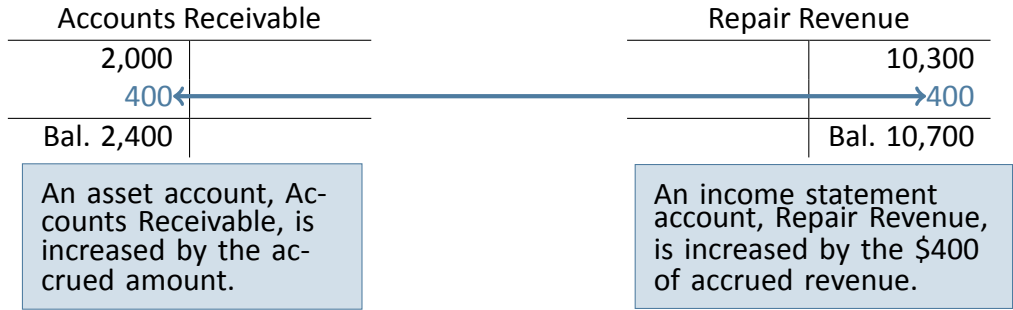
Adjusting Accrued Revenue Accounts

Accrued revenues are revenues that have been earned but not yet collected or recorded. For example, a bank has numerous notes receivable. Interest is earned on the notes receivable as time passes. At the end of an accounting period, there would be interest receivable where the interest has been earned but not collected or recorded. The adjusting entry for accrued revenues is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Receivable A+		XXX	
	Revenue R+ SE+			XXX
	To adjust for accrued revenue.			

For Big Dog Carworks Corp., assume that on January 31, \$400 of repair work was completed for a client but it had not yet been collected or recorded. BDCC must record the following adjusting entry:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 31	Accounts Receivable A+		400	
	Repair Revenue R+ SE+			400
	To adjust for accrued revenue.			



If the adjustment was not recorded, assets on the balance sheet would be understated by \$400 and revenues would be understated by the same amount on the income statement.

Adjusting Accrued Expense Accounts

Accrued expenses are expenses that have been incurred but not yet paid or recorded. For example, a utility bill received at the end of the accounting period is likely not payable for 2–3 weeks. Utilities for the period have been used but have not yet been paid or recorded. The adjusting entry for accrued expenses is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Expense E+ (SE)		XXX	
	Payable L+			XXX
	To adjust for accrued expense.			

Accruing Interest Expense

For Big Dog Carworks Corp., the January 31, 2015 unadjusted trial balance shows a \$6,000 bank loan balance. Assume it is a 4%, 60-day bank loan¹. It was dated January 3 which means that on January 31, 28 days of interest have accrued (January 31 less January 3 = 28 days) as shown in Figure 3.6.

¹The maturity date is March 4, 2015 calculated as: January 31 less January 3 = 28 days + 28 days in February = 56 days + 4 days = March 4.

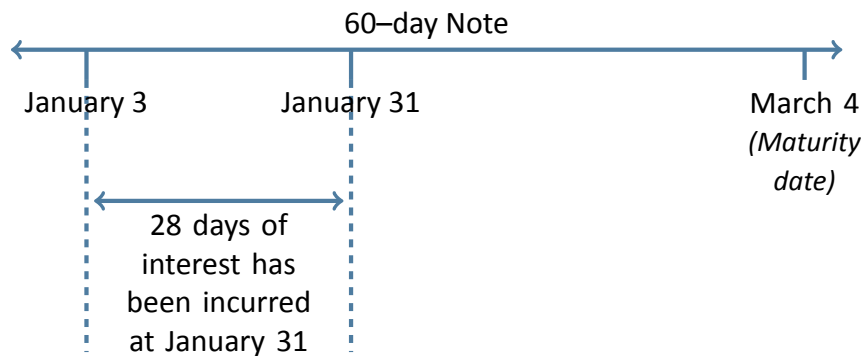


Figure 3.6: Interest Incurred During an Accounting Period

The formula for calculating interest when the term is expressed in days is:

$$\text{Interest} = \text{Principal} \times \text{Interest rate} \times \frac{\text{Elapsed time in days}}{360}$$

The interest expense accrued at January 31 is calculated as:

$$\text{Interest} = \$6,000 \times 0.04 \times \frac{28}{360} = \$19 \text{ (rounded to nearest whole dollar)}$$

Interest is normally expressed as an annual rate. Therefore, the 28 days must be divided by 360 days assuming a 360-day year. Normally all interest calculations in this textbook are rounded to two decimal places. However, for simplicity of demonstrations in this chapter, we will round to the nearest whole dollar.

BDCC's adjusting entry on January 31 is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 31	Interest Expense E+ (SE)		19	
	Interest Payable L+			19
	To adjust for accrued interest; \$6,000 X 4% X 28/360 = \$18.67 (rounded to \$19 for illustrative purposes in this chapter).			

This adjusting entry enables BDCC to include the interest expense on the January income statement even though the payment has not yet been made. The entry 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:



An expense account is established to record the debit.

Interest payable is established to record the credit.

On February 28, interest will again be accrued and recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Feb 28	Interest Expense E+ (SE)		19	
	Interest Payable L+			19
	To adjust for accrued interest; \$6,000 X 4% X 28/360 = \$18.67 (rounded to \$19 for illustrative purposes in this chapter).			

On March 4 when the bank loan matures, Big Dog will pay the interest and principal and record the following entry:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Mar 4	Interest Expense E+ (SE)		3	
	Interest Payable L+		38	
	Notes Payable L+		6,000	
	Cash (A)			6041
	To record payment of the bank loan and interest; interest expense for March is \$6,000 X 4% X 4/360 = \$2.67 (rounded to \$3 for illustrative purposes in this chapter).			

The \$38 debit to interest payable will cause the Interest Payable account to go to zero since the liability no longer exists once the cash is paid. Notice that the total interest expense recorded on the bank loan was \$41 – \$19 expensed in January, \$19 expensed in February, and \$3 expensed in March. The interest expense was matched to the life of the bank loan.

Accruing Income Tax Expense

Another adjustment that is required for Big Dog Carworks Corp. involves the recording of corporate income taxes. In most jurisdictions, a corporation is taxed as an entity separate from its shareholders. For simplicity, assume BDCC’s income tax due for January 2015 is \$500. The adjusting entry is at January 31:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 31	Income Tax Expense E+ (SE)		500	
	Income Tax Payable L+			500
	To adjust for January accrued income tax.			

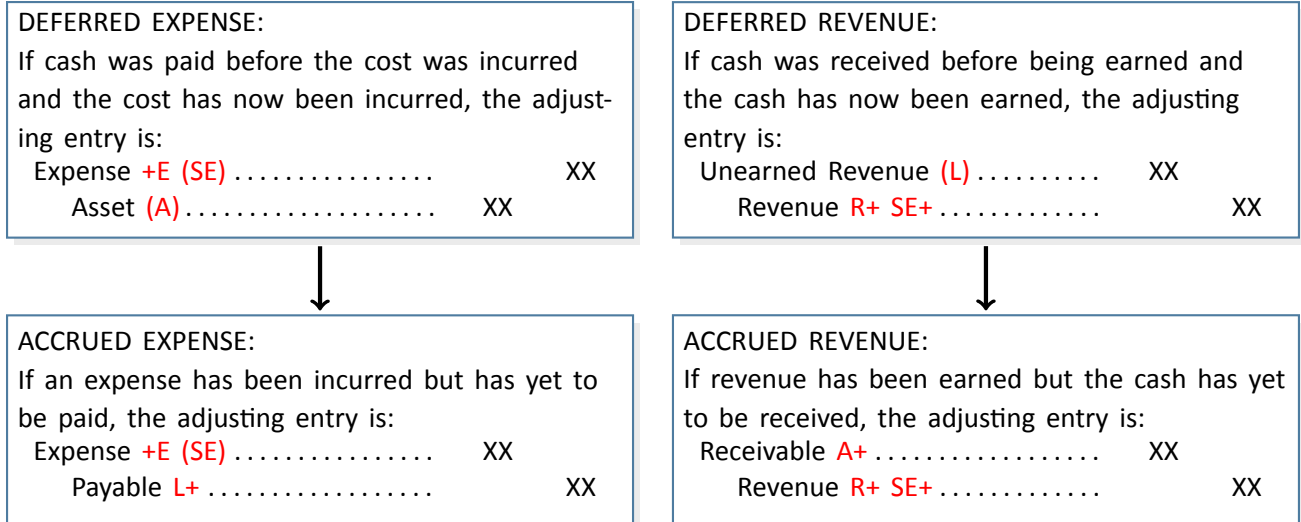
When the adjusting entry is posted, the accounts appear as follows:



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

The four types of adjustments discussed in the previous paragraphs are summarized in Figure 3.7.

Each of the four types of adjusting entries either debits an expense or credits a revenue.



1. A **deferred expense** is an asset created when a payment has been made before the cost has been incurred.
2. A **deferred revenue** is a liability created when a payment has been received before the product or service has been provided.
3. An **accrued revenue** is a revenue that has been earned but has not been collected or recorded.
4. An **accrued expense** is an expense that has been incurred but has not yet been paid or recorded.

Figure 3.7: Summary of the Four Types of Adjusting Entries

3.3 The Adjusted Trial Balance

LO3 – Prepare an adjusted trial balance and explain its use.

In the last section, adjusting entries were recorded and posted. As a result, some account balances reported on the January 31, 2015 unadjusted trial balance in Figure 2 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 3.8 shows the adjusted trial balance for BDCC at January 31, 2015.

In Chapters 1 and 2, the preparation of financial statements was demonstrated using BDCC's *unadjusted* trial balance. We now know that an adjusted trial balance must be used to prepare financial statements.

Big Dog Carworks Corp. Adjusted Trial Balance At January 31, 2015		
<i>Account</i>	<i>Account Balance</i>	
	<i>Debit</i>	<i>Credit</i>
Cash	\$3,700	
Accounts receivable	2,400	
Prepaid insurance	2,200	
Equipment	3,000	
Accumulated depreciation – equipment Truck	8,000	\$ 25
Accumulated depreciation – truck		100
Accounts payable		700
Income tax payable		500
Interest payable		19
Unearned repair revenue		100
Notes payable		6,000
Common stock		10,000
Dividends	200	
Repair revenue		10,700
Depreciation expense – equipment	25	
Depreciation expense – truck	100	
Rent expense	1,600	
Insurance expense	200	
Interest expense	19	
Salaries expense	3,500	
Supplies expense	2,000	
Truck operation expense	700	
Income tax expense	500	
Total debits and credits	\$28,144	\$28,144

Figure 3.8: BDCC's January 31, 2015 Adjusted Trial Balance

3.4 Using the Adjusted Trial Balance to Prepare Financial Statements

LO4 – Use an adjusted trial balance to prepare financial statements.

In the last section, we saw that the adjusted trial balance is prepared after journalizing and posting the adjusting entries. This section shows how financial statements are prepared using the adjusted trial balance.

3.4. Using the Adjusted Trial Balance to Prepare Financial Statements ■ 111

Big Dog Carworks Corp.
Adjusted Trial Balance
January 31, 2015

Account	Account Balance		
	Debit	Credit	
Cash	\$ 3,700		} Asset accounts, liability accounts, and the equity accounts from the statement of stockholders' equity are used to prepare the balance sheet.
Accounts receivable	2,400		
Prepaid insurance	2,200		
Equipment	3,000		
Accumulated depreciation – equipment		\$ 25	
Truck	8,000		
Accumulated depreciation – truck		100	
Accounts payable		700	
Unearned revenue		100	
Interest payable		19	
Income tax payable		500	} Common stock, dividends, and the net income/loss from the income statement are used to prepare the statement of stockholders' equity.
Notes payable		6,000	
Common stock		10,000	
Dividends	200		
Repair revenue		10,700	
Depreciation expense – equipment	25		
Depreciation expense – truck	100		
Rent expense	1,600		
Insurance expense	200		
Interest expense	19		
Salaries expense	3,500		} Revenue and expense accounts are used to prepare the income statement.
Supplies expense	2,000		
Truck operation expense	700		
Income tax expense	500		
Total debits and credits	<u>\$28,144</u>	<u>\$28,144</u>	

Figure 3.9: BDCC's January 31, 2015 Adjusted Trial Balance and Links Among Financial Statements

The income statement is prepared first, followed by the statement of stockholder's equity as shown below.

Big Dog Carworks Corp.
Adjusted Trial Balance
At January 31, 2015

Account	Debit	Credit
Cash	\$ 3,700	
Accounts receivable	2,400	
Prepaid insurance	2,200	
Equipment	3,000	
Accum. dep. – equipment		\$ 25
Truck	8,000	
Accum. dep. – truck		100
Accounts payable		700
Unearned revenue		100
Interest payable		19
Income tax payable		500
Notes payable		6,000
Common stock		10,000
Dividends	200	
Repair revenue		10,700
Dep. expense – equipment	25	
Dep. expense – truck	100	
Rent expense	1,600	
Insurance expense	200	
Interest expense	19	
Salaries expense	3,500	
Supplies expense	2,000	
Truck operation expense	700	
Income tax expense	500	
	<u>\$28,144</u>	<u>\$28,144</u>

Common Stock and Dividends are transferred to the Statement of Stockholders' Equity. Dividends is part of Retained Earnings because it is a distribution of Net Income.

Big Dog Carworks Corp.
Income Statement
For the Month Ended January 31, 2015

Revenues	
Repair revenue	\$10,700
Expenses	
Salaries expense	\$ 3,500
Supplies expense	2,000
Rent expense	1,600
Truck operation expense	700
Insurance expense	200
Dep. expense – truck	100
Dep. expense – equipment	25
Interest expense	19
Income tax expense	500
Total expenses	<u>8,644</u>
Net income	<u>\$2,056</u>

Big Dog Carworks Corp.
Statement of Stockholders' Equity
For the Month Ended January 31, 2015

	Common stock	Retained earnings	Total equity
Balance at beginning of period	\$ -0-	\$ -0-	\$ -0-
Stock issued	10,000		10,000
Dividends		(200)	(200)
Net income		2,056	2,056
Balance at end of period	<u>\$10,000</u>	<u>\$1,856</u>	<u>\$11,856</u>

Net Income is transferred to the Statement of Stockholders' Equity as part of Retained Earnings.

The balance sheet can be prepared once the statement of stockholder's equity is complete.

These accounts are used to prepare the Balance Sheet.

Big Dog Carworks Corp. Trial Balance At January 31, 2015				Big Dog Carworks Corp. Balance Sheet At January 31, 2015	
Account	Debit	Credit			
Cash	\$ 3,700		Cash		\$ 3,700
Accounts receivable	2,400		Accounts receivable		2,400
Prepaid insurance	2,200		Prepaid insurance		2,200
Equipment	3,000		Equipment	\$3,000	
Accum. dep. – equipment		\$ 25	Less: Accum. dep.	25	2,975
Truck	8,000		Truck	\$8,000	
Accum. dep. – truck		100	Less: Accum. dep.	100	7,900
Accounts payable		700	Total assets		<u>\$19,175</u>
Unearned revenue		100			
Interest payable		19	<i>Liabilities</i>		
Income tax payable		500	Accounts payable		\$ 700
Notes payable		6,000	Unearned revenue		100
Common stock		10,000	Interest payable		19
Dividends	200		Income tax payable		500
Repair revenue		10,700	Notes payable		6,000
Dep. expense – equipment	25		Total liabilities		<u>\$7,319</u>
Dep. expense – truck	100				
Rent expense	1,600		<i>Equity</i>		
Insurance expense	200		Common stock	\$10,000	
Interest expense	19		Retained earnings	1,856	
Salaries expense	3,500		Total equity		11,856
Supplies expense	2,000		Total liabilities and equity		<u>\$19,175</u>
Truck operation expense	700				
Income tax expense	500				
	<u>\$28,144</u>	<u>\$28,144</u>			

The Common Stock and Retained Earnings balances are transferred to the balance sheet from the statement of stockholders' equity.

Notice how accumulated depreciation is shown on the balance sheet.

3.5 The Accounting Cycle

LO5 – Identify and explain the steps in the accounting cycle.

The concept of the accounting cycle was introduced in Chapter 2. The accounting cycle consists of the steps followed each accounting period to prepare financial statements. These eight steps are:

Step 1: Transactions are analyzed and recorded in the general journal

Step 2: The journal entries in the general journal are posted to accounts in the general ledger

Step 3: An unadjusted trial balance is prepared to ensure total debits equal total credits

Step 4: The unadjusted account balances are analyzed and adjusting entries are journalized in the general journal and posted to the general ledger

Step 5: An adjusted trial balance is prepared to prove the equality of debits and credits

Step 6: The adjusted trial balance is used to prepare financial statements

Step 7: Closing entries are journalized and posted

Step 8: Prepare a post-closing trial balance

Steps 1 through 6 were introduced in this and the preceding chapters. Steps 7 and 8 are discussed in the next section.

3.6 The Closing Process

LO6 – Explain the use of and prepare closing entries and a post-closing trial balance.

At the end of a fiscal year, after 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 accounts** because their balances are zeroed at the end of each accounting period. Balance sheet accounts, such as retained earnings, are **permanent accounts** because they have a continuing balance from one fiscal year to the next. The closing process transfers temporary account balances into a permanent account, namely retained earnings. The four entries in the closing process are detailed below.

Entry 1: Close the revenue accounts to the income summary account

A single compound closing entry is used to transfer revenue account balances to the *income summary account*. The **income summary** is a checkpoint: once all revenue and expense account balances are transferred/closed to the income summary, the balance in the Income Summary account must be equal to the net income/loss reported on the income statement. If not, the revenues and expenses were not closed correctly.

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

The expense accounts are closed in one compound closing journal entry 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.

After entries 1 and 2 above are posted to the Income Summary account, the balance in the income summary must be compared to the net income/loss reported on the income statement. If the income summary balance does not match the net income/loss reported on the income statement, the revenues and/or expenses were not closed correctly.

Entry 3: Close the income summary to retained earnings

The Income Summary account is closed to the Retained Earnings account. This procedure transfers the balance in the income summary to retained earnings. Again, the amount closed from the income summary to retained earnings must always equal the net income/loss as reported on the income statement.

Note that the Dividend account is **not** closed to the Income Summary account because dividends

is not an income statement account. The dividend account is closed in Entry 4.

Entry 4: Close dividends 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 balance in the Income Summary account is transferred to retained earnings because the net income (or net loss) belongs to the stockholders. The closing entries for Big Dog Carworks Corp. are shown in Figure 3.10.

GENERAL JOURNAL				Page 1			
Date	Description	R	Debit			Credit	
2015							
	Closing Entries						
Jan. 31	Repair Revenue		1 0 7 0 0 -				
	Income Summary					1 0 7 0 0 -	
	To close the revenue account balance.						
	Income Summary		8 6 4 4 -				
	Depreciation expense – equipment					2 5 -	
	Depreciation expense – truck					1 0 0 -	
	Income tax expense					5 0 0 -	
	Insurance expense					2 0 0 -	
	Interest expense					1 9 -	
	Rent expense					1 6 0 0 -	
	Salaries expense					3 5 0 0 -	
	Supplies expense					2 0 0 0 -	
	Truck operation expense					7 0 0 -	
	To close expense account balances.						
	Income Summary		2 0 5 6 -				
	Retained earnings					2 0 5 6 -	
	To close income summary to retained earnings.						
	Retained Earnings		2 0 0 -				
	Dividends					2 0 0 -	
	To close dividends to retained earnings.						

Figure 3.10: Closing Entries

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 3.11. Notice that a zero balance results for each revenue and expense account after the closing entries are posted, and there is a \$2,056 credit balance in the income summary. The income summary balance agrees to the net income reported on the income statement.

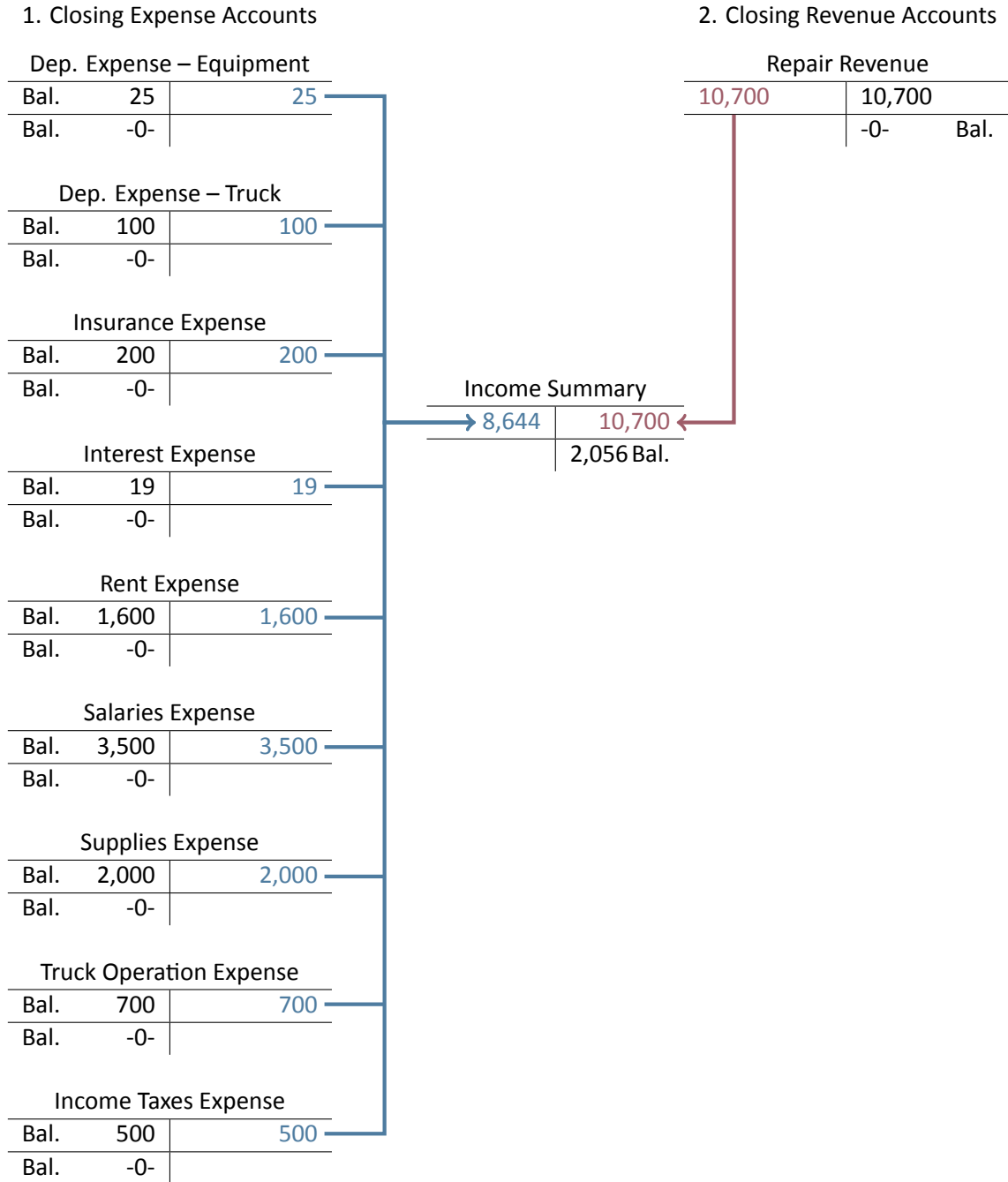


Figure 3.11: Closing Revenue and Expense Accounts

When the income summary is closed to retained earnings in the third closing entry, the \$2,056 credit balance in the income summary account is transferred into retained earnings as shown in Figure 3.12. As a result, the income summary is left with a zero balance.

3. Closing the Income Summary Account

Income Summary		Retained Earnings	
8,644	10,700		2,056 ←
2,056	2,056 Bal.		
Bal.	-0-		

Figure 3.12: Closing the Income Summary Account

This example demonstrated closing entries when there was a net income. 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 following closing entry is required:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Retained Earnings		XX	
	Income Summary			XX
	To close the net loss, a debit balance in the income summary, to retained earnings.			

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 3.13. 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 \$1,856. Notice that the \$1,856 must agree to the retained earnings balance calculated on the statement of shareholders' equity.

4. Closing the Dividends Account

Dividends		Retained Earnings	
200	200 →	200	2,056
Bal.	-0-		1,856 Bal.

Figure 3.13: Closing the Dividends Account

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, 2015

<i>Account</i>	<i>Account Balance</i>	
	<i>Debit</i>	<i>Credit</i>
Cash	\$ 3,700	
Accounts receivable	2,400	
Prepaid insurance	2,200	
Equipment	3,000	
Accumulated depreciation – equipment		\$ 25
Truck	8,000	
Accumulated depreciation – truck		100
Accounts payable		700
Unearned revenue		100
Interest payable		19
Income tax payable		500
Notes payable		6,000
Common stock		10,000
Retained earnings		1,856
Total debits and credits	<u>\$19,300</u>	<u>\$19,300</u>

Only permanent accounts remain.

Note that only balance sheet accounts, the permanent accounts, have balances and are carried forward to the next accounting year. All temporary accounts begin the new fiscal year with a zero balance, so they can be used to accumulate amounts belonging to the new time period.

Summary of Chapter 3 Learning Objectives

L01 – Explain how the timeliness, matching, and recognition GAAP require the recording of adjusting entries.

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.

L02 – Explain the use of and prepare the adjusting entries required for deferred expenses, deferred 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/paid. The four types of adjustments are:

Expense E+ (SE)	XX	Receivable A+	XX
Asset (A)	XX	Revenue R+ SE+	XX
<i>To adjust for deferred expense.</i>		<i>To adjust for accrued revenue.</i>	
Unearned Revenue (L)	XX	Expense E+ (SE)	XX
Revenue R+ SE+	XX	Payable L+	XX
<i>To adjust for deferred revenue.</i>		<i>To adjust for accrued expense.</i>	

L03 – Prepare an adjusted trial balance and explain its use.

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.

L04 – Use an adjusted trial balance to prepare financial statements.

Financial statements are prepared based on adjusted account balances.

L05 – Identify and explain the steps in the accounting cycle.

The steps in the accounting cycle are followed each accounting period in the recording and reporting of financial transactions. The steps are:

1. Transactions are analyzed and recorded in the general journal.
2. The journal entries in the general journal are posted to accounts in the general ledger.
3. An unadjusted trial balance is prepared to ensure total debits equal total credits.
4. The unadjusted account balances are analyzed, and adjusting entries are journalized in the general journal and posted to the general ledger.

5. An adjusted trial balance is prepared to prove the equality of debits and credits.
6. The adjusted trial balance is used to prepare financial statements.
7. Closing entries are journalized and posted.
8. Prepare a post-closing trial balance.

L06 – Explain the use of and prepare closing entries and 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. The four closing entries are:

Revenue XX
 Income Summary XX
To close each revenue to the income summary.

Income Summary XX
 Expense XX
To close each expense to the income summary.

Income Summary XX
 Retained Earnings XX
To close a net income in income summary to retained earnings.

OR Retained Earnings XX
 Income Summary XX
To close a net loss in income summary to retained earnings.

Retained Earnings XX
 Dividends XX
To close dividends to retained earnings.

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.

Discussion Questions

1. Explain the sequence of financial transactions that occur continuously during an accounting time period. What is this sequence of activities called?

2. Do you have to wait until the operating cycle is complete before you can measure income using the accrual basis of accounting?
3. 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?
4. What is the impact of the going concern concept on accrual accounting?
5. Identify the different categories of expenses.
6. What are adjusting entries and why are they required?
7. Why are asset accounts like Prepaid Insurance adjusted? How are they adjusted?
8. How are asset accounts like plant and equipment adjusted?
9. What is a *contra account* and why is it used?
10. How are liability accounts like Unearned Repair Revenue adjusted?
11. Explain the terms *deferrals* and *accruals*. Give examples of items that defer and accrue.
12. Why is an adjusted trial balance prepared?
13. How is the adjusted trial balance used to prepare financial statements?
14. List the eight steps in the accounting cycle.
15. Which steps in the accounting cycle occur continuously throughout the accounting period?
16. Which steps in the accounting cycle occur only at the end of the accounting period? Explain how they differ from the other steps.
17. Give examples of revenue, expense, asset, and liability adjustments.
18. In general, income statement accounts accumulate amounts for a time period not exceeding one year. Why is this done?
19. Identify which types of general ledger accounts are temporary and which are permanent.
20. What is the income summary account and what is its purpose?
21. What is a post-closing trial balance and why is it prepared?

Exercises

EXERCISE 3–1 (LO1,2) Adjusting Entries

The following are account balances of Graham Corporation:

<i>Account Title</i>	<i>Amount in Unadjusted Trial Balance</i>	<i>Balance after Adjustment</i>
Interest receivable	\$ -0-	\$110
Prepaid insurance	1,800	600
Interest payable	-0-	90
Salaries payable	-0-	450
Unearned rent	700	200

Required:

- Enter the unadjusted balance for each account in the following T-accounts: Interest Receivable, Prepaid Insurance, Interest Payable, Salaries Payable, Unearned Rent, Interest Earned, Rent Earned, Insurance Expense, Interest Expense, and Salaries Expense.
 - Reconstruct the adjusting entry that must have been recorded for each account.
 - Post these adjusting entries and agree ending balances in each T-account to the adjusted balances above.
 - List revenue and expense amounts for the period.
-

EXERCISE 3–2 (LO1,2) Adjusting Entries

The trial balance of Lauer Corporation at December 31, 2015 follows, before and after the posting of adjusting entries.

	<i>Trial Balance</i>		<i>Adjustments</i>		<i>Adjusted Trial Balance</i>	
	<i>Dr.</i>	<i>Cr.</i>	<i>Dr.</i>	<i>Cr.</i>	<i>Dr.</i>	<i>Cr.</i>
Cash	\$4,000				\$4,000	
Accounts receivable	5,000				5,000	
Prepaid insurance	3,600				3,300	
Prepaid rent	1,000				500	
Truck	6,000				6,000	
Accumulated depreciation		\$ -0-				\$1,500
Accounts payable		7,000				7,400
Salaries payable						1,000
Unearned rent		1,200				600
Common stock		2,700				2,700
Revenue		25,000				25,000
Rent earned						600
Advertising expense	700				700	
Commissions expense	2,000				2,000	
Depreciation expense					1,500	
Insurance expense					300	
Rent expense	5,500				6,000	
Salaries expense	8,000				9,000	
Interest expense	100				500	
Totals	<u>\$35,900</u>	<u>\$35,900</u>			<u>\$38,800</u>	<u>\$38,800</u>

Required:

- Indicate in the “Adjustments” column the debit or credit difference between the unadjusted trial balance and the adjusted trial balance.
- Prepare in general journal format the adjusting entries that have been recorded. Include descriptions.

EXERCISE 3–3 (LO1,2) Adjusting Entries

The following data are taken from an unadjusted trial balance at December 31, 2015:

Prepaid rent	\$ 600
Office supplies	700
Income taxes payable	-0-
Unearned commissions	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 2015, January 2016, and February 2016.
- (b) Office supplies on hand at December 31, 2015 amounted to \$300.
- (c) The estimated income taxes for 2015 are \$5,000.
- (d) All but \$500 in the Unearned Commissions account has been earned in 2015.
- (e) Salaries for the last three days of December amounting to \$300 have not yet been recorded.

Required:

- a. Prepare all necessary adjusting entries in general journal format.
- b. Calculate the cumulative financial impact on assets, liabilities, equity, revenue and expense if these adjusting entries are not made.

EXERCISE 3–4 (LO1,2) Adjusting Entries

The following are general ledger accounts extracted from the records of Bernard Inc. at December 31, 2015, its year-end ('Bal' = unadjusted balance):

Prepaid Advertising		Accounts Payable		Common Stock		
Bal.	1,000	500	Bal.	15,000	Bal.	8,000
				200		
				100	Subscription Revenue	
Unused Supplies				400	5,000	
Bal.	750	400		800		
Equipment			Salaries Payable		Advertising Expense	
Bal.	21,750			700	500	
Acc. Dep'n – Equipment			Unearned Subscriptions		Commissions Expense	
	Bal.	1,500	5,000	Bal.	10,000	800
		250			Dep'n Expense – Equipment	
					250	
					Maintenance Expense	
					200	
					Salaries Expense	
				Bal.	9,500	
					700	
					Supplies Expense	
				Bal.	2,500	
					400	
					Telephone Expense	
					100	
					Utilities Expense	
					400	

Required: Prepare in general journal format the adjusting entries that were posted. Include plausible descriptions/narratives for each adjustment.

EXERCISE 3–5 (LO1,2) Adjusting Entries

The following unadjusted accounts are extracted from the general ledger of A Corp. at December 31, 2015:

Truck	Depreciation Expense – Truck	Acc. Dep'n – Truck
10,000	1,300	1,300

Additional Information: The truck was purchased January 1, 2015. It has an estimated useful life of 4 years.

Required: Prepare the needed adjusting entry at December 31, 2015.

EXERCISE 3–6 (LO1,2) Adjusting Entries

The following unadjusted accounts are taken from the records of B Corp. at December 31, 2015:

Notes Payable	Interest Expense	Interest Payable
12,000	1,100	100

Additional Information: The bank loan was received on January 1, 2015. It bears interest at 10% annual rate.

Required: Prepare the adjusting entry at December 31, 2015.

EXERCISE 3–7 (LO1,2) Adjusting Entries

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, 2015.

Cash	101	Unused 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	Telephone Expense	669
Bal. 1,200		Bal. 7,750		Bal. 250	

Additional Information:

- (a) The prepaid insurance is for a one-year policy, effective July 1, 2015.
- (b) A physical count indicated that \$500 of supplies is still on hand.
- (c) A \$50 December telephone bill has been received but not yet recorded.

Required: Record all necessary adjusting entries in general journal format.

EXERCISE 3–8 (LO2) Adjusting Entries

Below are descriptions of various monthly adjusting entries:

1. Adjusting entry for revenue earned but not yet billed to the customer.
2. Adjusting entry for cash received from a customer for revenue not yet earned.
3. Adjusting entry for revenue earned that was originally received as cash in advance in the previous month.
4. Adjusting entry for services received from a supplier, but not yet paid.
5. Adjusting entry for cash paid to a supplier for repair services not yet received.
6. Adjusting entry for repair services received that was originally paid as cash in advance to the supplier in the previous month.
7. Adjusting entry for salaries earned by employees, but not yet paid.
8. Adjusting entry for annual depreciation expense for equipment.

Required: For each description above, identify the likely journal entry debit and credit account.

EXERCISE 3–9 (LO2) Adjusting Entries

Turner Empire Co. employs 65 employees. The employees are paid every Monday for work done from the previous Monday to the end-of-business on Friday, or a 5-day work week. Each employee earns \$80 per day.

Required:

1. Calculate the total weekly payroll cost and the salary adjustment at March 31, 2016.
2. Prepare the adjusting entry at March 31, 2016.
3. Prepare the subsequent cash entry on April 4, 2016.

EXERCISE 3–10 (LO1,2,3) Adjusting Entries

Below is a trial balance for Quertin Quick Fix Ltd. at October 31, 2016 with three sets of debit/credit columns. The first set is before the October month-end adjusting entries, and the third column is after the October month-end adjusting entries.

Quertin Quick Fix Ltd. Trial Balance At October 31, 2016						
	Unadjusted Trial Balance		Adjustments		Adjusted Trial Balance	
	Debit	Credit	Debit	Credit	Debit	Credit
Cash	\$ 80,000				\$118,700	
Accounts receivable	325,000				395,000	
Office supplies	5,000				5,000	
Prepaid expenses	15,000				16,300	
Equipment	150,000				150,000	
Accumulated depreciation, equipment	1,500					\$ 2,500
Land	150,000				150,000	
Accounts payable		\$225,000				225,500
Accrued salaries payable		5,000				9,500
Unearned service revenue		10,000				50,000
Notes payable		210,000				210,000
Common stock		10,000				10,000
Retained earnings		37,800				37,800
Service revenue		300,000				370,000
Advertising expense	1,500				1,500	
Depreciation expense	800				1,800	
Maintenance service expenses	1,000				1,000	
Rent expense	14,000				14,000	
Salaries expense	45,000				49,500	
Utilities expense	12,000				12,500	
	<u>\$799,300</u>	<u>\$799,300</u>			<u>\$915,300</u>	<u>\$915,300</u>

Required: Determine the differences for all the account balances and identify the most likely adjusting entries that would have been recorded in October to correspond to these differences.

EXERCISE 3–11 (LO3) Prepare an Adjusted Trial Balance

After Bernard Inc. completed its first year of operations on December 31, 2015, the following adjusted account balances appeared in the general ledger.

Prepaid Advertising 1,000	Accounts Payable 13,250	Common Stock 8,000
Supplies 750		Subscription Revenue 5,000
Equipment 21,750	Salaries Payable 700	Advertising Expense 500
Acc. Dep'n – Equipment 1,500	Unearned Subscriptions 10,000	Commissions Expense 800
		Dep'n Expense – Equipment 250
		Maintenance Expense 200
		Salaries Expense 10,200
		Supplies Expense 2,500
		Telephone Expense 100
		Utilities Expense 400

Required: Prepare an adjusted trial balance at December 31, 2015.

EXERCISE 3–12 (LO6) Closing Entries

Below is the alphabetized adjusted trial balance for Quefort Ltd. as at September 30, 2016:

	Debit	Credit
Accounts payable		\$ 23,250
Accounts receivable	\$106,800	
Accrued salaries payable		8,700
Accumulated depreciation, building		200
Accumulated depreciation, equipment		3,200
Advertising expense	4,050	
Building	111,000	
Cash	87,300	
Cash dividends	5,000	
Depreciation expense	2,380	
Equipment	15,000	
Income tax expense	4,500	
Income taxes payable		4,500
Insurance expense	3,700	
Interest expense	150	
Interest payable		150
Notes payable		30,000
Office supplies	1,800	
Prepaid insurance	12,790	
Rent expense	22,500	
Repair expense	7,800	
Retained earnings		65,470
Salaries expense	41,700	
Service revenue		276,000
Common stock		1,500
Shop supplies expense	750	
Unearned service revenue		37,500
Utilities expense	23,250	
	\$450,470	\$450,470

Required: Prepare the closing entries.

EXERCISE 3–13 (LO6) Prepare Closing Entries and a Post-Closing Trial Balance

The following alphabetized adjusted trial balance information is available for Willis Inc. at December 31, 2015. Assume all accounts have normal balances.

Accounts payable	\$ 4,400
Accounts receivable	3,600
Accumulated depreciation – machinery	2,800
Accumulated depreciation – warehouse	8,000
Cash	12,000
Commissions earned	20,000
Common stock	52,100
Depreciation expense – machinery	900
Depreciation expense – warehouse	1,200
Dividends	14,000
Insurance expense	1,800
Interest expense	2,365
Interest payable	1,200
Land	15,000
Machinery	20,000
Notes payable	47,600
Retained earnings	36,000
Salaries expense	33,475
Salaries payable	1,970
Subscriptions revenue	17,630
Supplies	2,500
Supplies expense	15,800
Unearned fees	800
Utilities expense	2,860
Warehouse	67,000

Required: Prepare closing entries and a post-closing trial balance.

Problems

PROBLEM 3–1 (LO1,2) Adjusting Entries

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

	<i>Balance</i>	
	<i>Unadjusted</i>	<i>Adjusted</i>
(a) Prepaid rent	\$ 900	\$ 600
(b) Wages payable	500	700
(c) Income taxes payable	-0-	1,000
(d) Unearned commissions revenue	4,000	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 operation expense	4,000	4,500

Required: For each of the above unrelated accounts, prepare the most likely adjusting entry including plausible description/narrative.

PROBLEM 3–2 (LO1,2) Adjusting Entries

The unadjusted trial balance of Lukas Films Corporation includes the following account balances at December 31, 2015, its fiscal year-end. Assume all accounts have normal debit or credit balances as applicable.

Prepaid rent	\$ 1,500
Unused supplies	-0-
Equipment	2,400
Unearned advertising revenue	1,000
Insurance expense	900
Supplies expense	600
Telephone expense	825
Wages expense	15,000

The following information applies at December 31:

- a. A physical count of supplies indicates that \$100 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 three months: December 2015, January 2016, and February 2016.
- f. Half of the unearned advertising has been earned at December 31.
- g. The \$900 balance in Insurance Expense is for a one-year policy, effective August 1, 2015.

Required: Prepare all necessary adjusting entries at December 31, 2015. Descriptions are not needed.

PROBLEM 3–3 (LO1,2) Adjusting Entries

The unadjusted trial balance of Mighty Fine Services Inc. includes the following account balances at December 31, 2015, its fiscal year-end. No adjustments have been recorded. Assume all accounts have normal debit or credit balances.

Notes receivable	\$10,000
Prepaid rent	-0-
Prepaid insurance	600
Unused supplies	500
Notes payable	5,000
Subscription revenue	9,000
Rent expense	3,900
Truck operation expense	4,000

The following information applies to the fiscal year-end:

- (a) Accrued interest of \$250 has not yet been recorded on the Notes Receivable.
- (b) The \$600 prepaid insurance is for a one-year policy, effective September 1, 2015.

- (c) A physical count indicates that \$300 of supplies is still on hand at December 31.
- (d) 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.
- (e) The Subscription Revenue account consists of one \$9,000 cash receipt for a 6-month subscription to the corporation's Computer Trends report; the subscription period began December 1, 2015.
- (f) Three days of salary amounting to \$300 remain unpaid and unrecorded at December 31.
- (g) The rent expense account should reflect 12 months of rent. The monthly rent expense is \$300.
- (h) A bill for December truck operation expense has not yet been received; an amount of \$400 is owed.

Required: Prepare all necessary adjusting entries at December 31, 2015. Descriptions are not needed.

PROBLEM 3–4 (LO1,2) Adjusting Entries

The following accounts are taken from the records of Bill Pitt Corp. at the end of its first 12 months of operations ended December 31, 2015, prior to any adjustments.

