INTRODUCTION TO FINANCIAL ACCOUNTING



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Introduction to Financial Accounting (Dauderis and Annand)

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CHAPTER OVERVIEW

Chapter 1: Introduction to Financial Accounting

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.

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.

1.1: Accounting Defined
1.2: Business Organizations
1.3: Generally Accepted Accounting Principles (GAAP)
1.4: Financial Statements
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1.1: Accounting Defined

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 business organization and a non-business organization?
5. What are the three types of business organizations?
6. What is a PAE? A PE?
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. Identify and explain at least five of the nine 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, labour 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 types of business organizations: *business* and *non-business*. A **business organization** sells products and/or services for profit. A **non-business organization**, such as a charity or hospital, exists to meet various societal needs and does not have profit as a goal. All businesses, regardless of type, record, report, and, most importantly, *use* accounting information for making decisions.

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

Proprietorship

A proprietorship is a business owned by one person. It is not a separate legal entity, which means that the business and the owner are considered to be the same entity. This means, for example, that from an income tax perspective, the profits of a 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 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 *shareholders*. A **shareholder** owns shares of the corporation. **Shares**[1] are units of ownership in a corporation. For example, if a corporation has 1,000 shares, there may be three shareholders where one has 700 shares, another has 200 shares, and the third has 100 shares. The number of shares held by a shareholder 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 shares**.

A corporation's shares can be privately held or available for public sale. A corporation that holds its shares privately and does not sell them publicly is known as a **private enterprise (PE)**. A corporation that sells its shares publicly, typically on a stock exchange, is called a **publicly accountable enterprise (PAE)**.

Unlike the proprietorship and partnership, a corporation is a separate legal entity. This means, for example, that from an income tax perspective, a corporation files its own tax return. The owners or shareholders 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 shareholders. In these cases, shareholders 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.

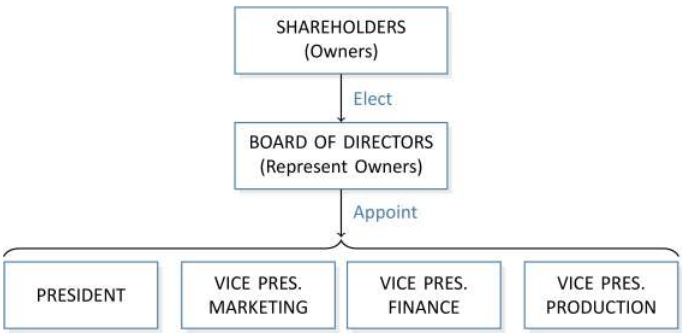


Figure 1.1 Generalized Form of a Corporate Organization

Shareholders 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 shareholders, 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 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 as **Generally Accepted Accounting Principles (GAAP)**.

GAAP in Canada, as well as in many other countries, is based on International Financial Reporting Standards (IFRS) for publicly accountable enterprises (PAE). IFRS are issued by the **International Accounting Standards Board (IASB)**. The IASB's mandate is to promote the adoption of a single set of global accounting standards through a process of open and transparent discussions among corporations, financial institutions, and accounting firms around the world. Private enterprises (PE) in Canada are permitted to follow either IFRS or **Accounting Standards for Private Enterprises (ASPE)**, a set of less onerous GAAP-based standards developed by the Canadian Accounting Standards Board (AcSB). The **AcSB** is the body that governs accounting standards in Canada. ***The focus in this book will be on IFRS for PAEs***[2].

Accounting practices are guided by GAAP which are comprised of qualitative characteristics and principles. As already stated, relevance and faithful representation are the primary qualitative characteristics. Comparability, verifiability, timeliness, and understandability are additional 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 nine principles that support these qualitative characteristics.

Accounting Principle	Explanation/Example
Business entity	Requires that each economic entity maintain separate records. Example: A business owner keeps separate accounting records for business transactions and for personal transactions.
Consistency	Requires that a business use the same accounting policies and procedures from period to period. Example: A business uses a particular inventory costing method. It cannot change to a different inventory costing method in the next accounting period.
Cost	Requires that each economic transaction be based on the actual original cost (also known as historical cost principle). 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.
Full disclosure	Requires that accounting information communicate sufficient information to allow users to make knowledgeable decisions. 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.
Going concern	Assumes that a business will continue for the foreseeable future. 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.
Matching	Requires that financial transactions be reported in the period in which they occurred/were realized. Example: Supplies were purchased March 15 for $700. They will be recorded as an asset on March 15 and then expensed as they are used.
Materiality	Requires a business to apply proper accounting only for items that would affect decisions made by users. Example: The business purchases a stapler for $5 today. Technically, the stapler will last several years so should be recorded as an asset. However, the business will record the $5 as an expense instead because depreciating a $5 item will not impact the decisions of financial information.
Monetary unit	Requires that financial information be communicated in stable units of money.

Accounting Principle	Explanation/Example
	Example: Land was purchased in 1940 for $5,000 Canadian. It is maintained in the accounting records at $5,000 Canadian and is not adjusted.
Recognition	Requires that revenues be recorded when earned and expenses be recorded when incurred, which is not necessarily when cash is received (in the case of revenues) or paid (in the case of expenses). 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.

Note: Some of the principles discussed above may be challenging to understand because related concepts have not yet been introduced. Therefore, most of these 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 changes in 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, 2023 by Bob "Big Dog" Baldwin in order to repair automobiles. All the shares of the corporation are owned by Bob.

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



The Statement of Changes in Equity

The **statement of changes in equity** provides information about how the balances in Share capital and Retained earnings changed during the period. **Share capital** is a heading in the shareholders' equity section of the balance sheet and represents how much shareholders have invested. When shareholders 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 shareholders is known as common shares. Other types of shares will be discussed in a later chapter. When a corporation sells its shares to shareholders, the corporation is said to be **issuing shares** to shareholders.

In the statement of changes in equity shown below, Share capital and Retained earnings balances at January 1 are zero because the corporation started the business on that date. During January, Share capital of $10,000 was issued to shareholders 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 shareholders. Distributions of net income to shareholders are called dividends. Shareholders 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 changes in equity below.



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, 2023 and dividends of $1,000 were given to the shareholder. 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, 2023 is shown below.



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, 2023 and will provide benefits for 2023 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 shareholders). **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 shareholders 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 share capital and retained earnings. Share capital represents how much the shareholders 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 shareholders.

In summary, the balance sheet is represented by the equation: Assets = Liabilities + 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 shareholders, and consists of share capital and retained earnings. Investments made by shareholders, namely share capital, 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 processes involved in selling products and/or services to generate net income. Examples of operating activities include the purchase and use of supplies, paying employees, fuelling 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 share capital (getting money from the owners known as shareholders) or borrowing. Figure 1.2 summarizes the interrelationships among the three types of business activities.

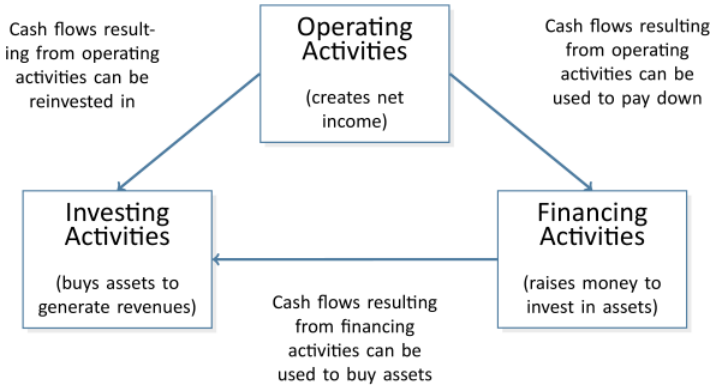


Figure 1.2 Relationships Among the Three Types of Business Activities

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

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:

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

When financial transactions are recorded, combined effects on assets, liabilities, and 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, 2023, as follows:

ASSETS					=	LIABILITIES			+	EQUITY	
Cash	+ Accounts Receivable	+ Prepaid Insurance	+ Equipment	+ Truck	=	Bank Loan	+ Accounts Payable	+ Unearned Revenue	+	Share Capital	+ Retained Earnings

If one item within the accounting equation is changed, then another item must also be changed to balance it. In this way, the equality of the equation is maintained. For example, if there is an increase in an asset account, then there must be a decrease in another asset or a corresponding increase in a liability or 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 2023.

Transaction Number	Date	Description of Transaction	Effect on the Accounting Equation: 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 Cash is increased while the equity item Share Capital is also increased. The impact on the equation is: CASH → +10,000; SHARE CAPITAL ⇢ +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 Cash is increased and the liability Bank Loan is also increased. The impact on the equation is: CASH → +3,000; BANK LOAN ⇢ +3,000			
3	Jan.2	The corporation purchased $3,000 of equipment for cash. There is an increase of the asset Equipment and a decrease to another asset, Cash. The impact on the equation is: EQUIPMENT → +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 Cash is decreased while the asset Truck is increased and the liability Bank Loan is also increased. The impact on the equation is: CASH → -3,000; TRUCK → +8,000; BANK LOAN ⇢ +5,000			

Transaction Number	Date	Description of Transaction	Effect on the Accounting Equation: ASSETS	= LIABILITIES	+ EQUITY
5	Jan.5	Big Dog Carworks Corp. paid $2,400 for a one-year insurance policy, effective January 1. Here the asset Prepaid Insurance is increased and the asset Cash is decreased. The impact on the equation is: PREPAID INSURANCE → +2,400; CASH → -2,400. 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.			
6	Jan.10	The corporation paid $2,000 cash to the bank to reduce the loan outstanding. The asset Cash is decreased and there is a decrease in the liability Bank Loan. The impact on the equation is: BANK LOAN ⇢ -2,000; CASH → -2,000			
7	Jan.15	The corporation received $400 as an advance payment from a customer for services to be performed in the future. The asset Cash is increased by $400 and a liability, Unearned Revenue, is also increased since the revenue has not been earned as of January 15. It will be earned when the work is performed in the future. 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: CASH → +400; UNEARNED REVENUE ⇢ +400			

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Transaction Number	Date	Description of Transaction	Effect on the Accounting Equation: ASSETS	= LIABILITIES	+ EQUITY
8	Jan.20	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. Cash and Accounts Receivable assets of the corporation increase. The repairs are a revenue; revenue causes an increase in net income and an increase in net income causes an increase in equity. The impact on the equation is: CASH → +8,000; ACCOUNTS RECEIVABLE → +2,000; REPAIR REVENUE ⇢ +10,000. This activity increases assets and net income.			
9	Jan.31	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 Cash. Expenses cause net income to decrease and a decrease in net income causes equity to decrease. There is an increase in the liability Accounts Payable. The impact on the equation is: RENT EXPENSE ⇢ -1,600; SALARIES EXPENSE ⇢ -3,500; SUPPLIES EXPENSE ⇢ -2,000; TRUCK OPERATING EXPENSE ⇢ -700; CASH → -7,100; ACCOUNTS PAYABLE ⇢ +700			
10	Jan.31	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: DIVIDENDS ⇢ -200; CASH → -200			

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

	ASSETS					=	LIABILITIES			+	EQUITY	
Trans.	Cash	+ Acc. Rec.	+ Prepaid Insur.	+ Equip.	+ Truck	=	Bank Loan	+ Acc. Pay.	+ Unearned Revenue	+	Share Capital	+ 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	These numbers are used to prepare the Income Statement.			-1,600 -3,500 -2,000 -700
10.	-200											-200
	3,700	+ 2,000	+ 2,400	+ 3,000	+ 8,000	=	6,000	+ 700	+ 400	+	10,000	+ 2,000

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

Column totals are used to prepare the Balance Sheet.

ASSETS = $19,100

LIABILITIES + EQUITY = $19,100

Figure 1.3 Transactions Worksheet for January 31, 2023

Transactions summary:

1. Issued share capital 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 shareholder, 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 shareholders. 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 shareholders 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

LO1 – Define accounting.

Accounting is the process of identifying, measuring, recording, and communicating an organization's economic activities to users for decision making. Internal users work for the organization while external users do not. Managerial accounting serves the decision-making needs of internal users. Financial accounting focuses on external reporting to meet the needs of external users.

LO2 – Identify and describe the forms of business organization.

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

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

Characteristic	Proprietorship	Partnership	Corporation
Separate legal entity	No	No	Yes
Business income is taxed as part of the business	No[3]	No[4]	Yes
Unlimited liability	Yes	Yes	No
One owner permitted	Yes	No	Yes[5]
Board of Directors	No	No	Yes

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

GAAP followed in Canada by PAEs (Publicly Accountable Enterprises) are based on IFRS (International Financial Reporting Standards). PEs (Private Enterprises) follow GAAP based on ASPE (Accounting Standards for Private Enterprises), a less onerous set of GAAP maintained by the AcSB (Accounting Standards Board). GAAP have qualitative characteristics (relevance, faithful representation, comparability, verifiability, timeliness, and understandability) and principles (business entity, consistency, cost, full disclosure, going concern, matching, materiality, monetary unit, and recognition).