In addition to the balances in each set of accounts, additional data are provided for adjustment purposes if applicable. Treat each set of accounts independently of the others.

Truck	Depreciation Expense – Truck	Acc. Dep'n – Truck
6,000	600	600

- (a) Additional information: The truck was purchased July 1; it has an estimated useful life of 4 years.

Cash	Unearned Rent	Rent Earned
600	-0-	600

- (b) Additional information: A part of the office was sublet during the entire 12 months for \$50 per month.

Unused Supplies	Supplies Expense
	1,250

- (c) Additional information: A physical inventory indicated \$300 of supplies still on hand at December 31.

Prepaid Rent	Rent Expense
1,200	4,400

- (d) Additional information: The monthly rent is \$400.

Wages Expense	Wages Payable
6,000	-0-

- (e) Additional information: Unrecorded wages at December 31 amount to \$250.

Notes Payable	Interest Expense	Interest Payable
8,000	600	100

- (f) Additional information: The bank loan bears interest at 10 per cent. The money was borrowed on January 1, 2015.

Cash	Utilities Expense	Utilities Payable
1,000	1,200	200

- (g) Additional information: The December bill has not yet been received or any accrual made; the amount owing at December 31 is estimated to be another \$150.

Cash	Prepaid Insurance	Insurance Expense
1,200	600	600

- (h) Additional information: A \$1,200 one-year insurance policy had been purchased effective February 1, 2015; there is no other insurance policy in effect.

Unearned Rent Revenue	Rent Earned
900	-0-

- (i) Additional information: The Unearned Rent Revenue balance applies to three months: November 2015, December 2015, and January 2016. \$600 of the \$900 has been earned as at December 31, 2015.

Cash	Other Unearned Revenue	Commissions Earned
25,200	-0-	25,200

- (j) Additional information: \$2,000 of the total \$25,200 balance in commission revenue has not been earned at December 31, 2015.

Required: Prepare all necessary adjusting entries. Include descriptions/narratives.

PROBLEM 3–5 (LO1,2,3) Adjusting Accounts

Roth Contractors Corporation was incorporated on December 1, 2015 and had the following transactions during December:

Part A

- (a) Issued common stock for \$5,000 cash.
- (b) Paid \$1,200 for three months' rent: December 2015; January and February 2016.
- (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: advertising, \$350; interest, \$100; telephone, \$75; truck operation, \$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.
- (l) Paid the following expenses: advertising, \$200; interest, \$150; truck operation, \$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 electricity used during the month (recorded as utilities expense).

Required:

1. Open general ledger T-accounts for the following: Cash (101), Accounts Receivable (110), Prepaid Insurance (161), Prepaid Rent (162), Truck (184), Accounts Payable (210), Common Stock (320), Repair Revenue (450), Advertising Expense (610), Interest Expense (632), Supplies Expense (668), Telephone Expense (669), Truck Operation Expense (670), Utilities Expense (676), and Wages Expense (677).
2. Prepare journal entries to record the December transactions. Descriptions are not needed.
3. Post the entries to general ledger T-accounts.

Part B

At December 31, the following information is made available for the preparation of adjusting entries.

- (o) One month of the Prepaid Insurance has expired.
- (p) The December portion of the December 1 rent payment 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; the unpaid amount of \$1,500 will be included in the first Friday wages payment in January.
- (t) The truck has an estimated useful life of 4 years.

Required:

4. Open additional general ledger T-accounts for the following: Supplies (173), Accumulated Depreciation – Truck (194), Wages Payable (237), Unearned Revenue (249), Depreciation Expense – Truck (624), Insurance Expense (631), and Rent Expense (654).
5. Prepare all necessary adjusting entries. Omit descriptions.
6. Post the entries to general ledger T-accounts and calculate balances.
7. Prepare an adjusted trial balance at December 31, 2015.

PROBLEM 3–6 (LO6) Closing Accounts**Required:**

1. Using the adjusted trial balance answer from Problem 3–5, journalize the appropriate closing entries (create additional accounts if required).
2. Prepare a post-closing trial balance.

PROBLEM 3–7 (LO1,2,3,4,5,6) Comprehensive Accounting Cycle Review Problem

The unadjusted trial balance of Packer Corporation showed the following balances at the end of its first 12-month fiscal year ended August 31, 2015:

	<i>Balance</i>	
	<i>Debits</i>	<i>Credits</i>
Cash	\$12,000	
Accounts receivable	3,600	
Prepaid insurance	-0-	
Supplies	2,500	
Land	15,000	
Building	60,000	
Furniture	3,000	
Equipment	20,000	
Accumulated depreciation – building		\$ -0-
Accumulated depreciation – equipment		-0-
Accumulated depreciation – furniture		-0-
Accounts payable		4,400
Salaries payable		-0-
Interest payable		-0-
Unearned commissions revenue		1,200
Unearned subscriptions revenue		800
Notes payable		47,600
Common stock		52,100
Retained earnings		-0-
Income summary		-0-
Commissions earned		37,900
Subscriptions revenue		32,700
Advertising expense	4,300	
Depreciation expense – building	-0-	
Depreciation expense – equipment	-0-	
Depreciation expense – furniture	-0-	
Insurance expense	1,800	
Interest expense	2,365	
Salaries expense	33,475	
Supplies expense	15,800	
Utilities expense	2,860	
Totals	<u>\$176,700</u>	<u>\$176,700</u>

At the end of August, the following additional information is available:

- (a) The company's insurance coverage is provided by a single comprehensive 12-month policy that began on March 1, 2015.
- (b) Supplies on hand total \$2,850.
- (c) The building has an estimated useful life of 50 years.

- (d) The furniture has an estimated useful life of ten years.
- (e) The equipment has an estimated useful life of 20 years.
- (f) Interest of \$208 on the bank loan for the month of August will be paid on September 1, when the regular \$350 payment is made.
- (g) A review of the unadjusted balance in the unearned commissions revenue account indicates the unearned balance should be \$450.
- (h) A review of the unadjusted balance in the subscription revenue account reveals that \$2,000 has not been earned.
- (i) Salaries that have been earned by employees in August but are not due to be paid to them until the next payday (in September) amount to \$325.

Required:

1. Set up necessary general ledger T-accounts and record their unadjusted balances. Create and assign account numbers that you deem appropriate.
2. Prepare the adjusting entries. Descriptions are not needed.
3. Post the adjusting entries to the general ledger T-accounts and calculate balances.
4. Prepare an adjusted trial balance at August 31, 2015.
5. Prepare an income statement and balance sheet.
6. Prepare and post the closing entries.
7. Prepare a post-closing trial balance.

PROBLEM 3–8 (LO1,2,3) Challenge Question – Adjusting Entries

Below is an unadjusted trial balance for Smith and Smith Co., at June 30, 2016.

Smith and Smith Co.
Unadjusted Trial Balance
At June 30, 2016

	Debit	Credit
Cash	\$ 50,400	
Accounts receivable	25,000	
Shop supplies	1,500	
Prepaid insurance expense	4,500	
Prepaid advertising expense	2,000	
Prepaid rent expense	–	
Building	74,000	
Accumulated depreciation, building		\$ –
Equipment	10,000	
Accumulated depreciation, equipment		2,000
Accounts payable		12,000
Accrued salaries payable		15,500
Interest payable		–
Income taxes payable		–
Notes payable		20,000
Unearned service revenue		30,000
Common stock		1,000
Retained earnings		24,900
Service revenue		125,000
Salaries expense	22,000	
Insurance expense	–	
Interest expense	–	
Shop supplies expense	200	
Advertising expense	2,200	
Depreciation expense	1,400	
Maintenance service expense	5,200	
Rent expense	20,000	
Income tax expense	–	
Utilities expense	12,000	
	\$230,400	\$230,400

Additional information for June not yet recorded:

- a. Unbilled and uncollected work to June 30 totals \$45,000.
- b. An analysis of prepaid advertising shows that \$500 of the balance was consumed.
- c. A shop supplies count on June 30 shows that \$1,200 are on hand.
- d. Equipment has an estimated useful life of ten years and an estimated residual value of \$500.

- e. The records show that fifty percent of the work, for a \$10,000 fee received in advance from a customer and recorded last month, is now completed.
- f. Salaries of \$5,800 for employees for work done to the end of June has not been paid.
- g. Utilities invoice for services to June 22 totals \$3,500.
- h. Accrued revenues of \$7,800 previously recorded to accounts receivable were collected.
- i. A building was purchased at the end of May. Its estimated useful life is fifty years and has an estimated residual value of \$10,000.
- j. Rent expense of \$5,000 cash for July has been paid and recorded directly to rent expense.
- k. Interest for the 6% note payable has not yet been recorded for June.
- l. Income taxes of \$3,000 is owing but not yet paid.
- m. Unrecorded and uncollected service revenue of \$9,000 has been earned.
- n. A two year, \$1,800 insurance policy was purchased on June 1 and recorded to prepaid insurance expense.
- o. The prior balance in the unadjusted prepaid insurance account (excluding the insurance in item n. above), shows that \$300 of that balance is not yet used.

Required:

1. Prepare the adjusting and correcting entries for June.
2. Prepare an adjusted trial balance at June 30, 2016.

PROBLEM 3–9 (LO4) Challenge Question – Preparation of Financial Statements

Using the adjusted trial balance in PROBLEM 3–8 above:

Required: Prepare an income statement, statement of stockholder's equity and a balance sheet as at June 30, 2016. (Hint: For the balance sheet, also include a subtotal for each asset's book value).

PROBLEM 3–10 (LO6) Closing Entries and Post-Closing Trial Balance

Required: Using the adjusted trial balance in PROBLEM 3–8 above:

- a. Assuming that June 30, 2016, is the year-end, prepare the closing journal entries.
- b. Prepare a post-closing trial balance at June 30, 2016.

Chapter 4

The Classified Balance Sheet and Related Disclosures

Chapters 1 through 3 discussed and illustrated the steps in the accounting cycle. They also discussed the concepts, assumptions, and procedures that provide a framework for financial accounting as a whole. Chapter 4 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 expands on notes to the financial statements, the auditor's report, and the management's responsibility report which are all integral to meeting disclosure requirements.

Chapter 4 Learning Objectives

LO1 – Explain the importance of and challenges related to basic financial statement disclosure.

LO2 – Explain and prepare a classified balance sheet.

LO3 – Explain the purpose and content of notes to financial statements.

LO4 – Explain the purpose and content of the auditor's report.

LO5 – Explain the purpose and content of the report that describes management's responsibility for internal control.

Concept Self-Check

Use the following as a self-check while working through Chapter 4.

1. What shapes and limits an accountant's measurement of wealth?
2. Are financial statements primarily intended for internal or external users?
3. What is a classified balance sheet?
4. What are the classifications within a classified balance sheet?
5. What are current assets?

6. What are non-current assets?
7. What are current liabilities?
8. What are long-term liabilities?
9. What is the current-portion of a long-term liability?
10. What is the purpose and content of the notes to the financial statements?
11. What is the purpose and content of the auditor's report?
12. What is the purpose and content of the report that describes management's responsibility for internal control?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

4.1 Financial Statement Disclosure Decisions

LO1 – Explain the importance of and challenges related to basic 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 shareholders 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 generally accepted accounting principles and assumptions introduced and discussed in Chapter 1, including historical cost, the monetary unit, and going concern. These principles and assumptions mean that accountants record transactions at the acquisition price, they assume the monetary currency retains its purchasing power and changes in market values of assets are generally not recorded, and the entity is expected to continue operating into the foreseeable future respectively.

Economists, on the other hand, do recognize changes in market value. 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. Generally Accepted Accounting Principles (GAAP) 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 acquisition cost. This practice is based on the application of the historical cost principle, which is a part of GAAP.

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 primarily on the needs of external users. To provide information to these users, accountants make cost-benefit judgments. They use materiality considerations to decide how particular items of information should be recorded and disclosed. Accountants build limitations into the process of identifying whether an expenditure should be expensed or recorded as an asset. 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 having to record depreciation expense, a cost-benefit consideration that will not impact decisions made by external users of the business's financial statements. Another company determined limitation example is to expense immediately unless the asset has a useful life (the period of time the company expects to use the asset) of one year or greater.

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.

4.2 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. Balance sheet
2. Income statement
3. Statement of stockholders' equity
4. Statement of cash flows
5. Notes to the financial statements

Note that this is not the same order in which the financial statements are prepared which was discussed in Chapter 2.

In addition, the financial statements are often accompanied by an auditor's report and a management's responsibilities section that asserts the responsibility of management for the information contained in the financial statements as well as an evaluation of the internal control procedures of the company. Each of these items will be discussed below. Financial statement information must be disclosed for the most recent year with the prior year for comparison.

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 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 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*. Another common term for

non-current is *long-term*. Non-current assets, also referred to as long-term assets, can be classified further into *long-term investments*; *property, plant and equipment*, *intangible assets*, and *other assets*. The asset and liability classifications are summarized below:

Assets	Liabilities
Current assets	Current liabilities
Long-term assets:	Long-term liabilities
Long-term investments Property, plant, & equipment Intangible assets Other assets	

Current Assets

Current assets are those resources that the entity expects to convert to cash, or to consume during the next year or within the operating cycle of the entity, whichever is longer. Examples of current assets include:

- cash, comprising paper currency and coins, deposits at banks, checks, and money orders.
- short-term investments, the investment of cash that will not be needed immediately, in short-term, interest-bearing notes that are easily convertible into cash.
- accounts receivable that are due to be collected within one year.
- notes receivable, usually formalized account receivables — 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 in a short period of time. These are not expected to be converted into cash, and include:

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

On the balance sheet, current assets are normally reported before non-current assets. They are listed by decreasing levels of **liquidity** — their ability to be converted into cash. Therefore, cash appears first under the current asset heading since it is already liquid.

Non-current Assets

Non-current assets are assets that will be useful for more than one year; they are sometimes referred to as **long-lived assets**. Non-current assets include property, plant, and equipment (PPE) items used in the operations of the business. Some examples of PPE are: a) land, b) buildings, c) equipment, and d) motor vehicles such as trucks.

Other types of non-current assets include long-term investments and intangible assets. **Long-term investments** are held for more than one year or the operating cycle and include long-term notes receivable and investments in shares and bonds. **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. **Other assets** are resources that are not reported in the other major balance sheet categories such as bond issue costs which are discussed in Chapter 9.

Current Liabilities

Current liabilities are obligations that must be paid within the next 12 months or within the entity's next operating cycle, whichever is longer. They are shown first in the liabilities section of the balance sheet and generally listed in order of **maturity** (their due dates). The order of liabilities is not as structured as that of assets and may vary somewhat from company to company. Examples of current liabilities include:

- accounts payable
- unearned revenue
- accrued liabilities such as interest payable and wages payable
- income taxes payable.
- notes payable (bank loans) that are due within the next 12 months
- the current portion of long-term liabilities

The **current portion of long-term liabilities** is the principal amount of a long-term liability that is to be paid within the next 12 months. For example, assume a \$24,000 note payable issued on

January 1, 2015 where principal is repaid at the rate of \$1,000 per month over two years. The current portion of this note on the January 31, 2015 balance sheet would be \$12,000 (calculated as 12 months X \$1,000/month). The remaining principal would be reported on the balance sheet as a long-term 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, such as the long-term portion of a bank loan or a mortgage. A **mortgage** is a liability that is secured by real estate.

Equity

The equity section of the classified balance sheet consists of two major accounts: common stock and retained earnings.

The following illustrates the presentation of Big Dog Carworks Corp.’s classified balance sheet after several years of operation.

Big Dog Carworks Corp. Balance Sheet At December 31, 2018					
<i>Assets</i>			<i>Liabilities</i>		
	2018	2017		2018	2017
<i>Current assets</i>			<i>Current liabilities</i>		
Cash	\$ 10,800	\$ 12,000	Accounts payable	\$ 24,000	\$ 22,000
Accounts receivable	26,000	24,000	Income taxes payable	15,000	10,000
Merchandise inventories	120,000	100,000	Current portion of long-term notes	39,000	82,250
Prepaid expenses	1,200	570	Total current liabilities	<u>\$ 78,000</u>	<u>\$114,250</u>
Total current assets	<u>\$158,000</u>	<u>\$136,570</u>			
<i>Property, plant, and equipment (Note 4)</i>	126,645	10,430	<i>Long-term liabilities</i>		
			Notes payable (Note 5)	163,145	-0-
			Total liabilities	<u>\$241,145</u>	<u>\$114,250</u>
			<i>Equity</i>		
			Common stock (Note 6)	\$ 11,000	\$ 11,000
			Retained earnings	32,500	21,750
			Total equity	<u>43,500</u>	<u>32,750</u>
Total assets	<u>\$284,645</u>	<u>\$147,000</u>	Total liabilities and equity	<u>\$284,645</u>	<u>\$147,000</u>

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 balance sheet can be presented in the **account form** balance sheet, as shown above where

liabilities and equities are presented to the right of the assets. An alternative is the **report form** balance sheet where liabilities and equity are presented below the assets. Publicly traded financial statements are presented in report form.

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 Chapter 1 as copied below.

Big Dog Carworks Corp.		
Income Statement		
For the Month Ended January 31, 2015		
<i>Revenues</i>		
Repair revenues		\$10,000
<i>Expenses</i>		
Rent expense	\$1,600	
Salaries expense	3,500	
Supplies expense	2,000	
Fuel expense	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. Like the classified balance sheet, an income statement can be classified as well as prepared with comparative information. The classified income statement will be discussed in detail in Chapter 5.

Regardless of the type of financial statement, any items that are *material* must be disclosed separately so users will not otherwise be misled. Materiality is a matter for judgment. Office supplies of \$2,000 per month used by BDCC in January 2015 might be a material amount and therefore disclosed as a separate item on the income statement for the month ended January 31, 2015. If annual revenues grew to \$1 million, \$2,000 per month for supplies might be considered immaterial. These expenditures would then be grouped with other similar items and disclosed as a single amount.

4.3 Notes to Financial Statements

LO3 – 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 disclosure principle, **notes to the financial statements** provide relevant details that are not included in the body of the financial statements. For instance, details about

property, plant, and equipment are shown in Note 4 in the following sample notes to the financial statements. The notes help external users 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, 2018

1. Business operations

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

2. Summary of Significant Accounting Policies

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

(a) Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP) requires the Company's management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results may be substantially different.

(b) Property, Plant, and Equipment

Property, plant, and equipment are stated at cost. Expenditures for repairs and maintenance are expensed as incurred. Depreciation is computed using the straight-line method based upon the estimated useful lives of the underlying assets as follows:

- Buildings: 25 years
- Equipment: 10 years
- Truck: 5 years

(c) 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.

(d) Revenue Recognition

The Company recognizes revenue on service sales when there is a transfer of promised goods or services to customers in the amount it expects to receive.

(e) Operating Expenses

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

(f) 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.

(g) Common Stock

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

3. Property, plant, and equipment

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

	2018				2017	
	<i>Land</i>	<i>Building</i>	<i>Equip.</i>	<i>Truck</i>	<i>Total</i>	<i>Total</i>
<i>Gross Carrying Amount</i>						
Balance, January 1	\$ -0-	\$ -0-	\$3,000	\$8,000	\$ 11,000	\$11,000
Additions	30,000	90,000			120,000	
Balance, January 31	30,000	90,000	3,000	8,000	131,000	11,000
<i>Depreciation</i>						
Balance, January 1		-0-	90	480	570	285
Depreciation for year		3,500	45	240	3,785	285
Balance, December 31		3,500	135	720	4,355	570
<i>Carrying Amount</i>						
December 31	<u>\$30,000</u>	<u>\$86,500</u>	<u>\$2,865</u>	<u>\$7,280</u>	<u>\$126,645</u>	<u>\$ 10,430</u>

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

4. Borrowings

Borrowings include the following financial liabilities measured at cost:

	Current		Non-Current	
	2018	2017	2018	2017
Demand bank loan	\$ 20,000	\$ 52,250	\$ -0-	\$ -0-
Subordinated shareholder loan	13,762	30,000	-0-	-0-
Mortgage	5,238	-0-	163,145	-0-
Total carrying amount	<u>\$39,000</u>	<u>\$82,250</u>	<u>\$163,145</u>	<u>\$ -0-</u>

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 shareholder loan is due on demand, non-interest bearing, and unsecured.

The mortgage is payable to First Bank of Capitalville. 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 2021.

5. Common stock

The common stock of Big Dog Carworks Corp. consists of fully-paid common shares 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 shareholders' meeting. There were no shares issued during 2017 or 2018.

4.4 Auditor's Report

LO4 – 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 procedures or policies put in place by management to safeguard assets, increase efficiency, promote accountability, and prevent fraudulent behavior. 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, a professional accountant, who is contracted by the company to report the audit's findings to the company's board of directors and its shareholders. 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.

An example of an unqualified auditor's report for BDCC is shown below, along with a brief description of each component. Put in simple terms, an **unqualified auditor's report** indicates that the financial statements are truthful and a **qualified auditor's report** is one that indicates the financial statements are not or may not be truthful.

<p>The auditors' independence is stated.</p>	<p>→ REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM</p>
<p>The audit report is addressed to the board and the shareholders.</p>	<p>{ To the Shareholders and the Board of Directors of Big Dog Carworks Corp.</p>
<p>The opinion must be included in the first section of the report and must state the financial statements were audited.</p>	<p>Opinion on the Financial Statements We have audited the accompanying balance sheets of Big Dog Carworks Corp. as of December 31, 2018 and 2017, and the related statements of income, of stockholders' equity, and cash flows for each of the three years in the periods ended December 31, 2018, including related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America.</p>
	<p>We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) and our report dated March 16, 2018 expressed an unqualified opinion thereon.</p> <p>Basis for Opinion The Company's management is responsible for these financial statements. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.</p> <p>We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provides a reasonable basis for our opinion.</p>
<p>Clarifies the auditors' role and needs to affirm auditor independence.</p>	<p>{</p>
<p>Required statement containing the year the auditor (firm) began serving consecutively as the company's auditor.</p>	<p>→ CPA Firm LLP (signed) We have served as the Company's auditor since 2015.</p>
	<p>City, State March 16, 2018</p>

4.5 Management's Responsibility for Internal Control

LO5 – Explain the purpose and content of the report that describes management's responsibility for internal control.

Management is responsible for demonstrating that the internal controls of a company are effective. The Securities and Exchange Commission (SEC) requires management to:

- Provide a report on internal control
- Accept responsibility for the effectiveness of their internal control
- Evaluate the effectiveness of their internal control utilizing suitable control criteria
- Support management's evaluation of internal control with sufficient evidence

When Management files their annual report (Form 10-K) with the SEC that includes the auditors' opinion it must also include a management report on internal control. The SEC doesn't require exact wording but it must include the following:

- A statement that it is management's responsibility to establish and maintain adequate internal control
- Identify the framework followed by management for evaluating internal control
- Include management's assessment of the company's effectiveness regarding internal control over financial reporting as of the end of the most recent fiscal period and include a statement as to whether internal control over financial reporting is effective
- Include a statement that the company's auditors have issued an audit report on management's assessment

Summary of Chapter 4 Learning Objectives

L01 – Explain the importance of and challenges related to basic 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.

L02 – 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: <ul style="list-style-type: none"> • Long-term investments • Property, plant, & equipment • Intangible assets • Other assets 	Non-current or long-term liabilities

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 are used beyond one year or one operating cycle. There are four types of non-current assets: property, plant, and equipment (PPE), long-term investments, intangible assets, and other assets. Long-term investments include investments in shares and bonds. 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. Long-term liabilities are paid beyond one year or one operating cycle. Income statements are also classified (discussed in Chapter 5).

L03 – 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 would include a summary of accounting policies, details regarding property, plant, and equipment assets, and specifics about liabilities such as the interest rates and repayment terms.

L04 – 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 truthful and a qualified auditor's report is one that indicates the financial statements are not or may not be truthful.

L05 – Explain the purpose and content of the report that describes management's report on internal controls.

This report makes a statement describing management's responsibility for establishing and maintaining adequate internal control.

Discussion Questions

Refer to the Big Dog Carworks Corp. financial statements for the year ended December 31, 2018 and other information included in this chapter to answer the following questions.

1. Identify the economic resources of Big Dog Carworks Corp. in its financial statements.
2. What comprises the financial statements of BDCC?
3. Why does BDCC prepare financial statements?
4. From the balance sheet at December 31, 2018 extract the appropriate amounts to complete the following accounting equation:

$$\text{ASSETS} = \text{LIABILITIES} + \text{EQUITY}$$
5. If $\text{ASSETS} - \text{LIABILITIES} = \text{NET ASSETS}$, how much is net assets at December 31, 2018? Is net assets synonymous with equity?
6. What types of assets are reported by Big Dog Carworks Corp.? What types of liabilities?
7. What kind of assumptions is made by Big Dog Carworks Corp. about asset capitalization? Over what periods of time are assets being amortized?
8. What adjustments might management make to the financial information when preparing the annual financial statements? Consider the following categories:
 - a. Current asset accounts.
 - b. Non-current asset accounts.
 - c. Current liability accounts.
 - d. Non-current liability accounts.

Indicate several examples in each category. Use the BDCC balance sheet and notes 3 and 5 for ideas.

9. What are the advantages of using a classified balance sheet? Why are current accounts shown before non-current ones on BDCC's balance sheet?
10. How does Big Dog Carworks Corp. make it easier to compare information from one time period to another?
11. Who is the auditor of BDCC? What does the auditor's report tell you about BDCC's financial statements? Does it raise any concerns?
12. What does the auditor's report indicate about the application of generally accepted accounting principles in BDCC's financial statements?
13. Do the financial statements belong to management? the auditor? the board of directors? shareholders?
14. What is BDCC management's responsibility with respect to the company's internal control?

Exercises

EXERCISE 4–1 (LO2) Classified Balance Sheet

The following accounts and account balances are taken from the records of Joyes Enterprises Ltd. at December 31, 2016, its fiscal year-end.

	<i>Dr.</i>	<i>Cr.</i>
Accounts receivable	\$8,000	
Accounts payable		\$7,000
Accumulated depreciation – buildings		1,000
Accumulated depreciation – equipment		4,000
Notes payable (due 2017)		5000
Buildings	25,000	
Cash	2,000	
Dividends declared	1,000	
Equipment	20,000	
Income tax payable		3,000
Land	5,000	
Merchandise inventory	19,000	
Mortgage payable (due 2019)		5,000
Prepaid insurance	1,000	
Common stock		48,000
Retained earnings, Jan. 1 2016	-0-	2,000
Totals	<u>\$81,000</u>	<u>\$75,000</u>
Net Income	-0-	6,000
Totals	<u><u>-0-</u></u>	<u><u>-0-</u></u>

Required:

- a. Using the above information, prepare a classified balance sheet.
- b. Does Joyes Enterprises Ltd. have sufficient resources to meet its obligations in the upcoming year?
- c. Calculate the proportion of shareholders' to creditors' claims on the assets of Joyes.

EXERCISE 4–2 (LO2,3) Classified Balance Sheet

The following balance sheet was prepared for Abbey Limited:

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Abbey Limited Balance Sheet As at November 30, 2015			
	<i>Assets</i>		<i>Liabilities</i>
<i>Current</i>			<i>Current</i>
Cash	\$1,000		Accounts payable
Accounts receivable	6,000		\$5,600
Building	12,000		Notes payable (due 2016)
Merchandise inventory	3,000		2,000
Total current assets	\$22,000		Notes payable (due 2022)
			1,000
<i>Non-current</i>			Total current liabilities
Short-term investments	3,000		\$8,600
Equipment	1,500		<i>Non-current</i>
Unused office supplies	100		Mortgage payable (due 2023)
Truck	1,350		7,000
Total non-current assets	5,950		Retained earnings
			1,000
			Salaries payable
			250
			Total non-current liabilities
			8,250
			Total liabilities
			16,850
			<i>Equity</i>
			Common stock
			11,100
Total assets	\$27,950	Total liabilities and assets	\$27,950

Required:

- a. Identify the errors that exist in the balance sheet of Abbey Limited and why you consider this information incorrect.
- b. Prepare a corrected, classified balance sheet.
- c. Based on the balance sheet categories, what additional information should be disclosed in the notes to the financial statements?

EXERCISE 4–3 (LO2,3) Accounts Classifications

Below are various accounts:

	Land used in the normal course of business operations		Accrued salaries payable
	Notes payable, due in four months		Prepaid advertising
	Truck		Advertising expense
	Land held for investment		Unearned revenue
	Copyright		Service revenue
	Accounts payable		Cash
	Cash dividends		Mortgage payable, due in fifteen years
	Building		Mortgage payable, due in six months
	Furniture		Common stock
	Accounts receivable, from customer sales		Shop supplies
	Franchise		Accumulated depreciation, building
	Utilities expense		Depreciation expense
	Utilities payable		Office supplies

Required: Classify each account as one of the following:

1. current asset
2. long-term investment
3. property, plant and equipment
4. intangible asset
5. current liability
6. long-term liability
7. equity
8. not reported on the balance sheet

EXERCISE 4–4 (LO2) Preparing Closing Entries, Balance Sheet and Post-closing Trial balance

Below are the December 31, 2016, year-end accounts balances for Abled Appliance Repair Ltd. This is the business's third year of operations.

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Cash	\$80,000	Common stock	\$1,000
Accounts receivable	66,000	Retained earnings	116,600
Office supplies inventory	2,000	Revenue	35,000
Prepaid insurance	5,000	Rent expense	3,000
Land	20,000	Salaries expense	8,000
Office equipment	10,000	Utilities expense	500
Accumulated depreciation, office equip- ment	2,000	Travel expense	1,500
Accounts payable	35,000	Insurance expense	600
Unearned consulting fees	10,000	Supplies and postage expense	3,000

Required:

- a. Prepare the closing entries.
- b. Prepare a classified balance sheet.
- c. Prepare a post-closing trial balance.

EXERCISE 4–5 (LO2) Classified Balance Sheet

Below is the post-closing trial balance for Mystery Company Ltd. All accounts have normal balances.

Mystery Company Ltd.
Trial Balance
November 30, 2016

Accounts payable	\$ 95,960
Accounts receivable	99,520
Accrued salaries payable	58,580
Accumulated depreciation, building	43,530
Accumulated depreciation, vehicle	8,650
Building	270,000
Cash	150,650
Copyright	51,600
Current portion of long-term debt	72,000
Income taxes payable	32,500
Interest payable	12,000
Notes payable, due 2025	145,000
Office supplies	1,300
Prepaid insurance expense	10,000
Prepaid rent expense	12,000
Retained earnings	74,850
Common stock	??
Unearned revenue	150,000
Vehicle	108,000

Required: Prepare a classified balance sheet.

EXERCISE 4–6 (LO2) Classified Balance Sheet

Below is the adjusted trial balance for Hitalle Heights Corp. All accounts have normal balances.

Hitalle Heights Corp.
 Trial Balance
 May 31, 2016

Accounts payable	\$ 13,020
Accounts receivable	59,808
Accrued salaries and benefits payable	4,872
Accumulated depreciation, furniture	1,792
Cash	8,888
Cash dividends	2,800
Depreciation expense	1,333
Furniture	8,400
Income tax expense	2,520
Income taxes payable	3,320
Insurance expense	2,072
Interest expense	84
Interest payable	224
Land	58,048
Notes payable (long-term)	16,800
Shop supplies	1,008
Prepaid insurance expense	7,162
Rent expense	12,600
Travel expense	840
Retained earnings	192,355
Revenue	94,000
Salaries expense	23,352
Common stock	840
Shop supplies expense	420
Franchise	155,868
Unearned revenue	21,000
Utilities expense	3,020

Additional information:

The bank loan will be reduced by \$5,200 next year.

There were 200 additional shares issued during the year for \$200.

Required: Prepare a classified balance sheet and a statement of shareholders' equity for May 31, 2016.

Problems

PROBLEM 4–1 (LO2) Classified Balance Sheet

The following list of accounts is taken from the records of the Norman Company Ltd. at December 31, 2015:

<i>Account Title</i>	<i>Balance</i>
Accounts payable	\$125
Accounts receivable	138
Building	400
Cash	250
Common stock	400
Equipment	140
Land	115
Mortgage payable (due 2022)	280
Notes payable, due within 90 days	110
Notes receivable, due within 90 days	18
Prepaid insurance	12
Retained earnings	214
Salaries payable	14
Unused office supplies	70

Required: Prepare a classified balance sheet.

PROBLEM 4–2 (LO2) Classified Balance Sheet

The following adjusted trial balance has been extracted from the records of Dark Edge Sports Inc. at December 31, 2015, its second fiscal year-end.

	<i>Account Balances</i>	
	<i>Dr.</i>	<i>Cr.</i>
Accounts payable		\$8,350
Accounts receivable	\$18,700	
Accumulated depreciation – equipment		2,000
Advertising expense	7,200	
Notes payable, due May 31, 2016		10,000
Cash	1,500	
Depreciation expense	1,100	
Dividends	600	
Equipment	12,500	
Income taxes expense	2,300	
Income taxes payable		4,600
Insurance expense	1,200	
Interest and bank fees	1,300	
Prepaid insurance	1,300	
Prepaid rent	600	
Retained earnings		2,000
Rent expense	17,950	
Revenue		80,000
Salaries expense	39,000	
Common stock		3,000
Telephone expense	1,100	
Utilities expense	3,600	
Totals	\$109,950	\$109,950

Note: No shares were issued during 2015.

Required:

1. Calculate net income for year ended December 31, 2015.
2. Prepare a statement of shareholders' equity for the year ended December 31, 2015.
3. Prepare a classified balance sheet at December 31, 2015.
4. By what amounts do total current liabilities exceed total current assets (working capital) at December 31, 2015?
5. Assume a \$5,000 bank loan is received, payable in six months. Will this improve the negative working capital situation calculated in (4) above? Calculate the effect on your answer to (4) above?
6. As the bank manager, what questions might you raise regarding the loan?

PROBLEM 4–3 (LO2) Closing Entries and Financial Statements

Below is the adjusted trial balance with accounts in alphabetical order for MayBee Services Ltd. All accounts have normal balances.

MayBee Services Ltd.
Trial Balance
At June 30, 2016

Accounts payable	\$ 32,550
Accounts receivable	149,520
Accrued salaries payable	12,180
Accumulated depreciation, building	280
Accumulated depreciation, equipment	4,480
Advertising expense	5,670
Building	145,400
Cash	122,220
Cash dividends	7,000
Depreciation expense	3,332
Equipment	21,000
Income tax expense	6,300
Income taxes payable	6,300
Insurance expense	5,180
Interest expense	210
Interest payable	210
Notes payable, due 2018	42,000
Office supplies	2,520
Prepaid insurance expense	17,906
Rent expense	31,500
Repairs expense	10,920
Retained earnings	343,058
Revenue	135,000
Salaries expense	58,380
Common stock	2,100
Shop supplies expense	1,050
Trademark	10,000
Unearned revenue	52,500
Utilities expense	32,550

Additional Information: For the note payable, its account balance will be reduced by \$14,000 as at June 30, 2017.

Required:

1. Prepare the closing entries.
2. Prepare a classified balance sheet.
3. Prepare a post-closing trial balance.

PROBLEM 4–4 (LO2) Challenge Question – Closing Entries and Financial Statements

Below is the unadjusted trial balance with accounts in alphabetical order for Jennette Ltd. All accounts have normal balances.

Jennette Ltd.
Unadjusted Trial Balance
At September 30, 2016

Accounts payable	\$ 39,983
Accounts receivable	321,468
Accrued salaries payable	21,909
Accumulated depreciation, building	9,632
Accumulated depreciation, vehicle	602
Advertising expense	12,191
Building	312,610
Cash	262,773
Cash dividends	15,050
Copyright	21,500
Depreciation expense	7,164
Income tax expense	13,545
Income taxes payable	13,545
Insurance expense	11,137
Interest expense	452
Interest payable	4,730
Mortgage payable, due 2019	90,300
Office supplies	5,418
Prepaid insurance expense	8,498
Rent expense	67,725
Repairs expense	23,478
Retained earnings	737,575
Revenue	290,250
Salaries expense	155,517
Common stock	4,515
Shop supplies expense	2,259
Unearned revenue	112,875
Utilities expense	39,981
Vehicle	45,150

Additional information:

Adjustments not yet recorded are:

1. Revenue earned but not yet billed is \$20,000.
2. Depreciation expense for the vehicle is \$3,000.
3. The building's estimated residual value is \$100,000 and its estimated useful life is 25 years.

4. Salaries not yet paid are \$2,500.
5. Revenue that was paid in cash as an advance of \$50,000 is now earned.
6. Rent for October 2016 of \$5,150 was paid and recorded to rent expense.
7. One-half of the prepaid insurance is has now been used.

Mortgage payments for the next fiscal year will total \$36,000, which includes interest expense of \$6,000.

Required:

1. Update all the account balances with appropriate adjusting entries based on the six missing adjustments above. (Hint: Use a trial balance format with adjusting entry columns.)
2. Prepare an adjusted trial balance.
3. Prepare a classified balance sheet.

Chapter 5

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, Sullivan Tire and Walmart 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 classified multiple-step income statement for a merchandiser.

LO6 – Explain the closing process for a merchandiser.

LO7 – Explain and identify the entries regarding purchase and sales transactions in a periodic inventory system.

Concept Self-Check

Use the following questions as a self-check while working through Chapter 5.

1. What is gross profit and how is it calculated?
2. How is a merchandiser different from a service company?

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 that is restored to inventory recorded versus a sales return that is not restored to inventory (assuming a perpetual inventory 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 an income statement, how is the function of an expense reported versus the nature of an expense?
15. On a classified multiple-step income statement, what is reported under the heading ‘Other revenues and expenses’ and why?
16. What is the periodic inventory system?
17. How is cost of goods sold calculated under the periodic inventory system?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

5.1 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 cost of the actual goods sold. For example, the cost of goods sold for a car dealership would be the cost of the cars purchased from manufacturers and then resold to customers. A service company does not have an expense called cost of goods sold since it does not sell goods. Because a merchandiser has cost of goods sold expense and a service business does not, 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 called **gross profit** or **gross margin**. The basic income statement differences between a service business and a merchandiser are illustrated in Figure 5.1.

<i>Service Company</i>	<i>Merchandising Company</i>
Revenues	Sales
	<i>Less: Cost of Goods Sold</i>
	<hr style="width: 50%; margin: 0 auto;"/> Equals: Gross Profit
<i>Less: Expenses</i>	<i>Less: Expenses</i>
<hr style="width: 50%; margin: 0 auto;"/> <i>Equals: Net Income</i>	<hr style="width: 50%; margin: 0 auto;"/> <i>Equals: Net Income</i>
<hr style="width: 50%; margin: 0 auto;"/> <hr style="width: 50%; margin: 0 auto;"/>	<hr style="width: 50%; margin: 0 auto;"/> <hr style="width: 50%; margin: 0 auto;"/>

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 \$3,000 and then sells it for \$4,000, the gross profit would be \$1,000, as follows:

Sales	\$ 4,000
Cost of Goods Sold	3,000
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 25% gross profit percentage ($\$1,000/4,000$). That is, for every \$1 of sales, the company has \$.25 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. 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 types of ways in which inventory is managed: perpetual inventory system or periodic inventory system. In a **perpetual inventory system**, the merchandise inventory account and cost of goods sold account are updated immediately when transactions occur. In a perpetual system, as merchandise inventory is purchased, it 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. A perpetual system means that account balances are known on a real-time basis. This chapter focuses on the perpetual system.

Some businesses still use a **periodic inventory system** in which the purchase of merchandise inventory is debited to a temporary account called Purchases. At the end of the accounting period, inventory is counted (known as a **physical count**) and 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 are not known. It should be noted that even in a perpetual system a physical count must be performed at the end of the accounting period to record differences between the actual inventory on hand and the account balance. The entry to record this difference is discussed later in this chapter. The periodic system is discussed in greater detail in the appendix to this chapter.

5.2 The Purchase and Payment of Merchandise Inventory (Perpetual)

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.

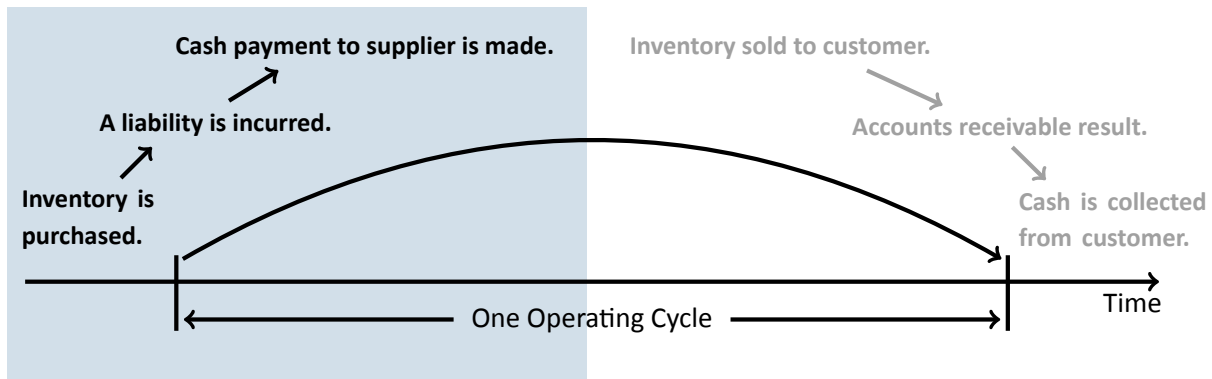


Figure 5.2: Purchase and Payment Portion of the Operating Cycle

Recording the Purchase of Merchandise Inventory (Perpetual)

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 for \$3,000. The journal entry and general ledger T-account effects would be as follows.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Merchandise Inventory A+		3,000	
	Accounts Payable L+			3,000
	To record the purchase of merchandise inventory on account.			