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

The four financial statements are: income statement, statement of changes in equity, balance sheet, and statement of cash flows. The income statement reports financial performance by detailing revenues less expenses to arrive at net income/loss for the period. The statement of changes in equity shows the changes during the period to each of the components of equity: share capital 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.

LO5 – 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 recognised?
3. How does the matching concept 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 changes in 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?

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1.2: Business Organizations

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1.3: Generally Accepted Accounting Principles (GAAP)

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1.5: Transaction Analysis and Double-entry Accounting

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1.6: Summary of Chapter 1 Learning Objectives

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1.7: Exercises

EXERCISE 1–1 (LO 1,2,3) Matching

Ethics	Managerial accounting
Financial accounting	Partnership
International Financial Reporting Standards	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 PAEs in Canada.
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 Principles

Business entity	Full disclosure	Materiality
Consistency	Going concern	Monetary unit
Cost	Matching	Recognition

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 proprietorship from his home office, also paints and sells watercolour 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 Tires, purchased a shop tool for cash of $20 to replace the one that had broken earlier that day. The tool would be useful for several years, but the transaction was recorded as a debit to shop supplies expense instead of to shop equipment (asset).
f. Embassy Lighting, a small company operating in Canada, sold some merchandise to a customer in California and deposited cash of $5,000 US. The bookkeeper recorded it as a credit to revenue of $7,250 CAD, which was the Canadian equivalent currency at that time.
g. 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.

h. At the end of each year, a business owner looks at his estimated net income for the year and decides which depreciation method he will use in an effort to reduce his business income taxes to the lowest amount possible.
i. 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*.

	A	*B*	*C*	*D*	*E*
Cash	$3,000	$1,000	$?	$6,000	$2,500
Equipment	8,000	6,000	4,000	7,000	?
Accounts Payable	4,000	?	1,500	3,000	4,500
Share Capital	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, 2023	$50,000		$40,000		?
Balance, Dec. 31, 2023	40,000		20,000		?

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

a. During 2023, no share capital was issued and no dividends were declared.
b. During 2023, no share capital was issued and dividends of $5,000 were declared.
c. During 2023, share capital of $12,000 was issued and no dividends were declared.
d. During 2023, share capital 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.	Bank Loan Payable	**m.**	Retained Earnings
d.	Building	**n.**	Interest Revenue
e.	Cash	**o.**	Interest Payable
f.	Share Capital	**p.**	Interest Expense
g.	Loan 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, 2023, after its first month of operations. Assume no dividends were declared in January.

Cash	$33,000	Equipment	$30,000
Accounts Receivable	82,000	Bank Loan	15,000
Unused Supplies	2,000	Accounts Payable	27,000
Land	25,000	Share Capital	?
Building	70,000	Net Income	40,000

Required:

a. Calculate total assets.
b. Calculate total liabilities.
c. Calculate share capital.
d. Calculate retained earnings.
e. 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	Share Capital	?
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 changes in equity, and balance sheet using the templates provided below.

EDW Inc.			
Income Statement			
Month Ended March 31, 2023			
Revenues			
Service Revenue			$
Expenses			
Wages Expense	$		
Miscellaneous Expense			
Insurance Expense			
Office Supplies Expense			
Net Income			$

EDW Inc.									
Statement of Changes in Equity									
Month Ended March 31, 2023									
				Share Capital		*Retained Earnings*		*Total Equity*	
				Opening Balance	$		$		$
				Shares Issued					
				Net Income					
				Ending Balance	$		$		$

EDW Inc.							
Balance Sheet							
March 31, 2023							
Assets			Liabilities				
Cash	$		Accounts Payable			$	
Accounts Receivable							
Equipment			Equity				
			Share Capital	$			
			Retained Earnings				
			Total Equity				
Total Assets	$		Total Liabilities and Equity			$	

EXERCISE 1–9 (LO4) Net Income, Dividends

Accounts Receivable	$17,000	Machinery	$14,000
Accounts Payable	3,000	Note 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	Share Capital	10,000

Required: Algonquin Inc. began operations on August 1, 2021. 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 changes in equity, and balance sheet using the templates provided below.

Algonquin Inc.				**Algonquin Inc.**					
Income Statement				**Statement of Changes in Equity**					
Year Ended July 31, 2023				**Year Ended July 31, 2023**					
Revenues					Share		Retained		Total
Service Revenue			$		Capital		Earnings		Equity
Expenses				Opening Balance	$ 10,000		$ 6,000		$ 16,000
Advertising Expense	$			Net Income					
Insurance Expense				Dividends					
Salaries Expense				Ending Balance	$		$		$
Net Income			$						

Algonquin Inc.				
Balance Sheet				
July 31, 2023				
Assets		Liabilities		
Cash	$	Accounts Payable	$	
Accounts Receivable		Note Payable		
Machinery		Total Liabilities		$
		Equity		
		Share Capital	$	
		Retained Earnings		
		Total Equity		
Total Assets	$	Total Liabilities and Equity		$

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 changes in equity, and balance sheet using the templates provided below.

Algonquin Inc.				**Algonquin Inc.**					
Income Statement				**Statement of Changes in Equity**					
Year Ended July 31, 2023				**Year Ended July 31, 2023**					
Revenues									
Service Revenue			$		*Share Capital*		*Retained Earnings*		*Total Equity*
Expenses				Opening Balance	$		$		$
Advertising Expense	$			Shares Issued					
Insurance Expense				Net Income					
Salaries Expense				Dividends					
Net Income			$	Ending Balance	$		$		$

Algonquin Inc.				
Balance Sheet				
July 31, 2023				
Assets		*Liabilities*		
Cash	$	Accounts Payable	$	
Accounts Receivable		Note Payable		
Machinery		Total Liabilities		$
		Equity		
		Share Capital	$	
		Retained Earnings		
		Total Equity		
Total Assets	$	Total Liabilities and Equity		$

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	Share Capital	6,400
Fees Earned	12,000	Truck	22,000
Fuel Expense	500	Wages Expense	3,400
Note Payable	18,000		

Required: Wallaby Inc. began operations on February 1, 2023. 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 changes in equity, and balance sheet using the templates provided below.

Wallaby Inc.					**Wallaby Inc.**					
Income Statement					**Statement of Changes in Equity**					
Month Ended March 31, 2023					**Month Ended March 31, 2023**					
Revenues										
Fees Earned			$			*Share Capital*		*Retained Earnings*		*Total Equity*
Expenses					Opening Balance	$ 6,400		$ 4,000		$ 10,400
Equipment Rental Expense	$				Net Loss					
Wages Expense					Ending Balance	$		$		$
Fuel Expense										
Net Loss			$							

Wallaby Inc.					
Balance Sheet					
March 31, 2023					
Assets		*Liabilities*			
Cash	$	Rent Payable	$		
Accounts Receivable		Note Payable			
Truck		Total Liabilities			$
		Equity			
		Share Capital	$		
		Retained Earnings			
		Total Equity			
Total Assets	$	Total Liabilities and Equity			$

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, 2023			
Service Revenue			$3,335
Expenses			
Accounts Payable	$300		
Land	1,000		
Miscellaneous Expenses	335		1,635
Net Income			$1,700

Balance Sheet				
Assets			*Liabilities and Equity*	
Cash	$1,000		Rent Expense	$300
Repairs Expense	500		Share Capital	3,000
Salaries Expense	1,000		Retained Earnings	1,700
Building	2,500			
	$5,000			$5,000

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

EXERCISE 1–13 (LO4) Income Statement

Below are the December 31, 2023, year-end accounts balances for Mitch's Architects Ltd. This is the business's second year of operations.

Cash	$	23,000	Share capital	$	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 share capital 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 shareholders 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 Changes in Equity

Required: Using the data in EXERCISE 1–13, prepare a statement of changes in 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, 2023, year-end financial statements for Gillespie Corp., prepared by a summer student. There were no share

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capital transactions in the year just ended.

Gillespie Corp.		
Income Statement		
For the Year Ended May 31, 2023		
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 Changes in Equity					
At May 31, 2023					
	Share Capital		**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, 2023							
Assets			*Liabilities*				
Cash	$	50,000	Accounts payable	$	130,000		
Accounts receivable		85,000					
Office		45,000	Total			$	130,000

equipment			liabilities				
Building		240,000	*Equity*				
Shop supplies		52,000	Share capital	$	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 ColourMePink 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, 2023	$100,000		$60,000		$40,000	
					?	Shares issued in April
					?	April net income(loss)
					?	Dividends paid in April
Balances at April 30, 2023	$180,000	=	$130,000	+	?	

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, 2023	$160,000		$100,000		$60,000	
					?	Shares issued in June
					?	June net income(loss)
					?	Dividends paid in June
Balances at June 30, 2023	$200,000	=	$90,000	+	?	

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 share capital 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 prime minister about a mail strike and hired a messenger service to deliver letters
h.		Received a collect telegram from the prime minister; 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		Bank Loan	$8,000		Share Capital	$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 changes in equity for Dumont's first month ended January 31, 2015.
2. Prepare a balance sheet at January 31, 2023.

PROBLEM 1–2 (LO4) Preparing Financial Statements

Laberge Sheathing Inc. began operations on January 1, 2023. The office manager, inexperienced in accounting, prepared the following statement for the business's most recent month ended August 31, 2023.

Laberge Sheathing Inc.				
Financial Statement				
Month Ended August 31, 2023				
Cash	$400		Accounts Payable	$7,800
Accounts Receivable	3,800		Share Capital	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 changes in equity for the month ended August 31, 2023, and a balance sheet at August 31, 2023. 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 2023, its first month of operations.

Aug.	1	Issued share capital 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	=	Bank Loan	+	Acct. Pay.	+	Unearned Revenue	+	Share Capital	+	Retained Earnings

- 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'.
- 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 changes in equity for the month ended August 31, 2023. Label the revenue earned as Fees Earned. Prepare a balance sheet at August 31, 2023.

PROBLEM 1–5 (LO5) Transaction Analysis and Table

The following transactions occurred for Olivier Bondar Ltd., an restaurant management consulting service, during May, 2024:

May 1	Received a cheque 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 U.S. client and invoiced $18,000 US (US funds). The Canadian equivalent is $25,000 CAD.
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 labour.

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	Equipment	Office furniture	Accounts payable	Note/Loan payable	Unearned revenue	Share capital	Retained earnings
Open	+10,000	+25,000	+2,000	0	+25,000	+15,000	+35,000	0	0	+8,000	+34,000
Bal											
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, 2024.

1. Shares are also called stock.
2. It should be noted, however, that at the introductory level, there are no significant differences in how IFRS and ASPE are applied.
3. Business income is added to the owner's personal income and the owner pays tax on the sum of the two.
4. Business income is added to the owner's personal income and the owner pays tax on the sum of the two.
5. A corporation can have one or more owners.

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CHAPTER OVERVIEW

Chapter 2: The Accounting Process

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.

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.

2.1: Accounts

2.2: Transaction Analysis Using Accounts

2.3: The Trial Balance

2.4: Using Formal Accounting Records

2.5: The Accounting Cycle

2.6: Summary of Chapter 2 Learning Objectives

2.7: Exercises

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2.1: Accounts

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 share capital 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, cheques, 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 shareholders. 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: share capital, retained earnings, dividends, revenues, and expenses. Share capital 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 shareholders 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.

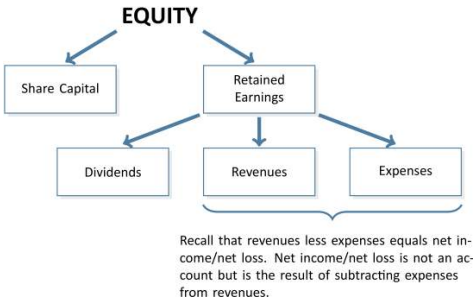


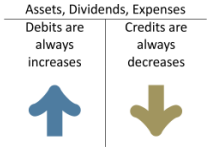
Figure 2.1 Composition of Equity Accounts

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.

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

The *type* of account determines whether an increase or a decrease in a particular transaction is represented by a debit or credit. For financial transactions that affect *assets*, *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*, *share capital*, 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 share capital 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	LIABILITIES
DIVIDENDS	SHARE CAPITAL
EXPENSES	REVENUE
Increases are DEBITED.	Increases are CREDITED.
Decreases are CREDITED.	Decreases 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				4,300	Balance
	8,000	2,000					
		7,100					
		200					
Balance	3,700						

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	Share capital, 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**	+	**EQUITY**[3]
Increases are:	Debits		Credits		Credits
Decreases are:	Credits		Debits		Debits

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

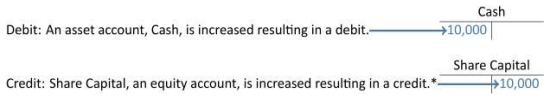
In this section, the following debit and credit summary will be used to record the transactions of Big Dog Carworks Corp. into T-accounts.

ASSETS	LIABILITIES
DIVIDENDS	SHARE CAPITAL
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 shareholder, for a total of $10,000 cash.