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 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 (Perpetual)

Assume that the vehicle purchased by Excel turned out to be the wrong color. The supplier was contacted and agreed to reduce the price by \$300 to \$2,700. This is an example of a **purchase returns and allowances** adjustment. The amount of the allowance, or reduction, is recorded as a credit to the Merchandise Inventory account, as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Payable (L)		300	
	Merchandise Inventory (A)			300
	To record purchase allowance; incorrect color.			

Note that the cost of the vehicle has been reduced to \$2,700 ($\$3,000 - 300$) as has the amount owing to the supplier. Again, the perpetual inventory system records changes in the Merchandise Inventory account each time a relevant transaction occurs.

Purchase Discounts (Perpetual)

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 \$3,000 invoice for one vehicle received by Excel indicates "1/15, n/45", this means that the \$3,000 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 \$27 [$(\$3,000 - \$300) = \$2,700 \times 1\% = \27]. The payment to the supplier would be recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Payable (L)		2,700	
	Merchandise Inventory (A)			27
	Cash (A)			2,673
	To record payment on account within the discount period.			

5.2. The Purchase and Payment of Merchandise Inventory (Perpetual) ■ 179

The cost of the vehicle in Excel's inventory records is now \$2,673 (\$3,000 – 300 – 27). If payment is made after the discount period, \$2,700 of cash is paid and the entry would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Payable L+		2,700	
	Cash (A)			2,700
	To record payment of account; no purchase discount applied.			

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:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Merchandise Inventory A+		900	
	Accounts Payable L+			900
	To record purchase on account; 10% trade discount (\$1,000 – 10% = \$900).			

Note that 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, the entry would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Merchandise Inventory A+		125	
	Cash (A)			125
	To record shipping costs on inventory purchased.			

The cost of the vehicle in the Excel Merchandise Inventory account is now \$2,798 (calculated as \$3,000 original cost - \$300 allowance - \$27 discount + \$125 shipping). It is important to note that Excel's transportation costs to deliver goods to customers are recorded as *delivery expenses* and **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.

5.3 Merchandise Inventory: Sales and Collection (Perpetual)

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.

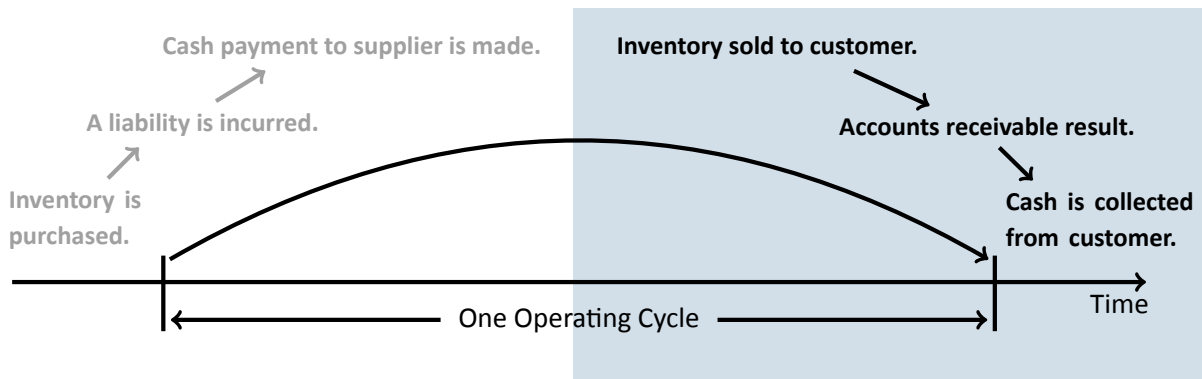


Figure 5.3: Sales and Collection Portion of the Operating Cycle

There are some slight recording differences when revenue is earned in a merchandising company. These are discussed below.

Recording the Sale of Merchandise Inventory (Perpetual)

The sale of merchandise inventory is recorded with two entries:

1. recording the sale by debiting Cash or Accounts Receivable and crediting Sales, and

5.3. Merchandise Inventory: Sales and Collection (Perpetual) ■ 181

- recording the cost of the sale by debiting Cost of Goods Sold and crediting Merchandise Inventory.

Assume the vehicle purchased by Excel is sold for \$4,000 on account. Recall that the cost of this vehicle in the Excel Merchandise Inventory account is \$2,798, as shown below.

The entries to record the sale of the merchandise inventory are:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+		4,000	
	Sales R+ SE+			4,000
	To record the sale of merchandise on account.			

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cost of Goods Sold E+ (SE)		2,798	
	Merchandise Inventory (A)			2,798
	To record the cost of the sale.			

The first entry records the sales revenue. The second entry is required to reduce the Merchandise Inventory account and transfer the cost of the inventory sold to the Cost of Goods Sold account. The second entry ensures that both the Merchandise Inventory account and Cost of Goods Sold account 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 merchandise inventory sold by Excel while it is being delivered to the customer. Excel gives the customer a *sales allowance* by agreeing to reduce the amount owing by \$100. The entry is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Sales Returns and Allowances XR+ (R) (SE)		100	
	Accounts Receivable (A)			100
	To record allowance for damage to merchandise inventory during delivery.			

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 \$3,900. If the \$3,900 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 and is therefore **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:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+		3	
	Sales R+ SE+			3
	To record sale on credit.			

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cost of Goods Sold E+ (SE)		1	
	Merchandise Inventory (A)			1
	To record the cost of the sale.			

If the customer returns the container and the merchandise is restored to inventory, the dual journal entry would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Sales Returns and Allowances XR (R) (SE) .		3	
	Accounts Receivable (A)			3
	To record sales return.			

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Merchandise Inventory A+		1	
	Cost of Goods Sold (E) SE+			1
	To record sales return being restored to inventory.			

The use of a contra account to record sales returns and allowances permits management to track the amount of returned and damaged items.

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

5.4. Adjustments to Merchandise Inventory (Perpetual) ■ 183

sales terms of “2/10, n/30.” 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 \$3,900 (\$4,000 less the \$100 allowance for damage). Payment within 10 days entitles the customer to a \$78 discount ($\$3,900 \times 2\% = \78). If payment is made within the discount period, Excel receives \$3,822 cash ($\$3,900 - 78$) and prepares the following entry:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash A+		3,822	
	Sales Discounts XR (R) (SE)		78	
	Accounts Receivable (A)			3,900
	To record payment on account and sales discount applied.			

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 \$3,900.

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, as already stated, 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.

5.4 Adjustments to Merchandise Inventory (Perpetual)

LO4 – Record adjustments to merchandise inventory.

To verify that the actual amount of merchandise inventory on hand is consistent with the balance recorded in the accounting records, a physical inventory count must be performed at the end of the accounting period. When a physical count of inventory is conducted, the costs attached to these inventory items are totaled. This total is compared to the Merchandise Inventory account balance in the general ledger. Any discrepancy is called **shrinkage**. Theft and deterioration of merchandise inventory are the most common causes of shrinkage.

The adjusting entry to record shrinkage is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cost of Goods Sold E+ (SE)		XX	
	Merchandise Inventory (A)			XX
	To adjust for shrinkage.			

Summary of Merchandising Transactions

As the preceding sections have illustrated, there are a number of entries which are unique to a merchandiser. These are summarized below (assume all transactions were on account):

(a) To record the purchase of merchandise inventory from a supplier:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Merchandise Inventory A+		XX	
	Accounts Payable L+			XX

(b) To record purchase return and allowances:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Payable (L)		XX	
	Merchandise Inventory (A)			XX

(c) To record purchase discounts:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Payable (L)		XX	
	Merchandise Inventory (A)			XX

(d) To record shipping costs from supplier to merchandiser:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Merchandise Inventory A+		XX	
	Accounts Payable L+			XX

(e) To record sale of merchandise inventory and cost of the sale:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+		XX	
	Sales R+ SE+			XX

AND

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cost of Goods Sold E+ (SE)		XX	
	Merchandise Inventory (A)			XX

(f) To record sales returns restored to inventory:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Sales Returns and Allowances XR+ (R) (SE)		XX	
	Accounts Receivable (A)			XX

AND

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Merchandise Inventory A+		XX	
	Cost of Goods Sold (E) SE+			XX

(g) To record sales returns and allowances (where returns are not restored to inventory):

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Sales Returns and Allowances XR+ (R) (SE)		XX	
	Accounts Receivable (A)			XX

(h) To record discounts:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Sales Discounts XR+ (R) (SE)		XX	
	Cash A+		XX	
	Accounts Receivable (A)			XX

(i) To record adjustment for shrinkage at the end of the accounting period:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cost of Goods Sold E+ (SE)		XX	
	Merchandise Inventory (A)			XX

5.5 Merchandising Income Statement

LO5 – Explain and prepare a classified 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 tax, or wages, 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. The **full disclosure principle** 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 introduced — the classified multiple-step format. This format is generally used for internal reporting because of the detail it includes. An example of a classified multiple-step income statement is shown below using assumed data for XYZ Inc. for its month ended December 31, 2015.

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XYZ Inc. Income Statement Month Ended December 31, 2015		
Sales		\$100,000
Less: Sales discounts	\$1,000	
Sales returns and allowances	500	1,500
Net sales		<u>\$98,500</u>
Cost of goods sold		<u>50,000</u>
Gross profit from sales		\$48,500
Operating expenses:		
Selling expenses:		
Sales salaries expense	\$11,000	
Rent expense, selling space	9,000	
Advertising expense	5,000	
Depreciation expense, store equipment	3,000	
Total selling expenses		<u>\$28,000</u>
General and administrative expenses:		
Office salaries expense	\$9,000	
Rent expense, office space	3,000	
Office supplies expense	1,500	
Depreciation expense, office equipment	1,000	
Insurance expense	1,000	
Total general and administrative expenses		<u>15,500</u>
Total operating expenses		<u>43,500</u>
Income from operations		\$5,000
Other revenues and expenses:		
Rent revenue	\$12,000	
Interest expense	1,500	10,500
Income before tax		<u>\$15,500</u>
Income tax expense		3,000
Net income		<u><u>\$12,500</u></u>

Notice that the classified multiple-step income statement shows expenses by both function and nature. The broad categories that show expenses by function include operating expenses, selling expenses, and general and administrative expenses. 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 more than one category or function.

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/loss on the sale of property, plant, and equipment are other examples of 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. Another example of a non-operating expense is losses on the sale of property, plant, and equipment. Income tax expense is a government requirement so it is shown separately. Notice that income tax expense follows the subtotal 'Income before tax'.

5.6 Closing Entries for a Merchandiser

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.

5.7 Appendix A: The Periodic Inventory System

LO7 – Explain and identify the entries regarding 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.

The journal entry, assuming a purchase of merchandise on credit, is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Purchases A+		XX	
	Accounts Payable L+			XX

Purchase Returns and Allowances (Periodic)

Under the periodic inventory system, any purchase returns or purchase allowances are accumulated in a separate account called **Purchase Returns and Allowances**, an income statement account, and recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Payable L+		XX	
	Purchase Returns and Allowances XE+ (E) SE+			XX

Purchase Returns and Allowances is a contra expense account and the balance is deducted from Purchases when calculating cost of goods sold on the income statement.

Purchase Discounts (Periodic)

Another contra expense 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 and recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Payable (L)		XX	
	Purchase Discounts XE+ (E) SE+			XX

Transportation (Periodic)

Under the periodic inventory system, an income statement account called **Transportation-in** is used to accumulate transportation or freight charges on merchandise purchased for resale. The Transportation-in account is used in calculating the cost of goods sold on the income statement. It is recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Transportation-In E+		XX	
	Cash (A) or Accounts Payable L+			XX

At the end of the accounting period, cost of goods sold must be calculated which requires that the balance in Merchandise Inventory be determined. To determine the end of the period balance in Merchandise Inventory, a physical count of inventory is performed. The total value of the inventory as identified by the physical count becomes the ending balance in Merchandise Inventory. Cost of goods sold can then be calculated as follows:

Beginning Balance of Merchandise Inventory	XX
Plus: Net Cost of Goods Purchased*	XX
Less: Ending Balance of Merchandise Inventory	XX
Equals: Cost of Goods Sold	<u>XX</u>

*Net Cost of Goods Purchased is calculated as:

Purchases	XX
Less: Purchase Returns and Allowances	XX
Less: Purchase Discounts	XX
Equals: Net Purchases	<u>XX</u>
Add: Transportation-In	XX
Equals: Net Cost of Goods Purchased	<u>XX</u>

Closing Entries (Periodic)

In the perpetual inventory system, the Merchandise Inventory account is continuously updated and is adjusted at the end of the accounting period based on a physical inventory count. In the periodic inventory system, the balance in Merchandise Inventory does not change during the accounting period. As a result, at the end of the accounting period, the balance in Merchandise Inventory in a periodic system is the beginning balance. In order for the Merchandise Inventory account to reflect the ending balance as determined by the physical inventory count, the beginning

inventory balance must be removed by crediting Merchandise Inventory, and the ending inventory balance entered by debiting it. This is accomplished as part of the closing process. Closing entries for a merchandiser that uses a periodic inventory system are illustrated below using the adjusted trial balance information for Norva Inc.

Norva Inc. Adjusted Trial Balance At December 31, 2015		
	Debits	Credits
Cash	\$15,000	
Merchandise inventory	1,000	
Accounts payable		\$ 5,000
Common shares		8,000
Dividends	500	
Retained earnings		3,500
Sales		13,400
Sales discounts	200	
Purchases	5,000	
Purchase returns & allowances		800
Salaries expense	7,000	
Advertising expense	2,000	
Totals	<u>\$30,700</u>	<u>\$30,700</u>

Other information: The ending balance in merchandise inventory is \$2,000 based on a physical count.

Step 1: Close debit balance income statement accounts plus beginning merchandise inventory:

Income Summary	15,200	
Merchandise Inventory		1,000
Sales Discounts		200
Purchases		5,000
Salaries Expense		7,000
Advertising Expense		2,000

Step 2: Close credit balance income statement accounts plus ending merchandise inventory:

Merchandise Inventory	2,000	
Sales	13,400	
Purchase Returns & Allowances	800	
Income Summary		16,200

Step 3: Close income summary to retained earnings:

Income Summary	1,000	
Retained Earnings		1,000

Step 4: Close dividends to retained earnings:

Retained Earnings	500	
Dividends		500

When the closing entries above are posted and a post-closing trial balance prepared as shown below, notice that the Merchandise Inventory account reflects the correct balance based on the physical inventory count.

Norva Inc. Adjusted Trial Balance At December 31, 2015		
	Debits	Credits
Cash	\$15,000	
Merchandise inventory	2,000	
Accounts payable		\$ 5,000
Common shares		8,000
Retained earnings		4,000
Totals	<u>\$17,000</u>	<u>\$17,000</u>

Summary of Chapter 5 Learning Objectives

L01 – 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.

L02 – 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.

L03 – 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 two 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.

L04 – 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.

L05 – Explain and prepare a classified multiple-step income statement for a merchandiser.

A classified multiple-step 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.

L06 – 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.

L07 – Explain and identify the entries regarding 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.

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 are some common types of transactions that are recorded in the merchandise Inventory account?
4. Contrast and explain the sales and collection cycle and the purchase and payment cycle.
5. What contra accounts are used in conjunction with sales? What are their functions?
6. (Appendix) Compare the perpetual and periodic inventory systems. What are some advantages of each?

Exercises

EXERCISE 5–1 (LO1)

Consider the following information of Jones Corporation over four years:

	2014	2013	2012	2011
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:

- a. Calculate the missing amounts for each year.
- b. What does this information indicate about the company?

EXERCISE 5–2 (LO2)

Reber Corp. uses the perpetual inventory system. Its transactions during July 2015 are as follows:

- July 6 Purchased \$600 of merchandise on account from Hobson Corporation for terms 1/10, net/30.
- 9 Returned \$200 of defective merchandise.
- 15 Paid the amount owing to Hobson.

Required: Prepare journal entries to record the above transactions for Reber Corp.

EXERCISE 5–3 (LO2,3,4)

Horne Inc. and Sperling Renovations Ltd. both sell goods and use the perpetual inventory system. Horne Inc. had \$3,000 of merchandise inventory at the start of its fiscal year, January 1, 2015. During the 2015, Horne Inc. had the following transactions:

- May 5 Horne sold \$4,000 of merchandise on account to Sperling Renovations Ltd., terms 2/10, net/30. Cost of merchandise to Horne from its supplier was \$2,500.
- 7 Sperling returned \$500 of merchandise received in error which Horne returned to inventory; 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 Horne's Merchandise Inventory at May 31, the fiscal year-end, showed \$700 of goods on hand.

Required: Prepare journal entries to record the above transactions and adjustment:

- a. In the records of Horne Inc.
 - b. In the records of Sperling Renovations Ltd.
-

EXERCISE 5–4 (LO2,3) Recording Purchase and Sales Transactions

Below are transactions for March, 2016 for AngieJ Ltd.:

- March 1 Purchased \$25,000 of merchandise on account for terms 2/10, n/30.
- March 3 Sold merchandise to a customer for \$5,000 for terms 1/10, n/30. (Cost \$2,600)
- March 4 Customer from March 3 returned \$200 of some unsuitable goods which were returned to inventory. (Cost \$100)
- March 5 Purchased \$15,000 of merchandise from a supplier for cash and arranged for shipping, fob shipping point.
- March 6 Paid \$200 for shipping on the March 5 purchase.
- March 7 Contacted the supplier from March 5 regarding \$2,000 of merchandise with some minor damages. Supplier agreed to reduce the price and offered an allowance of \$500 cash, which was accepted.
- March 8 Sold \$25,000 of merchandise for terms 1.5/10, n/30. (Cost \$13,000). Agreed to pay shipping costs for the goods sold to the customer.
- March 9 Shipped the goods sold on March 8 to customer, fob destination for \$500 cash. (Hint: Shipping costs paid to ship merchandise sold to a customer is an operating expense.)
- March 11 Paid for fifty percent of the March 1 purchase to the supplier.
- March 13 Collected the account owing from the customer from March 3.
- March 15 Purchased office supplies on account for \$540 for terms 1/10, n/30.
- March 18 Ordered merchandise inventory from a supplier totaling \$15,000. Goods to be shipped on April 10, fob shipping point.
- March 20 Collected \$6,010 cash from an account owing from two months ago. The early payment discount had expired.
- March 25 Paid for the March 15 purchase.
- March 27 Sold \$12,500 of merchandise inventory for cash (Cost \$5,000).
- March 31 Paid the remaining of the amount owing from the March 1 purchase.

Required: Prepare the journal entries, if any, for AngieJ Ltd.

EXERCISE 5–5 (LO2,3) Recording Purchase and Sales Transactions

Below are the April, 2016 sales for Beautort Corp.

- April 1 Purchased \$15,000 of merchandise for cash.
- April 3 Sold merchandise to a customer for \$8,000 cash. (Cost \$4,600)
- April 5 Purchased \$10,000 of merchandise from a supplier for terms 1/10, n/30.
- April 7 Returned \$2,000 of damaged merchandise inventory from April 5 back to the supplier. Supplier will repair the items and return them to their own inventory.
- April 8 Sold \$8,000 of merchandise for terms 2/10, n/30. (Cost \$4,000). Agreed to pay shipping costs for the goods sold to the customer.
- April 9 Shipped the goods sold on April 8 to customer, fob shipping point for \$500 cash. (Hint: Shipping costs paid to ship merchandise sold to a customer is not an inventory cost.)
- April 10 Customer from April 3 returned \$1,000 of unsuitable goods which were returned to inventory. (Cost \$400). Amount paid was refunded.

- April 10 Agreed to give customer from April 8 sale a sales allowance of \$200.
 April 12 Purchased inventory on account for \$22,000 for terms 1/10, n/30.
 April 15 Paid amount owing for purchases on April 5.
 April 16 Paid \$600 for shipping on the April 12 purchase.
 April 18 Collected \$5,000 cash, net of discount, for the customer account owing from April 8.
 April 27 Paid for the April 12 purchase.
 April 27 Sold \$20,000 of merchandise inventory for cash (Cost \$10,000).

Required: Prepare the journal entries, if any, for Beautort Corp. Round final entry amounts to the nearest whole dollar.

EXERCISE 5–6 (LO5)

The following information is taken from the records of Smith Corp. for the year ended June 30, 2015:

Advertising expense	\$ 1,500
Commissions expense	4,000
Cost of goods sold	50,000
Delivery expense	500
Depreciation expense – equipment	500
Insurance expense	1,000
Office salaries expense	3,000
Rent expense – office	1,000
Rent expense – store	1,500
Sales salaries expense	2,000
Sales	72,000
Sales returns and allowances	2,000

Required:

- a. Prepare a classified multi-step income statement for the year ended June 30, 2015. Assume an income tax rate of 20%.
- b. Compute the gross profit percentage, rounding to two decimal places.

EXERCISE 5–7 (LO4) Calculating Inventory and Cost of Goods Sold

Below is a table that contains two important calculations that link together to determine net income/(loss):

Inventory, opening balance	\$ 10,000	\$ 53,000	?	168,540	50,562
Plus: purchases	30,000	?	1,685,400	?	?
Total goods available for sale	?	212,000	2,247,200	?	657,306
Less: ending inventory	15,000	?	842,700	556,180	100,000
Cost of goods sold	?	132,500	?	?	?
Sales	?	240,000	1,600,000	900,000	?
Less: cost of goods sold	?	?	?	?	?
Gross profit	30,000	?	?	276,400	142,694
Less: operating expenses	12,000	?	275,000	?	?
Net income/(loss)	?	43,900	?	26,400	(2,306)
Gross profit/sales (%)	?	?	?	?	?

Required: Calculate the missing account balances using the relationships between these accounts. Percentage can be rounded to the nearest two decimal places.

EXERCISE 5–8 (LO6)

Refer to the information in EXERCISE 5–6.

Required:

- Prepare all closing entries. Assume cash dividends totaling \$2,000 were declared during the year and recorded as a debit to Dividends Declared and a credit to Cash.
- Calculate the June 30, 2015 post-closing balance in Retained Earnings assuming a beginning balance of \$18,000.

EXERCISE 5–9 (LO7 Appendix)

Consider the information for each of the following four companies.

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	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Opening Inventory	\$?	\$ 184	\$ 112	\$ 750
Purchases	1415	?	840	5,860
Transportation-In	25	6	15	?
Cost of Goods Available for Sale	1,940	534	?	6,620
Ending Inventory	340	200	135	?
Cost of Goods Sold	?	?	?	5,740

Required: Calculate the missing amounts.

EXERCISE 5–10 (LO7 Appendix)

The following data pertain to Pauling Inc.

Opening Inventory	\$ 375
Purchases	2930
Purchases Discounts	5
Purchases Returns and Allowances	20
Transportation-In	105

Ending inventory amounts to \$440.

Required: Calculate cost of goods sold.

EXERCISE 5–11 (LO7 Appendix)

The following information is taken from the records of four different companies in the same industry:

	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>
Sales	\$300	\$150	\$?	\$ 90
Opening Inventory	?	40	40	12
Purchases	240	?	?	63
Cost of Goods Available for Sale	320	?	190	?
Ending Inventory	?	(60)	(60)	(15)
Cost of Goods Sold	?	100	130	60
Gross Profit	\$100	\$?	\$ 65	\$?
Gross Profit percentage	?	?	?	?

Required:

- a. Calculate the missing amounts.
- b. Which company seems to be performing best? Why?

Problems**PROBLEM 5–1 (LO1,2,3,4)**

Salem Corp. was incorporated on July 2, 2015 to operate a merchandising business. It uses the perpetual inventory system. All its sales are on account with terms: 2/10, n/30. Its transactions during July 2015 are as follows:

- July 2 Issued common stock for \$5,000 cash.
- 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.
- 10 Paid Blic Pens Ltd. for the July 2 purchase.
- 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 accounts payable by \$100 for defective merchandise included in the July 8 purchase.
- 16 Eagle Products Corp. returned \$200 of defective merchandise which was scrapped (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. Include general ledger account numbers and a brief description.
2. Calculate the unadjusted 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.

PROBLEM 5–2 (LO1,5,6)

The following closing entries were prepared for Whirlybird Products Inc. at December 31, 2015, the end of its fiscal year.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 31	Sales		37,800	
	Income summary			37,800
	Income summary		32,800	
	Cost of goods sold			26,800
	Sales returns and allowances			690
	Sales discounts			310
	Salaries expenses			5,000
31	Income summary		5,000	
	Retained earnings			5,000

Required: Calculate gross profit.

PROBLEM 5–3 (LO1,5,6)

The following alphabetized adjusted trial balance has been extracted from the records of Acme Automotive Inc. at December 31, 2015, its third fiscal year-end. All accounts have a normal balance.

Accounts payable	9,000
Accounts receivable	15,000
Accumulated depreciation – equipment	36,000
Advertising expense	14,000
Bank loan (long-term note)	14,000
Cash	2,000
Commissions expense	29,000
Cost of goods sold	126,000
Delivery expense	14,800
Depreciation expense	12,000
Dividends	11,000
Equipment	120,000
Income taxes expense	4,200
Income taxes payable	4,200
Insurance expense	10,400
Interest expense	840
Merchandise inventory	26,000
Office supplies expense	3,100
Rent expense	32,400
Rent revenue	19,200
Retained earnings	12,440
Sales	310,000
Sales discounts	1,300
Sales returns and allowances	2,900
Sales salaries expense	26,400
Common stock	70,000
Supplies	3,200
Telephone expense	1,800
Utilities expense	4,200
Wages expense – office	14,300

Required:

1. Prepare a classified multi-step income statement and statement of stockholders' equity for the year ended December 31, 2015. Assume 40% of the Rent Expense is allocated to general and administrative expenses with the remainder allocated to selling expenses. Additionally, assume that \$20,000 of shares were issued during the year ended December 31, 2015.
2. Prepare closing entries.

PROBLEM 5–4 (LO1,2,3,4) Challenge Question – Pulling It All Together

Calculating Purchases, Inventory Shrinkage, Net Sales, Cost Goods Sold, Gross Profit, and Net Income/(Loss)

The information below is a summary of the merchandise inventory and sales transactions for 2016.

Total cost of purchases	\$250,000
Total sales	580,000
Purchases shipping costs	500
Merchandise inventory, opening balance	55,000
Purchase discounts	3,500
Sales discounts	200
Total sales returns to inventory	100
Merchandise inventory, closing GL balance	90,000
Merchandise inventory, physical inventory count	88,500
Sales allowances	600
Operating expenses	250,000
Sales returns	200
Purchase returns and allowances	200
Net purchases	?
Inventory shrinkage adjustment amount	?
Cost of goods sold	?
Net sales	?
Gross profit	?
Net income/(loss)	?
Gross profit ratio	?

Required: Calculate and fill in the blanks. (Hint: Refer to the merchandising company illustration in Section 5.1 and the T-account summary illustrations for inventory and cost of goods sold at the end of Section 5.4.)

PROBLEM 5–5 (LO1,2,3,5,6) Preparing a Classified Multiple-step Income Statement and Closing Entries

Below is the adjusted trial balance presented in alphabetical order for Turret Retail Ltd., for 2016. Their year-end is December 31.

Turret Retail Ltd.
Trial Balance
At December 31, 2016

Accounts payable		\$ 31,250
Accounts receivable	\$140,000	
Accrued salaries and benefits payable		12,000
Accumulated depreciation, furniture		4,300
Cash	21,000	
Cash dividends	10,000	
Cost of goods sold	240,000	
Bank loan payable (long-term note)		40,320
Depreciation expense	3,200	
Copyright	20,000	
Furniture	20,000	
Income tax expense	2,028	
Income taxes payable		8,000
Insurance expense	5,000	
Interest expense	200	
Interest payable		550
Land	140,000	
Merchandise inventory	120,000	
Prepaid insurance expense	6,000	
Rent expense	30,240	
Rental income		6,000
Retained earnings		307,748
Salaries expense	57,000	
Sales		360,000
Sales discounts	3,600	
Sales returns and allowances	9,600	
Common stock		20,000
Shop supplies expense	2,400	
Shop supplies expense	1,000	
Travel expense	2,100	
Unearned revenue		50,500
Utilities expense	7,300	
	\$840,668	\$840,668

Required:

1. Prepare a classified multiple-step income statement in good form, reporting operating expenses by nature, for the year ended December 31, 2016.
2. Prepare the closing entries for the year-ended December 31, 2016.
3. Calculate the gross profit ratio to two decimal places and comment on what this ratio means.

PROBLEM 5–6 (LO1,2,3,4,5) Challenge Question – Preparing Adjusting Entries and a Classified Multiple-step Income Statement

Below are the unadjusted accounts balances for Yuba Yabi Enterprises Ltd., for the year ended March 31, 2017. All account balances are normal. Yuba Yabi's business involves selling frozen food to restaurants as well as providing consulting services to assist restaurant businesses with their daily operations.

Yuba Yabi Enterprises Ltd.
Unadjusted Trial Balance
March 31, 2017

Accounts payable	68,750
Accounts receivable	308,000
Accrued salaries and benefits payable	26,400
Accumulated depreciation, furniture	9,460
Cash	46,200
Cash dividends	22,000
Cost of goods sold	528,000
Advertising expense	9,900
Bank loan payable (long-term note)	88,704
Depreciation expense	7,040
Copyright	44,000
Franchise	66,000
Furniture	44,000
Income tax expense	-
Income taxes payable	17,600
Insurance expense	11,000
Interest expense	440
Interest payable	1,210
Land	308,000
Merchandise inventory	264,000
Prepaid insurance expense	13,200
Prepaid advertising expense	8,800
Rent expense	66,528
Rental income	13,200
Retained earnings	265,364
Salaries expense	125,400
Sales	792,000
Sales discounts	7,920
Sales returns and allowances	21,120
Service revenue	495,000
Common stock	44,000
Shop supplies	8,360
Shop supplies expense	2,200
Travel expense	4,620
Unearned service revenue	111,100
Utilities expense	16,060

Additional information:

The following are adjusting entries that have not yet been recorded:

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Accrued salaries	\$12,000
Accrued interest on the bank loan	5,600
Inventory shrinkage	7,800
Prepaid insurance expense	5,000 has expired
Prepaid advertising expense	no change
Unearned revenue	30,000 has been earned
Income tax rate	30%

Required:

1. Update the affected accounts by the adjustments, if any. Round all adjustments to the nearest whole dollar.
2. Prepare a classified multiple-step income statement in good form for the year ended March 31, 2017.

Chapter 6

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 inventory costs and 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 – Calculate cost of goods sold and merchandise inventory using specific identification, and the cost flow assumptions of first-in first-out (FIFO), last-in first-out (LIFO), and weighted average — perpetual.

LO2 – Explain the impact on financial statements of inventory cost flows and errors.

LO3 – Explain and calculate lower of cost and net realizable value and lower of cost or market inventory adjustments.

LO4 – Estimate merchandise inventory using the gross profit method and the retail inventory method.

LO5 – Explain and calculate merchandise inventory turnover.

LO6 – Calculate cost of goods sold and merchandise inventory using specific identification, and the cost flow assumptions of first-in first-out (FIFO), last-in first-out (LIFO), and weighted average — periodic.

Concept Self-Check

Use the following as a self-check while working through Chapter 6

1. What are the four inventory costing methods that can be used in perpetual inventory systems?
2. What impact does the use of different inventory costing methods have on financial statements?

3. What is the meaning of the term *lower of cost and net realizable value*, and how is it calculated?
4. What is the meaning of the term *lower of cost or market*, and how is it calculated?
5. What is the effect on net income of an error in ending inventory values?
6. What methods are used to estimate ending inventory?
7. What ratio can be used to evaluate the liquidity of merchandise inventory?
8. What are the four inventory costing methods that can be used in a periodic inventory system?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

6.1 Inventory Costing Methods

LO1 – Calculate cost of goods sold and merchandise inventory using specific identification, and the cost flow assumptions of first-in first-out (FIFO), last-in first-out (LIFO), and weighted average — perpetual.

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 to the next. For example, the cost of coffee beans could be \$5.00 a pound in October and \$7.00 a pound in November. Finally, some types of inventory flow into and out of the warehouse in a specific sequence, while others do not. For example, milk would need to be managed so that the oldest milk is sold first. In contrast, a car dealership has no control over which vehicles are sold because customers make specific choices based on what is available. So how is the cost of a unit in merchandise inventory determined? There are several methods that can be used. Each method may result in a different cost, 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, 2015. The company purchased five units during June as shown in Figure 6.1.

<i>Date</i>	<i>Purchase Transaction</i>	
	<i>Number of units</i>	<i>Price per unit</i>
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 June 30 for \$10 each on account. The cost of the four units sold could be determined based on identifying the cost associated with the specific units sold, the actual physical flow of goods. For example, a car dealership will need to track the cost of each vehicle purchased and sold. Alternatively, rather than identifying specific costs per unit a cost flow assumption can be used to determine costs. For example, if large quantities of low dollar value items are in inventory, such as pencils or hammers, an average cost might be used to calculate cost of goods sold. A business may choose one of four methods to calculate cost of goods and the resulting ending inventory value. These methods are: specific identification, FIFO, LIFO, and weighted average, and are discussed in the next sections.

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.

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 units @ \$10 per unit). 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 as illustrated in Figure 6.2 would show:

Merchandise Inventory			
Jun. 1	\$1		
5	2		
7	3		
21	4		
28	5		
		11	Jun. 30
End. Bal.	4		

Cost of Goods Sold	
	11

→

Figure 6.2: Cost of Goods Sold using Specific Identification

The entry to record the June 30 sale on account would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+		40	
	Sales R+ SE+			40
	To record the sale of merchandise on account.			
	Cost of Goods Sold E+ (SE)		11	
	Merchandise Inventory (A)			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. Any industry that faces rising prices and wants to maintain a strong balance sheet to qualify for loans or satisfy investors can make a case for utilizing FIFO accounting. When costs are rising FIFO will result in a higher ending inventory valuation on the balance sheet, higher profits, higher taxes, and decreased cash flow.

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
End. Bal.	5		

Cost of Goods Sold	
	10

→

Figure 6.3: Cost of Goods Sold using FIFO

The entry to record the sale would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable		40	
	Sales			40
	To record the sale of merchandise on account.			
	Cost of Goods Sold		10	
	Merchandise Inventory			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 last goods purchased are the first ones sold. Any industry that faces rising prices and wants a tax advantage can make a case for utilizing LIFO accounting. When costs are rising LIFO will result in a lower ending inventory valuation on the balance sheet, lower profits, lower taxes, and increased cash flow. Although U.S. GAAP accepts the use of LIFO for financial reporting purposes International Financial Reporting Standards (IFRS) does not.

Using the information from the previous example, under the periodic method the last four units purchased are assumed to be the first four units sold under LIFO during the month of June. 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
End. Bal.	1		

Cost of Goods Sold	
	14

→

Figure 6.4: Cost of Goods Sold using LIFO

The entry to record the sale would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+		40	
	Sales R+ SE+			40
	To record the sale of merchandise on account.			
	Cost of Goods Sold E+ (SE)		14	
	Merchandise Inventory (A)			14
	To record the cost of the sale.			

The Weighted Average Cost Flow Assumption

A **weighted average** cost flow is assumed when goods purchased on different dates are mixed with each other. The weighted average cost assumption is popular in practice because it is easy to calculate. It is also suitable when inventory is held in common storage facilities — for example, when several crude oil shipments are stored in one large holding tank. To calculate a weighted average, the total cost of all purchases of a particular inventory type is divided by the number of units purchased.

To calculate the weighted average cost in our example, the purchase prices for all five units are totaled ($\$1 + \$2 + \$3 + \$4 + \$5 = \15) and divided by the total number of units purchased (5). The weighted average cost for each unit is $\$3$ ($\$15 / 5$ units). The weighted average cost of goods sold would be $\$12$ (4 units @ $\$3$ per unit). Sales still equal $\$40$ resulting in a gross profit under weighted average of $\$28$ ($\$40 - \12). The cost of the one remaining unit in ending inventory is $\$3$.

The general ledger T-accounts for Merchandise Inventory and Cost of Goods Sold as illustrated in Figure 6.5 are:

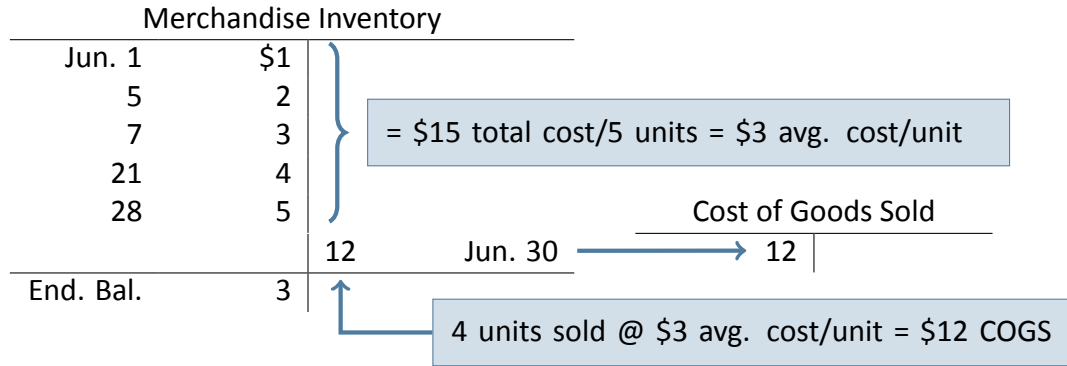


Figure 6.5: Cost of Goods Sold using Weighted Average

The entry to record the sale would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+		40	
	Sales R+ SE+			40
	To record the sale of merchandise on account.			
	Cost of Goods Sold E+ (SE)		12	
	Merchandise Inventory (A)			12
	To record the cost of the sale.			

Cost Flow Methods: 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 continuous. 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:

<u>Date</u>	<u>Number of Units Sold</u>
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:

Date	Purchases/Shipping Costs/ (Purchase Returns/Discounts)			Cost of Goods Sold/ (Returns to Inventory)			Balance in Inventory		
	Units	Cost/Unit	Total \$	Units	Cost/Unit	Total \$	Units	Cost/Unit	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 costing method. 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 costing method 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 detailed below.

Date of Sale	Specific Units Sold
June 3	The unit sold on June 3 was purchased on June 1
8	The unit sold on June 8 was purchased on June 7
23	The unit sold on June 23 was purchased on June 5
29	The unit sold on June 29 was purchased on June 28

Using the information above to apply specific identification, the resulting inventory record card appears in Figure 6.7.

Date	Purchases/Shipping Costs/ (Purchase Returns/Discounts)			Cost of Goods Sold/ (Returns to Inventory)			Balance in Inventory		
	Units	Cost/Unit	Total \$	Units	Cost/Unit	Total \$	Units	Cost/Unit	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 that the number of units sold plus the units in ending inventory equals the total units that were available for sale. This will always be true regardless of which inventory costing method is used.

Date	Purchases/Shipping Costs/ (Purchase Returns/Discounts)			Cost of Goods Sold/ (Returns to Inventory)			Balance in Inventory		
	Units	Cost/Unit	Total \$	Units	Cost/Unit	Total \$	Units	Cost/Unit	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

Figure 6.8: Total Units Sold plus Total Units in Ending Inventory equals Total Units Available for Sale (Specific Identification)

Date	Purchases/Shipping Costs/ (Purchase Returns/Discounts)			Cost of Goods Sold/ (Returns to Inventory)			Balance in Inventory		
	Units	Cost/Unit	Total \$	Units	Cost/Unit	Total \$	Units	Cost/Unit	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 cost of goods available for sale: \$15

=

Total cost of goods sold: \$11

+

Total cost of ending inventory: \$4

Figure 6.9: Total Cost of Goods Sold plus Total Cost of Units in Ending Inventory equals Total Cost of Goods Available for Sale (Specific Identification)

Figure 6.9 highlights the relationship in which total cost of goods sold plus total cost of ending inventory equals total cost of goods available for sale. This relationship will always be true for each of specific identification, FIFO, LIFO, and weighted average.

Comprehensive Example—FIFO (Perpetual)

Using the same information, we now apply the FIFO cost flow assumption as shown in Figure 6.10.

Date	Purchases/Shipping Costs/ (Purchase Returns/Discounts)			Cost of Goods Sold/ (Returns to Inventory)			Balance in Inventory		
	Units	Cost/Unit	Total \$	Units	Cost/Unit	Total \$	Units	Cost/Unit	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

Figure 6.10: 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 6.10, 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 \$2 was in inventory first (before the June 7 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 6.10, 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.

The information in Figure 6.10 is repeated in Figure 6.11 to reinforce that goods available for sale equals the sum of goods sold and ending inventory.

Date	Purchases/Shipping Costs/ (Purchase Returns/Discounts)			Cost of Goods Sold/ (Returns to Inventory)			Balance in Inventory		
	Units	Cost/Unit	Total \$	Units	Cost/Unit	Total \$	Units	Cost/Unit	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

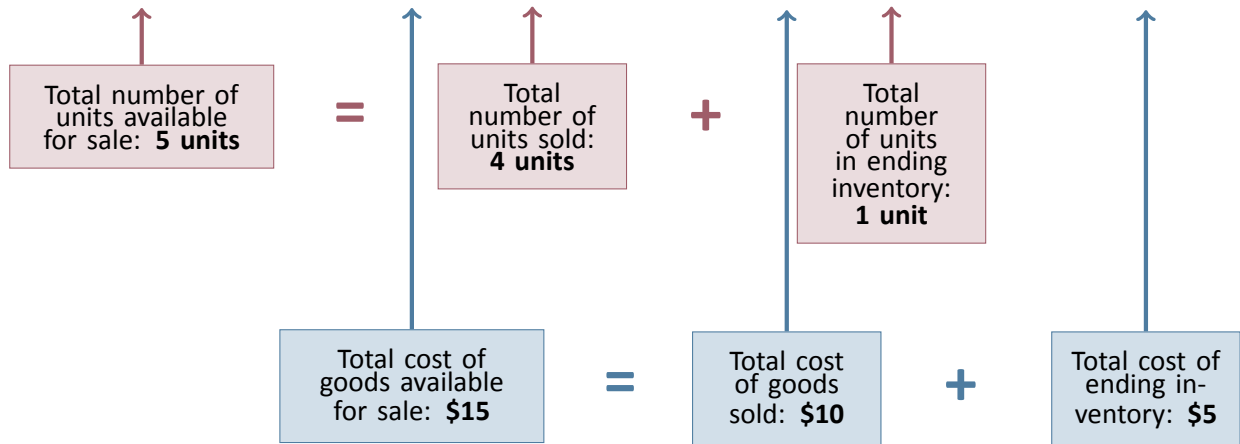


Figure 6.11: Total Goods Sold plus Ending Inventory equals Total Goods Available for Sale (FIFO Perpetual)

Comprehensive Example—LIFO (Perpetual)

Using the same information, we now apply the LIFO cost flow assumption as shown in Figure 6.12.