Analysis:

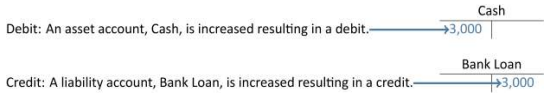


**Note: An alternate analysis would be that the issuance of shares causes equity to increase and increases in equity are always recorded as a credit.*

Transaction 2

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

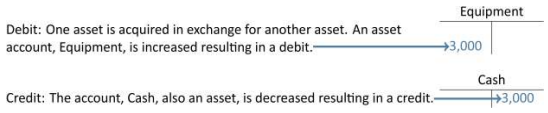
Analysis:



Transaction 3

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

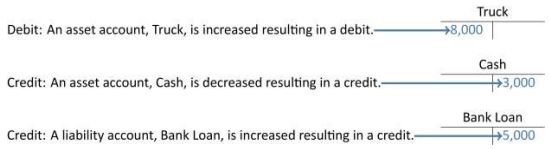
Analysis:



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:

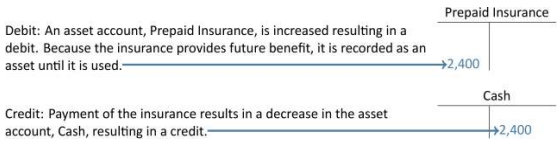


Note: Transaction 4 involves one debit and two credits. Notice that the total debit of $8,000 equals the total credits of $8,000 which satisfies the double-entry accounting rule requiring that debits ALWAYS equal credits.

Transaction 5

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

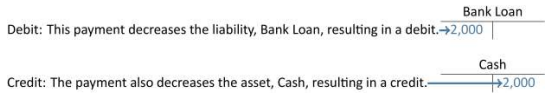
Analysis:



Transaction 6

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

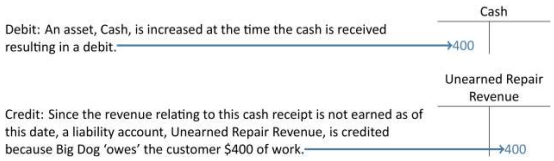
Analysis:



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.

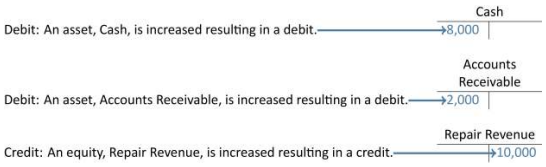
Analysis:



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.

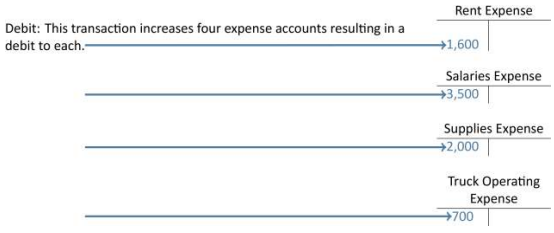
Analysis:



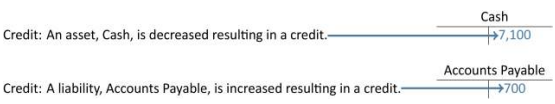
Transaction 9

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:



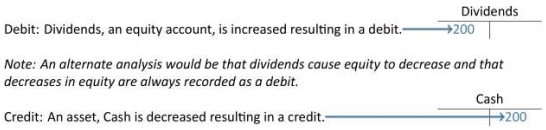
Note: Each expense is recorded in an individual account.



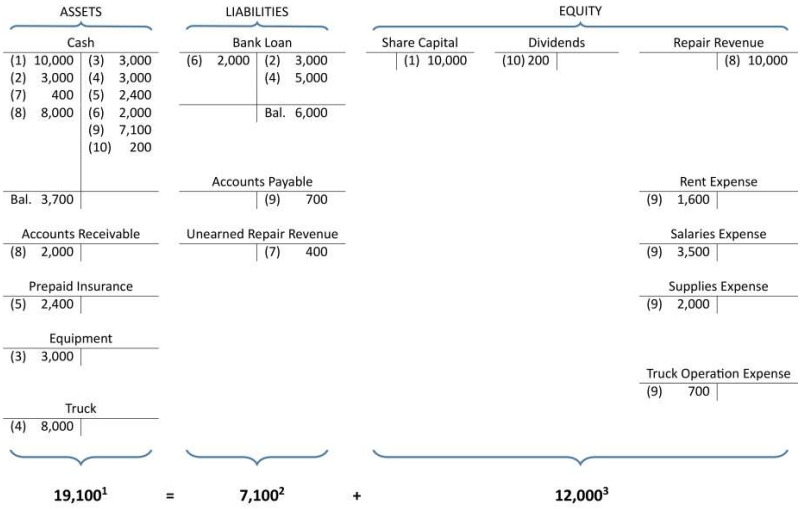
Transaction 10

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

Analysis:



After the January transactions of Big Dog Carworks Corp. have been recorded in the T-accounts, each account is totalled and the difference between the 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.



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 document that lists all the account balances at a point in time. The total debits must equal total credits on the trial balance. The form and content of a trial balance is illustrated below, using the account numbers, account names, and account balances of Big Dog Carworks Corp. at January 31, 2015. Assume that the account numbers are those assigned by the business.

Big Dog Carworks Corp.				
Trial Balance				
At January 31, 2023				
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	Bank loan			$6,000
210	Accounts payable			700
247	Unearned revenue			400
320	Share capital			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, 2023 can now be prepared from the trial balance figures. First, an income statement is prepared.



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



NOTE: Pay attention to the links between financial statements.

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

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

The balance sheet SUMMARIZES equity by showing only account balances for share capital and retained earnings. To obtain the details regarding these equity accounts, we must look at the income statement and the statement of changes in 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 'F' (for Folio) 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 about one centimetre into the column. Accounts to be credited are always indented in this way in the journal. The amount of the credit is recorded in the credit column. 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.

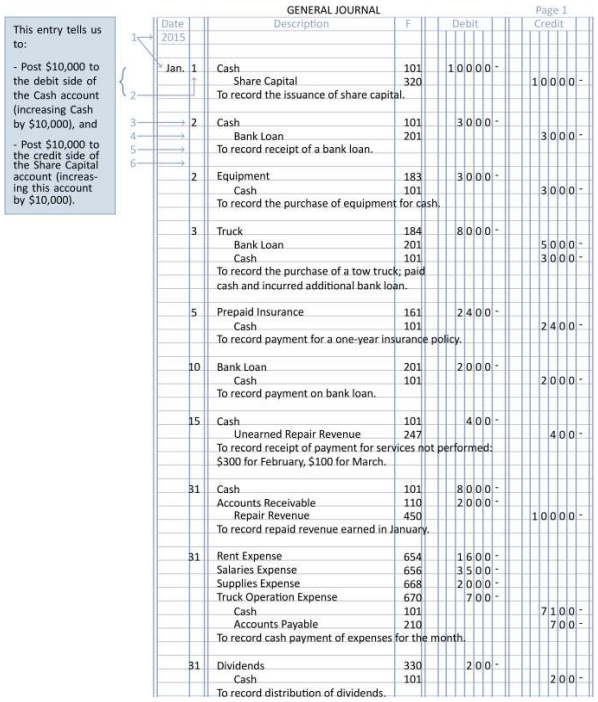


Figure 2.2 General Journal Transactions for BDCC in January

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.