Date	Purchases			Cost of Goods Sold – LIFO			Balance in Inventory		
	Units Purchased	Cost/Unit	Total Cost	Units Sold	Cost/Unit	Total Cost	Units Available for Sale	Cost/Unit	Total Value in Inventory
June 1	1	\$1	\$1				1	1 unit @ \$1	\$1
3				1	\$1	\$1	0	\$0	\$0
5	1	\$2	\$2				1	1 unit @ \$2	\$2
7	1	\$3	\$3				2	1 unit @ \$2 1 unit @ \$3	\$5
8				1	\$3	\$3	1	1 unit @ \$2	\$2
21	1	\$4	\$4				2	1 unit @ \$2 1 unit @ \$4	\$6
23				1	\$4	\$4	1	1 unit @ \$2	\$2
28	1	\$5	\$5				2	1 unit @ \$2 1 unit @ \$5	\$7
29				1	\$5	\$5	1	1 unit @ \$2	\$2

Figure 6.12: Inventory Record Card using LIFO (Perpetual)

When calculating the cost of the units sold in LIFO, the newest unit in inventory will always be the first unit removed. For example, in Figure 6.12, 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 newest inventory (purchased after the June 5 unit costing \$2), the cost assigned to the unit sold on June 8 is \$3. Under LIFO, the newest units into inventory are assumed to be the first units removed from inventory when calculating cost of goods sold. Therefore, under LIFO, ending inventory will always be the oldest units purchased. In Figure 6.12, there is one unit in ending inventory and it is assigned the \$2 cost of the oldest purchase which was made on June 5.

The information in Figure 6.12 is repeated in Figure 6.13 to reinforce that goods available for sale equals the sum of goods sold and ending inventory.

Date	Purchases			Cost of Goods Sold – LIFO			Balance in Inventory		
	Units Purchased	Cost/Unit	Total Cost	Units Sold	Cost/Unit	Total Cost	Units Available for Sale	Cost/Unit	Total Value in Inventory
June 1	1	\$1	\$1				1	1 unit @ \$1	\$1
3				1	\$1	\$1	0	\$0	\$0
5	1	\$2	\$2				1	1 unit @ \$2	\$2
7	1	\$3	\$3				2	1 unit @ \$2 1 unit @ \$3	\$5
8				1	\$3	\$3	1	1 unit @ \$2	\$2
21	1	\$4	\$4				2	1 unit @ \$2 1 unit @ \$4	\$6
23				1	\$4	\$4	1	1 unit @ \$2	\$2
28	1	\$5	\$5				2	1 unit @ \$2 1 unit @ \$5	\$7
29				1	\$5	\$5	1	1 unit @ \$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 6.13: Total Units Sold plus Total Units in Ending Inventory equals Total Units Available for Sale

Comprehensive Example—Weighted Average (Perpetual)

The inventory record card transactions using weighted average costing are detailed in Figure 6.14. *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 + 1 unit at \$3) resulting in an average cost per unit of \$2.50 ($\$5 / 2 \text{ units} = \2). 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 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.

Date	Purchases			Cost of Goods Sold – Weighted Average			Balance in Inventory		
	Units	Cost/Unit	Total Cost	Units	Cost/Unit	Total Cost	Units for Sale	Average Cost/Unit	Total Cost
June 1	1	\$1	\$1				1	1 unit @ \$1.00	\$1.00
3				1	\$1.00	\$1.00	–		\$0.00
5	1	\$2	\$2				1	1 unit @ \$2.00	\$2.00
7	1	\$3	\$3				2	1 unit @ \$2.00 + 1 unit @ \$3.00 = \$5.00/2 units = \$2.50 per unit	\$5.00
8				1	\$2.50	\$2.50	1	1 unit @ \$2.50	\$2.50
21	1	\$4	\$4				2	1 unit @ \$2.50 + 1 unit @ \$4.00 = \$6.50/2 units = \$3.25 per unit	\$6.50
23				1	\$3.25	\$3.25	1	1 unit @ \$3.25	\$3.25
28	1	\$5	\$5				2	1 unit @ \$3.25 + 1 unit @ \$5.00 = \$8.25/2 units = \$4.13 per unit	\$8.25
29				1	\$4.13	\$4.13	1	1 unit @ \$4.12	\$4.12

Figure 6.14: 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 ($\$8.25 \div 2 \text{ units} = \$4.125/\text{unit}$ 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. Remember that the cost of goods sold plus the balance in inventory must equal the goods available for sale as highlighted in Figure 6.15.

Date	Purchases			Cost of Goods Sold – Weighted Average			Balance in Inventory		
	Units	Cost/Unit	Total Cost	Units	Cost/Unit	Total Cost	Units for Sale	Average Cost/Unit	Total Cost
June 1	1	\$1	\$1				1	1 unit @ \$1.00	\$1.00
3				1	\$1.00	\$1.00	–		\$0.00
5	1	\$2	\$2				1	1 unit @ \$2.00	\$2.00
7	1	\$3	\$3				2	1 unit @ \$2.00 + 1 unit @ \$3.00 = \$5.00/2 units = \$2.50 per unit	\$5.00
8				1	\$2.50	\$2.50	1	1 unit @ \$2.50	\$2.50
21	1	\$4	\$4				2	1 unit @ \$2.50 + 1 unit @ \$4.00 = \$6.50/2 units = \$3.25 per unit	\$6.50
23				1	\$3.25	\$3.25	1	1 unit @ \$3.25	\$3.25
28	1	\$5	\$5				2	1 unit @ \$3.25 + 1 unit @ \$5.00 = \$8.25/2 units \$4.13 per unit	\$8.25
29				1	\$4.13	\$4.13	1	1 unit @ \$4.12	\$4.12

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: **\$10.88**

+

Total cost of ending inventory: **\$4.12**

Figure 6.15: Total Goods Sold plus Ending Inventory equals Total Goods Available for Sale (Weighted Average Perpetual)

Figure 6.16 compares the results of the four costing methods. Goods available for sale, units sold, and units in ending inventory are the same regardless of which method is used. However, because each costing 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.

Costing Method	Total Cost of Goods 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 6.16: 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 6.14).

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+		10.00	
	Sales R+ SE+			10.00
	To record credit sale at a selling price of \$10 per unit.			
	Cost of Goods Sold E+ SE+		3.25	
	Merchandise Inventory (A)			3.25
	To record the cost of the sale.			

Perpetual inventory incorporates an internal control feature that is lost under the periodic inventory method. 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 Merchandise 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. There are other types of subledgers: the accounts receivable subledger and the accounts payable subledger. These will be introduced in a subsequent chapter.

6.2 Financial Statement Impact of Different Inventory Cost Flows

LO2 – Explain the impact of inventory cost flows and errors.

When purchase costs 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 are shown in Figure 6.17.

	<i>Spec. Ident.</i>	<i>FIFO</i>	<i>LIFO</i>	<i>Wtd. Avg.</i>
Sales	\$ 40.00	\$ 40.00	\$ 40.00	\$ 40.00
Cost of goods sold	11.00	10.00	13.00	10.88
Gross profit	<u>\$ 29.00</u>	<u>\$ 30.00</u>	<u>\$ 27.00</u>	<u>\$ 29.12</u>
Ending inventory (on the balance sheet)	<u>\$ 4.00</u>	<u>\$ 5.00</u>	<u>\$ 2.00</u>	<u>\$ 4.12</u>

Figure 6.17: Effects of Different Cost Flow Assumptions

FIFO *maximizes* net income and ending inventory amounts when purchase costs are rising. FIFO *minimizes* net income and ending inventory amounts when purchase costs are decreasing. LIFO *minimizes* net income and ending inventory when purchase costs are rising and *maximizes* net income and ending inventory when purchases costs are decreasing.

Because different costing methods can affect the financial statements, GAAP requires that the methods adopted by a company be disclosed in its financial statements (full disclosure principle).

Additionally, GAAP requires that once a method is adopted, it be used every accounting period thereafter (consistency principle) unless there is a justifiable reason to change. A business that has a variety of inventory items may choose a different costing method for each item. For example, Walmart might use weighted average to account for its sporting goods items and specific identification for each of its various major appliances.

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, 2019, 2020, and 2021 was reported as \$2,000 and that merchandise purchases during each of 2020 and 2021 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					2020	2021
Beg. Bal.	2,000			Sales	\$30,000	\$30,000
2020 Purch.	20,000	20,000	2020 COGS	COGS	20,000	20,000
2020 Bal.	2,000			Gross profit	<u>\$10,000</u>	<u>\$10,000</u>
2021 Purch.	20,000	20,000	2021 COGS			
2021 Bal.	2,000					

Assume now that ending inventory was misstated at December 31, 2020. 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 2020 as shown below instead of \$20,000 as originally reported above. Because of the 2020 error, the 2021 beginning inventory was incorrectly reported above as \$2,000 and should have been \$1,000 as shown below. This caused the 2021 gross profit to be understated by \$1,000 — cost of goods sold in 2021 should have been \$19,000 as illustrated below but was originally reported above as \$20,000.

Merchandise Inventory					2020	2021
Beg. Bal.	2,000					
2020 Purch.	20,000	20,000	2020 COGS	Sales	\$30,000	\$30,000
		1,000	Inv. Adj.	COGS	21,000	19,000
				Gross Profit	<u>\$ 9,000</u>	<u>\$11,000</u>
2020 Bal.	1,000					
2021 Purch.	20,000					
Inv. Adj.	1,000	20,000	2021 COGS			
2021 Bal.	2,000					

Ending inventory is incorrectly stated.

As can be seen, income is misstated in both 2020 and 2021 because cost of goods sold in both years is affected by the adjustment to ending inventory needed at the end of 2020 and 2021. 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 beginning inventory. This process can be illustrated by comparing gross profits for 2020 and 2021 in the above example. The sum of both years’ gross profits is the same.

	<i>Overstated Inventory</i>	<i>Correct Inventory</i>
Gross profit for 2020	\$10,000	\$ 9,000
Gross profit for 2021	10,000	11,000
Total	<u>\$20,000</u>	<u>\$20,000</u>

6.3 Lower of Cost and Net Realizable Value (LCNRV) and Lower of Cost or Market (LCM)

LO3 – Explain and calculate lower of cost and net realizable and lower of cost or market 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. Initially inventory is recorded at its purchase price (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. However, due to the conservatism principle, GAAP requires companies using FIFO, weighted average, or any method other than LIFO to report inventory using the lower of cost and net realizable value (LCNRV) approach. This requires companies to compare inventory at cost to inventory at net realizable value (NRV) and then value inventory at the lower of the two. **Net realizable value** is the estimated selling price less any costs to complete, dispose of, or transport inventory.

6.3. Lower of Cost and Net Realizable Value (LCNRV) and Lower of Cost or Market (LCM) ■ 229

This requirement adheres to the conservatism principle by removing the possibility of overstating the value of inventory.

As an example, 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, groups of similar items, or the entire inventory. Figure 6.18 below provides an example.

	<i>Total Cost</i>	<i>Total NRV</i>	<i>LCNRV</i>	
			<i>Unit Basis</i>	<i>Group Basis</i>
White paper	\$1,250	\$1,200	\$1,200	
Coloured paper	1,400	1,500	1,400	
Total	\$2,650	\$2,700	\$2,600	\$2,650
Ending inventory (LCNRV)			\$2,600	\$2,650

Figure 6.18: 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.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cost of Goods Sold E+ (SE)		50	
	Merchandise Inventory (A)			50
	To adjust inventory to reflect its LCNRV.			

The purpose of the adjusting entry is to ensure that inventory is not overstated on the balance sheet and that income is not overstated on the income statement. Note that this is just a timing difference. Cost of goods sold would increase in the current period but it will result in a decrease in cost of goods sold in the following period assuming the inventory is sold.

Effect of the Write-Down	Current Period	Next Period ¹
Cost of goods sold	Increase \$50	Decrease \$50
Pretax income	Decrease \$50	Increase \$50
Ending inventory on the balance sheet	Decrease \$50	No Effect

¹the result next period assuming the inventory that was previously written down has now been sold

If white paper and colored paper are considered a similar group, the calculations in Figure 6.18 above show they have a combined cost of \$2,650 and a combined net realizable value of \$2,700. LCM would therefore be \$2,650. In this case, the cost is equal to the LCM so no adjusting entry would be required if applying LCM on a group basis.

Companies that use LIFO must report inventory using the lower of cost or market (LCM) approach. **Market** is defined as the current replacement cost of inventory. The market cost should not be greater than the net realizable value, the estimated selling price less any estimated costs to sell, (called the “ceiling”) and should not be less than the net realizable value reduced by an allowance for a normal profit margin (called the “floor”). If the replacement cost is between the ceiling and the floor, the replacement cost is considered to be market. If the replacement cost is above the ceiling, the ceiling is considered to be market. If the replacement cost is below the floor, the floor is considered to be market. Whichever cost is determined to be market, this cost is used to compare to the cost of inventory. The lower of the two costs determines the value of inventory. Just like LCM it can be applied individually, to similar groups, or the entire inventory. Figure 6.19 below provides an example on an individual basis.

Unit	Cost (C)	Replacement Cost (RC)	NRV-Ceiling (NRV)*	Floor (F)**	Market (M) (Middle of RC, NRV, F)	LCM*** (Lower of C or M)
A	\$5,000	\$5,500	\$8,500	\$6,500	\$6,500	\$5,000
B	\$10,000	\$9,700	\$9,000	\$6,600	\$9,000	\$9,000

Figure 6.19: LCM Calculations

* Estimated selling price less estimated selling costs = NRV-Ceiling

** NRV-Ceiling less normal profit margin = Floor

Example – Unit A Calculation:

* \$10,000 estimated selling price – \$1,500 estimated selling costs = \$8,500 NRV-Ceiling

** \$8,500 NRV-Ceiling – \$2,000 profit margin (20% of estimated selling price) = \$6,500 Floor

*** \$5,000 Cost compared to \$6,500 Market = \$5,000 LCM (what inventory should be valued at)

6.4 Estimating the Balance in Merchandise Inventory

LO4 – Estimate merchandise inventory using the gross profit method and the retail inventory method.

A physical inventory count determines the quantity of items on hand. When costs are assigned to these items and these individual costs are added, a total inventory amount is calculated. Is this dollar amount correct? Should it be larger? How can one tell if the physical count is accurate? Being able to estimate this amount provides a check on the reasonableness of the physical count and valuation.

The two methods used to estimate the inventory dollar amount are the *gross profit method* and the *retail inventory method*. Both methods are based on a calculation of the gross profit percentage in the income statement. Assume the following information:

Sales		\$15,000	100%
<i>Cost of Goods Sold:</i>			
Beginning Inventory	\$ 4,000		
Purchases	12,000		
Cost of Goods Available for Sale	<u>16,000</u>		
Less: Ending Inventory	(6,000)		
Cost of Goods Sold		<u>10,000</u>	67%
Gross Profit		<u>\$ 5,000</u>	<u>33%</u>

The gross profit percentage, rounded to the nearest whole percent, is 33% (\$5,000/15,000). This means that for each dollar of sales, an average of \$.33 is left to cover other expenses after deducting cost of goods sold.

Estimating ending inventory requires an understanding of the relationship of ending inventory with cost of goods sold. Review the following cost of goods sold calculations.

<i>Cost of Goods Sold:</i>		<i>Cost of Goods Sold:</i>	
Beginning Inventory	\$ 4,000	Beginning Inventory	\$ 4,000
Purchases	12,000	Purchases	12,000
Cost of Goods Available for Sale	<u>\$16,000</u>	Cost of Goods Available for Sale	<u>\$16,000</u>
Less: Estimated Ending Inventory	?	Less: Estimated Ending Inventory	6,000
Cost of Goods Sold	<u>\$10,000</u>	Cost of Goods Sold	<u>?</u>

How much of the \$16,000 of goods that the company had available to sell is still not sold at December 31 (in other words, what is ending inventory)? You can calculate this as:

Available for sale	\$16,000
Less inventory that was sold	<u>10,000</u>
Equals what must still be on hand	<u>\$ 6,000</u>

How much of the \$16,000 of goods that were available to be sold have been sold? You use the dollar amount of ending inventory to calculate this, as:

Available for sale	\$16,000
Less inventory on hand	<u>6,000</u>
Equals what must have been sold	<u>\$10,000</u>

The sum of cost of goods sold and ending inventory is always equal to cost of goods available for sale. Knowing any two of these amounts enables the third amount to be calculated. Understanding this relationship is the key to estimating inventory using either the gross profit or retail inventory methods, discussed below.

Gross Profit Method

The **gross profit method** of estimating ending inventory assumes that the percentage of gross profit on sales remains approximately the same from period to period. Therefore, if the gross profit percentage is known, the dollar amount of ending inventory can be estimated. First, gross profit is estimated by applying the gross profit percentage to sales. From this, cost of goods sold can be derived, namely the difference between sales and gross profit. Cost of goods available for sale can be determined from the accounting records (beginning inventory + purchases). The difference between cost of goods available for sale and cost of goods sold is the estimated value of ending inventory.

To demonstrate, assume that Pete's Products Ltd. has an average gross profit percentage of 40%. If beginning inventory at January 1, 2019 was \$200, sales for the six months ended June 30, 2019 were \$2,000, and inventory purchased during the six months ended June 30, 2019 was \$1,100, the cost of goods sold and ending inventory can be estimated as follows.

	<i>Six Months Ended</i>	
	<i>June 30, 2019</i>	
Sales (given)	<u>\$2,000</u>	
<i>Cost of Goods Sold:</i>		
Beginning Inventory (given)	\$ 200	
Purchases (given)	<u>1,100</u>	
Cost of Goods Available for Sale	<u>1,300</u>	
Less: Estimated Ending Inventory	<u>(100)</u>	Step 3: Ending inventory can be estimated (\$1,300-1,200=100).
Cost of Goods Sold	<u>1,200</u>	Step 2: Cost of goods sold can be derived (\$2,000-800=\$1,200).
Gross Profit	<u>\$ 800</u>	Step 1: Gross profit is estimated at \$800 (\$2,000 x 40%).

The estimated ending inventory at June 30 must be \$100—the difference between the cost of goods available for sale and cost of goods sold.

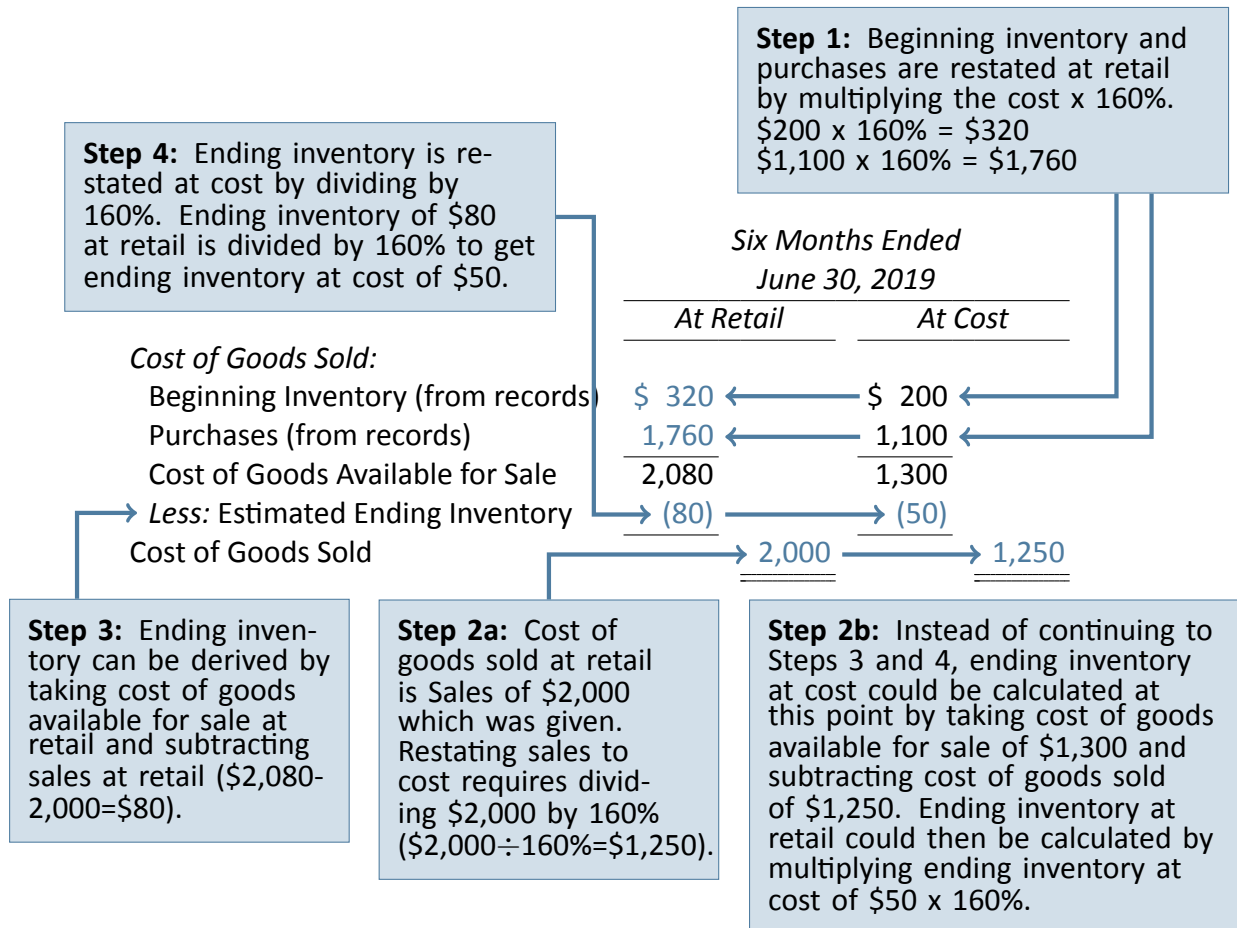
The gross profit method of estimating inventory is useful in situations when goods have been stolen or destroyed by fire or when it is not cost-effective to make a physical inventory count.

This method has limitations in that the gross profit ratio may differ from period to period and additionally it doesn't take into account theft or spoilage of inventory. For these reasons the gross profit method is not acceptable for preparing annual financial statements.

Retail Inventory Method

The **retail inventory method** is another way to estimate cost of goods sold and ending inventory. It can be used when items are consistently valued at a known percentage of cost, known as a *mark-up*. A **mark-up** is the ratio of retail value (or selling price) to cost. For example, if an inventory item had a retail value of \$12 and a cost of \$10, then it was marked up to 120% ($12/10 \times 100$). Mark-ups are commonly used in clothing stores.

To apply the retail inventory method using the mark-up percentage, the cost of goods available for sale is first converted to its retail value (the selling price). To do this, the mark-up (ratio of retail to cost) must be known. Assume the same information as above for Pete's Products Ltd., except that now every item in the store is marked up to 160% of its purchase price. That is, if an item is purchased for \$100, it is sold for \$160. Based on this, beginning inventory, purchases, and cost of goods available can be restated at retail. Cost of goods sold can then be valued at retail, meaning that it will equal sales for the period. From this, ending inventory at retail can be determined and then converted back to cost using the mark-up. These steps are illustrated below.



The retail inventory method of estimating ending inventory is easy to calculate and produces a relatively accurate cost of ending inventory, provided that no change in the average mark-up has occurred during the period. Unlike the gross profit method the retail inventory method is allowed for annual financial reporting purposes.

6.5 Appendix A: Ratio Analysis—Merchandise Inventory Turnover

LO5 – Explain and calculate merchandise inventory turnover.

To help determine how quickly a company is able to sell its inventory, the **merchandise inventory turnover** can be calculated as:

$$\text{Cost of Goods Sold} \div \text{Average Merchandise Inventory}$$

The average merchandise inventory is the beginning inventory plus the ending inventory divided by two. For example, assume Company A had cost of goods sold of \$3,000; beginning merchandise inventory of \$500; and ending inventory of \$700. The merchandise inventory turnover would be 5, calculated as:

$$\begin{array}{r} \text{Cost of Goods Sold} \div \text{Average Merchandise Inventory} \\ \$3,000 \qquad \qquad \qquad \div \qquad \qquad \qquad ((\$500+\$700)/2) \end{array}$$

The '5' means that Company A sold its inventory 5 times during the year. In contrast, assume Company B had cost of goods sold of \$3,000; beginning merchandise inventory of \$1,000; and ending inventory of \$1,400. The merchandise inventory turnover would be 2.50 calculated as:

$$\begin{array}{r} \text{Cost of Goods Sold} \div \text{Average Merchandise Inventory} \\ \$3,000 \qquad \qquad \qquad \div \qquad \qquad \qquad ((\$1,000+\$1,400)/2) \end{array}$$

The '2.5' means that Company B sold its inventory 2.5 times during the year which is much slower than Company A. The faster a business sells its inventory, the better, because high turnover positively affects *liquidity*. **Liquidity** is the ability to convert assets, such as merchandise inventory, into cash. Therefore, Company A's merchandise turnover is more favorable than Company B's.

6.6 Appendix B: Inventory Costing Methods Under the Periodic System

LO6 – Calculate cost of goods sold and merchandise inventory using specific identification, and the cost flow assumptions of first-in first-out (FIFO), last-in first-out (LIFO), and weighted average — periodic.

Recall from Chapter 5 that the periodic inventory system does not maintain detailed records to calculate cost of goods sold each time a sale is made. Rather, when a sale is made, the following entry is made:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable A+		XX	
	Sales R+ SE+			XX
	To record a credit sale.			

No entry is made to record cost of goods sold and to reduce Merchandise Inventory, as is done under the perpetual inventory system. Instead, all purchases are expenses and are recorded in the general ledger account “Purchases.” A physical inventory count is conducted at year-end. An amount for ending inventory is calculated based on this count and the valuation of the items in inventory, and cost of goods sold is calculated in the income statement based on this total amount. The income statement format is:

Sales		\$10,000
<i>Cost of Goods Sold:</i>		
Beginning Inventory	\$ 1,000	
Purchases	5,000	
Goods Available for Sale	<u>6,000</u>	
Less: Ending Inventory	<u>(2,000)</u>	
Cost of Goods Sold		4,000
Gross Profit		<u>\$6,000</u>

Even under the periodic inventory system, however, inventory costing methods need to be made (specific identification, FIFO, LIFO, weighted average). Further, different inventory costing methods produce different cost of goods sold and ending inventory values, just as they did under the perpetual inventory system. These effects have been explained earlier in this chapter. *Under the periodic inventory system, cost of goods sold and ending inventory values are determined as if the sales for the period all take place at the end of the period.* These calculations were demonstrated in our earliest example in this chapter.

Our original example using units assumed there was no beginning inventory at June 1, 2015 and that purchases were made as follows.

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<i>Date</i>	<i>Purchase Transaction</i>	
	<i>Number of units</i>	<i>Price per unit</i>
June 1	1	\$1
5	1	2
7	1	3
21	1	4
28	1	5
	<u>5</u>	<u>\$15</u>

When recorded in the general ledger T-account “Purchases” (an income statement account), these transactions would be recorded as follows.

<i>Purchases</i>		No. 570
Jun. 1	\$1	
5	2	
7	3	
21	4	
28	5	

Sales of four units are all assumed to take place on June 30. Ending inventory would then be counted at the end of the day on June 30. One unit should be on hand. It would be valued as follows under the various inventory costing methods, as discussed in the first part of the chapter:

Specific identification	\$4
FIFO	\$5
LIFO	\$1
Weighted average	\$3

These values would be used to calculate cost of goods sold and gross profit on the income statement, as shown in Figure 6.20 below:

	<i>Spec. Ident.</i>	<i>FIFO</i>	<i>LIFO</i>	<i>Wtd. Avg.</i>
Sales	\$40	\$40	\$40	\$40
<i>Cost of Goods Sold:</i>				
Beginning Inventory	-0-	-0-	-0-	-0-
Purchases	15	15	15	15
Goods Available for Sale	15	15	15	15
Less: Ending Inventory	(4)	(5)	(1)	(3)
Cost of Goods Sold	11	10	14	12
Gross Profit and Net Income	\$29	\$30	\$26	\$28
Ending Inventory (Balance Sheet)	\$ 4	\$ 5	\$ 1	\$ 3

Figure 6.20: Effects of Different Cost Flow Assumptions: Periodic Inventory System

Note that the results for specific identification and FIFO periodic inventory method are the same as those calculated using the perpetual inventory method. See specific identification perpetual (Figure 6.9), and FIFO perpetual (Figure 6.11). Also note that the results for LIFO and weighted average periodic inventory method are not the same as those calculated using the perpetual inventory method. See LIFO perpetual (Figure 6.13) and weighted average perpetual (Figure 6.15).

Recall that the periodic method will require an adjusting entry at the end of the accounting period in order to update the ending balance in inventory and the cost of goods sold account to their actual balances. The entry to adjust inventory and cost of goods sold to their actual balances under each inventory periodic costing method would be as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Inventory (ending balance) A+		XX	
	Purchase returns and allowances XE+ (E)		XX	
	SE+			
	Cost of goods sold E+ (SE)		XX	
	Purchases (A)			XX
	Inventory (beginning balance) (A)			XX
	To adjust inventory to the correct balance when using the periodic inventory method.			

Summary of Chapter 6 Learning Objectives

L01 – Calculate cost of goods sold and merchandise inventory using specific identification, and the cost flow assumptions of first-in first-out (FIFO), last-in first-out (LIFO), and weighted average – perpetual.

Cost of goods available for sale must be allocated between cost of goods sold and ending inventory using a costing method. 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 newest units in inventory. Weighted average allocates cost to units sold by calculating a weighted average cost per unit at the time of sale.

L02 – Explain the impact on financial statements of inventory cost flows and errors.

As purchase prices change, particular inventory methods will assign different cost of goods sold and resulting ending inventory to the financial statements. Specific identification achieves the

exact matching of revenues and costs while weighted average accomplishes an averaging of price changes, or smoothing. The use of FIFO results in the current cost of inventory appearing on the balance sheet in ending inventory. The use of LIFO results in the oldest cost of inventory appearing on the balance sheet in ending inventory. 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 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.

L03 – Explain and calculate lower of cost and net realizable value and lower of cost or market 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 (LC-NRV) of inventory. An adjustment is made if the NRV is lower than cost. LCNRV is used for FIFO, weighted average, and any method other than LIFO. Companies that use LIFO must use the lower of cost or market approach to evaluate inventory. This is a two-step process that first determines market (replacement cost) and then compares market to cost. The lower of the two costs determines inventory valuation. Both of these approaches can be applied to individual units, groups of similar items, or entire inventory.

L04 – Estimate merchandise inventory using the gross profit method and the retail inventory method.

Estimating inventory using the gross profit method requires that estimated cost of goods sold be calculated by, first, multiplying net sales by the gross profit ratio. Estimated ending inventory at cost is then arrived at by taking goods available for sale at cost less the estimated cost of goods sold. To apply the retail inventory method, three calculations are required:

- retail value of goods available for sale less retail value of net sales equals retail value of ending inventory,
- goods available for sale at cost divided by retail value of goods available for sale equals cost to retail ratio, and
- retail value of ending inventory multiplied by the cost to retail ratio equals estimated cost of ending inventory.

L05 – Explain and calculate merchandise inventory turnover.

The merchandise turnover is a liquidity ratio that measures how quickly inventory is sold. It is calculated as: $\text{COGS}/\text{Average Merchandise Inventory}$. Average merchandise inventory is the beginning inventory balance plus the ending inventory balance divided by two.

L06 – Calculate cost of goods sold and merchandise inventory using specific identification, and the cost flow assumptions of first-in first-out (FIFO), last-in first-out (LIFO), and weighted average – periodic.

Periodic systems assign cost of goods available for sale to cost of goods sold and ending inventory at the end of the accounting period. Specific identification and FIFO give identical results in each of periodic and perpetual. LIFO and the weighted average cost, periodic, will differ from its perpetual counterpart because in periodic, the average cost per unit is calculated at the end of the accounting period based on total goods that were available for sale.

Discussion Questions

1. Explain the importance of maintaining appropriate inventory levels for
 - a. management; and
 - b. investors and creditors.
2. What aspects of accounting for inventory on financial statements would be of interest to accountants?
3. What types of costs are included in the cost of inventory?
4. How does a flow of goods differ from a flow of costs? Do generally accepted accounting principles require that the flow of costs be similar to the physical movement of goods? Explain.
5. What two factors are considered when costing merchandise for financial statement purposes? Which of these factors is most difficult to determine? Why?
6. Why is consistency in inventory valuation necessary? Does the application of the consistency principle preclude a change from weighted average to FIFO or LIFO? Explain.
7. The ending inventory of CBCA Inc. is overstated by \$5,000 at December 31, 2018. What is the effect on 2018 net income? What is the effect on 2019 net income assuming that no other inventory errors have occurred during 2019?

8. When should inventory be valued at less than cost?
9. What is the primary reason for the use of the LCNRV method and the LCM method of inventory valuation? What does the term net *realizable value* mean? What does the term *market* mean?
10. When inventory is valued at LCNRV or LCM, what does cost refer to?
11. What inventory cost flow assumptions are permissible under GAAP?
12. Why is estimating inventory useful?
13. How does the estimation of ending inventory differ between the gross profit method and the retail inventory method? Use examples to illustrate.
14. When is the use of the gross profit method particularly useful?
15. Does the retail inventory method assume any particular inventory cost flow assumption?

Exercises

EXERCISE 6–1 (LO1)

Laplante Inc. uses the perpetual inventory system. The following transactions took place during January 2021.

<i>Date</i>		<u><i>Units</i></u>	<u><i>Unit Cost</i></u>
Jan 1	Beginning 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 using the FIFO and LIFO cost flow assumptions.

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<i>Date</i>		<i>Purchased (Sold)</i>			<i>Balance</i>		
		<i>Units</i>	<i>Unit Cost</i>	<i>COGS</i>	<i>Units</i>	<i>Unit Cost</i>	<i>Total Cost</i>
Jan 1	Beginning Inventory				100	× \$1	= \$100
7	Purchase #1						
9	Sale #1						
21	Purchase #2						
24	Sale #2						

EXERCISE 6–2 (LO1)

Using the information from EXERCISE 6–1, calculate the cost of goods sold for the January 9 and 24 sales, and ending inventory using the Specific Identification cost flow assumption. Assume that:

- on January 9, the specific units sold were 72 units from beginning inventory and 8 units from the January 7 purchase and
- the specific units sold on January 24 were 23 units from beginning inventory and 17 units from the January 21 purchase.

EXERCISE 6–3 (LO1)

ABBA uses the weighted average inventory cost flow assumption under the perpetual inventory system. The following transactions took place in January 2018.

<i>Date</i>		<i>Units</i>	<i>Unit Selling Price/ Cost</i>
Jan 1	Beginning 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

All sales are made on account. Round all per unit costs to two decimal places.

Required:

- 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.

EXERCISE 6–4 (LO2)

Listed below are common accounting errors.

<i>Errors</i>	<i>2016 Statements</i>				<i>2017 Statements</i>			
	<i>Beginning Invent.</i>	<i>Ending Invent.</i>	<i>2016 Total Assets</i>	<i>2016 Net Income</i>	<i>Beginning Invent.</i>	<i>Ending Invent.</i>	<i>2017 Total Assets</i>	<i>2017 Net Income</i>
1. Goods purchased in 2016 were included in the December 31, 2016 inventory, but the transaction was not recorded until early 2017.		N/E						
2. Goods purchased in 2017 were included in December 31, 2016 inventory, and the transaction was recorded in 2016.		N/E						

Required: Use N/E (No Effect), O (Overstated), or U (Understated) to indicate the effect of each error on the company's financial statements for the years ended December 31, 2016 and December 31, 2017. The beginning inventory for the 2016 statements is done.

EXERCISE 6–5 (LO2)

Partial income statements of Lilydale Products Inc. are reproduced below:

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	2021	2022	2023
Sales	\$30,000	\$40,000	\$50,000
Cost of Goods Sold	20,000	23,000	25,000
Gross Profit	<u>\$10,000</u>	<u>\$17,000</u>	<u>\$25,000</u>

Required:

- a. Calculate the impact of the two errors listed below on the gross profit calculated for the three years:
- i. The 2021 ending inventory was understated by \$2,000.
 - ii. The 2023 ending inventory was overstated by \$5,000.
- b. What is the impact of these errors on Total Assets?

EXERCISE 6–6 (LO3)

Erndale Products Ltd. has the following items in inventory at year-end:

<i>Item</i>	<i>Units</i>	<i>Cost/Unit</i>	<i>NRV/Unit</i>
X	2	\$50	\$60
Y	3	150	75
Z	4	25	20

Required: Calculate the cost of ending inventory using LCNRV on

- a. A unit-by-unit basis
- b. A group inventory basis.

EXERCISE 6–7 (LO4)

Windy City Insurance Ltd. has received a fire-loss claim of \$45,000 from Balton Corp. A fire destroyed Balton's inventory on May 25, 2015. Balton has an average gross profit of 35%. You have obtained the following information:

Inventory, May 1, 2015	\$ 80,000
Purchases, May 1 - May 25	150,000
Sales, May 1 - May 25	300,000

Required:

- Calculate the estimated amount of inventory lost in the fire.
- How reasonable is Balton's claim?

EXERCISE 6–8 (LO5)

The following account balances for Cost of Goods Sold and Merchandise Inventory were extracted from Able Corp.'s accounting records:

	2025	2024	2023	2022	2021
Cost of Goods Sold	370,000	400,000	420,000	440,000	450,000
Merchandise Inventory	120,000	111,250	88,750	111,250	88,750

Required:

- Calculate the Merchandise Inventory Turnover for each of the years 2022 to 2025.
- Is the change in Able Corp.'s Merchandise Inventory Turnover ratio favorable or unfavorable? Explain.

Problems**PROBLEM 6–1 (LO1)**

Southern Cross Company Limited made the following purchases and sales of Products A and B during the year ended December 31, 2020:

<i>Product A</i>			
		<i>Units</i>	<i>Unit Cost/ Selling Price</i>
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

<i>Product B</i>			
		<i>Units</i>	<i>Unit Cost/ Selling Price</i>
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

Beginning 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, 2020.
3. Calculate the gross profit percentage earned on the sale of
 - i. Product A in 2020 and
 - ii. Product B in 2020.

PROBLEM 6–2 (LO1) Challenge Question – Assigning Costs to Inventory

Below are various inventory related transactions:

Jan 1	Inventory, beginning	500 units	@	\$10	=	\$5,000
4	Sale	100 units	@	\$20	=	2,000
6	Purchase	200 units	@	\$11	=	2,200
8	Purchase return (from Jan 6 purchase)	(10) units	@	\$11	=	(110)
9	Sale	200 units	@	\$22	=	4,400
10	Sales return from customer from Jan 4 sale (returned to inventory)	(15) units	@	\$22	=	(330)
15	Sale	150 units	@	\$23	=	3,450
17	Purchase	300 units	@	\$9	=	2,700
19	Sales return from customer from Jan 15 sale (beyond repair, disposed)	(2) units		\$23	=	(46)
20	Sale	400 units	@	\$21	=	2,100

Required:

1. Complete an inventory record card (schedule) the same as the example shown in Figure 6.11 of the text and with totals at the bottom. Assume that the FIFO method was used.
2. Complete an inventory record card (schedule) the same as the example shown in Figure 6.13 of the text and with totals at the bottom. Assume that the LIFO method was used.
3. Calculate the gross profit and the gross profit percentage under both FIFO and LIFO.
4. What is the ending inventory balance at January 20, 2016 under both FIFO and LIFO?

PROBLEM 6–3 (LO1) Assigning Costs to Inventory

Below are various inventory related transactions:

Purchases:

Feb 1	Beginning inventory	75 units @ \$12
Feb 7	Purchase	300 units @ \$11
Feb 14	Purchase return from Feb 7	10 units @ \$11
Feb 19	Purchase	400 units @ \$9

Sales Price: \$24.00

Units Sold:

Feb 5	70 units
Feb 12	180 units
Feb 17	100 units
Feb 23	80 units

Required:

1. Complete an inventory record card (schedule) the same as the example shown in Figure 6.15 of the text and with totals at the bottom. Assume that a weighted average cost method was used. Round unit costs to the nearest two decimals.
2. Calculate the gross profit and the gross profit percentage.
3. What is the ending inventory balance at February 23, 2016?

PROBLEM 6–4 (LO2) Inventory Errors

The following table shows the following financial data for AAA Ltd. for the year ended December 31, 2016:

Financial Data		
For the year ended December 31, 2016		
	2015	2016
Cost of goods sold	\$ 500,000	\$ 660,000
Net income	250,000	350,000
Total assets	1,500,000	1,400,000
Equity	1,400,000	1,300,000

The following errors were made:

The inventory count for 2015 was overstated by \$45,000.

Required: Calculate the corrected cost of goods sold, net income, total assets and equity for 2015 and 2016.