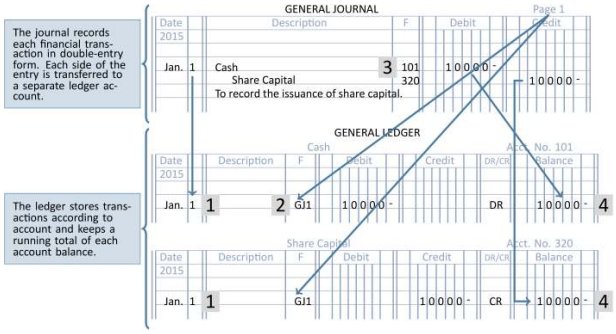


Figure 2.3 Illustration of a Transaction Posted to Two Accounts in the General Ledger

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 Share Capital is then posted from the journal to the Share Capital ledger account.
2. The journal page number is recorded in the folio (F) 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 folio (F) 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 Share Capital 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.

Special Journals and Subledgers

The general journal and the general ledger each act as a single all-purpose document where all the company's transactions are recorded and posted over the life of the company.

As was shown in Figure 2.2, various transactions are recorded to a general journal chronologically by date as they occurred. When companies engage in certain same-type, high-frequency transactions such as credit purchases and sales on account, special journals are often created in order to separately track information about these types of transactions. Typical special journals that companies often use are a sales journal, cash receipts journal, purchases journal and a cash disbursements journal. There can be others, depending on the business a company is involved in. The general journal continues to be used to record any transactions not posted to any of the special journals, such as:

- correcting entries
- adjusting entries
- closing entries

An example of a special journal for credit sales is shown below.



Figure 2.4 Sales Journal – records credit sales

For simplicity, the cost of goods sold is excluded from this sales journal and will be covered in chapter five of this course. The sales journal provides a quick overview of the total credit sales for the month as well as various sub-groupings of credit sales such as by product sold, GST, and customers.

The sales journal can also be expanded to include credit sales returns, and the purchases journal to include purchases returns and allowances for each accounting month. Note that purchase discounts would be recorded in the cash disbursements journal because the discount is usually claimed at the time of the cash payment to the supplier/creditor. This is also the case with sales discounts from customers which would be recorded in the cash receipts journal at the time the cash, net of the sales discount, is received. Any cash sales returns would be recorded in the cash disbursements journal.

Recall from Figure 2.3 that with accounting records that comprise only a general journal and general ledger, each transaction recorded in the general journal was posted to the general ledger. With special journals, such as the sales journal, their *monthly* totals are posted to the general ledger instead. For larger companies, these journals can be summarized and posted more frequently, such as weekly or daily, if needed.

Below are examples of other typical special journals such as a purchases journal, cash receipts journal, cash disbursements journal and the general journal. Note the different sub-groupings in each one and consider how these would be useful for managing the company's business.

Figure 2.5 Purchases Journal – records credit purchases

Credit Purchases Journal													P1
Date	**Invoice #**	**Creditor**	**Ref**	**Accounts Payable**		**Hardware Purchases**		**Lighting Purchases**		**Plumbing Purchases**		**GST Recv**	
				Credit		Debit		Debit		Debit		Debit	
2025													
Sept 1	B253	Better and Sons	AP6	$	60,000					$	57,000	$	3,000
Sept 5	2008	Northward Suppliers	AP2		160,000	$	152,000						8,000
Sept 6	15043	Lighting Always	AP4		18,000			$	17,100				900
Sept 7	RC18	VeriSure Mfg	AP1		24,000						22,800		1,200
Sept 8	1102	Pearl Lighting	AP3		5,000		2,000		2,750				250
Sept 11	EF-1603	Arnold Consolidated	AP5		1,600						1,520		80
Totals				$	268,600	$	154,000	$	19,850	$	81,320	$	13,430
GL account					210		510		514		518		180

Figure 2.6 Cash Receipts Journal – records all cash receipts

Cash Receipts Journal													CR1
						Sales		**Accounts**		**Cash**		**GST**	
Date	**Billing #**	**Customer**	**Ref**	**Cash**		**Discount**		**Receivable**		**Sales**		**Payable**	
				Debit		Debit		Credit		Credit		Credit	
2025													
Sept 1	17001	Hardy	AR5	$	12,000	$	120	$	12,120				
Sept 6	CS1	Cash sale	CS1		1,500					$	1,425	$	75
Sept 8	17003	Bergeron	AR4		2,000				2,000				
Sept 11	17004	Douglas	AR3		20,000				20,000				
Sept 12	17005	Cash sale	CS2		3,250						3,088		163
Sept 13	17006	White	AR2		5,000				5,000				
Totals				$	43,750	$	120	$	39,120	$	4,513	$	238
GL account					102		402		110		410		280

Figure 2.7 Cash Disbursements Journal – records all cash disbursements

Cash Disbursements Journal												CD1
						Purchase						
						Discount		**Accounts**		**Other**		
Date	**Chq #**	**Payee**	**Ref**	**Cash**		**(Inventory)**		**Payable**		**Disb...**		**Desc**
				Credit		Credit		Debit		Debit		
2025												
Sept 1	101	General Lighting Ltd.	AP22	$	14,775	$	225	$	15,000			
Sept 2	102	John Bremner	SAL1		1,600					$	1,600	Salary exp.
Sept 11	103	Lighting Always	AP4		4,200				4,200			
Sept 12	104	VeriSure Mfg	AP1		22,500		225		22,725			
Sept 13	105	Receiver General	AP 14		14,000						14,000	GST Aug
Sept 14	106	City of Edmonton	AP18		5,500						5,500	Property Tax
Totals				$	62,575	$	450	$	41,925	$	21,100	
GL account					102		104		210		various	

General Journal				GJ1
Date	Account/Explanation	PR	Debit	Credit
Sept 30, 2025	Bank service charges expense	520	25	
	Cash	102		25
	Bank reconciliation for August			
Sept 30, 2025	Depreciation expense	530	3,500	
	Accumulated depreciation	118		3,500
	Depreciation for September			
Totals			3,525	3,525

Figure 2.8 General Journal – records all other entries including adjustments, corrections, and closing entries

Each account that exists in the general journal must be represented by a corresponding account in the general ledger. As previously stated, each entry from the general journal is posted directly to the general ledger, if no other special journals or subledgers exist. If there are several hundreds or thousands of accounts receivable transactions for many different customers during a month, this detail cannot be easily summarized in meaningful ways. This may be fine for very small companies, but most companies need certain types of transactions sub-groupings, such as for accounts receivable, accounts payable and inventory. For this reason, subsidiary ledgers or subledgers are used to accomplish this. Subledgers typically include accounts receivable sub-grouped by customer, accounts payable by supplier, and inventory by inventory item. Monthly totals from the special journals continue to be posted to the general ledger, which now acts as a control account to its related subledger. **It is critical that the subledgers always balance to their respective general ledger control account, hence the name *control account.***

Below is an example of how a special journal, such as a sales journal is posted to the subledgers and general ledger.

Note how the general ledger can now be posted using the monthly totals from the sales journal instead of by individual transaction. Each line item within the sales journal is now posted on a daily basis directly to the subledger by customer instead, and balanced to the accounts receivable control balance in the general ledger. The subledger enables the company to quickly determine which customers owe money and details about those amounts.

At one time, recording transactions to the various journals and ledgers was all done manually as illustrated above. Today, accounting software makes this process easy and efficient. Data for each transaction is entered into the various data fields within the software transaction record. Once the transaction entry has been input and saved, the software automatically posts the data to any special journals, subledgers and general ledger. At any time, the accountant can easily obtain summary or detailed reports including a trial balance, accounts receivable by customer, accounts payable by creditor, inventory by inventory item, and so on.

Below is a flowchart that illustrates the flow of the information for a manual system from the source documents to the special journals, the subledgers and to the general ledger. This illustration also helps to give a sense of how the data would flow using accounting software.



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 2.9.

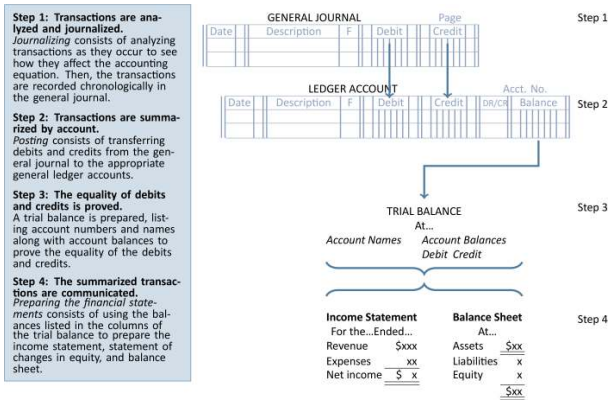


Figure 2.9 Illustrating the Steps in the Accounting Cycle

The sequence just described, beginning with the journalising 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

LO1 – 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. Inrceases in liabilities are recorded as credits and decreases as debits. Equity represents the net assets owned by the owners and includes share capital, dividends, revenues, and expenses. Increases in equity, caused by the issuance of shares 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.

LO2 – 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: Assets = Liabilities + Equity.

LO3 – 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 document 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.

LO4 – 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.

LO5 – 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. Summarise the rules for using debits and credits to record assets, expenses, liabilities, equity, and revenues.
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.

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2.6: Summary of Chapter 2 Learning Objectives

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2.7: 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
		Share capital			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	
	Debit	*Credit*	*Debit*	*Credit*	*Debit*	*Credit*
	(increase)	(decrease)	(decrease)	(increase)	(decrease)	(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):

	Debit	*Credit*
1. Issued share capital for cash.	Cash	Share Capital
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 share capital in exchange for $3,000 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 service work for a European customer. Invoiced $8,000 EURO (European funds). The Canadian currency equivalent is $12,000 CAD. (hint: Recall the monetary unit principle.)
7. Completed $7,000 of service work for a customer on account.
8. Purchased $1,000 of equipment, paying cash.
9. Received $8,000 EURO ($12,000 CAD) cash for service work done regarding item (6).
10. Rent of $5,000 cash was paid for the current month's rent.
11. 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.
12. Reimbursed $25 in cash to an employee for use of his personal vehicle for company business for a business trip earlier that day.
13. Received a cash of $5,000 regarding the service work for item (7).
14. Vehicle worth $30,000 purchased in exchange for $10,000 cash and $20,000 note due in six months.
15. Paid the full amount of the utilities invoice regarding item (2).
16. Purchased $3,000 of furniture on account.

17. Completed $2,000 of service work for a customer and collected cash.
18. Received a cheque in the amount of $2,000 from a customer for service work to be done in two months.
19. Purchased office supplies for $3,000 on account.
20. Completed a project for a customer and billed them $8,000 for the service work.
21. Purchased a laptop computer for $2,500 in exchange for a note payable.
22. 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, 2024, 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, 2024, income statement, statement of changes in 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 share capital 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		Share Capital		Repair Revenue	
(1) 5,000					(1) 5,000		
Accounts Receivable		Accounts Payable				Electricity Expense	
Prepaid Expense						Rent Expense	
Unused 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, 2023. 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.

Account Title	*Account Balances*	
	Debits	*Credits*
Cash	$120,400	
Commissions Earned	5,000	
Share Capital		$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	$161,700	$408,300

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 share capital 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, 2023. Do not include amounts. For instance, the first entry would be:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Cash		XX	
	Share Capital			XX
	(1) To record issuance of share capital			

Cash		Bank Loan		Share Capital		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 2023.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan. 1	Cash		10,000	
	Share Capital			10,000
	To record the issuance of shares.			
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, 2023.
c. Prepare an Income Statement and Statement of Changes in Equity for the month ended January 31, 2023 and a Balance Sheet at January 31, 2023.

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	PR	Debit	Credit
	Advertising expense		1,500	
	Cash			1,500

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

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

4. Completed service work for a British customer. Invoiced $5,000 GBP (British pounds Sterling funds). The Canadian currency equivalent is $8,400 CAD. (Hint: Recall the monetary unit principle.)

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

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

General Journal				
Date	Account/Explanation	PR	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	PR	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	PR	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
Bank Loan	5,000		Telephone Expense	250
Cash	1,000		Truck	9,000
Share Capital	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, 2023.
2. Prepare an Income Statement and Statement of Changes in Equity for the year ended October 31, 2023.
3. Prepare a Balance Sheet at October 31, 2023.

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

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May 31, 2023. No journal entries were prepared in support of the amounts recorded in the ledger accounts.