PROBLEM 6–5 (LO2) Inventory Errors

Using the data from PROBLEM 6–4, the following table shows the following financial data for AAA Ltd. for the year ended December 31, 2016:

Financial Data		
For the year ended December 31, 2016		
	2015	2016
Cost of goods sold	\$ 500,000	\$ 660,000
Net income	250,000	350,000
Total assets	1,500,000	1,400,000
Equity	1,400,000	1,300,000

The following errors were made:

The inventory count for 2015 was understated by \$30,000.

Required: Calculate the corrected cost of goods sold, net income, total assets and equity for 2015 and 2016.

PROBLEM 6–6 (LO3) Lower of Cost and Net Realizable Value

Below are the inventory details for Almac Flooring Ltd.:

	# of Units	Cost/Unit	NRV/Unit
Ceramic Wall Tiles:			
White	1,025	5.00	6.00
Black	875	4.50	4.25
Slate	645	7.00	7.11
Beige	325	2.00	2.25
 Marble Flooring:			
Cordoba	10,000	9.25	9.35
Carrera	12,000	10.50	10.50
Maricha	8,000	11.50	11.45
 Shower Waterproofing:			
Novo	10,035	9.85	9.50
Deetra	9,86	6.75	7.15

Required:

1. Calculate the LCNRV for each group.

2. Calculate the LCNRV for each individual product.
3. Prepare the adjusting entries if any for parts (1) and (2).

PROBLEM 6–7 (LO4) Estimating Inventory and Valuation – Gross Profit Method

Varane Ltd. is required to submit an interim financial statement to their bank as part of the line-of-credit monitoring process. Below is information regarding their first quarter business for 2017:

Ending inventory from the previous year	\$420,364
Purchases	1,323,280
Purchase returns	18,270
Transportation-in	9,660
Freight-out	2,300
Sales	1,667,610
Sales returns	13,230
Operating expenses	130,500
3-year rolling average gross profit	34%
Income tax rate	30%

Required:

1. Prepare a schedule of calculations to estimate the company's ending inventory at the end of the quarter using the gross profit method.
2. Prepare a multiple-step income statement for the first quarter ending March 31, 2017.

PROBLEM 6–8 (LO4) Estimating Inventory and Valuation – Retail Inventory Method

Ceabane Ltd. is required to submit an interim financial statement to their creditors. Below is information regarding their first six months for 2017:

	At Cost	At Retail
Ending inventory from the previous year	\$659,890	\$1,298,010
Purchases	4,660,362	8,958,180
Purchase returns	73,920	167,090
Sales		7,693,980
Sales returns		62,440
Additional information:		
Operating expenses	\$1,500,000	
Income tax rate	30%	

Required:

1. Prepare a schedule of calculations to estimate the company's ending inventory at the end of the quarter using the retail inventory method.
2. Prepare a multiple-step income statement for the first six months ending June 30, 2017.

PROBLEM 6–9 (LO2) Inventory Errors

Partial income statements of Schneider Products Inc. are reproduced below:

	2016	2017
Sales	\$50,000	\$50,000
Cost of Goods Sold	20,000	23,000
Gross Profit	<u>\$30,000</u>	<u>\$27,000</u>

The 2016 ending inventory was overstated by \$2,000 during the physical count. The 2017 physical inventory count was done properly.

Required:

1. Calculate the impact of this error on the gross profit calculated for 2016 and 2017.
2. What is the impact of this error on total assets at the end of 2016 and 2017? Net assets?

PROBLEM 6–10 (LO3) Lower of Cost and Net Realizable Value

Reflex Corporation sells three products. The inventory valuation of these products is shown below for years 2017 and 2018.

	2017			2018		
	<i>Cost</i>	<i>NRV</i>	<i>Unit Basis (LCNRV)</i>	<i>Cost</i>	<i>NRV</i>	<i>Unit Basis (LCNRV)</i>
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	?	?	?	?	?	?

Required: If Reflex values its inventory using LCNRV/unit basis, complete the 2017 and 2018 cost, net realizable value, and LCNRV calculations.

PROBLEM 6–11 (LO3) Lower of Cost or Market

Drake Medical Supply uses LIFO as their inventory costing method. Data related to their inventories are presented below:

	Surgical Equipment	Surgical Supplies	Lab Equipment	Lab Supplies
Selling price	\$260	\$120	\$340	\$165
Cost	170	90	250	162
Replacement cost	240	80	235	158
Costs to sell	30	5	25	10
Normal profit ratio	30%	30%	30%	20%

Required: In applying the lower of cost or market rule, determine what the inventory value of surgical equipment should be.

Chapter 7

Cash and Receivables

This chapter focuses on the current assets of cash and receivables. Internal control over cash involves processes and procedures that include the use of a petty cash fund and the preparation of a bank reconciliation. Receivables can be determined to be uncollectible. To match the cost of uncollectible accounts and the related revenue, uncollectible accounts, more commonly referred to as bad debts, must be estimated. Bad debts are accounted for using the allowance approach, applied using either the income statement method or balance sheet method. When uncollectible accounts are specifically identified, they are written off. Write-offs can be subsequently recovered. The journalizing of short-term notes receivable and related interest revenue is also discussed in this chapter. To help in the analysis of cash and receivables, two ratios are introduced: the acid-test and accounts receivable turnover.

Chapter 7 Learning Objectives

- LO1 – Define the fraud triangle. Define internal control and explain how it is applied to cash.
- LO2 – Explain and journalize petty cash transactions.
- LO3 – Explain the purpose of and prepare a bank reconciliation, and record related adjustments.
- LO4 – Explain, calculate, and record estimated uncollectible accounts receivable and subsequent write-offs and recoveries.
- LO5 – Explain and record a short-term notes receivable as well as calculate related interest.
- LO6 – Explain and calculate the acid-test ratio.
- LO7 – Explain and calculate the accounts receivable turnover.

Concept Self-Check

Use the following as a self-check while working through Chapter 7.

1. What constitutes a good system of control over cash?

2. What is a petty cash system and how is it used to control cash?
3. How is petty cash reported on the balance sheet?
4. How does the preparation of a bank reconciliation facilitate control over cash?
5. What are the steps in preparing a bank reconciliation?
6. How does the estimation of uncollectible accounts receivable address the GAAP of matching?
7. How are uncollectible accounts disclosed on financial statements?
8. What are the different methods used for estimating uncollectible accounts receivable?
9. How is aging of accounts receivable used in estimating uncollectible accounts?
10. How are notes receivable recorded?
11. What is the acid-test ratio and how is it calculated?
12. How is the accounts receivable turnover calculated and what does it mean?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

7.1 Internal Control

LO1 – Define the fraud triangle. 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 record-keeping, 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 record-keeping functions and control of assets, and employees' work is checked by others. The use of electronic record-keeping 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. Three conditions are necessary for financial statement fraud to occur: incentive, opportunity, and the ability to rationalize the fraud. Antifraud experts refer to this as the **fraud triangle**.

Internal controls take 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 record-keeping, 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 recorded in the appropriate account. As an example, expenses are classified and recorded in applicable expense accounts, then summarized and evaluated against those of a prior year.

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 afterwards, since they become less credible and the possibility of error increases with the passage of time. The documents should also be consecutively pre-numbered, to indicate whether there may be missing documents.

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 payments (commonly referred to as cash disbursements). Procedures to achieve 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 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 a separate external record 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 use of a petty cash account and the preparation of bank reconciliations.

7.2 Petty Cash

LO2 – 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 processing cost of 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 are made by this petty cash custodian out of the fund as required when supported by receipts. 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. 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:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Petty Cash A+		200	
	Cash (A)			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 reported separately.

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, \$35 for postage, and office supplies of \$55. The petty cash custodian submits the receipts to the accountant who records the following entry and issues a check for \$190.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Delivery Expense E+ (SE)		100	
	Postage Expense E+ (SE)		35	
	Office Supplies Expense ¹ E+ (SE)		55	
	Cash (A)			190
	To reimburse the petty cash fund.			

The 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 required 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:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Delivery Expense E+ (SE)		100	
	Postage Expense E+ (SE)		35	
	Office Supplies Expense E+ (SE)		55	
	Cash Over/Short Expense E+ (SE)		2	
	Cash (A)			192
	To reimburse the petty cash fund and account for the \$2.00 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:

¹An expense is debited instead of Office Supplies, an asset, because the need to purchase supplies through petty cash assumes the immediate use of the items.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Delivery Expense E+ (SE)		100	
	Postage Expense E+ (SE)		35	
	Office Supplies Expense E+ (SE)		55	
	Cash Over/Short Expense R+ SE+			4
	Cash (A)			186
	To reimburse the petty cash fund and account for the \$4.00 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.

What happens if the petty cash custodian finds that the fund is rarely used? In such a case, the size of the fund should be decreased to reduce the risk of theft. To demonstrate, assume the petty cash custodian has receipts totaling \$110 and \$90 in coin and currency remaining in the petty cash box. The receipts consist of the following: delivery charges \$80 and postage \$30. The petty cash custodian submits the receipts to the accountant and requests that the petty cash fund be reduced by \$75. The following entry is recorded and a check for \$35 is issued.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Delivery Expense E+ (SE)		80	
	Postage Expense E+ (SE)		30	
	Petty Cash (A)			75
	Cash (A)			35
	To reimburse the petty cash fund and reduce it by \$75.			

The \$35 credit to Cash plus the \$90 of coin and currency remaining in the petty cash box immediately prior to reimbursement equals the \$125 new balance in the petty cash fund (\$200 original balance less the \$75 reduction).

In cases when the size of the petty cash fund is too small, the petty cash custodian could request an increase in the size of the petty cash fund at the time of reimbursement. Care should be taken to ensure that the size of the petty cash fund is not so large as to become a potential theft issue. Additionally, 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. Remember that the purpose of the petty cash fund is to pay for infrequent expenses; day-to-day items should not go through petty cash.

7.3 Cash Collections and Payments

LO3 – 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. The difference is usually 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. The reconciliation process brings into agreement the company's accounting records for cash and the **bank statement** issued by the company's bank. A bank reconciliation explains the difference between the balances reported by the company and by the bank on a given date.

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. The preparation of a bank reconciliation is discussed in the following section.

The Bank Reconciliation

The bank reconciliation is a report prepared by a company at a point in time. It identifies 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, more commonly referred to as the *books*. These discrepancies are known as *reconciling items* and are added or subtracted to either the book balance or bank balance of cash. Each of the reconciling items is added or subtracted to the business's cash balance. The business's cash balance will change as a result of the reconciling items. 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* cash balance. The following is a list of potential reconciling items and their impact on the bank reconciliation.

<i>Book reconciling items</i>	<i>Bank reconciling items</i>
Collection of notes receivable (added)	Outstanding deposits (added)
NSF checks (subtracted)	Outstanding checks (subtracted)
Bank charges (subtracted)	
Book errors (added or subtracted, depending on the nature of the error)	Bank errors (added or subtracted, depending on the nature of the error)

Book Reconciling Items

The collection of notes receivable 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, and so cause the general ledger cash account to be understated. As a result, the collection of a notes receivable is added to the unreconciled book balance of cash on the bank reconciliation.

Checks returned to the bank because there were not sufficient funds (NSF) 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 therefore be subtracted from the unreconciled book balance of cash on the bank reconciliation to reconcile cash.

Checks received by a company and deposited into its bank account may be returned by the customer's bank for a number of reasons (e.g., the check was issued too long ago, known as a stale-dated check, an unsigned or illegible check, or the check shows the wrong account number). Returned checks cause the general ledger cash account to be overstated. These checks are therefore subtracted on the bank statement, and must be deducted from the unreconciled book balance of cash on the bank reconciliation.

Bank service charges are 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 book balance of cash 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 book balance of cash on the bank reconciliation. For example, if the company recorded a check as \$520 when the correct amount of the check was \$250, the \$270 difference would be added to the unreconciled book balance of cash on the bank reconciliation. Why? Because the cash balance reported on the books is understated by \$270 as a result of the error. 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 book balance of cash on the bank reconciliation. Why? Because the cash balance reported on the books is overstated by \$270 as a result of the error. Each error requires careful analysis to determine whether it will be added or subtracted in the unreconciled book balance of cash on the bank reconciliation.

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. Since not all cash receipts recorded by the company will have been recorded by the bank when the bank statement is prepared, there will be outstanding deposits, also known as **deposits in transit**. Outstanding deposits cause the bank statement cash balance to be understated. Therefore, outstanding deposits are a reconciling item that must be added to the unreconciled bank balance of cash 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 books. A bank statement will not record a cash reduction until a check is presented and accepted for payment (or *clears* the bank). Checks that are recorded in the company's books but are not paid out of its bank account when the bank statement is prepared are referred to as **outstanding checks**. Outstanding checks mean that the bank statement cash balance is overstated. Therefore, outstanding checks are a reconciling item that must be subtracted from the unreconciled bank balance of cash on the bank reconciliation.

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 of cash 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 of cash on the bank reconciliation. Why? Because 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 of cash on the bank reconciliation. Why? Because 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.

Illustrative Problem—Bank Reconciliation

Assume that a bank reconciliation is prepared by Big Dog Carworks Corp. (BDCC) at April 30. At this date, the Cash account in the general ledger shows a balance of \$21,929 and includes the cash receipts and payments shown in Figure 7.1.

Cash			Acct. No. 101			
Date		Description	Debit	Credit	DR/CR	Balance
2015						
Mar.	31	Balance			DR	20673-
Apr.	30	April cash receipts	9482-		DR	30155-
	30	April cash payments		8226-	DR	21929-

Remember, 'DR' (debit) denotes a positive cash balance in the far right-hand column of the general ledger.

Figure 7.1: Big Dog's General Ledger 'Cash' Account at April 30

Extracts from BDCC's accounting records are reproduced with the bank statement for April in Figure 7.2.

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PER COMPANY RECORDS

PER BANK RECORDS

Outstanding checks
at March 31:

Check No.	Amount
580	\$4,051 x
599	196 x
600	7 x

Step 1a: March 31 outstanding checks are compared with checks cashed to see if any are still outstanding at April 30. Cleared items are marked with an 'x'.

Checks written
during month of April:

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
	<u>\$8,226</u>

Step 1b: Checks written are compared with the cleared checks on the bank statement to identify which ones have not cleared the bank (outstanding checks). Cleared items are marked with an 'x'.

Step 2: Other charges made by the bank are identified (SC=service charge; NSF=not sufficient funds).

Deposits made for
the month of April:

Date	Amount
April 5	\$1,570 x
10	390 x
23	5,000 x
28	1,522 x
30	1,000
	<u>\$9,482</u>

Step 3: Deposits made by the company are compared with deposits on the bank statement to determine outstanding deposits at April 30. Cleared items are marked with an 'x'.

The BDCC bank statement for the month of April is as follows:

Checks/Charges/Debits			Deposits/ Credits	Balance
				24,927
4,051 x			1,570	22,446
196 x	24 x	230 x	390	22,386
200 x				22,186
124 x	397 x	7 x		21,658
2,220 x	180 NSF		5,000	24,258
1,720 x	31		1,522	24,029
				24,023

Step 5: Remaining items are identified and resolved with the bank.

Step 4: Outstanding deposits from March 31 are compared with the bank statement to see if they are still outstanding at April 30. (There were no outstanding deposits at March 31.)

Figure 7.2: The Bank Reconciliation Process

For each entry in BDCC's general ledger Cash account, there should be a matching entry on its bank statement. Items in the general ledger Cash account but not on the bank statement must be reported as a reconciling item on the bank reconciliation. For each entry on the bank statement, there should be a matching entry in BDCC's general ledger Cash account. Items on the bank statement but not in the general ledger Cash account must be reported as a reconciling item on the bank reconciliation.

There are nine steps to follow in preparing a bank reconciliation for BDCC at April 30, 2015:

Step 1

Identify the ending general ledger cash balance (\$21,929 from Figure 7.1) and list it on the bank reconciliation as the book balance on April 30 as shown in Figure 7.3. This represents the unrec- onciled book balance.

Step 2

Identify the ending cash balance on the bank statement (\$24,023 from Figure 7.2) and list it on the bank reconciliation as the bank statement balance on April 30 as shown in Figure 7.3. This represents the unreconciled bank balance.

Step 3

Checks written that have cleared the bank are returned with the bank statement. These checks are said to be *cancelled* because, once cleared, the bank marks them to prevent them from being used again. Cancelled checks are compared to the company's list of cash payments. Outstanding checks are identified using two steps:

- a. Any outstanding checks listed on the BDCC's March 31 bank reconciliation are compared to the checks listed on the April 30 bank statement.

For BDCC, all of the March outstanding checks (nos. 580, 599, and 600) were paid by the bank in April. Therefore, there are no reconciling items to include in the April 30 bank reconciliation. If one of the March outstanding checks had not been paid by the bank in April, it would be subtracted as an outstanding check from the unreconciled bank balance on the bank reconcil- iation.

- b. The cash payments listed in BDCC's accounting records are compared to the checks on the bank statement. This comparison indicates that the following checks are outstanding.

<i>Check No.</i>	<i>Amount</i>
606	\$ 287
607	1,364
608	100
609	40
610	1,520

Outstanding checks must be deducted from the bank statement's unreconciled ending cash balance of \$24,023 as shown in Figure 7.3.

Step 4

Other payments made by the bank are identified on the bank statement and subtracted from the unreconciled book balance on the bank reconciliation.

- a. An examination of the April bank statement shows that the bank had deducted the NSF check of John Donne for \$180. This is deducted from the unreconciled book balance on the bank reconciliation as shown in Figure 7.3.
- b. An examination of the April 30 bank statement shows that the bank had also deducted a service charge of \$6 during April. This amount is deducted from the unreconciled book balance on the bank reconciliation as shown in Figure 7.3.

Step 5

Last month's bank reconciliation is reviewed for outstanding deposits at March 31. There were no outstanding deposits at March 31. If there had been, the amount would have been added to the unreconciled bank balance on the bank reconciliation.

Step 6

The deposits shown on the bank statement are compared with the amounts recorded in the company records. This comparison indicates that the April 30 cash receipt amounting to \$1,000 was deposited but it is not included in the bank statement. The outstanding deposit is added to the unreconciled bank balance on the bank reconciliation as shown in Figure 7.3.

Step 7

Any errors in the company's records or in the bank statement must be identified and reported on the bank reconciliation.

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.

The check deducted in error must be added to the bank statement balance on the bank reconciliation as shown in Figure 7.3.

Step 8

Total both sides of the bank reconciliation. The result must be that the book balance and the bank statement balance are equal or reconciled. These balances represent the adjusted balance.

The bank reconciliation in Figure 7.3 is the result of completing the preceding eight steps.

Big Dog Carworks Corp.
Bank Reconciliation
At April 30, 2015

Book balance at Apr. 30	\$21,929	Bank statement balance at Apr. 30	\$24,023
		Add: Outstanding deposit	1,000
		Check deducted in error	31
			25,054
Less: Bank charges	\$ 6	Less: Outstanding checks	
NSF Check – J. Donne	<u>180</u>	<i>Check No.</i>	<i>Amount</i>
	186	606	\$ 287
		607	1,364
		608	100
		609	40
		610	<u>1,520</u>
Adjusted book balance at Apr. 30	<u>\$21,743</u>	Adjusted bank balance at Apr. 30	<u>\$21,743</u>

These balances must agree.

Reconciling items in this section require journal entries to be made in the general journal to correct the unreconciled Cash balance of \$21,929 in the general ledger to the reconciled balance of \$21,743.

Reconciling items in this section do not require journal entries because the outstanding deposits and checks should clear the bank next month, in May. Additionally, the other reconciling items (e.g., 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.

Figure 7.3: BDCC's April Bank Reconciliation

Step 9

For the adjusted balance calculated in the bank reconciliation to appear in the accounting records, an adjusting entry(s) must be prepared.

The adjusting entry(s) is based on the reconciling item(s) used to calculate the adjusted book balance. The book balance side of BDCC's April 30 bank reconciliation is copied to the left below to clarify the source of the following April 30 adjustments.

7.3. Cash Collections and Payments ■ 267

Book balance at Apr. 30	\$21,929	
Less: Bank charges	\$ 6	
NSF Check – J. Donne	<u>180</u>	<u>186</u>
Adjusted book balance at Apr. 30	<u>\$21,743</u>	

Bank Service Charges Expense	6	
Cash		6
<i>To record service charges from April 30 bank reconciliation.</i>		
Accounts Receivable – J. Donne	180	
Cash		180
<i>To record NSF check from April 30 bank reconciliation.</i>		

It is common practice to use one compound entry to record the adjustments resulting from a bank reconciliation as shown below for BDCC.

Once the adjustment is posted, the Cash general ledger account is up to date, as illustrated in Figure 7.4.

Bank Service Charges Expense	6	
Accounts Receivable – J. Donne	180	
Cash		186
<i>To record reconciling items from April 30 bank reconciliation.</i>		

Cash			Acct. No. 101			
Date		Description	Debit	Credit	DR/CR	Balance
2015						
Mar.	31	Balance			DR	20673-
Apr.	30	April cash receipts	9482-		DR	30155-
	30	April cash payments		8226-	DR	21929-
	30	Bank charge expense		6-	DR	21923-
	30	NSF check		180-	DR	21743-

This adjusted cash balance now agrees with the bank reconciliation.

Figure 7.4: Updated Cash Account in the General Ledger

Note that the balance of \$21,743 in the general ledger Cash account is the same as the adjusted book balance of \$21,743 on the bank reconciliation. Big Dog does not make any adjusting entries for the reconciling items on the bank side of the bank reconciliation since these will eventually clear the bank and appear on a later bank statement. Bank errors will be corrected by the bank.

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:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash A+		980	
	Credit Card Expense E+ (SE)		20	
	Sales R+ SE+			1,000
	To record sale and related credit card fee.			
	Cost of Goods Sold E+ (SE)		750	
	Merchandise Inventory (A)			750
	To record cost of sales.			

The credit card fee is calculated as the \$1,000 sale \times 2% = \$20. Companies may record this as Credit Card Discount, a contra revenue account netted against sales, or recorded as part of selling, general, and administrative (S, G & A) expenses. The above journal entry shows the fee recorded as an S, G & A expense. This means that BDCC collects net cash proceeds of \$980 (\$1,000 – \$20). The use of debit cards also involves fees and these would be journalized in the same manner.

7.4 Accounts Receivable

LO4 – Explain, calculate, and record estimated uncollectible accounts receivable and subsequent write-offs and recoveries.

Recall from Chapter 5 that the revenue portion of the operating cycle, as copied in Figure 7.5, 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.

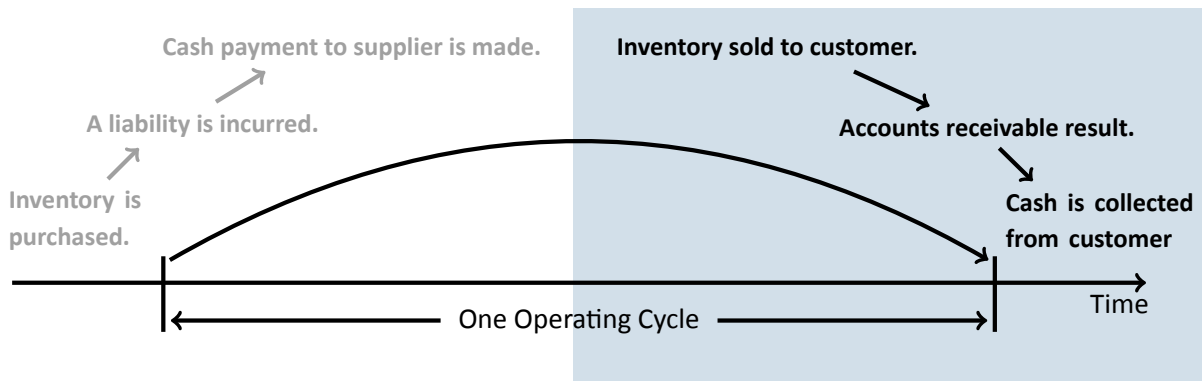


Figure 7.5: Revenue Portion of Operating Cycle

Uncollectible Accounts Receivable

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. Companies with credit sales realize that some of these amounts may never be collected. **Uncollectible accounts**, commonly known as **bad debts**, are an expense associated with selling on credit.

Bad debt expenses must be matched to the credit sales of the same period (matching principle). For example, assume BDCC recorded a \$1,000 credit sale to XYA Company in April, 2015. Assume further that in 2016 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, 2015. But how can that be done if it is not known which receivables will become uncollectible? 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 (AFDA)** 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	<u>1,400</u>	23,600
OR		
Accounts receivable (net of \$1,400 AFDA)		\$ 23,600

The Allowance for Doubtful Accounts contra account reduces accounts receivable to the amount that is expected to be collected — in this case, \$23,600.

Estimating Uncollectible Accounts Receivable

The AFDA account 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.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Bad Debts Expense E+ (SE)		XXX	
	Allowance for Doubtful Accounts XA+ (A)			XXX
	To record the adjustment estimating uncollectible accounts receivable.			

The bad debt expense is shown on the income statement. AFDA appears on the balance sheet and is subtracted from accounts receivable resulting in the estimated net realizable 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 AFDA on the balance sheet.

The Income Statement Method

The objective of the **income statement method** is to estimate 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	Amounts	
	Credit Sales	Not Collected
2012	\$150,000	\$1,000
2013	200,000	1,200
2014	250,000	800
	<u>\$600,000</u>	<u>\$3,000</u>

The average loss over these years is $\frac{\$3,000}{\$600,000}$, or $\frac{1}{2}$ of 1%. If management anticipates that similar losses can be expected in 2015 and credit sales for 2015 amount to \$300,000, bad debts expense would be estimated as \$1,500 ($\$300,000 \times 0.005$). Under the income statement method, the \$1,500 represents estimated bad debt expense for the period and is recorded as:

This estimated bad debt expense is calculated without considering any existing balance in the AFDA account.

Bad Debts Expense 1,500
 Allowance for Doubtful Accounts 1,500
To record the adjustment estimating bad debt expense.



Allowance for Doubtful Accounts		Allowance for Doubtful Accounts	
Bal.	250	Bal.	250
		Adjustment	1,500
		Adjusted Bal.	1,750

The Balance Sheet Method

Estimated uncollectible accounts can also be calculated by using the **balance sheet method** where a process called **aging of accounts receivable** is used. At the end of the period, the total of estimated uncollectible accounts is calculated by analyzing accounts receivable according to how long each account has been outstanding. An 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 following schedule.

*Aging of Accounts Receivable
 December 31, 2015*

Customer	Total	Not Yet Due	Number of Days Past Due				
			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		
Hornsgren 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	\$ 0	\$10,000	\$5,000	\$2,000	\$ 7,000	\$ 1,000

In this example, accounts receivable total \$25,000 at the end of the period. These are classified into six time periods: those receivables that are not yet due; 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.

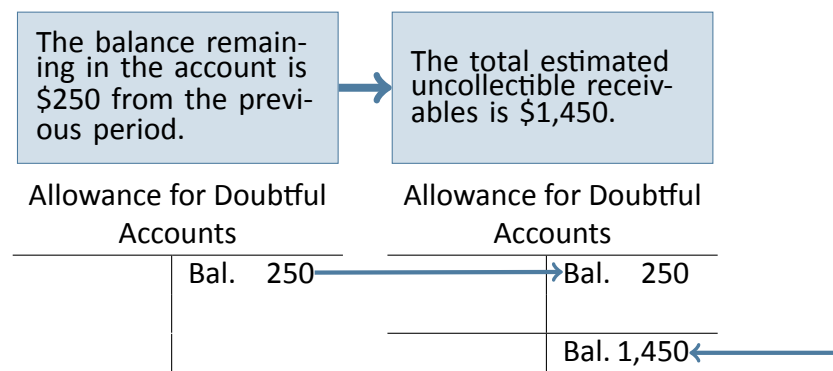
Based on past experience, assume management estimates a bad debt percentage, or rate of uncollectibility, for each time period as follows:

<i>Number of Days Outstanding</i>	<i>Not Yet Due</i>	<i>1–30</i>	<i>31–60</i>	<i>61–90</i>	<i>91–120</i>	<i>Over 120</i>
<i>Rate of Uncollectibility</i>	0.5%	1%	3%	5%	10%	40%

The calculation of expected uncollectible accounts receivable at December 31, 2015 would be as follows:

Calculation of Uncollectible Amounts
December 31, 2015

<i>Age (days)</i>	<i>Accounts Receivable</i>	<i>Estimated Bad Debt Percentage</i>	<i>Estimated Uncollectible Amount</i>
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, 2015.

Under the balance sheet method, the estimated bad debt expense for the period consists of the *difference* between the opening AFDA balance (\$250, as in the prior example) and the estimated uncollectible receivables (\$1,450) required at year-end.

\$1,200 must be recorded to bring the account to \$1,450.

Allowance for Doubtful Accounts	
Bal.	250
	1,200←
Bal.	1,450

\$1,200 is the difference between the \$250 unadjusted balance and the required \$1,450 closing balance.

The adjustment is recorded by the following journal entry:

Bad Debts Expense	1,200	
Allowance for Doubtful Accounts		1,200←
<i>To record the adjustment estimating bad debt expense.</i>		

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 AFDA 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:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Bad Debts Expense E+ (SE)		1,250	
	Allowance for Doubtful Accounts XA+ (A)			1,250
	To record the adjustment estimating bad debt expense.			

The total estimated uncollectible accounts was \$1,500 ($\$25,000 \times 0.06$). Given an unadjusted balance in AFDA of \$250, the adjustment to AFDA 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 these 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 an 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, 2016 the \$1,000 credit account for customer Bendix Inc. is identified as uncollectible because of the company’s bankruptcy. The receivable is removed by:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	AFDA (XA) A+		1,000	
	Accounts Receivable – Bendix Inc. (A).			1,000
	To record write-off of Bendix Inc.’s account receivable.			

The \$1,000 write-off reduces both the accounts receivable and AFDA accounts. The write-off does not affect net realizable accounts receivable as demonstrated below.

	<i>Before</i> <i>Write-Off</i>	<i>Write-Off</i>	<i>After</i> <i>Write-Off</i>
Accounts receivable	\$25,000	Cr 1,000	\$24,000
Less: Allowance for doubtful accounts	1,450	Dr 1,000	450
Net accounts receivable	<u>\$23,550</u>		<u>\$23,550</u>

Additionally, a write-off does not affect bad debt expense. This can be a challenge to understand. To help clarify, recall that the adjusting entry to estimate uncollectibles was:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Bad Debts Expense E+ (SE)		XXX	
	AFDA XA+ (A)			XXX
	To record the adjustment estimating bad debt expense.			

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:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	AFDA (XA) A+		XXX	
	Accounts Receivable (A)			XXX
	To record write-off of account receivable.			

Notice that the AFDA 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 AFDA 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 later, 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. A recovery requires two journal entries. The first entry reinstates the amount *expected* to be collected by BDCC—\$250

(\$1,000 × 25%) in this case and is recorded as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Accounts Receivable – Bendix Inc. A+		250	
	AFDA XA+ (A)			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		Allowance for Doubtful Accounts	
Bal.	\$25,000	Bal.	1,450
	Write-off 1,000	Write-off 1,000	
Recovery	250	Recovery	250

The second entry records the collection of the reinstated amount as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash A+		250	
	Accounts Receivable – Bendix Inc. (A) .			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
		Merchandise Inventory	XXX
Adjusting entry estimating uncollectible accounts.	{	Bad Debts Expense	XXX
		AFDA	XXX
Write-off of uncollectible account.	{	AFDA.....	XXX
		Accounts Receivable	XXX
Recovery of account previously written off.	{	Accounts Receivable	XXX
		AFDA	XXX
		Cash	XXX
		Accounts Receivable	XXX

7.5 Short-Term Notes Receivable

LO5 – Explain and record a short-term notes receivable as well as calculate related interest.

Short-term notes receivable are current assets, since they are due within the greater of 12 months or the business's operating cycle. A note receivable is a *promissory note*. A **promissory note** is a signed document where the **debtor**, the person who owes the money, promises to pay the *creditor* the *principal* and *interest* on the *due date*. The **principal** is the amount owed. The **creditor**, or **payee**, is the entity owed the principal and interest. **Interest** is the fee for using the principal and is calculated as: $\text{Principal} \times \text{Annual Interest Rate} \times \text{Time}$. The **time** or **term** of the note is the period from the *date of the note* to the due date. The **due date**, also known as the **maturity date**, is the date on which the principal and interest must be paid. The **date of the note** is the date the note begins accruing interest.

Short-term notes receivable can arise at the time of sale or when a customer's account receivable becomes overdue. To demonstrate the conversion of a customer's account to a short-term receivable, assume that BDCC's customer Bendix Inc. is unable to pay its \$5,000 account within the normal 30-day period. The receivable is converted to a 5%, 60-day note dated December 5, 2015 with the following entry:

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General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 5	Notes Receivable - Bendix A+		5,000	
	Accounts Receivable - Bendix (A)			5,000
	To record the conversion of a customer's account to a 5%, 60-day note dated December 5, 2015.			

The note is due on February 3, 2016 calculated as:

Days in December	31
Less: December 5 date of the note	<u>5</u>
Subtotal number of days	26
Add: Days in January	<u>31</u>
Subtotal number of days	57
Add: Days in February to total 60 days	3 ←
Total term of the note in days	60

Assuming a December 31, year-end for BDCC, the adjusting entry to accrue interest on December 31 would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Interest Receivable A+		18.06	
	Interest Revenue R+ SE+			18.06
	To record the accrual of interest from December 5 to December 31.			

The interest of \$18.06 was calculated as: $\$5,000 \times 5\% \times 26/360^2 = \18.0556 rounded to \$18.06. **All interest calculations in this textbook are rounded to two decimal places.**

At maturity, February 3, 2016, BDCC collects the note plus interest and records:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Feb 3	Cash A+		5,041.67	
	Note Receivable - Bendix (A)			5,000.00
	Interest Receivable (A)			18.06
	Interest Revenue R+ SE+			23.61
	To record the collection of the principal and interest.			

The total interest realized on the note was \$41.67 ($\$5,000 \times 5\% \times 60/360 = \41.6667 rounded to \$41.67). Part of the \$41.67 total interest revenue was realized in 2015 (\$18.06) and the rest in

²When calculating interest based on days, use 360 days per year.

2016 ($\$41.67 - \$18.06 = \$23.61$). Therefore, care must be taken to correctly allocate the interest between periods. The total cash received by BDCC on February 3 was the sum of the principal and interest: $\$5,000.00 + \$41.67 = \$5,041.67$.

When the term of a note is expressed in months, the calculations are less complex. For example, assume that BDCC sold customer Woodlow a \$4,000 service on August 1, 2015. On that date, the customer signed a 4%, 3-month note. The term of the note is based on months and not days therefore the maturity date is October 31, 2015. BDCC would record the collection on October 31 as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Oct 31	Cash A+		4,040	
	Note Receivable - Woodlow (A)			4,000
	Interest Revenue R+ SE+			40
	To record the collection of the principal and interest.			

The total interest realized on the note was \$40 ($\$4,000 \times 4\% \times 3/12^3 = \40.00)

7.6 Appendix A: Ratio Analysis—Acid Test

LO6 – Explain and calculate the acid-test ratio.

The **acid-test ratio**, also known as the **quick ratio**, is a liquidity ratio that is a strict measure of a business's availability of cash to pay current liabilities as they come due. It is considered a strict measure because it includes only *quick current assets*. **Quick current assets** are those current assets that are one step away from becoming cash. For example, accounts receivable are a quick current asset because collection of receivables results in cash. However, inventory is not a quick current asset because it is two steps from cash — it has to be sold which creates an account receivable and the receivable then has to be collected. Prepaids are not a quick current asset because the intent in holding prepaids is not to convert them into cash but, instead, to use them (e.g., prepaid insurance becomes insurance expense as it is used). Quick current assets include only cash, short-term investments, and receivables.

The acid-test ratio is calculated as:

$$\text{Quick current assets} \div \text{Current liabilities}$$

³When calculating interest based on months, use 12 months per year.

The acid-test ratios for three companies operating in a similar industry are shown below:

Year	Acid-Test Ratios		
	Company A	Company B	Company C
2014	0.56	1.3	8.6
2015	0.72	1.2	8.7

In 2014, Company A's acid-test ratio shows that it has only \$0.56 to cover each \$1.00 of current liabilities as they come due. Company A therefore has a liquidity issue. Although Company A's acid-test ratio is still unfavorable in 2015, the change is favorable because the liquidity improved. So a company can have an unfavorable acid-test ratio but show a favorable change.

Company B's 2014 acid-test shows that it has favorable liquidity: \$1.30 to cover each \$1.00 of current liabilities as they come due. However, the change from 2014 to 2015 shows a decrease in the acid-test ratio which is unfavorable although Company B's acid-test still shows favorable liquidity. So a company can have a favorable acid-test ratio but an unfavorable change.

Company C's 2014 acid-test ratio indicates that it has favorable liquidity: \$8.60 to cover each \$1.00 of current liabilities as they come due. However, this is actually unfavorable because a company can have an acid-test ratio that is too high. If the acid-test ratio is too high, it is a reflection that the company has idle assets. Idle assets do not typically generate the most optimum levels of revenue. Remember that the purpose of holding assets is to generate revenue. In 2015, Company C's acid-test ratio increased a bit and it is still excessive which is unfavorable. So the change was favorable but because the ratio is too high, it reflects an unfavorable liquidity position, though for different reasons than Company A.

7.7 Appendix B: Ratio Analysis—Accounts Receivable Turnover

LO7 – Explain and calculate the accounts receivable turnover.

The accounts receivable turnover not only measures the liquidity of receivables but also the efficiency of collection, referred to as turnover (i.e., accounts receivable *turnover* into cash). A low turnover indicates high levels of accounts receivable which has an unfavorable impact on liquidity since cash is tied up in receivables. A low turnover means management might need to review credit granting policies and/or strengthen collection efforts.

The accounts receivable turnover is calculated as:

$$\text{Net credit sales (or revenues)} \div \text{Average net accounts receivable}^4$$

⁴Short-term notes receivable from customers would be included in this amount.

Average accounts receivable is calculated by taking the beginning of the period balance plus the end of the period balance and dividing the sum by two.

The accounts receivable turnover ratios for two companies operating in a similar industry are shown below:

Year	Accounts Receivable Turnover	
	Company A	Company B
2015	5.8	6.9

Company B is more efficient at collecting receivables than is Company A. The higher the ratio, the more favorable.

Summary of Chapter 7 Learning Objectives

L01 – Define the fraud triangle. Define internal control and explain how it is applied to cash.

The fraud triangle are the three things antifraud experts say are needed in order to commit financial statement fraud: incentive, opportunity, and the ability to rationalize the fraud. 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.

L02 – 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.

L03 – 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 book balance. Reconciling items that affect the bank statement balance are outstanding deposits, outstanding checks, and bank errors. Reconciling items that affect the book 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 book balance.

L04 – 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 uncollectibles is a debit to Bad Debt Expense and a credit to Allowance for Doubtful Accounts (AFDA). 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 (aka the balance in AFDA) 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) and then journalizing the collection.

L05 – Explain and record a short-term notes receivable as well as calculate related interest.

A short-term notes receivable is a promissory note that bears an interest rate calculated over the term of the note. Short-term notes receivable are current assets that mature within 12 months from the date of issue or within a business's operating cycle, whichever is longer. Notes can be issued to a customer at the time of sale, or a note receivable can replace an overdue receivable.

L06 – Explain and calculate the acid-test ratio.

The acid-test ratio is a strict measure of liquidity. It is calculated as quick current assets divided by current liabilities. Quick assets include cash, short-term investments, and accounts receivable.

L07 – Explain and calculate the accounts receivable turnover.

The accounts receivable turnover is a measure of liquidity and demonstrates how efficiently receivables are being collected. It is calculated as net sales divided by average accounts receivable. Average accounts receivable are the sum of the beginning accounts receivable, including short-term notes receivable from customers, plus ending receivables, divided by two.

Discussion Questions

1. What is the fraud triangle? 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 is a petty cash system?
7. What is the difference between establishing and replenishing the petty cash fund?
8. How does use of allowance for doubtful accounts match expenses with revenue?
9. How does the income statement method calculate the estimated amount of uncollectible accounts?
10. What is an aging schedule for bad debts, and how is it used in calculating the estimated amount of uncollectible accounts?
11. How are credit balances in accounts receivable reported on the financial statements?

Exercises

EXERCISE 7-1 (LO2)

The following transactions were made by Landers Corp. in March 2017.

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
		<u>\$120</u>
18	Increased the fund by an additional \$200	
25	Reimbursed the fund for the following:	
	Office supplies	\$75
	Delivery charges	30
		<u>\$105</u>
28	Reduced the amount of the fund to \$350.	

Required: Prepare journal entries to record the petty cash transactions.

EXERCISE 7-2 (LO3)

The following information pertains to Ferguson Corp. at December 31, 2016, its year-end:

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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:			
Amount of note receivable	\$1,300		
Amount of interest	25	1,325	
Fluet inc. check deducted in error by bank		200	
December checks not yet paid by bank in December:			
#631	\$354		
#642	746		
#660	200		
#661	300	1,600	
December deposit recorded by the bank January 3, 2017		700	

Required: Prepare a bank reconciliation and all necessary adjusting entries at December 31, 2016.

EXERCISE 7–3 (LO3)

The Cash general ledger account balance of Gladstone Ltd. was \$2,531 at March 31, 2018. 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, 2018 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 cleared the bank for this amount, was recorded in the company records incorrectly 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 net amount of \$290: \$250 regarding a note receivable, interest revenue of \$50, and a \$10 service charge that also is not included in the company records.

Required: Prepare a bank reconciliation and record all necessary adjusting entries at March 31, 2018.

EXERCISE 7-4 (LO4)

Sather Ltd. had the following unadjusted account balances at December 31, 2015 (assume normal account balances):

Accounts Receivable	\$147,000
Allowance for Doubtful Accounts	3,000
Sales	750,000

Required:

- a. Assume that Sather Ltd. estimated its uncollectible accounts at December 31, 2015 to be two per cent of sales.
 - i. Prepare the appropriate adjusting entry to record the estimated uncollectible accounts at December 31, 2015.
 - ii. Calculate the balance in the Allowance for Doubtful Accounts account after posting the adjusting entry.
- b. Assume that Sather Ltd. estimated its uncollectible accounts at December 31, 2015 to be ten per cent of the unadjusted balance in accounts receivable.
 - i. Prepare the appropriate adjusting entry to record the estimated uncollectible accounts at December 31, 2015.
 - ii. Calculate the balance in the Allowance for Doubtful Accounts account after posting the adjusting entry.
- c. Why is there a difference in the calculated estimates of doubtful accounts in parts (a) and (b)?
- d. Which calculation provides better matching: that made in part (a) or in part (b)? Why?

EXERCISE 7-5 (LO4)

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, 2020 uncollectible accounts by preparing an aging of its accounts receivable. An amount of \$10,000 was considered uncollectible at December 31, 2020.

Required:

- a. Calculate the amount of bad debt expense for 2019.
- b. What adjusting entry was recorded at December 31, 2019 to account for bad debts?
- c. Calculate the amount of bad debt expense for 2020.
- d. What adjusting entry was recorded at December 31, 2020 to account for bad debts?

EXERCISE 7-6 (LO5)

Following are notes receivable transactions of Vilco Inc. whose year-end is March 31:

- | | |
|---------|---|
| Mar. 1 | Accepted a \$40,000, 90-day, 3% note receivable dated today in granting a time extension to West Corp. on its past-due accounts receivable. |
| Mar. 31 | Made an adjusting entry to record the accrued interest on West Corp.'s note receivable. |
| May 30 | Received West Corp.'s payment for the principal and interest on the note receivable dated March 1. |
| Jun. 15 | Accepted a \$50,000, 45-day, 3% note receivable dated today in granting a time extension to Jill Monte on her past-due accounts receivable. |
| ??? | Received Jill Monte's payment for the principal and interest on her note dated June 15. |

Required:

- a. Prepare journal entries to record Vilco Inc.'s transactions (round all calculations to two decimal places).
- b. Assume instead that on May 30 West Corp. dishonored (did not pay) its note when presented for payment. How would Vilco Inc. record this transaction on May 30?

EXERCISE 7-7 (LO6,7)

The following comparative information is taken from the records of Salzl Corp. at its December 31 year-ends from 2016 to 2018:

	<u>2018</u>	<u>2017</u>	<u>2016</u>
Cash	\$42,000	\$30,000	\$21,000
Accounts receivable	25,000	20,000	14,000
Merchandise inventory	36,000	25,000	17,500
Prepaid insurance	6,000	4,000	2,800
Plant and equipment	160,000	160,000	112,000
Accumulated depreciation – plant and equipment	68,000	54,000	37,800
Accounts payable	14,000	12,000	8,400
Salaries payable	9,000	8,000	5,600
Income tax payable	11,000	9,000	6,300
Bank loan, due in 3 months	17,000	0	0
Bank loan, due in 24 months	48,000	0	0
Common stock	50,000	50,000	35,000
Retained earnings	15,000	12,000	8,400
Dividends	15,000	15,000	10,500
Sales	375,000	367,000	256,900
Cost of goods sold	190,000	152,000	106,400
Operating expenses	120,000	96,000	67,200
Income tax expense	13,000	10,000	7,000

Required:

- a. Calculate the acid-test and accounts receivable turnover ratios for each of 2017 and 2018 (round final calculations to two decimal places).
- b. Was the change in each ratio from 2017 to 2018 favorable or unfavorable? Explain.

Problems

PROBLEM 7–1 (LO3)

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

- Additions to the reported general ledger cash balance.
- Deductions from the reported general ledger cash balance.
- Additions to the reported cash balance per the bank statement.
- Deductions from the reported cash balance per the bank statement.
- Information that has no effect on the current reconciliation.

Required: 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 returned by the bank.
- _____ 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.
- _____ An \$840 check from customer Abe Dobbs was incorrectly 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.

PROBLEM 7–2 (LO2) Petty Cash

As of August 1, 2017, Bolchuk Buildings Ltd. decided that establishing a petty cash fund would be more efficient way to handle small day-to-day reimbursements. Below is a list of transactions during August:

- August 2 Prepared and cashed a \$500 check to establish the petty cash fund for the first time.
- 3 Purchased some office supplies for \$35.00 for immediate use.
- 4 Paid \$20.00 for delivery charges for some merchandise inventory purchased from a supplier, fob shipping point.
- 6 Reimbursed an employee \$139.60 for travel expenses to attend an out of town meeting.
- 8 Paid a delivery charge of \$32.00 regarding a sale to a customer.
- 10 Purchased a birthday cake for all the employees having a birthday in August as part of their employee recognition program. Cost was \$80.00.
- 14 Paid \$145.00 for postage to cover postage needs for the next 6 months.
- 15 Checked the petty cash and realized that it needed to be replenished so a check was issued to replenish the fund and increase it to \$800.00. Petty cash currency was counted and totaled \$50.00.
- 17 Reimbursed an employee \$75.80 for company-related travel expenses.
- 20 Purchased shop supplies for \$300.00 to replenish shop inventory.
- 24 Paid \$56.00 to a courier company to deliver documents to a customer.
- 28 Paid \$345.00 to repair a broken window.
- 31 Check issued to replenish petty cash. Petty cash was counted and totaled \$20.00.

Required: Prepare journal entries with dates as needed to record the items above.

PROBLEM 7–3 (LO3) Bank Reconciliation

It was time for Trevrini Co. to complete its bank reconciliation for November 30, 2017. Below is information that may relate to the task:

1. The cash balance as at November 30, 2017 was a debit balance of \$23,500. The ending balance shown on the bank statement was \$30,000.
2. Checks that were outstanding at November 30 were:

Chq 236	\$230
Chq 240	15

3. It was noted that Check 230 was recorded as \$50 in the accounting records but was posted by the bank as \$55 in error.
4. The bank statement showed a deposit of \$180 for a \$200 non-interest bearing note that the bank had collected on behalf of the company, net of the \$20 bank service charge for collection of the note. This was not yet recorded in the company's books.
5. The bank statement showed a deduction of \$1,500 for a check from a customer for payment on account returned NSF. Included in this charge was a \$25 NSF charge.
6. The bank statement also showed a deduction of bank service charge fees of \$18.
7. A deposit recorded by the company for \$4,500 did not yet appear in the bank statement.

Required:

1. Prepare a bank reconciliation for the company as at November 30, 2017.
2. Prepare any necessary journal entries as a result of the bank reconciliation.

PROBLEM 7-4 (LO4)

Tarpon Inc. made \$1,000,000 in sales during 2018. Thirty per cent of these were cash sales. During 2018, \$25,000 of accounts receivable were written off as being uncollectible. In addition, \$15,000 of the accounts that were written off in 2017 were unexpectedly collected in 2018. The December 31, 2017 adjusted balance in AFDA was a credit of \$15,000. At its December 31, 2018 year-end, Tarpon had the following accounts receivable:

<i>Age (days)</i>	<i>Accounts Receivable</i>
1-30	\$100,000
31-60	50,000
61-90	25,000
91-120	60,000
Over 120	15,000
Total	<u>\$250,000</u>

Required:

1. Prepare journal entries to record the following 2018 transactions:

- (a) The write-off of \$25,000.
 (b) The recovery of \$15,000.
2. Calculate the unadjusted balance in AFDA at December 31, 2018.
3. Prepare the adjusting entry required at December 31, 2018 for each of the following scenarios:
- (a) Bad debts at December 31, 2018 is based on three per cent of credit sales.
 (b) Estimated uncollectible accounts at December 31, 2018 is estimated at five per cent of accounts receivable.
 (c) Estimated uncollectible accounts at December 31, 2018 is calculated using the following aging analysis:

<i>Age (days)</i>	<i>Estimated Loss Percentage</i>
2015-01-30	2%
31-60	4%
61-90	5%
91-120	10%
Over 120	50%

4. Calculate the December 31, 2018 adjusted balance in AFDA based on the adjustments prepared in 3(a), 3(b), and 3(c) above.

PROBLEM 7–5 (LO4) Recording Accounts Receivable Related Entries

Ripter Co. Ltd. began operations on January 1, 2017. It had the following transactions during 2017, 2018, and 2019.

Dec 31, 2017	Estimated uncollectible accounts as \$5,000 (calculated as 2% of sales)
Apr 15, 2018	Wrote off the balance of Coulter, \$700
Aug 8, 2018	Wrote off \$3,000 of miscellaneous customer accounts as uncollectible
Dec 31, 2018	Estimated uncollectible accounts as \$4,000 (1.5% of sales)
Mar 6, 2019	Recovered \$200 from Coulter, whose account was written off in 2018; no further recoveries are expected
Sep 4, 2019	Wrote off as uncollectible \$4,000 of miscellaneous customer accounts
Dec 31, 2019	Estimated uncollectible accounts as \$4,500 (1.5% 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 2019 is estimated to be \$2,000. Comment on the discrepancy between the two methods of estimating allowance for doubtful accounts.

PROBLEM 7–6 (LO4) Recording Accounts Receivable Adjusting Entries

The following balances are taken from the unadjusted trial balance of Cormrand Inc. at its year-end, December 31, 2016:

	<i>Account Balances</i>	
	<i>Debit</i>	<i>Credit</i>
Accounts Receivable	\$100,000	
Allowance for Doubtful Accounts	1,800	
Sales (all on credit)	750,000	
Sales Returns and Allowances		\$22,000

The balance of a customer's account in the amount of \$1,000 is over 90 days past due and management has decided to write this account off.

Required:

1. Record the write-off of the uncollectible account.
2. Record the adjusting entry if the bad debts are estimated to be 2% of sales.
3. Record the adjusting entry if instead, the bad debts are estimated to be 4% of the adjusted accounts receivable balance as at December 31, 2016.
4. Show how Accounts Receivable and the Allowance for Doubtful Accounts would appear on the December 31, 2011, balance sheet for parts (1) and (2).

PROBLEM 7–7 (LO5) Recording Short-term Notes Receivables Transactions

Below are transactions for Regal Co.:

2016

- Dec 12 Accepted a \$20,500, 30-day, 5% note dated this date from a customer in exchange for their past-due accounts receivable amount owing.
- Dec 31 Made an adjusting entry to record the accrued interest on the Dec 12 note.
- Dec 31 Closed the Interest Revenue account as part of the closing process at year-end.

2017

- Jan 12 Received payment for the principal and interest on the note dated December 12.
- Jan 14 Accepted a \$12,000, 6%, 60-day note dated this date for a sale to a customer with a higher credit risk. Cost of goods was \$7,500.
- Jan 31 Made adjusting entries to record the accrued interest for January, 2017 for all outstanding notes receivable.
- Feb 10 Accepted a \$6,600, 90-day, 9% note receivable dated this day in exchange for his past-due account.
- Feb 28 Made adjusting entries to record the accrued interest for January, 2017 regarding any outstanding notes receivable.
- ? Received payment for the principal and interest on the note dated January 14.

Required:

1. Prepare the journal entries for the transactions above. Determine the maturity date of the January 14 note required for the journal entry. Round interest amounts to the nearest whole dollar for simplicity.
2. Determine the maturity date of the February 10 note.

PROBLEM 7–8 (LO5) Notes Receivables

	Note Date	Face Value	Note Term	Interest Rate	Maturity Date	Accrued Interest
						Dec 31, 2016
a)	Jan 1, 2017	\$260,000	180 days	4.0%		
b)	Jan 15, 2017	180,000	3 months	5.0%		
c)	Jun 21, 2017	40,000	45 days	5.5%		
d)	Dec 1, 2017	60,000	4 months	6.5%		

Required:

1. Determine the maturity date for each note.

2. For each note, calculate the total amount of accrued interest from the note date to December 31, 2017 (the company year-end). Round interest to the nearest whole dollar.
3. What is the amount that would be collected for each note, assuming that both interest and principal are collected at maturity?

PROBLEM 7–9 (LO6) Ratio Calculations

The following information was taken from the December 31, 2017, financial statements of Stonehedge Cutters Ltd.:

	2017	2016
Sales	\$250,000	\$162,000
Sales discounts	52,000	2,300
Sales allowances	5,000	500
Accounts receivable	53,000	22,000

Required:

1. Calculate the accounts receivable turnover for 2017. Round answer to two decimal places.
2. If the ratio was 5.25 from 2016, has the company become more efficient or not?

Chapter 8

Long-lived Assets

Long-lived assets or property, plant, and equipment (PPE) assets are used in the normal operating activities of the business and are expected to provide benefits for a period in excess of one year. Long-lived assets covered in this chapter consist of three types: property, plant, and equipment (PPE), intangible assets, and goodwill. Also discussed are *depreciation* and *amortization*, techniques to allocate the cost of most long-lived assets over their estimated useful lives.

Chapter 8 Learning Objectives

LO1 – Describe how the cost of property, plant, and equipment (PPE) is determined, and calculate PPE.

LO2 – Explain, calculate, and record depreciation using the units-of-production, straight-line, and double-declining balance methods.

LO3 – Explain, calculate, and record depreciation for partial years.

LO4 – Explain, calculate, and record revised depreciation for subsequent capital expenditures.

LO5 – Explain, calculate, and record the impairment of long-lived assets.

LO6 – Account for the derecognition of PPE assets.

LO7 – Explain and record the acquisition and amortization of intangible assets.

LO8 – Explain goodwill and identify where on the balance sheet it is reported.

LO9 – Describe the disclosure requirements for long-lived assets in the notes to the financial statements.

Concept Self-Check

Use the following as a self-check while working through Chapter 8.

1. What is the distinction between capital expenditures and revenue expenditures?

2. How do generally accepted accounting principles prescribe what amount should be capitalized?
3. How is partial period depreciation recorded?
4. What is the formula for calculating revised depreciation?
5. What is the difference between a tangible and intangible long-lived asset?
6. What different methods can be used to calculate depreciation for property, plant, and equipment?
7. How are disposals of property, plant, and equipment recorded in the accounting records?
8. How is the impairment of a long-lived asset accounted for?
9. How are intangible assets amortized?
10. What is goodwill and what is its accounting treatment?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

8.1 Establishing the Cost of Property, Plant, and Equipment (PPE)

LO1 – Describe how the cost of property, plant, and equipment (PPE) is determined, and calculate PPE.

Property, plant, and equipment (PPE) are *tangible* long-lived assets that are acquired for the purpose of generating revenue either directly or indirectly. 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. Because PPE assets are long-lived or have a life greater than one year, they are non-current in nature, also known as long-term assets. Examples of PPE 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 like tractors and field equipment. PPE 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 – like copyrights and patents. These will be discussed later 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. Under the cost principle, all reasonable and necessary expenditures made in acquiring and preparing an asset for use (or sale, as in the case of inventory) should be recorded as the cost of an asset. Examples of various costs that may be incurred to prepare PPE for use are listed below.

		<i>Capital Expenditures</i>		
		<i>Land</i>	<i>Building</i>	<i>Equipment</i>
Costs to Acquire PPE	}	Purchase price	Purchase price	Invoice cost
		Commission to real estate agent	Commission to real estate agent	Transportation
		Legal fees	Legal fees	Insurance (during transportation)
Costs to Prepare PPE for Use	}	Costs of draining, clearing, and landscaping; demolition	Repair and remodelling costs before use	Assembly Installation (including wages paid to company employees)
		Assessments for streets and sewage system	Payments to tenants for premature termination of lease	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 so 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 be capitalized, while all capital expenditures under \$1,000 will be expensed when incurred. Another company may have a capitalization policy limit of \$500. Additionally, a company

may have a different capitalization policy for different types of plant and equipment assets – hand tools may have a capitalization policy limit of \$200 while the limit might be \$1,000 for furniture.

Most assets require significant expenditures throughout their lives to maintain their productive capacity. Expenditures made after the purchase of an asset can be classified as **ordinary repairs and maintenance** or **improvements**. Ordinary repairs and maintenance are expenditures made to maintain PPE in satisfactory working order and are expensed. These expenditures involve relatively small amounts, are recurring in nature, and do not directly increase the productive life, operating efficiency, or capacity of the asset. 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). Improvements are expenditures that increase the operating efficiency, productive life, or capacity of the asset. These expenditures occur infrequently, increase the economic usefulness of the asset, and involve large amounts of money. These expenditures are capitalized (added to the asset account). Examples of these expenditures include: (a) the cost of putting on an addition; (b) major overhaul of a building; and (c) replacing the engine in a vehicle.

In many cases there is no clear line between ordinary repairs and maintenance (expense) or improvements (asset). In this case, management must exercise professional judgment to determine how to classify the expenditure.

Land

The purchase of land is a capital expenditure when 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 \$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 PPE 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 ($\$150,000 \times 25\%$) and the Building account would be debited for the remaining 75% or \$112,500 ($\$150,000 \times 75\% = \$112,500$ or $\$150,000 - \$37,500 = \$112,500$) as shown in the following journal entry.

8.1. Establishing the Cost of Property, Plant, and Equipment (PPE) ■ 299

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Land A+		37,500	
	Building A+		112,500	
	Cash (A)			150,000
	To record the purchase of land and building for a lump sum of \$150,000; \$150,000 x 25% = \$37,500; \$150,000 x 75% = \$112,500.			

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.

Property, Plant, and Equipment (PPE) Subsidiary Ledger

The accounts receivable and accounts payable subsidiary ledgers (more commonly referred to as subledgers) were introduced in Chapter 5 and the merchandise inventory subledger was introduced in Chapter 6. To review, a subledger contains the details to support a general ledger control account, also known as the controlling account. For example, the accounts receivable controlling account for ABC Inc. shows a balance of \$4,000 on the December 31, 2015 balance sheet. The accounts receivable subledger shows that the \$4,000 is made up of three receivables: \$800 for Ducker Inc.; \$2,200 for Zest Inc.; and \$1,000 for Frank Corporation. Since the controlling account is a summary of the subledger, their balances must be identical. Subledgers allow details to be maintained in a separate record.

In a PPE subledger, an account would exist for each piece of land, each piece of machinery, each vehicle, and so on. The subledger account would include information regarding the date of purchase, cost, residual value, estimated useful life, depreciation, and other relevant information.

8.2 Depreciation

LO2 – Explain, calculate, and record depreciation using the units-of-production, straight-line, and double-declining balance methods.

The role of **depreciation** is to allocate the cost of a PPE 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. Regardless of depreciation method, there are three factors necessary to calculate depreciation:

- cost of the asset
- residual value
- estimated useful life or productive output

Residual value is the estimated worth of the asset at the end of its estimated useful life.

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.

Productive output is the amount of goods or services expected to be provided. For example, it may be measured in units of output, hours used, or miles driven.

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.

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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, 2015 with a \$2,000 residual value and estimated productive life of 10,000 units. If 1,500 units were produced during 2015, the depreciation expense for the year ended December 31, 2015 would be calculated using the following formula:

$$\frac{\text{Cost} - \text{Residual value}}{\text{Estimated units of output}} = \text{Depreciation per unit} \times \text{Number of units produced} = \text{Depreciation expense}$$

$$\frac{\$20,000 - \$2,000}{10,000 \text{ units}} = \$1.80 \text{ depreciation per unit} \times 1,500 \text{ units produced} = \$2,700 \text{ depreciation expense for 2015}$$

The following adjusting entry would be made on December 31, 2015:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Depreciation Expense E+ (SE)		2,700	
	Accumulated Depreciation XA+ (A) . . .			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** of the asset (cost less accumulated depreciation) on the December 31, 2015 balance sheet would be \$17,300 (\$20,000 - 2,700).

Note that the residual 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 (net book value) on the balance sheet.

If 2,000 units were produced during 2016, depreciation expense for that year would be \$3,600 (\$1.80 per unit × 2,000 units). At December 31, 2016, the following adjusting entry would be recorded:

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General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Depreciation Expense E+ (SE)		3,600	
	Accumulated Depreciation XA+ (A) . . .			3,600
	To record depreciation expense using the Units-of-Production method; $(\$20,000 - \$2,000)/10,000$ units = $\$1.80/\text{unit}$; $\$1.80/\text{unit} \times 2,000$ units = $\$3,600$.			

The carrying amount (or net book value) at December 31, 2016 would be \$13,700 ($\$20,000 - 2,700 - 3,600$). If the equipment produces 1,000 units in 2017, 2,500 units in 2018, and 3,000 units in 2019, depreciation expense and carrying amounts would be as follows each year:

<u>(a)</u>	<u>(b)</u>	<u>(c)</u>	<u>(d)</u>	<u>(e)</u>	<u>(f)</u>
Year	Carrying amount at start of year	Usage (units)	Rate	Dep'n expense	Carrying amount at end of year (b) – (e)
2015	\$20,000	1,500	\$1.80	\$2,700	\$17,300
2016	\$17,300	2,000	\$1.80	\$3,600	\$13,700
2017	\$13,700	1,000	\$1.80	\$1,800	\$11,900
2018	\$11,900	2,500	\$1.80	\$4,500	\$7,400
2019	\$7,400	3,000	\$1.80	\$5,400	\$2,000
		<u>10,000</u>		<u>\$18,000</u>	

If the equipment produces exactly 10,000 units over its useful life and is then retired, depreciation expense over all years will total \$18,000 ($10,000 \times \1.80) and the carrying amount will equal residual value of \$2,000.

It is unlikely that the equipment will produce exactly 10,000 units over its useful life. Assume instead that 4,800 units were produced in 2019. Depreciation expense and carrying amounts would be as follows each year:

(a)	(b)	(c)	(d)	(e)	(f)	
Year	Carrying amount at start of year	Usage (units)	Rate	Dep'n expense	Carrying amount at end of year (b) – (e)	
2015	\$20,000	1,500	\$1.80	\$2,700	\$17,300	
2016	17,300	2,000	1.80	3,600	13,700	
2017	13,700	1,000	1.80	1,800	11,900	
2018	11,900	2,500	1.80	4,500	7,400	
2019	7,400	4,800	1.80	5,400	2,000	Carrying amount (or net book value) cannot be less than residual value
		<u>11,800</u>		<u>\$18,000</u>		

Notice that the depreciation expense for 2019 is **not** \$8,640 (calculated as the 4,800 units x \$1.80/unit = \$8,640). The depreciation expense for 2019 cannot exceed \$5,400 because the remaining carrying amount must be equal to or greater than the residual value. In other words, the **maximum allowable accumulated depreciation** cannot exceed cost less residual. A PPE asset cannot be depreciated below its residual value.

Time-Based Depreciation Method – Straight-Line

The **straight-line method of depreciation** – introduced in Chapter 3 – 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 based on time – the asset's estimated useful life.

Straight-line depreciation is calculated as:

$$\frac{\text{Cost} - \text{Estimated residual value}}{\text{Estimated useful life in years}} = \text{Depreciation expense/year}$$

To demonstrate, assume the same \$20,000 piece of equipment used earlier, with an estimated useful life of five years and an estimated residual value of \$2,000. Straight-line depreciation would be \$3,600 per year calculated as:

$$\frac{\$20,000 - \$2,000}{5 \text{ years}} = \$3,600 \text{ depreciation expense/year}$$

Over the five-year useful life of the equipment, depreciation expense and carrying amounts will be as follows:

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(a)	(b)	(c)	(d)
Year	Carrying amount at start of year	Dep'n expense	Carrying amount at end of year (b) – (c)
2015	\$20,000	\$3,600	\$16,400
2016	16,400	3,600	12,800
2017	12,800	3,600	9,200
2018	9,200	3,600	5,600
2019	5,600	3,600	2,000
		\$18,000	

The carrying amount at December 31, 2019 will be the residual value of \$2,000 (\$20,000 – 18,000).

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 plant and equipment 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 year when it is new and efficient and declines significantly each year as it is used and becomes worn (such as 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. It is calculated as:

$$\text{Carrying Amount (or Net Book Value)} \times (2/n)$$

where n = estimated useful life. $2/n$ is the rate of depreciation and it remains constant over the asset's estimated useful life (unless there is a change in the useful life which is discussed in a later

section of this chapter). The DDB rate of depreciation can also be described as twice the straight-line rate. For example, if the straight-line rate of depreciation is 15%, the DDB rate will be 30% (calculated as $2 \times 15\%$).

To demonstrate DDB depreciation calculations, assume the same \$20,000 equipment with an estimated useful life of five years. The DDB rate of depreciation is calculated as $2/n = 2/5 = 0.40$ or 40%. Alternatively, given that we know the straight-line rate is 20%, doubling it is 40%.

The declining balance rate is applied to the carrying amount of the asset *without regard to residual value*. Regardless of which depreciation method is used, remember that the asset cannot be depreciated below its carrying amount (or net book value) which in this case is \$2,000. The DDB depreciation for the five years of the asset's useful life follows.

<u>(a)</u>	<u>(b)</u>	<u>(c)</u>	<u>(d)</u>	<u>(e)</u>
<i>Year</i>	<i>Carrying amount at start of year</i>	<i>DDB rate</i>	<i>Dep'n expense (b) x (c)</i>	<i>Carrying amount at end of year (b) - (d)</i>
2015	\$20,000	40%	\$8,000	\$12,000
2016	12,000	40%	4,800	7,200
2017	7,200	40%	2,880	4,320
2018	4,320	40%	1,728	2,592
2019	2,592	40%	592	2,000
			<u>\$18,000</u>	

Although for 2019 the depreciation expense would be calculated as \$1,037 ($\$2,592 \times 40\%$), only \$592 is recorded to bring the carrying amount of the asset down to its residual value of \$2,000.

At the end of five years, the carrying amount is once again equal to the residual value of \$2,000.

A comparison of the three depreciation methods is shown in Figure 8.1.

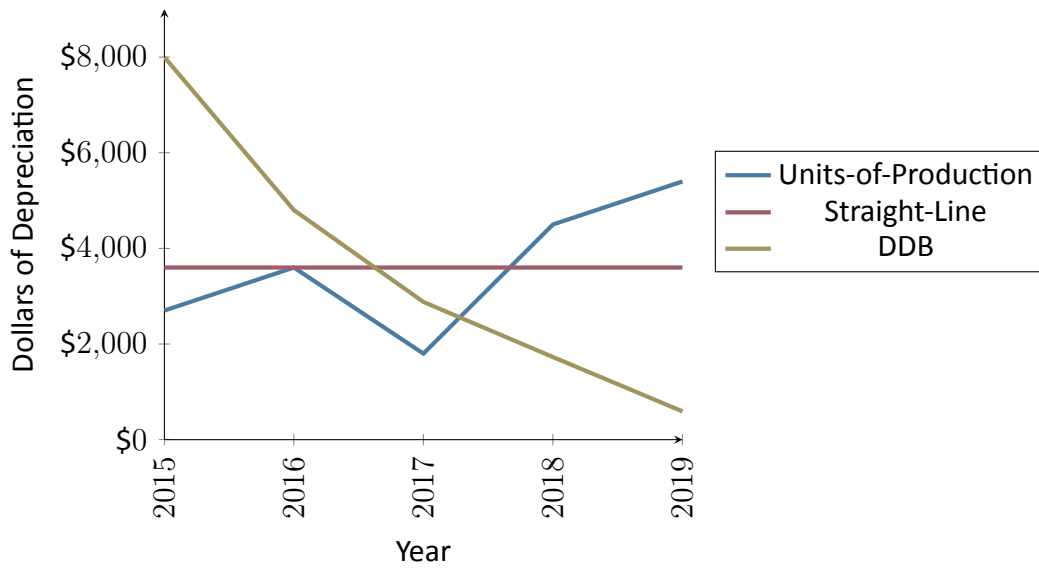


Figure 8.1: Comparing Three Depreciation Methods

8.3 Partial Year Depreciation

LO3 – Explain, 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. One is to calculate depreciation to the nearest whole month. Another, often called the **half-year convention**, states that, no matter when a fixed asset was purchased during the year, 6 months of depreciation is recorded in the first year and 6 months of depreciation is recorded in the final year. Many companies prefer to use the simplified half-year convention.

To demonstrate calculating depreciation to the nearest whole month, assume again that Big Dog Carworks Corp. purchases equipment for \$20,000 with an estimated useful life of five years and a residual value of \$2,000. Recall that depreciation expense for 2015 was \$3,600 using the straight-line method. Assume the asset was owned for only 8 months out of the 2015 year. Depreciation expense for 2015 would be \$2,400 ($\$3,600 \times 8/12$ months). Using the double-declining balance method, depreciation expense for 2015 would be \$5,333 ($\$20,000 \times .40 \times 8/12$ months). Recall the DDBM does not take into account the salvage value when calculating depreciation expense. Applying the half-year rule to the units-of-production depreciation for 2015, would result in no change because the method is usage-based and not time-based (presumably usage would be less if the asset is purchased partway through the year, so this depreciation method already takes this into account).

8.4 Revising Depreciation

LO4 – Explain, calculate, and record revised depreciation for subsequent capital expenditures.

Both the useful life and residual 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 example of the equipment purchased for \$20,000 on January 1, 2015, with an estimated useful life of five years and residual value of \$2,000. If the straight-line depreciation method is used, the yearly depreciation expense is \$3,600. After two years, the carrying amount at the end of 2016 is \$12,800 ($\$20,000 - 3,600 - 3,600$). Assume that on January 1, 2017, management estimates the remaining useful life of the equipment to be six years, and the residual value to be \$5,000.

Depreciation expense for the remaining six years would be calculated as:

$$\begin{aligned} & \frac{(\text{Remaining carrying amount} - \text{Revised residual value})}{\text{Estimated remaining useful life}} \\ &= \frac{(\$12,800 - 5,000)}{6 \text{ years}} \\ &= \$1,300 \text{ per year} \end{aligned}$$

Subsequent Capital Expenditures

As noted earlier, normal, recurring expenditures that relate to day-to-day servicing of depreciable assets are not capitalized, but rather are expensed when incurred. Oil changes and new tires for vehicles are examples of recurring expenditures that are expensed. Expenditures that are material, can be reliably measured, and enhance the future economic benefit provided by the asset, are added to the cost of the asset rather than being expensed when incurred.

To demonstrate the accounting for a subsequent capital expenditure, recall our original example where equipment was purchased on January 1, 2015 for \$20,000; the estimated useful life and residual value were five years and \$2,000, respectively. Assume that on January 4, 2016, a heat exchanger was added to the equipment that allowed it to produce a new product in addition to the existing product line. This \$12,000 addition, paid in cash, had an estimated life of ten years with no residual value. The useful life and residual value of the original equipment did not change as a result of the addition. The entry to record the addition on January 4 is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 4	Equipment – Heat Exchanger A+		12,000	
	Cash (A)			12,000
	To record the addition of a heat exchanger to the equipment.			

The entry to record revised depreciation on December 31, 2016 is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Depreciation Expense - Equipment E+ (SE)		4,800	
	Accumulated Depreciation - Equipment XA+ (A)			4,800
	To record revised straight-line depreciation; $(\$20,000 - \$2,000)/5 \text{ years} = \$3,600/\text{year}$; $(\$12,000 - \$0)/10 \text{ years} = \$1,200/\text{year}$; $\$3,600 + \$1,200 = \$4,800$.			

8.5 Impairment of Long-lived Assets

LO5 – Explain, calculate, and record the impairment of long-lived assets.

Under generally accepted accounting principles, management must perform two steps to investigate the possible impairment of an asset. The tests should be performed when circumstances indicate that the asset's carrying amount may not be recoverable. Step 1 is to test for **impairment**. The asset may be impaired if events or circumstances indicate that the asset is not expected to generate sufficient cash flows that are, at a minimum, equal to its carrying amount (carrying amount > estimated future cash flows). If this is the case the asset would be considered impaired. Step 2 calculate the impairment loss (carrying amount of the asset less fair value of the asset). The difference between the carrying amount and the **fair value** (market price) of the asset is recognized as the loss and the asset is written down to fair value.

An impairment loss may occur because of a variety of reasons such as technological obsolescence, an economic downturn, or a physical disaster. When an impairment is recorded, subsequent years' depreciation expense must also be revised.

Recall again our \$20,000 equipment purchased January 1, 2015 with an estimated useful life of five years and a residual value of \$2,000. Assume straight-line depreciation has been recorded for 2015 and 2016 at \$3,600 per year. At December 31, 2016, the carrying amount of the equipment is \$12,800 (\$20,000 – 3,600 – 3,600). At that point management determines that the equipment has an estimated future cash flow of \$8,000 and is impaired. The fair value of the equipment at December 31, 2016 is estimated to be \$7,000. Because the fair value is less than its carrying amount of \$12,800, an impairment loss of \$5,800 (\$12,800 – 7,000) is recorded in the accounting records of BDCC as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Impairment Loss E+ (SE)		5,800	
	Equipment (A)			5,800
	To record impairment loss on equipment.			

This reduces the carrying amount of the equipment to \$7,000 so that revised depreciation expense of \$1,667 per year would be recorded at the end of 2017, 2018, and 2019, calculated as follows (assume no change to original useful life and residual value):

$$\frac{(\text{Revised carrying amount} - \text{Revised residual value})}{\text{Remaining useful life}} \\ = \frac{(\$7,000 - \$2,000)}{3 \text{ years remaining useful life}} \\ = \$1,667 \text{ per year}$$

Impairment losses cannot be reversed under U.S. GAAP.

8.6 Derecognition of Property, Plant, and Equipment

LO6 – Account for the derecognition of PPE assets.

Property, Plant, and Equipment is *derecognized* (that is, the cost and any related accumulated depreciation are removed from the accounting records) when it is sold or when no future economic benefit is expected. To account for the disposal of a PPE 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

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Depreciation Expense E+ (SE)		XXX	
	Accumulated Depreciation XA+ (A) . . .			XXX
	To update depreciation for partial period.			

2. Record the disposal including any resulting gain or loss by

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash (if any, or other assets received) A+ .		XXX	
	Accumulated Depreciation (XA) A+		XXX	
	Loss on Disposal E+ (SE)		XXX	
	OR Gain on Disposal R+ SE+			XXX
	PPE Asset (such as Equipment) (A)			XXX
	To record disposal of PPE 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.

Sale or Retirement of PPE

When a PPE asset has reached the end of its useful life it can be either sold or retired. In either case, 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 or retirement.

Recall the calculation of straight-line depreciation for the equipment purchased for \$20,000 with an estimated useful life of five years and a residual value of \$2,000. Assume that the general ledger T-accounts of equipment and accumulated depreciation contain the following entries for the last five years:

Equipment		Accumulated Depreciation Equipment	
2015	20,000	2015	3,600
		2016	3,600
		2017	3,600
		2018	3,600
		2019	3,600
			18,000

Assume that the equipment is sold at the end of 2019, when accumulated depreciation totals \$18,000. The carrying amount at this date is \$2,000 (\$20,000 cost – \$18,000 accumulated depreciation). Three different situations are possible.

1. Sale at carrying amount

Assume the equipment is sold for its residual value of \$2,000. No gain or loss on disposal would occur.

Cost	\$	20,000
Accumulated depreciation		(18,000)
Carrying amount		2,000
Proceeds of disposition		(2,000)
Gain or loss on disposal	\$	-0-

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Cash A+		2,000	
	Accumulated Dep. – Equipment (XA) A+ ..		18,000	
	Equipment (A)			20,000
	To record the disposal of equipment sold for \$2,000 cash.			

2. Sale above carrying amount

Assume the equipment is sold for \$3,000. A gain of \$1,000 would occur.

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Cost	\$	20,000
Accumulated depreciation		(18,000)
Carrying amount		<u>2,000</u>
Proceeds of disposition		(3,000)
Gain on disposal	\$	<u><u>(1,000)</u></u>

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Cash A+		3,000	
	Accumulated Dep. – Equipment (XA) A+ ..		18,000	
	Gain on Disposal R+ SE+			1,000
	Equipment (A)			20,000
	To record the disposal of equipment sold for \$3,000 cash.			

3. Sale below carrying amount

Assume the equipment is sold for \$500. A loss on disposal of \$1,500 would occur.

Cost	\$	20,000
Accumulated depreciation		(18,000)
Carrying amount		<u>2,000</u>
Proceeds of disposition		(500)
Loss on disposal	\$	<u><u>1,500</u></u>

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Cash A+		500	
	Accumulated Dep. – Equipment (XA) A+ ..		18,000	
	Loss on Disposal E+ (SE)		1,500	
	Equipment (A)			20,000
	To record the disposal of equipment sold for \$500 cash.			

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.

Disposal Involving Trade-In

It is a common practice to exchange a used PPE asset for a new one. This is known as a **trade-in**. The value of the trade-in agreed by the purchaser and seller is called the **trade-in allowance**. This amount is applied to the purchase price of the new asset, and the purchaser pays the difference.

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For instance, if the cost of a new asset is \$10,000 and a trade-in allowance of \$6,000 is given for the old asset, the purchaser will pay \$4,000 (\$10,000 – 6,000).

Sometimes as an inducement to the purchaser, the trade-in allowance is higher than the fair value of the used asset on the open market. Regardless, the cost of the new asset must be recorded at its fair value, calculated as follows:

$$\text{Cost of new asset} = \text{Cash paid} + \text{Fair value of asset traded}$$

If there is a difference between the fair value of the old asset and its carrying value, a gain or loss results. For example, assume again that equipment was purchased by BDCC for \$20,000 and has accumulated depreciation of \$18,000 at the end of 2019. It is traded on January 1, 2020 for new equipment with a list price of \$25,000. A trade-in allowance of \$2,500 is given on the old equipment, which has a fair value of only \$1,800. In this case, the cost of the new asset is calculated as follows:

$$\begin{array}{rclcl} \text{Cash paid} & + & \text{Fair value of asset traded} & = & \text{Cost of new asset} \\ \$22,500 & + & 1,800 & = & \$24,300 \end{array}$$

Cash paid will equal the difference between the selling price of the new equipment less the trade-in allowance, or \$22,500 (\$25,000 - 2,500). The fair value of the asset traded-in is \$1,800. The cost of the new asset is therefore \$24,300 (\$22,500 + 1,800). There will be a loss on disposal of \$200 on the old equipment, calculated as follows:

Cost	\$	20,000
Accumulated depreciation		(18,000)
Carrying amount		2,000
Fair value		(1,800)
Loss on disposal	\$	200

The journal entry on January 1, 2020 to record the purchase of the new equipment and trade-in of the old equipment is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1	Equipment (new) A+		24,300	
	Accumulated Dep. – Equipment (old) (XA)		18,000	
	A+			
	Loss on Disposal E+ (SE)		200	
	Equipment (old) (A)			20,000
	Cash (A)			22,500
	To record trade-in.			

It's important to note that the gain/loss on sale is the difference between the carrying amount of the old asset and the fair value of the old asset. The amount of cash given or received in these trade-in transactions has no effect on the amount of gain or loss recognized. The cash that is given or received only supports equalizing the fair value of the assets exchanged. By this entry, the cost of the new equipment (\$24,300) is entered into the accounts, the accumulated depreciation and cost of the old equipment is removed from the accounts, and the amount of cash paid is recorded. The debit difference of \$200 represents the loss on disposal of the old equipment. It's important to note that the gain/loss on sale is the difference between the carrying amount of the old asset and the fair value of the old asset. The amount of cash given or received in these trade-in transactions has no effect on the amount of gain or loss recognized. The cash that is given or received only supports equalizing the fair value of the assets exchanged.

8.7 Intangible Assets

LO7 – Explain and record the acquisition and amortization of intangible assets.

Another major category of long-lived assets that arises from legal rights and does not have physical substance is that of **intangible assets**. Intangible assets are not recorded unless they have been purchased. Normally, purchased 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.

Intangible assets are further categorized as having a **definite life** such as patents, copyrights, and software, or an **indefinite life** such as trademarks and goodwill. The cost of purchased intangible assets with a definite life are allocated on a straight-line basis over the **economic life** (time useful to the owner) or **legal life** (determined by law) of the asset (whichever is shorter). This process is called **amortization** and is similar to the depreciation of fixed assets.

The cost of purchased indefinite life assets are not amortized but are tested annually for impairment. However, annual testing can be avoided by doing a qualitative analysis first to determine if annual testing is necessary. Based on an assessment of relevant events and circumstances if the likelihood is more than 50% that impairment has occurred the impairment testing process should continue. If testing is deemed necessary the difference between the carrying amount and the fair value the intangible asset will determine if an impairment loss has occurred.

Patents

A **patent** is an intangible asset that is granted when a company has an exclusive legal privilege to produce and sell a product or use a process for a 20 year period. This right is granted by the U.S. Patent Office.

If purchased from an inventor, the patent's cost is capitalized for the initial amount paid. The capitalized costs may include legal and filing fees paid in order to secure the rights to the patent. If the patent is developed internally, the research and development costs are expensed as incurred. However, even when the patent is developed internally, the legal and filing fees paid in order to secure the rights to the patent are capitalized.

Copyrights

A **copyright** is another intangible asset that confers on the holder an exclusive legal privilege to publish a literary or artistic work. Copyrights are protected by law and give the creator control over a published or artistic work for the life of the creator plus 70 years. Accounting for the costs of copyrights is identical to patents.

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. Costs to formulate and design computer software programs are expensed when incurred as research and development costs until **technological feasibility** has been established. Technological feasibility is established "when the entity has completed all planning, designing, coding, and testing activities that are necessary to establish that the product can be produced to meet its design specifications ...". The topic of how to account for software developed for internal use vs external use becomes quite complex and is beyond the scope of this text.

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. Many retail businesses such as motels, fast food businesses, and automobile dealerships are franchises. In addition to the payment of an initial franchise fee, which is capitalized, a franchise agreement usually requires annual payments. These

payments are considered revenue expenditures. Franchises can be considered definite or indefinite depending on the terms of the franchise contract.