Cash			101		Accounts Payable			210		Share Capital			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												Advertising Expense			610
		29	3,500												May 31	250		

Accounts Receivable			110							Commissions Expense			615
May 5	3,000	May 10	1,500							May 24	1,100		
18	2,500	15	1,200										
										Rent Expense			654
Prepaid Advertising			160							May 28	400		
May 16	500	May 31	250										
										Salaries Expense			656
Unused Supplies			173							May 29	3,500		
May 20	300	May 30	100										
										Supplies Expense			668
Equipment			183							May 30	100		
May 11	2,000	May 21	800										
										Telephone Expense			669
										May 23	150		

Required:

1. Reconstruct the transactions that occurred during the month and prepare journal entries to record these transactions, including appropriate descriptions. Include accounts numbers (Folio) 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, 2023.

Cash	$1,400	Accounts Payable	$2,000
Accounts Receivable	3,600	Share Capital	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 2023, its first month of operation.

Aug. 1	Issued share capital 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 Feeds 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, 2023		
	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
Share capital		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, 2023 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, 2023	
Accounts payable	$115,000
Accounts receivable	85,000
Cash	150,000
Building/warehouse	–
Equipment	45,000
Furniture	15,000
Land	–
Notes payable	20,000
Office equipment	–
Office supplies	7,000
Prepaid expenses	–
Repairs expense	500
Retained earnings	90,000
Salaries expense	32,000
Service revenue	25,000
Share capital	108,000
Unearned service revenue	–
Utilities expense	4,500
Vehicle	19,000

Listed below are activities for Stellar Services Ltd. for the month of January, 2023:

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 January 1, 2024.
c. Paid one half of the outstanding accounts payable.
d. Hired a new employee who will start up January 1, 2024. 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 March.
f. Booked a conference room at a hotel for a presentation to potential customers scheduled for January 15. The $600 rental fee will be paid January 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 8.

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 July 31, 2025.
l. John Stellar invested $30,000 cash and engineering equipment with a fair value of $10,000 in exchange for capital shares.
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 January 23, 2024. A deposit for $300 is to be paid on January 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 16.
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 January 10. This must be paid by January 25.

Required:

1. Prepare all required journal entries for December.
2. Prepare the income statement and the statement of changes in equity for the month ended December 31, 2023 and the balance sheet as at December 31, 2023. (Hint: Using T-accounts would be helpful.)

PROBLEM 2–7 (LO4) Special Journals and Subledgers

The following are selected transactions from December, 2025 for Readem & Weep Sad Books Co. Ltd., who purchases and sells books for a profit.

Required: Complete the schedule based on the information in Section 2.4, Special Journals and Subledgers from this chapter. If a transaction has no applicable subledger, leave answer blank.

Journals	
Sales	S
Purchases	P
Cash Receipts	CR
Cash Disbursements	CD
General Journal	GJ
Subledgers	
Accounts Receivable	AR
Accounts Payable	AP
Merchandise Inventory	MI

Date	Transaction	Journal	Subledger
Dec 1	Issued shares to the company's founder for cash		
1	Issued a cheque for rent to the building owner		
2	Purchased 100 books on credit from the publisher		
4	Borrowed money from bank (i.e. a note payable)		
5	Purchased office furniture on account		
6	Return 5 books to the publisher due to missing pages		
12	Sold 20 books to Fred's Cigar Store on account (credit)		
13	Paid cash for a two-year insurance policy effective immediately		
15	Paid cash for some office supplies		
19	Issued a cheque to the bank for the note payable interest		
20	Hired an employee and paid her first week's salary in cash		
22	Sold 10 books for cash		
27	Fred's Cigar Store returned five		

	of the books purchased earlier and the amount owing was adjusted (accounts receivable)		
27	Received cash from Fred's Cigar Store for amount owing		
28	Found an error in the accounting records and recorded a correcting entry		
29	Received cash from a customer for 100 books. 50% of the books will be sent immediately and the remained to be sent in January		
30	A cheque was issued for rent for January, 2026		
30	Dividends were paid in cash to the company founder		

PROBLEM 2–8 (LO4) Special Journals and Subledgers

Listed below are transactions for the first month of operations for Harmand Ltd., a consulting company who provides engineering consulting services and also sells vintage model airplanes (cost of goods sold ignored for simplicity).

June 1	Purchased equipment on credit from Bradley & Co., $12,000.
2	Billed consulting services completed for Cooper Co., Invoice #17001 for $8,000.
3	Issued cheque #601 to LRS Properties Ltd., for office rent for June, $3,500.
4	Purchased office supplies from Office Supplies Ltd., cheque #602 for $1,240.
6	Sold five vintage model airplanes to Mr. F. Scott on account, Invoice #17002 for $2,500 each.
7	Sold one vintage model airplane as a cash sale, $2,000.
8	Received cash from Cooper Co., for Invoice #17001 for $7,920. Cooper was entitled to an early payment discount of $80 because they paid their account within 10 days of being billed.
9	Paid salary for one employee, cheque #603 for $1,400.
10	Received an invoice from the Daily Gazette for advertising, payable in 30 days; $1,200.
10	Paid 20% of the June 1 equipment purchase; cheque #604.
11	Received a cheque for $5,000 from Fort Robbins Bridge Builders Ltd., for consulting work that will begin July 1;
14	Borrowed $10,000 from the bank as a loan.
18	Issued a receipt for $5,000 for cash payment from F. Scott as a partial payment of their account.
22	Issued 500 additional shares to owner and shareholder for $5,000 cash.
23	Paid utilities bill from last month to HTC Power Corp., cheque #605 for $350.
25	Billed $35,000 of consulting services rendered to Boyzee Villages Corp. Invoice #17003.
28	Paid Daily Gazette amount owing early and received a discount of $12, reducing payment to $1,188, cheque #606.
29	Paid $200 in dividends to Bill Sloan, owner and sole shareholder, cheque #607.
30	Paid $1,000 to pay the interest owing to date of $30 (interest expense) and reduce the bank loan for the balance, cheque #608.
30	Paid salary for employee up to date, cheque #609 for $1,600.
30	Corrected an error in the payment to the bank. Interest expense should be $35 and $965 to reduce the bank loan.

Required:

1. Prepare a sales journal, purchases journal, cash receipts journal, cash disbursements journal, and general journal as shown

below. Record the June transactions into these journals. (Ignore GST and account codes for simplicity.)

Credit Sales Journal											S1
						Consulting		**Vintage**			
				Accounts		**Services**		**Model**			
Date	**Billing #**	**Customer**	**Ref**	**Receivable**		**Revenue**		**Plane Sales**		**Other**	**