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 agency. The symbol ‘®’ denotes that a trademark is registered. Trademarks are registered through the U.S. Patent office and are protected for 10 years. They can be renewed indefinitely and are therefore categorized as an indefinite intangible asset. However, you will rarely see a trademark on the balance sheet because trademarks are typically internally developed and the costs are expensed as incurred.

Amortization of Intangible Assets

Plant and equipment assets are depreciated. Recall from above, intangible assets are also depreciated but the term used is amortization instead of depreciation. Like PPE considerations, useful life and residual value of intangible assets are estimated by management and must be reviewed annually for reasonableness. Any effects on amortization expense because of changes in estimates are accounted for prospectively. That is, prior accounting periods’ expenses are not changed.

To demonstrate the accounting for intangibles, assume a patent is purchased for \$20,000 on July 1, 2015. The entry to record the purchase is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
July 1	Patent A+		20,000	
	Cash (A)			20,000
	To record the purchase of a patent, an intangible asset.			

The patent will last 20 years with no residual value, and amortization is calculated to the nearest whole month, amortization expense will be recorded at the December 31, 2015 year end as:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Amortization Expense - Patent E+ (SE)		500	
	Accumulated Amortization - Patent XA+ (A)			500
	To record amortization on the patent; (\$20,000 - 0)/20 years = \$1,000/year; \$1,000 x 6/12 = \$500.			

Notice that an accumulated amortization account is credited and not accumulated depreciation.

Impairment losses, and gains and losses on disposal of intangible assets, are calculated and recorded in the same manner as for property, plant, and equipment.

8.8 Goodwill

LO8—Explain goodwill and identify where on the balance sheet 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 purchased assets consist of the following:

Patents	\$2M
Machinery	\$7M
Total	<u>\$9M</u>

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, and represents the value of the purchasee's ability to generate superior earnings compared to other companies in the same industry.

For accounting purposes, goodwill is defined as the difference between the purchase price of an entire company and the fair value of the company's net assets. Goodwill is a residual intangible asset that can only be valued after all the other assets of the company have been identified and valued.

Goodwill is a unique intangible asset because its cost doesn't point to a specific legal right and it can't be separated from the company. Goodwill arises from a company's reputation, favorable business location, clientele, specially trained employees and management, and other unique attributes that a company can't tie to a specific asset. Goodwill appears in the asset section of the balance sheet under its own heading of "Goodwill" but only if it was obtained by purchasing another company. Internally developed Goodwill will not appear on a company balance sheet.

A more detailed discussion of goodwill is an advanced accounting topic and beyond the scope of this textbook.

8.9 Disclosure

LO9 – 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 following more common elements need to be disclosed:

- *Accumulated depreciation.* The balances in each of the major classes of fixed assets as of the end of the reporting period.
- *Asset aggregation.* The balances in each of the major classes of fixed assets as of the end of the reporting period.
- *Depreciation expense.* The amount of depreciation charged to expense in the reporting period.
- *Depreciation methods.* A description of the methods used to depreciate assets in the major asset classifications.

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 8 Learning Objectives

L01 – Describe how the cost of property, plant, and equipment (PPE) is determined, and calculate PPE.

Property, plant and equipment (PPE) are tangible, long-lived assets that are acquired for the purpose of generating revenue either directly or indirectly. A capital expenditure is debited to a PPE asset account because it results in the acquisition of a non-current asset and includes any additional costs involved in preparing the asset for its intended use at or after initial acquisition. A revenue expenditure that does not have a future benefit beyond one year is expensed when incurred. The details regarding a PPE asset are maintained in a PPE subsidiary ledger.

L02 – Explain, calculate, and record depreciation using the units-of-production, straight-line, and double-declining balance methods.

Depreciation, an application of the matching principle, allocates the cost of a PPE asset (except land) over the accounting periods expected to receive benefits from its use. A PPE asset's cost, residual 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 depreciation using these methods are:

Units-of-Production	Straight-Line	Double-Declining Balance
$\frac{\text{Cost} - \text{Estimated Residual Value}}{\text{Estimated Total Units of Production}}$	$\frac{\text{Cost} - \text{Estimated Residual Value}}{\text{Estimated Total Useful Life}}$	$\text{Carrying Amount} \times 2/n$ where $n = \text{estimated useful life}$
= Depreciation Expense/Unit	= Depreciation Expense/Period	= Depreciation Expense/Period

Maximum accumulated depreciation is equal to cost less residual. The carrying amount of a PPE asset, also known as the net book value, equals the cost less accumulated depreciation.

L03 – Explain, calculate, and record depreciation for partial years.

When assets are acquired or derecognized partway through the accounting period, partial period depreciation is recorded. There are several ways to account for partial period depreciation. Two common approaches are to calculate depreciation to the nearest whole month or to apply the half-year convention. The half-year convention assumes six months of depreciation in the year of acquisition and year of derecognition regardless of the actual date these occurred.

L04 – Explain, calculate, and record revised depreciation for subsequent capital expenditures.

When there is a change that impacts depreciation (such as a change in the estimated useful life or estimated residual value, or a subsequent capital expenditure) revised depreciation is calculated prospectively. It is calculated as:

$$\frac{\text{Remaining Carrying Amount} - \text{Estimated Residual Value}^*}{\text{Estimated Remaining Useful Life}^*}$$

* where the residual value and/or useful life may have changed

L05 – Explain, calculate, and record the impairment of long-lived assets.

Two steps are performed to investigate the possible impairment of an asset. Step 1 is to test for **impairment**. The asset may be impaired if events or circumstances indicate that the asset is not expected to generate sufficient cash flows that are, at a minimum, equal to its carrying amount (carrying amount > estimated future cash flows). If this is the case the asset is considered to be impaired. Step 2 calculate the impairment loss (carrying amount of the asset less fair value of the asset). The difference between the carrying amount and the fair value (market price) of the asset is recognized as the loss and the asset is written down to fair value.

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Impairment Loss E+ (SE)		XXX	
	Equipment (A)			XXX
	To record impairment loss.			

Impairment losses cannot be reversed under U.S. GAAP.

L06 – Account for the derecognition of PPE assets.

Property, plant, and equipment is *derecognized* (that is, the cost and any related accumulated depreciation are removed from the accounting records) when it is sold or when no future economic benefit is expected. To account for the disposal of a PPE 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

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Depreciation Expense E+ (SE)		XXX	
	Accumulated Depreciation XA+ (A) ...			XXX
	To update depreciation for partial period.			

2. Record the disposal including any resulting gain or loss by

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash (if any, or other assets received) A+ .		XXX	
	Accumulated Depreciation (XA) A+		XXX	
	Loss on Disposal E+ (SE)		XXX	
	OR Gain on Disposal R+ SE+			XXX
	PPE Asset (such as Equipment) (A)			XXX
	To record disposal of PPE 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.

It is a common practice to exchange a used PPE asset for a new one, known as a **trade-in**. The value of the trade-in is called the **trade-in allowance** and is applied to the purchase price of the new asset so that the purchaser pays the difference. Sometimes the trade-in allowance is higher than the fair value of the used asset. The cost of the new asset must be recorded at its fair value, calculated as:

$$\text{Cost of new asset} = \text{Cash paid} + \text{Fair value of asset traded}$$

If there is a difference between the fair value of the old asset and its carrying value, a gain or loss results.

L07 – 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. Intangible assets are further categorized as having a **definite life** such as patents, copyrights, and software, or an indefinite life such as trademarks and goodwill. The cost of purchased intangible assets with a definite life are allocated on a straight-line basis over the economic or legal life of the asset (whichever is shorter). This process is called **amortization** and is similar to the depreciation of fixed assets. The entry to record amortization is a debit to amortization expense and a credit to either the intangible asset or to an accumulated amortization account. The cost of purchased indefinite life assets are not amortized but are tested annually for impairment.

Intangibles are amortized using various methods. The entry to record amortization is a debit to amortization expense and a credit to either the intangible asset or to an accumulated amortization account.

L08 – Explain goodwill and identify where on the balance sheet it is reported.

When one company buys another company, goodwill is the excess paid over the fair value of the net assets purchased and represents the value of the purchasee's ability to generate superior earnings compared to other companies in the same industry. Goodwill is a unique intangible asset because its cost doesn't point to a specific legal right and it can't be separated from the company. Goodwill arises from a company's reputation, favorable business location, clientele, specially trained employees and management, and other unique attributes that a company can't tie to a specific asset. Goodwill appears in the asset section of the balance sheet under its own

heading of “Goodwill” but only if it was obtained by purchasing another company. Internally developed Goodwill will not appear on a company balance sheet.

L09 – 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:

- *Accumulated depreciation.* The balances in each of the major classes of fixed assets as of the end of the reporting period.
- *Asset aggregation.* The balances in each of the major classes of fixed assets as of the end of the reporting period.
- *Depreciation expense.* The amount of depreciation charged to expense in the reporting period.
- *Depreciation methods.* A description of the methods used to depreciate assets in the major asset classifications.

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. Assume that you have recently purchased a new sports car. Is a usage or a time-based method preferable for recording depreciation? Why?
10. Why is residual value ignored when depreciation is calculated using the declining balance method but not the straight-line method? Is this inconsistent? Why or why not?
11. What is the formula for calculating the declining balance method of depreciation? ...the straight-line method?
12. What is the double-declining balance rate of depreciation for an asset that is expected to have a ten-year useful life?
13. Explain two types of partial-year depreciation methods.
14. 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.
15. Explain the effect on the calculation of depreciation expense for capital expenditures made subsequent to the initial purchase of plant or equipment.
16. Explain the process for determining whether the value of a long-lived asset has been impaired, and the required adjustments to the accounting records.
17. Your friend is concerned that the calculation of depreciation and amortization relies too much on the use of estimates. Your friend believes that accounting should be precise. Do you agree that the use of estimates makes accounting imprecise? Why or why not?
18. What is a lump sum purchase and how are the costs allocated?
19. When does the disposal of PPE not result in a gain or loss?
20. What is a trade-in? Explain how a trade-in impacts the recording of a gain or loss on sale.
21. Why might a trade-in allowance, particularly in the case of a car, be unrealistic? Why would a dealer give more trade-in allowance on a used car than it is worth?
22. How is the cost of a new capital asset calculated when a trade-in is involved?
23. How are intangible assets different from property, plant, and equipment? the same?
24. What is a patent? Does a patent's useful life correspond to its legal life? Why or why not? Support your answer with an example.
25. How does a copyright differ from a trademark? Give an example of each.

26. What is goodwill? Why is a company's internally-generated goodwill usually not recorded in its accounting records?
27. How are intangible assets valued, and what are their financial statement disclosure requirements?

Exercises

EXERCISE 8–1 (LO1)

For all expenditures, accountants identify them as either capital or revenue expenditures. The entries for such transactions can be made to any one of the following accounts:

Capital expenditures are recorded in an asset account on the balance sheet such as:

- a. Land
- b. Buildings
- c. Equipment
- d. Trucks
- e. Automobiles

Revenue expenditures are recorded in an income statement account:

- f. An expense account

Required: For each transaction below, indicate the account to be adjusted. Assume all expenditures are material in amount. Explain your answers.

Example:

- b Architect fees to design building.
- Battery purchased for truck.
- 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 new equipment and getting it ready for use.
- Installation of air-conditioner in automobile.
- Insurance paid during construction of building.
- Legal fees associated with purchase of land.

_____	Oil change for truck.
_____	Payment for landscaping.
_____	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 engine in automobile.
_____	Special floor foundations for installation of new equipment.
_____	Tires purchased for truck.
_____	Transportation expenditures to bring newly purchased equipment to plant.

EXERCISE 8–2 (LO1)

Glasgo Holdings Inc. purchased a property including land and a building for \$300,000. The market values of the land and building were \$100,000 and \$300,000, respectively.

Required: Using these market values, prepare a journal entry to record the lump sum purchase.

EXERCISE 8–3 (LO1,2)

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 \$3,575. The company expects it to have a useful life of five years, with an estimated residual value of \$250. Ekman is paying the delivery costs of \$100 along with the set-up and debugging costs of \$350.

Required:

- a. Calculate the total cost of the laser printer.
- b. 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.

EXERCISE 8–4 (LO2)

Willow Inc. began a business on January 1, 2019. It purchased equipment for its factory on this date for \$240,000. The equipment is expected to have an estimated useful life of five years with a residual value of \$40,000. Willow's year-end is December 31.

Required: Compute the depreciation for 2019, 2020, 2021, 2022 and 2023 using

- a. The straight-line method
 - b. The double-declining balance method.
-

EXERCISE 8–5 (LO2)

Mayr Inc. began a business on January 1, 2019. It purchased a machine for its factory on this date for \$110,000. The machine is expected to have an estimated useful life of four years with a residual value of \$40,000.

Required: Compute the depreciation for 2019, 2020, 2021, and 2022 using

- a. The straight-line method
 - b. The double-declining balance method.
-

EXERCISE 8–6 (LO2,3)

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 miles. Estimated residual value was \$5,000. The car was driven 120,000 miles. in 2019 and 150,000 miles. in 2020. Penny Corp.'s year end is December 31.

Required:

- a. Applying the half-year rule, calculate depreciation for 2019 and 2020 using
 - i. The straight-line method
 - ii. Units-of-production method
 - iii. Double-declining-balance method
- b. Assuming Penny Corp. calculates depreciation to the nearest whole month, determine depreciation for 2019 and 2020 using

- i. The straight-line method
 - ii. Units-of-production method
 - iii. Double-declining-balance method
-

EXERCISE 8–7 (LO4)

Global Flow Inc. purchased machinery on January 1, 2019 for \$60,000 cash. It had an estimated useful life of three years, with no residual value, and depreciation is calculated using the straight-line method. During 2021, Global Flow determined that the estimated useful life should be revised to a total of five years and the residual value changed to \$10,000.

Required: Prepare the entry to record revised depreciation for the year ended December 31, 2021.

EXERCISE 8–8 (LO4)

Denton Inc. purchased machinery on January 1, 2019 for \$140,000 cash. It had an estimated useful life of five years and no residual value. On January 1, 2020, Denton purchased a specialized component for \$50,000 that was attached to the machinery to significantly increase its productivity. The estimated useful life of the component was four years with no residual value. The life and residual value of the original machinery was not affected by the new component.

Required:

- a. Prepare the entry to record depreciation for the year ended December 31, 2019.
 - b. Prepare the entry to record revised depreciation for the year ended December 31, 2020.
-

EXERCISE 8–9 (LO5)

As part of its December 31, 2019 year end procedures, Beltore Inc. is evaluating its assets for impairment. It has recorded no impairment losses for previous years. Following is the Property, Plant and Equipment schedule showing adjusted balances as at December 31, 2019:

330 ■ Long-lived Assets

Asset	Date of Purchase	Depr. Method	Cost	Estim. Residual	Estim. Useful life	Accum. Depn.	Estim. Future Cash Flows	Fair Market Value
Land	Sept. 1/2018	N/A	\$100,000	N/A	N/A	N/A	\$120,000	\$115,000
Building	Dec. 1/2018	SL	\$890,000	\$250,000	20	\$34,667	\$895,000	\$870,000
Machinery	Dec. 1/2018	SL	\$400,000	\$0	10	\$40,000	\$330,000	\$337,083

DDB = Double-declining-balance; SL = Straight-line; U = Units-of-production; N/A = Not applicable

Required:

- a. Record any impairment losses at December 31, 2019.
- b. Record depreciation expense for the year ended December 31, 2020 assuming no changes in the estimated residual values or estimated useful lives of the assets.

EXERCISE 8–10 (LO6)

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 exchange.

Required:

- a. Prepare the journal entry on the books of
 - i. Freeman
 - ii. the developer.
- b. 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?

EXERCISE 8–11 (LO6)

Mayr Inc. showed the following selected adjusted trial balance information at June 30, 2019:

	<u>Debits</u>	<u>Credits</u>
Equipment	\$60,000	
Accumulated Depreciation – Equipment		\$40,000

Required: Mayr Inc. is planning on selling the equipment. Using the information provided above, prepare the journal entry to record the sale assuming

- a. The equipment was sold for \$20,000.
- b. The equipment was sold for \$30,000.
- c. The equipment was sold for \$5,000.

EXERCISE 8–12 (LO7)

On March 1, 2019, Willis Publishing purchased the copyright from the author of a new book for cash of \$50,000. It is expected that the book will have a shelf life of about 5 years with no expected residual value. On October 1, 2021, Willis sold the copyright to a movie producer for \$100,000. Willis Publishing uses the straight-line method to amortize copyrights.

Required: Prepare Willis Publishing's journal entries at

- a. March 1, 2019 to record the purchase of the copyright.
- b. December 31, 2019, Willis's year-end, to record amortization of the copyright.
- c. October 1, 2021.

Problems

PROBLEM 8–1 (LO1)

Arrow Construction Company Ltd. purchased a farm from K. Jones. Arrow and Jones completed the transaction under the following terms: a check 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, to be moved by the buyer, was sold for \$1,600; barns were razed at a cost of \$6,000, while 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.

PROBLEM 8–2 (LO2)

On January 1, 2017, Beyond Adventures Ltd. purchased a safari jeep for use in their wilderness weekends. The following information is available.

Cost	\$30,000
Estimated useful life	6 years or 80,000 miles
Residual value	\$8,000
Mileage in 2017	15,000 miles

Required:

- Assuming that the company depreciates on the basis of 50% each in the years of acquisition and disposal, calculate the depreciation for 2018 under each of the methods below. Round your final answer to nearest whole dollar.
 - Usage based (Units of Production)
 - Straight-line

- (c) Double-declining balance – round percentage to two decimal places.
2. Compare the carrying amount for 2017 under each of these methods.
 3. Which of the three methods results in the lowest net income for 2017?
 4. Which of the three methods results in the lowest net income for 2018 if 25,000 miles were driven?

PROBLEM 8–3 (LO2,6)

Janz Corporation purchased a piece of machinery on January 1, 2019. The company's year-end is December 31. The following information is available regarding the machinery:

<i>Cost</i>	<i>Estim. Useful Life</i>	<i>Estim. Residual Value</i>	<i>Depn. Method</i>
<u>\$95,000</u>	<u>9,000 units</u>	<u>\$5,000</u>	<u>Units-of-Production</u>

Assume actual output was:

	<i>Actual Units Produced</i>
<i>Year</i>	<u> </u>
2019	2,000
2020	3,000
2021	2,800
2022	2,900

The machinery was sold on January 15, 2023 for \$12,000.

Required:

1. Calculate the depreciation expense for each of 2019 through to 2022 inclusive.
2. What is the balance of accumulated depreciation at the end of 2022?
3. What is the carrying amount of the machinery shown on the balance sheet at the end of 2022?
4. Prepare the entry on January 15, 2023 to record the sale of the machinery.

PROBLEM 8–4 (LO1,2,4)

The following are details about an equipment purchase on January 1, 2017:

Purchase price	\$35,000
Transportation charges	1,200
Installation costs	5,700
Minor repair cost	100
Useful life	four years
Residual value	\$8,000

Required:

1. Calculate the total cost of the equipment asset.
2. Record the depreciation for each year of the expected useful life of the machine under straight-line method and double-declining balance method. Year-end is Dec 31.
3. Assume now that on January 1, 2020, management changed the estimated useful life on the machine to a total of five years from the date of purchase. Residual value was also changed to \$2,000. Calculate the depreciation that should be recorded in 2020 and each year thereafter assuming the company used the straight-line method.

Round all final answers to the nearest whole dollar.

PROBLEM 8–5 (LO4,6)

On January 1, 2011, Inceptor Ltd. purchased equipment for \$115,000. The estimated useful life was thirty years. The residual value was estimated to be 15 per cent of the original cost. On January 1, 2018, experts were hired to review the expected useful life and residual value of the machine. They determined that the estimated useful life remaining was fifteen years and the new residual value was \$18,000.

Depreciation has not yet been recorded in 2018. The company uses straight-line method of depreciation and the policy is to depreciate 50% each in the years of acquisition and disposal.

Required:

1. Calculate the carrying amount of the machine at December 31, 2017.
2. Calculate and record the depreciation expense at December 31, 2018.
3. Record the journal entries if the machine is sold on July 31, 2019 for \$80,000.

PROBLEM 8–6 (LO4,6)

On August 1, 2014 Mayfere Co. commenced business and purchased production equipment for \$250,000 cash. The equipment had an estimated useful life of eight years, an estimated total production output of 200,000 units, and a residual value of \$40,000. The equipment was depreciated using the units-of-production method. Actual units of output over three years were: 2014: 11,000; 2015: 25,000; and 2016: 35,000.

On January 1, 2017, the company traded in the original equipment for new production equipment. The company paid an additional \$30,000 cash for the new equipment. The fair value of the original equipment was \$140,000 at the date of the trade.

Required: Prepare journal entries to record the transactions for:

1. The equipment purchase
2. Depreciation for 2014, 2015 and 2016
3. The sale of the equipment

PROBLEM 8–7 (LO7,8,9)

Teldor Ltd. paid \$1M cash to purchase the following tangible and intangible assets of Zak Company on January 1, 2018. The fair values of the assets purchased were:

Land	\$150,000
Building	400,000
Patents	200,000
Machinery	150,000

The patents have an estimated useful life of twenty years and are amortized on a straight-line basis. They have no residual value. On January 3, 2020, the value of the patents was estimated to be \$165,000.

Required: Record the entries for the following transactions for Teldor:

1. The \$900,000 purchase.
2. The decline in value of the patents at January 3, 2020.
3. The amortization of the patents at December 31, 2020.
4. Prepare a partial balance sheet for the intangible assets section at December 31, 2020 in good form, with proper disclosures.

PROBLEM 8–8 (LO1,2)

Global Flow Inc. purchased a computer on January 1, 2018 for \$3,000 cash. It had an estimated useful life of three years and no residual value. Global Flow made the following changes to the computer:

- Mar 1, 2018 Added storage capacity at a cost of \$1,000. This had no effect on residual value or estimated useful life.
- Apr 1, 2019 Added a new processing board for \$2,000, which extended the estimated useful life of the computer another three years but did not affect residual 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 2018 and 2019 using the double-declining balance method. Assume a December 31 fiscal year-end and that the company depreciates 50% each in the acquisition and disposal years.

Chapter 9

Debt Financing: Current and Long-term Liabilities

A corporation often has liabilities. These liabilities must be classified on the balance sheet as current or long-term. Current liabilities can include known liabilities such as payroll liabilities, interest payable, and other accrued liabilities. Short-term notes payable and estimated liabilities, including warranties and income taxes, are also classified as current. Long-term debt is used to finance operations and may include a bond issue or long-term bank loan.

Chapter 9 Learning Objectives

LO1 – Identify and explain current versus long-term liabilities.

LO2 – Record and disclose known current liabilities.

LO3 – Record and disclose estimated current liabilities.

LO4 – Identify, describe, and record bonds.

LO5 – Explain, calculate, and record long-term loans.

Concept Self-Check

Use the following as a self-check while working through Chapter 9.

1. What is the difference between a current and long-term liability?
2. What are some examples of known current liabilities?
3. How are known current liabilities different from estimated current liabilities?
4. What are some examples of estimated current liabilities?
5. How is an estimated current liability different from a contingent liability?
6. What are bonds, and what rights are attached to bond certificates?
7. What are some characteristics of bonds?

8. When a bond is issued at a premium, is the market interest rate higher or lower than the contract interest rate on the bond?
9. When a bond is issued at a discount, is the market interest rate higher or lower than the contract interest rate on the bond?
10. How are bonds and related premiums or discounts recorded in the accounting records and disclosed on the balance sheet?
11. How is a loan payable similar to a bond issue? How is it different?
12. How are payments on a loan recorded, and how is a loan payable presented on the balance sheet?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

9.1 Current versus Long-term Liabilities

LO1 – Identify and explain current versus long-term liabilities.

Current or short-term liabilities are 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. Examples include accounts payable, wages or salaries payable, unearned revenues, short-term notes payable, and the current portion of long-term debt.

Long-term liabilities are forms of debt expected to be paid beyond one year of the balance sheet date or the next operating cycle, whichever is longer. Mortgages, long-term bank loans, and bonds payable are examples of long-term liabilities.

Current and long-term liabilities must be shown separately on the balance sheet. For example, assume the following adjusted trial balance at December 31, 2015 for Waterton Inc.:

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Waterton Inc.
Adjusted Trial Balance
December 31, 2015

<i>Account</i>	<i>Debits</i>	<i>Credits</i>
Cash	\$ 80,000	
Accounts receivable	140,000	
Equipment	570,000	
Accumulated depreciation – equipment		\$ 40,000
Accounts payable		39,000
Unearned revenue		15,000
Wages payable		7,000
Notes payable, due November 30, 2016		20,000
Notes payable, due March 31, 2018		75,000
Mortgage payable (Note 1)		115,797
Common stock		300,000
Retained earnings		178,203
	\$790,000	\$790,000

Note 1: A 4-year, 6%, \$150,000 mortgage was dated January 1, 2015. Waterton makes monthly payments of \$3,523. The principal balances at the end of each year are:

December 31, 2015	– \$	115,797
December 31, 2016	– \$	79,484
December 31, 2017	– \$	40,931
December 31, 2018	– \$	-0-

Based on this information, the liabilities section of the December 31, 2015 balance sheet would appear as follows:

Waterton Inc.
Liabilities Section of the Balance Sheet
December 31, 2015

Liabilities		
Current liabilities		
Accounts payable	\$39,000	
Unearned revenues	15,000	
Wages payable	7,000	
Notes payable, due November 30, 2016	20,000	
Current portion of mortgage payable	36,313	
Total current liabilities		\$117,313
Long-term liabilities		
Notes payable, due March 31, 2018	\$75,000	
Mortgage payable (less current portion)	79,484	
Total long-term liabilities		154,484
Total liabilities		\$271,797

Notice the sum of the current and long-term portion of the mortgage equals the unadjusted balance of \$115,797 on the Adjusted Trial Balance. This must always be the case.

The \$20,000 notes payable, due November 30, 2016 is a current liability because its maturity date is within one year of the balance sheet date, a characteristic of a current liability. The \$75,000 notes payable, due March 31, 2018 is a long-term liability since it is to be repaid beyond one year of the balance sheet date.

It is important to classify liabilities correctly otherwise decision makers may make incorrect conclusions regarding, for example, the organization's liquidity position.

9.2 Known Current Liabilities

LO2 – Record and disclose known current liabilities.

Known current liabilities are those where the payee, amount, and timing of payment are known. Examples include accounts payable, unearned revenues, and payroll liabilities. These are different from **estimated current liabilities** where the amount is not known and must be estimated. Estimated current liabilities are discussed later in this chapter.

Payroll Liabilities

Accounts payable and unearned revenues were introduced and discussed in previous chapters. Payroll is subject to a number of taxes, including federal, state, and local; federal and state unemployment taxes; and Social Security (FICA) taxes. Both employers and employees pay payroll taxes. These withheld amounts are remitted by the employer to the appropriate agencies. An employee's gross earnings, less the deductions withheld by the employer, equals the net pay.

Employers are required to withhold *income taxes* from the paycheck of each employee. This withholding is recorded as a liability on the company books because the employer must then remit the amount withheld to the government. This is normally done on a quarterly basis.

The Social Security taxes are known as FICA taxes because they are required by the Federal Insurance Contribution Act. The Social Security taxes also known as the matching taxes include both Social Security and Medicare taxes. They are known as a matching tax because the employer must match the amount required to be withheld from the employees paycheck. This results in the company recording both an expense and a liability related to these taxes. The employee portion, withheld by the company, will be recorded as a liability on the company books because the employer must remit the amount withheld to the government. The additional matching expense that the employer must pay will be recorded as an expense on the company books. This expense will also be remitted to the government. The Social Security tax for 2018 is 6.2% on the first \$128,700 of wages per employee and 1.45% for Medicare on the first \$200,000 of wages per employee. There is an additional Medicare tax for employees of 0.9% for all earnings above \$200,000. This tax is not matched by the company.

All employees must pay unemployment taxes due to the Federal Unemployment Tax Act (FUTA) and the State Unemployment Tax Act (SUTA). These taxes help support people that have lost their jobs. The FUTA tax is 6.0% on all employee wages up to \$7,000. The SUTA tax varies from state

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to state. Employers may receive credit that reduces their FUTA tax by having a solid SUTA tax payment history.

To demonstrate the journal entries to record a business's payroll liabilities for its two employees, assume the following payroll record (ignore SUTA due to state variances):

Salaries earned	\$400,000
Employee income taxes withheld	\$80,000
FICA taxes (employees' share)	\$21,759
FUTA taxes	\$840

The employer's journal entries would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Salaries Expense E+ (SE)		400,000	
	Employee Income Taxes Payable L+ ...			80,000
	FICA Taxes Payable L+			21,759
	Salaries Payable L+			298,241
	To record payroll. Note we are assuming each employee earned \$200,000.			

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Payroll Tax Expense E+ (SE)		22,599	
	FICA Payable L+			21,759
	FUTA Payable L+			840
	To record the employer's payroll related taxes. FICA calculated as Social Security ($\$128,700 \times 2 \times 6.2\%$) + Medicare ($\$200,000 \times 2 \times 1.45\%$), FUTA ($\$7,000 \times 2 \times 6\%$). Note we are assuming each employee earned \$200,000.			

Both the employee and employer are responsible for making payments to the government. Notice the two separate journal entries. The first journal entry records the salaries and wages paid to employees and the deductions withheld from the employees' paychecks that will be remitted to the government. The second journal entry records the matching tax that is a company expense that must also be remitted to the government.

Short-term Notes Payable

A short-term note payable is formal obligation to pay a specific sum, plus interest, within one year. A short-term note is classified as a current liability. Assume on October 31, 2015 BDCC takes out

6%, 60-day note for \$50,000. The following example shows the required entries for the short-term note payable.

General Journal				
Date	Account/Explanation	R	Debit	Credit
Oct 31	Cash A+		50,000	
	Short-term Note Payable L+			50,000
	To record the short-term loan taken on October 31, 2015.			
Dec 31	Interest Expense E+ (SE)		500	
	Interest Payable L+			500
	To record the adjusting entry for interest incurred as of December 31, 2015 (\$50,000 × .06 × 2 ÷ 12).			
Dec 31	Short-term Note Payable (L)		50,000	
	Interest Payable (L)		500	
	Cash (A)			50,500
	To record payment of the principal and interest at maturity on December 31, 2015.			

9.3 Estimated Current Liabilities

LO3 – Record and disclose estimated current liabilities.

An **estimated liability** is known to exist where the amount, although uncertain, can be estimated. Two common examples of estimated liabilities are warranties and income taxes.

Warranty Liabilities

A **warranty** is an obligation incurred by the seller of a product or service to replace or repair defects. Warranties typically apply for a limited period of time. For example, appliances are often sold with a warranty for a specific time period. The seller does not know which product/service will require warranty work, when it might occur, or the amount. To match the warranty expense to the period in which the revenue was realized (matching principle), the following entry that estimates the amount of warranty expense and related liability must be recorded:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Warranty Expense E+ (SE)		XXX	
	Estimated Warranty Liability L+			XXX
	To record estimated warranty expense and related liability.			

When the warranty work is actually performed, assuming both parts and labor, the following is recorded:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Estimated Warranty Liability (L)		XXX	
	Parts Inventory (A)			XXX
	Wages Payable L+			XXX
	To record the actual costs of parts and labor for warranty work.			

Income Tax Liabilities

A corporation is taxed on the taxable income it earns. As for any entity, corporations must file a tax return annually. However, the government typically requires the corporation to make advance monthly payments based on an estimated amount. When the total actual amount of income tax is known at the end of the accounting period, the corporation will record an adjustment to reconcile any difference between the total actual tax and the total monthly tax accrued in the accounting records. For example, assume it is estimated that the total income tax for the year ended December 31, 2015 will be \$300,000. This translates into \$25,000 of income tax to be accrued at the end of each month ($\$300,000 \div 12 \text{ months} = \$25,000/\text{month}$). Assume further that the government requires payments to be made by the 15th of the following month. The entries at the end of each month from January through to November would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Income Tax Expense E+ (SE)		25,000	
	Income Tax Payable L+			25,000
	To record estimated income tax expense.			

On the 15th of each month beginning February 15th to December 15th, the following entry would be recorded:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Income Tax Payable (L)		25,000	
	Cash (A)			25,000
	To record payment of income tax.			

Assume that at the end of December, the corporation's actual income tax was determined to be \$297,000 instead of the originally estimated \$300,000. The entry at December 31 would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Income Tax Expense E+ (SE)		22,000	
	Income Tax Payable L+			22,000
	To report income tax expense; (\$25,000 x 11 months = \$275,000; \$297,000 - \$275,000 = \$22,000).			

Contingent Liabilities

Recall that an estimated liability is recorded when the liability is probable and the amount can be reliably estimated. A **contingent liability** exists when a potential liability has arisen due to a past event but will not be a definitive liability until some future event occurs. Generally accepted accounting principles require that a contingent liability be reported on the balance sheet if it meets the following two factors: 1.) the ability of management to estimate the liability and 2.) the probability that there will be a future economic sacrifice. The probability is determined by the following:

Probable – the future event or events are likely to occur

Reasonably possible – the chance of the future event or events occurring is more than remote but less than likely

Remote – the chance of the future event or events occurring is slight

The following table illustrates the decision to record or disclose a contingent liability:

	Probable	Reasonably Possible	Remote
The liability amount can be reasonably estimated	Record as a liability	Disclose in the footnotes to the financial statements	Disclosure is not required
The liability amount cannot be reasonably estimated	Disclose in the footnotes to the financial statements	Disclose in the footnotes to the financial statements	Disclosure is not required

An example of a contingent liability is a lawsuit where it is probable there will be a loss but the amount cannot be reasonably estimated. A brief description of the lawsuit must be disclosed in the notes to the financial statements; it would not be recorded until the amount of the loss could be reasonably estimated. Great care must be taken with contingencies — if an organization intentionally withholds information, it could cause decision makers, such as investors, to make decisions they would not otherwise have made.

9.4 Long-Term Liabilities—Bonds Payable

LO4—Identify, describe, and record bonds.

Corporations generally acquire long-lived assets like property, plant, and equipment through the issue of shares or long-term debt that is repayable over many years. Chapter 10 addresses the ways in which a corporation can raise funds by issuing shares, known as equity financing. This chapter discusses corporate financing by means of issuing long-term debt, known as debt financing. Types of long-term debt are typically classified according to their means of repayment.

1. **Bonds** pay *only interest* at regular intervals to investors. The original investment is repaid to bondholders when the bond *matures* (or comes due), usually after a number of years. Bonds are generally issued to many individual investors.
2. **Loans** are repaid in equal payments on a regular basis. The payments represent 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.

Bonds are discussed in this section. Loans are expanded upon in the next section. Other types of debt, such as leases, are left for study in a more advanced accounting textbook.

Rights of Bondholders

As noted above, 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 legal contract called a **bond indenture** is prepared that specifies all the details of the bond offering. A regulatory document called a **bond prospectus** is also prepared and filed with the Securities and Exchange Commission (SEC). The prospectus also states the details of the bond offering such as interest rate, interest payment dates, maturity date, and other characteristics. In addition to this, the prospectus also describes any bond **covenants** designed to protect the creditors. Typical covenants will include limitations on dividend payments to shareholders, limitations on future borrowings, or requirements that the company maintain certain accounting ratio minimums.

Ownership of a bond certificate carries with it certain rights. These rights are printed on the actual certificate and vary among bond issues. The various characteristics applicable to bond issues are the subject of more advanced courses in finance and are not covered here. However, individual bondholders always acquire two rights.

1. The right to receive the face value of the bond at a specified date in the future, called the *maturity date*.
2. The right to receive periodic interest payments at a specified percent of the bond's face value.

A **trustee** is appointed to be an intermediary between the corporation and the bondholder. The trustee is an independent party that administers the terms of the indenture.

Bond Authorization

Assume that Big Dog Carworks Corp. decides to issue \$30 million of 12% bonds to finance its expansion. The bonds are repayable three years from the date of issue, January 1, 2015. The amount of authorized bonds, their interest rate, and their maturity date can be shown in the accounts as follows:

GENERAL LEDGER
Bonds Payable –
Long-Term
Due Jan. 1, 2018

Date		Description	Debit		Credit		Acct. No. 272	
							DR/CR	Balance
2015								
Jan.	1	Authorized to issue \$30,000,000 of 12%, 3-year bonds, due January 1, 2018.						

Bonds in the Financial Statement

Each bond issue is disclosed separately in the notes to the financial statements because each issue may have different characteristics. The descriptive information disclosed to readers of financial statements 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.

Other Issues Related to Bond Financing

There are several additional considerations related to the issue of bonds.

1. 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 can be issued whenever cash is required.

2. Time Periods Associated with Bonds

The interest rate of bonds is associated with time, their maturity date is based on time, and other provisions — such as convertibility into common stock and restrictions on future dividend distributions of the corporation — are typically activated at a given point in time. These must also be considered, as the success of a bond issue often depends on the proper combination of these and other similar features.

Bond Characteristics

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.

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.

The issue of **callable bonds** have a call feature that 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 shareholders 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. The **restriction of dividends** means that dividends declared cannot exceed a specified balance in retained earnings. This protects bondholders by limiting the amount of dividends that can be paid.

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.

Recording the Issuance of Bonds at Face Value (at Par)

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 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.

If a bond is sold at face value, the journal entry is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Cash A+		1,000	
	Bonds Payable L+			1,000
	To record the issue of 8% bonds at par.			

Recording the Issuance of Bonds at a Premium

A \$1,000 bond is sold at a **premium** when it is sold for more than its face value. This results when the bond interest rate is higher than the market interest rate. For instance, assume Big Dog Carworks Corp. issues a bond on January 1, 2015 with a face value of \$1,000, a maturity date of one year, and a stated or contract interest rate of 8% per year, at a time when the market interest rate is 7%. Potential investors will bid up the bond price to \$1,009.34 based on present value calculations where $FV = \$1,000$; $PMT = \$80$; $i = 7$ (the market rate); and $n = 1$. We will round the \$1,009.34 to \$1,009 to simplify the demonstration.

The premium is the \$9 difference between the \$1,009 selling price of the bond and the \$1,000 face value. The journal entry to record the sale of the bond on January 1, 2015 is:

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General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1	Cash A+		1,009	
	Bonds Payable L+			1,000
	Premium on Bonds Payable XL+ L+			9
	To record the issue of 8% bonds at a premium.			

The Premium on Bonds Payable account is a contra liability account that is added to the value of the bonds on the balance sheet. Because the bonds mature in one year, the bond appears in the current liabilities section of the balance sheet as follows:

<i>Liabilities</i>			
<i>Current</i>			
Bonds payable	\$1,000		
Add: Premium on bonds payable	9		\$1,009

On the maturity date of December 31, 2015, the interest expense of \$80 is paid, bondholders are repaid, and the premium is written off as a reduction of interest expense.

The journal entry that would be recorded is as follows:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Interest Expense E+ (SE)		71	
	Premium on Bonds Payable (XL) (L)		9	
	Bonds Payable (L)		1,000	
	Cash (A)			1,080
	To record payment of bond and interest on maturity date.			

Note that the interest expense recorded on the income statement would be \$71 (\$80 – 9). This is equal to the market rate of interest at the time of bond issue.

Recording the Issuance of Bonds at a Discount

If the bond is sold for less than \$1,000, then the bond has been sold at a **discount**. This results when the bond interest rate is lower than the market interest rate. To demonstrate the journal entries, assume a \$1,000, one-year, 8% bond is issued by BDCC when the market interest rate is 9%. The selling amount will be \$990.83 using PV calculations where $FV = \$1,000$; $PMT = \$80$; $i = 9\%$ (the market rate); and $n = 1$. We will round the \$990.83 to \$991 to simplify the demonstration.

The difference between the face value of the bond (\$1,000) and the selling price of the bond (\$991) is \$9. This is the *discount*.

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The journal entry to record the transaction on January 1, 2015 is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1	Cash A+		991	
	Discount on Bonds Payable XL+ (L)		9	
	Bonds Payable L+			1,000
	To record issue of bonds at a discount.			

The \$9 amount is a contra liability account and is *deducted* from the face value of the bonds on the balance sheet as follows:

<i>Liabilities</i>			
<i>Current</i>			
Bonds payable		\$1,000	
Less: Discount on bonds payable		<u>(9)</u>	\$991

On December 31, 2015, when the bonds mature, the following entry would be recorded:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31	Interest Expense E+ (SE)		89	
	Bonds Payable (L)		1,000	
	Discount on Bonds Payable (XL) L+			9
	Cash (A)			1,080
	To record payment of bond and interest on maturity date.			

The interest expense recorded on the income statement would be \$89 (\$80 + 9). This is equal to the market rate of interest at the time of bond issue.

These are simplified examples, and the amounts of bond premiums and discounts in these examples are insignificant. In reality, bonds may be outstanding for a number of years, and related premiums and discounts can be substantial when millions of dollars of bonds are issued. These premiums and discounts are *amortized* using the effective interest method over the same number of periods as the related bonds are outstanding. The amortization of premiums and discounts is an intermediate financial accounting topic and is not covered here.

Refer to the Appendix Section 9.8 at the end of this chapter for discussions and illustrations regarding the use of the effective interest method for bonds issued at a premium or discount.

Bonds Issued in Between Interest Payments

If investors purchase bonds on dates falling in between the interest payment dates, then the investor pays an additional interest amount. This is because the bond issuer always pays the full six months interest to the bondholder on the interest payment date because it is the easiest way to administer multiple interest payments to potentially thousands of investors. For example, if an investor purchases a bond four months after the last interest payment, then the issuer will add these additional four months of interest to the purchase price. When the next interest payment date occurs, the issuer pays the full six months interest to the purchaser. The interest amount paid and received by the bond-holder will net to two months. This makes intuitive sense given that the bonds have only been held for two months making interest for two months the correct amount.

For example, on September 1, 2016, an investor purchases **at face value**, \$100,000, 10-year, 8% bonds with interest payable each May 1 and November 1.

Bond payable	\$100,000
Accrued interest ($100,000 \times 8\% \times 4 \div 12$)	2,667
Total cash paid	\$102,667

To record the bond issuance on September 1, with four months' accrued interest:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Sept 1, 2016	Cash A+		102,667	
	Bond payable L+			100,000
	Interest payable L+			2,667

To record the first semi-annual interest payment on November 1 and zero out the interest payable:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Nov 1, 2016	Interest payable (L)		2,667	
	Bond interest expense E+ (SE)		1,333	
	Cash (A) ($\$100,000 \times 8\% \times 6 \div 12$) ..			4,000

Note that the bond interest on November 1 is for the amount the bondholder is entitled to, which is two months' of interest.

The December 31 year-end accrued interest entry:

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General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31, 2016	Interest expense E+ (SE)		1,333	
	Interest payable L+ (\$100,000 × 8% × 2 ÷ 12)			1,333

At maturity, the May 1, 2026, entry would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 1, 2026	Bond payable (L)		100,000	
	Cash (A)			100,000

Repayment Before Maturity Date

In some cases, a company may want to repay a bond issue before its maturity. Examples of such bonds are callable bonds, which give the issuer the right to call and retire the bonds before maturity. For example, if market interest rates drop, the issuer will want to take advantage of the lower interest rate. In this case, the reacquisition price paid to extinguish and derecognize the bond issuance will likely be slightly higher than the bond carrying value on that date, and the difference will be recorded by the issuing corporation as a loss on redemption. The company can, then, sell a new bond issuance at the new, lower interest rate.

For example, on January 1, 2016, Angen Ltd. issued bonds with a par value of \$500,000 at 99, due in 2026. On January 1, 2020, the entire issue was called at 101 and cancelled. The bond payable carrying value on the call date was \$497,000. Interest is paid annually and the discount amortized using the straight-line method. The carrying value of the bond on January 1, 2020, would be calculated as follows:

Carrying value on call date	\$497,000
Re-acquisition price (\$500,000 × 101)	505,000
Loss on redemption	<u>\$ 8,000</u>

Angen Ltd. would make the following entry:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1, 2020	Bond Payable (L)		500,000	
	Loss on redemption of bonds E+ (SE)		8,000	
	Cash (A)			505,000
	Discount on Bonds Payable (XL) L+			3,000

9.5 Long-term Liabilities—Loans Payable

LO5—Explain, calculate, and record long-term loans.

A *loan* is another form of long-term debt that a corporation can use to finance its operations. Like bonds, loans can be *secured*, giving the lender the right to specified assets of the corporation if the debt cannot be repaid. For instance a mortgage is a loan secured by specified real estate of the company, usually land with buildings on it.

Unlike a bond, a loan is typically obtained from one lender such as a bank. Also, a loan is repaid in equal *blended* payments over a period time. These payments contain both interest payments and some repayment of principal. As well, a loan does not give rise to a premium or discount because it is obtained at the market rate of interest in effect at the time.

To demonstrate the journal entries related to long-term loans, assume BDCC obtained a three-year, \$100,000, 10% loan on January 1, 2015 from First Bank to acquire a piece of equipment. When the loan proceeds are deposited into BDCC’s bank account, the following entry is recorded:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Jan 1	Cash A+		100,000	
	Long-Term Note Payable L+			100,000
	To record 10%, 3-year, \$100,000 bank loan.			

The loan is repayable in three annual blended payments. To calculate the payments, PV analysis is used whereby the following keystrokes are entered into a business calculator:

PV = 100000 (the cash received from the bank),

i = 10 (the interest rate),

n = 3 (the term of the loan is three years), and

Compute PMT.

The PMT (or payment) is -40211.48. The result is negative because payments are cash outflows. While the payments remain the same each year, the amount of interest paid decreases and the amount of principal increases. Figure 9.1 illustrates this effect.

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	(a)	(b)	(c)	(d)	(e)
<i>Year Ended Dec. 31</i>	<i>Beginning Loan Balance</i>	<i>Periodic Interest Expense</i>	<i>Reduction of Loan Payable</i>	<i>Total Loan Payment</i>	<i>Ending Loan Balance</i>
	(e)	(a) x 10%	(d) - (b)		(a) - (c)
2015	\$100,000	\$10,000	\$30,211	\$40,211	\$69,789
2016	69,789	6,979	33,232	40,211	36,557
2017	36,557	3,654	36,557	40,211	-0-
			<u>\$100,000</u>		

Interest expense and the principal balance decrease with each loan payment.

Figure 9.1: Effect of Blended Interest and Principal Payments

Figure 9.1 can be used to construct the journal entries to record the loan payments at the end of each year:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec. 31, 2015	Interest Expense E+ (SE)		10,000	
	Loan Payable (L)		30,211	
	Cash (A)			40,211
Dec. 31, 2016	Interest Expense E+ (SE)		6,979	
	Loan Payable (L)		33,232	
	Cash (A)			40,211
Dec. 31, 2017	Interest Expense E+ (SE)		3,654	
	Loan Payable (L)		36,557	
	Cash(A)			40,211

The amounts in Figure 9.1 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 portions on the balance sheet. Current liabilities are amounts paid within one year of the balance sheet date. That part of the loan payable to First Bank to be paid in the upcoming year needs to be classified as a current liability on the balance sheet. The amount of the total loan outstanding at December 31, 2015, 2016, and 2017 and the current and non-current portions are shown in Figure 9.2:

A	B	C	D
<i>Year ended Dec. 31</i>	<i>Ending loan balance per general ledger (Fig 9.1, Col. E)</i>	<i>Current portion (Fig. 9.1, Col. C)</i>	<i>(B – C) Long-term portion</i>
2015	\$69,788	\$33,232	\$36,557
2016	36,557	36,557	-0-
2017	-0-	-0-	-0-

Figure 9.2: Current and Long-term Portions of Loan Principal

Balance sheet presentation would be as follows at the end of 2015, 2016, and 2017:

	2015	2016	2017
<i>Current liabilities</i>			
Current portion of bank loan	\$33,232	\$36,557	\$ -0-
<i>Long-term liabilities</i>			
Bank loan (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 balance sheet. The *interest* expense portion is reported on the income statement as an expense. Because these loan payments are made at BDCC's year end, no interest payable is accrued or reported on the balance sheet.

9.6 Appendix A: Present Value Calculations

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 ($\$1 \times 110\% = \1.10). The increase of 10 cents results from the interest on \$1 for the year. Conversely, if you are to pay \$1.10 one year from today, the *present value* is \$1 — the amount you would need to invest today at 10% to receive \$1.10 in one year's time ($\$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 ($\$1.10 \times 110\%$). 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:

$$FV = PV \times (1 + i)^n$$

where FV = future value, PV = present value, i = the interest rate, and n = number of periods.

Substituting the values of our example, the calculation would be $FV = \$1[(1 + .1)^2]$, or \$1.21.

If the *future* value of today's \$1 at 10% interest compounded annually amounts to \$1.21 at the end of two years, the *present* value of \$1.21 to be paid in two years, discounted at 10%, is \$1. The formula to calculate this is just the inverse of the formula shown above, or

$$PV = \frac{FV}{(1 + i)^n}$$

Substituting the values of our example,

$$PV = \frac{\$1.21}{(1 + .1)^2}$$

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.

Instead of using formulas to calculate future and present values, a business calculator can be used where:

PV = present value

FV = future value

i = interest rate per period (for a semi-annual period where the annual interest rate is 8%, for example, $i = 4\%$ and would be entered into the calculator as '4' – not .04)

PMT = dollar amount of interest per period

n = number of periods.

The following three scenarios demonstrate how PV analysis is used to determine the issue price of a \$100,000 bond.

1. Big Dog Carworks Corp. issues \$100,000 of 3-year, 12% bonds on January 1, 2015 when the market rate of interest is 12%. Interest is paid semi-annually.

2. BDCC's bonds are issued at a premium because the market rate of interest is 8% at the date of issue.
3. BDCC's bonds are issued at a discount because the market rate of interest is 16% at the date of issue.

In each scenario, the bond *principal* of \$100,000 will be repaid at the end of three years, and *interest* payments of \$6,000 (calculated as \$100,000 x 12% x 6/12) will be received every six months for three years.

Scenario 1: The Bond Contract Interest Rate is 12% and the Market Interest Rate Is 12%

The market interest rate is the same as the bond interest rate, therefore the bond is selling at par. The present value will be \$100,000, the face value of the bond, which can be confirmed by entering the following into a business calculator:

FV = -100000 (we enter this as a negative because it is a cash outflow — it is being paid and not received when the bond matures)

i = 6 (calculated as 12%/year ÷ 2 periods per year)

PMT = -6000 (we enter this as a negative because it is a cash outflow — it is being paid and not received each semi-annual interest period)

n = 6 (3-year bond × 2 periods per year)

Compute PV

The PV = 100000. This result confirms that the bond is being issued at par or face value.

Scenario 2: The Bond Contract Interest Rate is 12% and the Market Interest Rate Is 8%

The market interest rate is less than the bond interest rate, therefore the bond is selling at a premium. The present value can be determined by entering the following into a business calculator:

FV = -100000 (we enter this as a negative because it is a cash outflow — it is being paid and not received when the bond matures)

$i = 4$ (calculated as $8\%/year \div 2$ periods per year)

$PMT = -6000$ (we enter this as a negative because it is a cash outflow — it is being paid and not received each semi-annual interest period)

$n = 6$ (3-year bond \times 2 periods per year)

Compute PV

The PV = 110484.27. This confirms that the bond is being issued at a premium. The premium is \$10,484.27 calculated as the difference between the present value of \$110,484.27 and the face value of \$100,000.

Scenario 3: The Bond Contract Interest Rate is 12% and the Market Interest Rate Is 16%

The market interest rate is more than the bond interest rate, therefore the bond is selling at a discount. The present value can be determined by entering the following into a business calculator:

$FV = -100000$ (we enter this as a negative because it is a cash outflow — it is being paid and not received when the bond matures)

$i = 8$ (calculated as $16\%/year \div 2$ periods per year)

$PMT = -6000$ (we enter this as a negative because it is a cash outflow — it is being paid and not received each semi-annual interest period)

$n = 6$ (3-year bond \times 2 periods per year)

Compute PV

The PV = 90754.24. This confirms that the bond is being issued at a discount. The discount is \$9,245.76 calculated as the difference between the present value of \$90,754.24 and the face value of \$100,000.

9.7 Appendix B: Additional Payroll Transactions

Fringe Benefits and Vacation Benefits

Some employers pay for an employee's benefits such as health insurance. The journal entry to record benefits would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Benefits Expense E+ (SE)		XX	
	Health Insurance Payable L+			XX
	To record health insurance benefits.			

Employers are also required to pay for vacation time equal to 4% of gross income. The entry to accrue vacation benefits would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
	Benefits Expense E+ (SE)		XX	
	Estimated Vacation Liability L+			XX
	To record accrual of vacation benefits.			

When vacation benefits are realized by the employee, the Estimated Vacation Liability account is debited and the appropriate liability accounts to record deductions/withholdings and net pay are credited.

9.8 Appendix C: The Effective Interest Rate Method

Another way to calculate the interest expense when a bond is issued at a premium or discount is the **effective interest rate method**.

Below are two examples where a bond is issued at a premium or discount. The interest expense and the amortization of the premium or discount is computed using the effective interest rate method.

Note that the bond's fair value can be determined by either using the **bond quote** or by performing a present value calculation. The bond quote is the last price a bond traded, expressed as a percentage of par value, and then converted to a point scale. Use of the bond quote rate is shown in the bond premium example, while the present value calculation is shown in the bond discount example. These are discussed next.

Bonds Issued at a Premium

On May 1, 2016, Impala Ltd. issued a 10-year, 8%, \$500,000 face value bond at a bond quote of 102 (2% above par). Interest is payable each year on May 1 and November 1. The company uses the effective interest rate method to calculate interest expense and amortize the bond premium.

The bond quote is 102, so the amount to be paid is \$510,000 ($500,000 \times 1.02$) and, therefore, represents the fair value or present value of the bond issuance on the purchase date.

The entry for the bond issuance is:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 1, 2016	Cash A+		510,000	
	Bond payable L+			500,000
	Premium on bonds payable XL+ L+ ...			10,000

Below is a portion of the effective interest rate method table:

	Payment	Interest 3.8547%	Amortization of Premium	Balance
May 1, 2016				510,000
Nov 1, 2016	20,000	19,659	341	509,659
May 1, 2017	20,000	19,646	354	509,305
Nov 1, 2017	20,000	19,632	368	508,937

Using the information from the schedule, the entries are completed below.

To record the interest payment and amortization of premium on November 1:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Nov 1, 2016	Interest expense E+ (SE)		19,659	
	Premium on bonds payable (XL) (L)		341	
	Cash (A)			20,000

Recording the accrued interest at the December 31 year-end uses the relevant portion of the effective interest schedule. For example, at December 31, 2016, the table shows interest of \$19,646 and bond amortization of \$354 at May, 2017. Prorating these amounts for November and December, or two months, results in the following entry:

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General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31, 2016	Interest expense E+ (SE) $(19,646 \times 2 \div 6)$		6,549	
	Premium on bonds payable (XL) (L) $(354 \times 2 \div 6)$		118	
	Interest payable L+.....			6,667

To record the interest payment on May 1, 2017, interest expense and amortization will be for the remainder of the table amounts of \$19,646 and \$354 respectively:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 1, 2017	Interest expense E+ (SE) $(19,646 - 6,549)$		13,097	
	Interest payable (L).....		6,667	
	Premium on bonds payable (XL) (L) $(354 - 118)$		236	
	Cash (A).....			20,000

To record the interest payment on November 1, 2017:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Nov 1, 2017	Interest expense E+ (SE).....		19,632	
	Premium on bonds payable (XL) (L).....		368	
	Cash (A).....			20,000

At maturity, the May 1, 2026, entry would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 1, 2026	Bond payable (L).....		500,000	
	Cash (A).....			500,000

Bonds Issued at a Discount

On May 1, 2016, Engels Ltd. issued a 10-year, 8%, \$500,000 face value bond with interest payable each year on May 1 and November 1. The market rate at the time of issuance is 9% and the company year-end is December 31. In this case the stated rate of 8% is less than the market rate of 9%. This means that the bond issuance is trading at a discount and the fair value, or its present value of the future cash flows, will be less than the face value upon issuance. The present value is calculated as:

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20,000 PMT (where semi-annual interest using the stated or face rate is $\$500,000 \times 8\% \times 6 \div 12$)
 4.5 I/Y (where 9% market or effective interest is paid twice per year)
 20 N (where interest is paid twice per year for 10 years)
 500,000 FV (where a single payment of the face value is due in a future year 2026);

Expressed in the following variables string, and using a financial calculator, the present value is calculated:

Present value (PV) = (20,000 PMT, 4.5 I/Y, 20 N, 500,000 FV) = \$467,480

Had the bond quote been used, this bond would be trading at a bond quote of 93.496 (or 93.496% of the bond's face value, which is below par). The fair value would also be \$467,480 ($\$500,000 \times 0.93496$).

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 1, 2016	Cash A+		467,480	
	Discount on bonds payable XL+ (L)		32,520	
	Bond payable (L)			500,000

The stated rate of 8% is less than the market rate of 9%, resulting in a present value less than the face amount of \$500,000. This bond issuance is trading at a discount. Since the market rate is greater, the investor would not be willing to purchase bonds paying less interest at the face value. The bond issuer must, therefore, sell these at a discount in order to entice investors to purchase them. The investor pays the reduced price of \$467,480. For the seller, the discount amount of \$32,520 ($\$500,000 - 467,480$) is then amortized over the life of the bond issuance using the effective interest rate method. The total interest expense for either method will be the same.

The interest schedule for the bond issuance is shown below:

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	Payment	Interest 4.5%	Amortization of Discount	Balance
May 1, 2016				467,480
Nov 1, 2016	20,000	21,037	1,037	468,517
May 1, 2017	20,000	21,083	1,083	469,600
Nov 1, 2017	20,000	21,132	1,132	470,732
May 1, 2018	20,000	21,183	1,183	471,915
Nov 1, 2018	20,000	21,236	1,236	473,151
May 1, 2019	20,000	21,292	1,292	474,443
Nov 1, 2019	20,000	21,350	1,350	475,793
May 1, 2020	20,000	21,411	1,411	477,203
Nov 1, 2020	20,000	21,474	1,474	478,677
May 1, 2021	20,000	21,540	1,540	480,218
Nov 1, 2021	20,000	21,610	1,610	481,828
May 1, 2022	20,000	21,682	1,682	483,510
Nov 1, 2022	20,000	21,758	1,758	485,268
May 1, 2023	20,000	21,837	1,837	487,105
Nov 1, 2023	20,000	21,920	1,920	489,025
May 1, 2024	20,000	22,006	2,006	491,031
Nov 1, 2024	20,000	22,096	2,096	493,127
May 1, 2025	20,000	22,191	2,191	495,318
Nov 1, 2025	20,000	22,289	2,289	497,607
May 1, 2026	20,000	22,392	2,392	500,000

Using the information from the schedule, the entries are completed below.

To record the interest payment on November 1:

General Journal				
Date	Account/Explanation	R	Debit	Credit
Nov 1, 2016	Interest expense E+ (SE) $(467,480 \times 4.5\%)$		21,037	
	Discount on bonds payable (XL) L+			1,037
	Cash (A)			20,000

Recording the accrued interest at the December 31 year-end uses the relevant portion of the effective interest schedule. For example, at December 31, 2016, the table shows interest of \$21,083 and bond amortization of \$1,083 at May, 2017. Prorating these amounts for November and December, or two months, results in the following entry

General Journal				
Date	Account/Explanation	R	Debit	Credit
Dec 31, 2016	Interest expense E+ (SE) $(21,083 \times 2 \div 6)$		7,028	
	Discount on bonds payable (XL) L+ $(1,083 \times 2 \div 6)$			361
	Interest payable L+			6,667

To record the interest payment on May 1, 2017, interest expense and amortization will be for the remainder of the table amounts of \$21,083 and \$1,083 respectively:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 1, 2017	Interest expense E+ (SE) (21,083 – 7,028)		14,055	
	Interest payable (L)		6,667	
	Discount on bonds payable (XL) L+ (1,083 – 361)			722
	Cash (A)			20,000

At maturity, the May 1, 2026, entry would be:

General Journal				
Date	Account/Explanation	R	Debit	Credit
May 1, 2026	Bond payable (L)		500,000	
	Cash (A)			500,000

Summary of Chapter 9 Learning Objectives

L01 – Identify and explain current versus long-term liabilities.

Current or short-term liabilities are 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. Long-term liabilities are 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. Current and long-term liabilities must be shown separately on the balance sheet.

L02 – Record and disclose known current liabilities.

Known current liabilities are those where the payee, amount, and timing of payment are known. Examples include accounts payable, unearned revenues, and payroll liabilities. Short-term notes payable, also a known current liability, can involve the accrual of interest if the maturity date falls in the next accounting period.

L03 – Record and disclose estimated current liabilities.

An estimated liability is known to exist where the amount, although uncertain, can be estimated. Warranties and income taxes are examples of estimated liabilities. A contingent liability exists when a potential liability has arisen due to a past event but will not be a definitive liability until some future event occurs. Generally accepted accounting principles require that a contingent liability be reported on the balance sheet if it meets the following two factors: 1.) the ability of management to estimate the liability and 2.) the probability that there will be a future economic sacrifice.

L04 – Identify, describe, and record bonds.

Bonds pay interest at regular intervals to bondholders. The original investment is repaid to bondholders when the bonds mature. There are different types of bonds such as secured or unsecured. Bonds can have a variety of characteristics, including: varying maturity dates, call provisions, conversion privileges, sinking fund requirements, or dividend restrictions. Bonds are issued: (a) at par (also known as the face value) when the market interest rate is the same as the bond (or contract) interest rate; (b) at a discount when the market interest rate is higher than the bond interest rate; or (c) at a premium when the market interest rate is lower than the bond interest rate.

L05 – Explain, calculate, and record long-term loans.

A loan is a form of long-term debt that can be used by a corporation to finance its operations. Loans can be secured and are typically obtained from a bank. Loans are often repaid in equal blended payments containing both interest and principal.

Discussion Questions

1. What is the difference between a current and long-term liability?
2. What are some examples of known current liabilities?
3. How are known current liabilities different from estimated current liabilities?
4. What are some examples of estimated current liabilities?
5. How is an estimated current liability different from a contingent liability?

6. What is a bond? ...a bond indenture? Why might a trustee be used to administer a bond indenture?
7. List and explain some bondholder rights.
8. How are different bond issues reported in the financial statements of a corporation?
9. What are three reasons why bonds might be redeemed before their maturity date?
10. 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.
11. How is an unamortized bond premium or discount disclosed in accordance with GAAP?
12. 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?
13. What method is used to amortize premiums and discounts?
14. How is a loan payable similar to a bond? How is it different?
15. Distinguish between future value and present value. What is the time value of money? Why is it important?
16. How is the actual price of a bond determined?

Exercises

EXERCISE 9–1 (LO1)

Ajam Inc. shows the following selected adjusted account balances at March 31, 2019:

Accounts Payable	\$ 58,000
Wages Payable	102,000
Accumulated Depreciation – Machinery	69,000
Income Taxes Payable	92,000
Note Payable, due May 15, 2021	108,000
Note Payable, due November 30, 2019	64,000
Mortgage Payable	320,000
Accounts Receivable	71,000

Note: \$240,000 of the mortgage payable balance is due one year beyond the balance sheet date; the remainder will be paid within the next 12 months.

Required: Prepare the liability section of Ajam's March 31, 2019 balance sheet.

EXERCISE 9-2 (LO2)

Libra Company borrowed \$300,000 by signing a 3.5%, 45-day note payable on July 1, 2019. Libra's year-end is July 31. Round all calculations to two decimal places.

Required:

- a. Prepare the entry to record the issuance of the note on July 1, 2019.
 - b. Prepare the entry to accrue interest on July 31, 2019.
 - c. On what date will this note mature?
 - d. Prepare the entry to record the payment of the note on the due date.
-

EXERCISE 9-3 (LO3)

On January 23, 2019, Zenox Company sold \$105,000 of furniture on account that had a cost of \$82,000. All of Zenox's sales are covered by an unconditional 24-month replacement warranty. Historical data indicates that warranty costs average 2% of the cost of sales. On January 29, 2019, Zenox replaced furniture with a cost of \$2,000 that was covered by warranty.

Required:

- a. Prepare the journal entry to record the estimated warranty liability for January.
 - b. Prepare the entry to record the warranty expense incurred in January.
 - c. Assuming the Estimated Warranty Liability account had a credit balance of \$740 on January 1, 2019, calculate the balance at January 31, 2019 after the entries above were posted.
-

EXERCISE 9-4 (LO2)

An extract from the trial balance of Paragon Corporation at December 31, 2018 is reproduced below:

	<i>Amount in unadjusted trial balance</i>	<i>Amount in adjusted trial balance</i>
a. Salaries expense (J. Smith)	\$50,000	\$52,000
b. Employee income taxes payable	-0-	500
c. Health insurance benefits	-0-	1,000
d. Vacation expense benefits	-0-	1,500

Required:

- a. Prepare the adjusting entry that was posted, including a plausible description.
- b. Prepare the journal entries to record the payments on January 5, 2019 to employee J. Smith and the IRS.

EXERCISE 9–5 (LO3)

Paul's Roofing Corporation paid monthly corporate income tax instalments of \$500 commencing February 15, 2018. The company's income before income taxes for the year ended December 31, 2018 was \$15,000. The corporate income tax rate is 35%. Paul's Roofing paid the 2018 corporate income taxes owing on January 31, 2019.

Required:

- a. Record the February 15, 2018 payment.
- b. Record the 2018 corporate income tax expense.
- c. Record the January 31, 2019 payment.

EXERCISE 9–6 (LO4)

Leong Corporation was authorized to issue \$500,000 face value bonds on January 1, 2017. The corporation issued \$100,000 of face value bonds on that date. The bonds will mature on December

31, 2020. Interest is paid semi-annually on June 30 and December 31 each year. The bond interest rate per the terms of the indenture is 12% per year.

Required: Answer the questions for each of the following cases.

Case A: The bonds were issued at face value.

Case B: The bonds were issued for \$112,000.

Case C: The bonds were issued for \$88,000.

- a. How much cash does Leong receive for the bonds?
- b. How much annual interest must the corporation pay? On what amount does the corporation pay?
- c. Prepare the journal entry to record the sale of the bonds.
- d. Record the entries applicable to interest and straight-line amortization for June 30, 2017 and for December 31, 2017.

EXERCISE 9–7 (LO4) Bonds Issued at a Discount and Retired

On January 1, 2017, the date of bond authorization, Nevada Inc. issued a 3-year, 12-per cent bond with a face value of \$100,000 at 94. Semi-annual interest is payable on June 30 and December 31.

Required:

- a. Prepare journal entries to record the following transactions:
 - i. The issuance of the bonds.
 - ii. The interest payment on June 30, 2017.
 - iii. The amortization of the discount on June 30, 2017 (use the straight-line method of amortization).
- b. Calculate the amount of interest paid in cash during 2017 and the amount of interest expense that will appear in the 2017 income statement.
- c. Prepare a partial balance sheet at December 31, 2017 showing how the bonds payable and the discount on the bonds should be shown on the balance sheet.

- d. Prepare the journal entry to record the retirement of the bonds on December 31, 2019.
 - e. Prepare the journal entry on January 1, 2018, assuming the bonds were called at 102.
-

EXERCISE 9–8 (LO4) Bonds Issued at a Premium and Retired

On January 1, 2019, the date of bond authorization, Sydney Corp. issued 3-year, 12-per cent bonds with a face value of \$200,000 at 112. Semi-annual interest is payable on June 30 and December 31.

Required:

- a. Prepare the journal entries to record the following transactions:
 - i. The issuance of the bonds.
 - ii. The interest payment on June 30, 2019.
 - iii. The amortization of the premium on June 30, 2019 (use the straight-line method of amortization).
 - b. 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?
 - c. Prepare a partial balance sheet at December 31, 2019 showing how the bonds payable and the premium on bonds should be shown on the balance sheet.
 - d. Prepare the journal entry on January 1, 2022 when the bonds were called at 106.
-

EXERCISE 9–9 (LO4) Bonds Issued between Interest Dates

On September 1, 2017, Harvort Inc. issues \$100,000, 10-year, 8% bonds at par. Interest is payable each May 1 and November 1. The company year-end is December 31.

Required: Prepare the journal entries to record the following transactions:

- a. The issuance of the bonds.
- b. The journal entries for 2018.

- c. The bond at maturity.
 - d. Prepare a partial balance sheet at December 31, 2018 showing how the bonds and interest payable should be shown on the balance sheet.
-

EXERCISE 9–10 (LO5) Long Term Loan Payable

Rosedale Corp. obtained a \$50,000 loan from Second Capital Bank on January 1, 2021. It purchases a piece of heavy equipment for \$48,000 on the same day. The loan bears interest at 6% per year on the unpaid balance and is repayable in three annual blended payments of \$18,705 on December 31 each year.

Required:

- a. Prepare the journal entries to record the following transactions:
 - i. Receipt of loan proceeds from the bank.
 - ii. Purchase of the equipment.
 - b. Prepare the loan repayment schedule.
 - c. Prepare the journal entry to record the first loan payment.
 - d. Prepare the liabilities section of the balance sheet in good form, including all disclosures, for this loan at December 31, 2021. (Hint: The current portion of a long-term liability must be reported.)
-

EXERCISE 9–11 (LO4)

Required: Complete the following by responding either *premium* or *discount*.

- a. If the market rate of interest is 15 per cent and the bond interest rate is 10 per cent, the bonds will sell at a _____.
- b. If a bond's interest rate is 10 per cent and the market rate of interest is 8 per cent, the bonds will sell at a _____.
- c. In computing the carrying amount of a bond, unamortized _____ is subtracted from the face value of the bond.

- d. In computing the carrying amount of a bond, unamortized _____ is added to the face value of the bond.
 - e. If a bond sells at a _____, an amount in excess of the face value of the bond is received on the date of issuance.
 - f. If a bond sells at a _____, an amount less than the face value of the bond is received on the date of issuance.
-

EXERCISE 9–12 (LO4)

On January 1, 2019, the date of bond authorization, Nevada Inc. issued a 3-year, 12-per cent bond with a face value of \$100,000 at 94. Semi-annual interest is payable on June 30 and December 31.

Required: Prepare the journal entry to record the issuance of the bonds on January 1, 2019.

EXERCISE 9–13 (LO4)

On January 1, 2019, the date of bond authorization, Sydney Corp. issued 3-year, 12-per cent bonds with a face value of \$200,000 at 112. Semi-annual interest is payable on June 30 and December 31.

Required: Prepare the journal entry to record the issuance of the bonds on January 1, 2019.

EXERCISE 9–14 (LO5)

Rosedale Corp. obtained a \$50,000 loan from Second Capital Bank on January 1, 2019. It purchased a piece of heavy equipment for \$48,000 on the same day. The loan bears interest at 6% per year on the unpaid balance and is repayable in three annual blended payments of \$18,705 on December 31 each year.

Required:

- a. Prepare the journal entries to record the following transactions:
 - i. Receipt of loan proceeds from the bank.

- ii. Purchase of the equipment.
- b. Prepare the loan repayment schedule.
- c. Prepare the journal entry to record the first loan payment.

Problems

PROBLEM 9–1 (LO5)

Zinc Corp. obtained a \$100,000 loan from First Capital Bank on December 31, 2015. It purchased a piece of heavy equipment for \$95,000 on January 2, 2016. The loan bears interest at 8% per year on the unpaid balance and is repayable in four annual blended payments of \$30,192 on December 31 each year, starting in 2016.

Required:

1. Prepare the journal entries to record the following transactions:
 - (a) Receipt of loan proceeds from the bank.
 - (b) Purchase of the equipment.
2. Prepare the loan repayment schedule in the following format:

Zinc Corp.					
Loan Repayment Schedule					
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
			<i>(D – B)</i>		<i>(A – C)</i>
<i>Year</i>	<i>Beginning</i>		<i>Reduction</i>	<i>Total</i>	<i>Ending</i>
<i>Ended</i>	<i>Loan</i>	<i>Interest</i>	<i>of Loan</i>	<i>Loan</i>	<i>Loan</i>
<i>Dec. 31</i>	<i>Balance</i>	<i>Expense</i>	<i>Payable</i>	<i>Payment</i>	<i>Balance</i>
2016					
2017					
2018					
2019					

3. Prepare the journal entry to record the last loan payment.
4. Prepare a partial balance sheet showing the loan liability at December 31, 2017

Corporations sometimes finance a large portion of their operations by issuing equity in the form of stocks. This chapter discusses in detail the nature of the corporate form of organization, the different types of stocks used to obtain funds for business activities, and how these transactions are recorded. It also expands on the concept of dividends.

Chapter 10 Learning Objectives

LO1 – Identify and explain characteristics of the corporate form of organization and classes of stock.

LO2 – Record and disclose preferred and common stock transactions including stock splits.

LO3 – Record and disclose cash dividends.

LO4 – Record and disclose stock dividends.

Concept Self-Check

Use the following as a self-check while working through Chapter 10.

1. What are the characteristics of a corporation?
2. What types of stock can a corporation issue to investors?
3. What are the rights of common stockholders in a corporation?
4. How are the rights of common stockholders different from those of preferred stockholders?
5. How are stock transactions recorded?
6. When both preferred and common stock are issued by a corporation, how is this disclosed in the equity section of the balance sheet?
7. What is meant by *authorized* shares?
8. How do *issued* shares differ from *outstanding* shares?

9. What is a stock split?
10. How does a stock split affect equity?
11. How are cash dividends recorded?
12. What is a stock dividend and how is it recorded?
13. How does a stock dividend affect equity?

NOTE: The purpose of these questions is to prepare you for the concepts introduced in the chapter. Your goal should be to answer each of these questions as you read through the chapter. If, when you complete the chapter, you are unable to answer one or more the Concept Self-Check questions, go back through the content to find the answer(s). Solutions are not provided to these questions.

10.1 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 10.1.

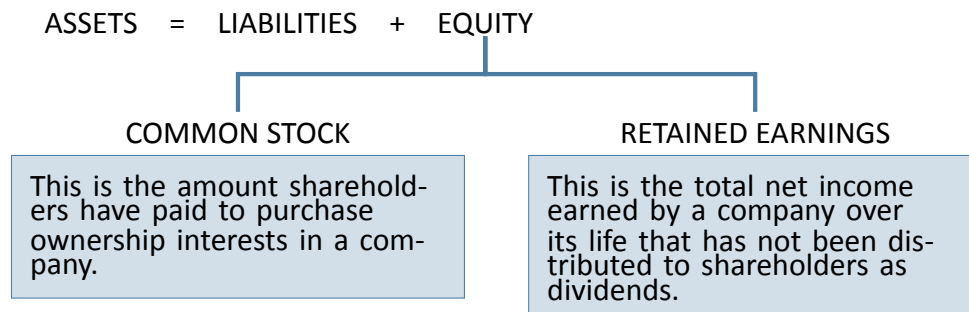


Figure 10.1: Common Stock Versus Retained Earnings

Corporate Characteristics

A unique characteristic of corporations is that they are legally separate from their owners, who are called **stockholders**. Each unit of ownership of a corporation is called a share of **stock**. If a corpo-

ration issues 1,000 shares 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 shares of stock are not issued for sale to the general public. A publicly-held corporation offers its shares of stock for sale to the general public on a stock market like the National Association of Securities Dealers Automated Quotation System (NASDAQ) or the New York Stock Exchange (NYSE).

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 can be formed in any of the 50 states in the United States. Some states are considered more business friendly, such as Delaware, Nevada, and Wyoming. Therefore many business choose to file their *articles of incorporation* in one of these states. This is sometimes called the *corporate charter* and must describe (a) the nature of the firm's business activities, (b) the shares to be issued, and (c) the make-up of the *board of directors (BOD)*. The **classes** or types of stock that will be issued will be determined as well as the total number of shares of each class that can be issued, known as the **authorized** number of shares. Once approved investors can then purchase stocks of the corporation. The investors elect the BOD. The BOD establishes corporate policies and appoints officers who manage the corporation. A chief executive officer (CEO) will be appointed by the BOD. This person in turn has authority over the employees of the corporation.

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 later in 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 stocks of the same 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 sole-proprietorship or partnership. These features

of a corporation are described further below. Proprietorships and partnerships are discussed in more detail in Chapter 13.

- **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 sole-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 fulfill 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 share of stock, and the ease with which ownership can be transferred — stocks 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 stocks 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. The Tax Cuts and Jobs Act (TCJA) recently reduced the corporate income tax rate from 35 percent to 21 percent.

Classes of Stocks

There are many types of stocks, with differences related to voting rights, dividend rights, liquidation rights, and other preferential features. The rights of each stockholder depends 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 or through absentee ballot.
- 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.

For other classes of stocks, 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 stocks are issued.

If the company is successful, common stockholders may receive dividend payments and the value of their 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 stocks 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 stocks. When dividends are declared, they might only be paid to holders of class A stock.

Preferred stocks is a class of stock where the stockholders are entitled to receive dividends before common stockholders. These stocks usually do not have voting privileges. Preferred stockholders typically assume less risk than common stockholders. In return, they receive only a limited amount of dividends. Issuing preferred stock allows a corporation to raise additional capital without requiring existing stockholders to give up control. Preferred stock is listed before common stock in the equity section of the balance sheet. Other characteristics of preferred stock and dividend payments are discussed later in this chapter.

The stocks 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 stocks**). The meaning of these terms is summarized in Figure 10.2:

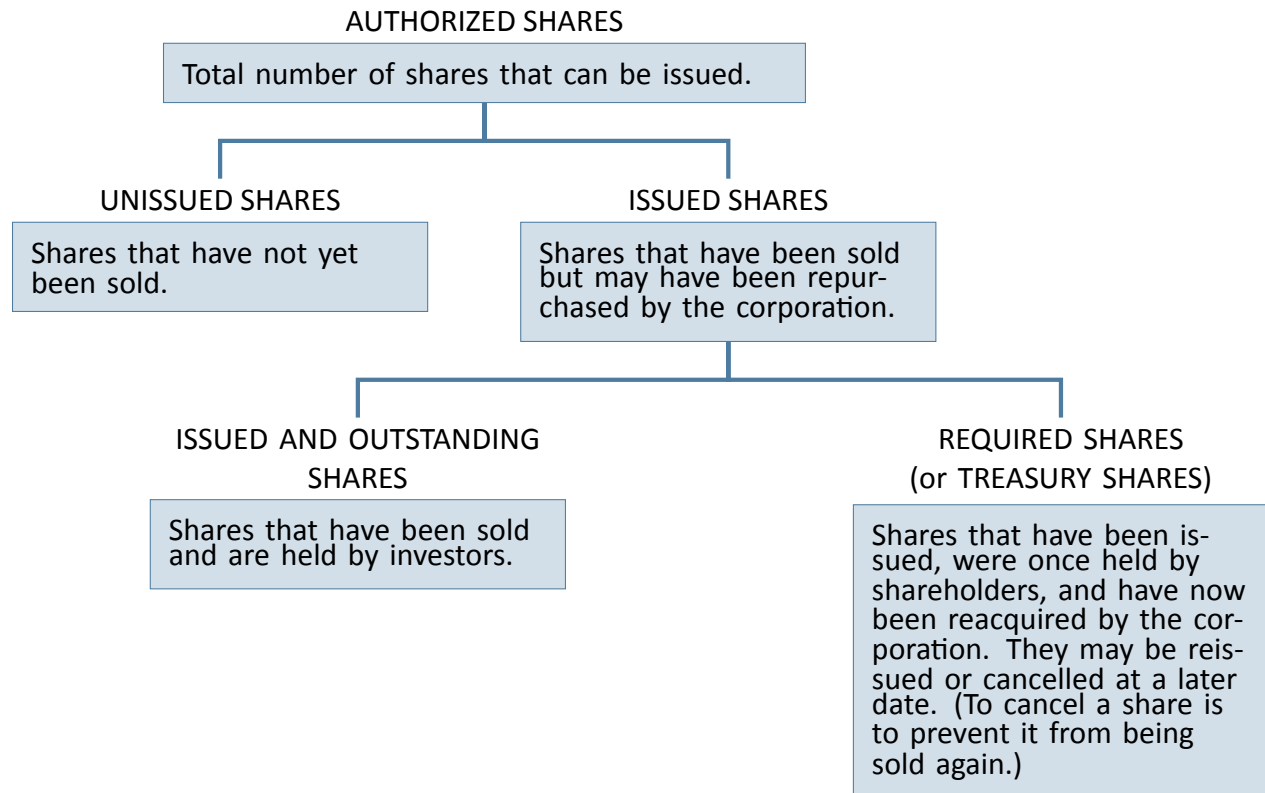


Figure 10.2: Status of Stocks

Par Value

Par-value is the nominal value per share that is established by the corporate charter. Par-value has nothing to do with the market value of the stock. Most states require stock to have a par value although there are states that require stock be issued at no-par value. The original purpose of par value was to protect creditors by specify a pre-determined amount that owners of the company could not withdraw from the company in the case of bankruptcy. This pre-determined amount is referred to as **legal capital**. In the case of a no-par value stock the legal capital would be determined by state law. However, companies simply started to issue par value at minimal amounts in order to avoid restrictions on what could be distributed and it does little to protect investors.

The practice of recording shares with a par value simply allocates the proceeds from the shareholder investment between legal capital and additional paid-in capital. The proceeds received

based on par value is recorded to the stock account and everything above par value is recorded to the additional paid-in capital account.

The Debt Versus Equity Financing Decision

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 a growth company, and is profitable. Assume Old World requires \$30 million in cash to finance a new plant. Management is currently reviewing two financing options:

1. Issue 12% \$30 million in debt, due in three years
2. Issue an additional 500,000 common stock at a selling price of \$60 each.

Management estimates that the new plant should result in income before interest and tax of \$6 million. Management has prepared the following analysis to compare and evaluate each financing option.

	<i>Plan 1:</i> Issue Debt	<i>Plan 2:</i> Issue Common Stock
Income before interest and income taxes	\$ 6,000,000	\$ 6,000,000
<i>Less:</i> Interest expense (\$30M × 12%)	(3,600,000)	-0-
Income before taxes	<u>2,400,000</u>	6,000,000
<i>Less:</i> Income taxes assumed to be 21%	(504,000)	(1,260,000)
Net income available to common stockholders	<u>\$ 1,896,000</u>	<u>\$ 4,740,000</u>
Number of shares common stock outstanding	100,000	600,000
Earnings per share	\$ 18.96	\$ 7.90

Plan 1, the issue of debt, has several advantages for existing common stockholders.

- **Advantage 1: Earnings per share**

If the additional long-term financing were acquired through the issue of debt, the corporate earnings per share (EPS) on each share of common stock would be \$18.96. This EPS is greater than the EPS earned through financing with 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 shares 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 from 100,000 to 600,000 shares.

- **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, which is after-tax income. Thus, dividends are not deductible again for tax purposes. With a 21% income tax rate, the after-tax interest expense to the corporation is only 2.5% ($12\% \times 21\%$).

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.

Another disadvantage is the fact that debt must be repaid at maturity, whether or not the corporation is financially able to do so. Stocks do not have to be repaid.

10.2 Recording Stock Transactions

LO2 – Record and disclose preferred and common stock transactions including stock splits.

To demonstrate the issuance and financial statement presentation of stocks, assume that New World Corporation is authorized to issue stock consisting of 500,000 shares of common stock and 100,000 non-voting shares of preferred stock.

Transaction 1: On January 1, 2015, New World sells 1,000 shares of \$1 par-value common stock to its first stockholders for \$10 per share, or \$10,000 cash. New World records the following entry: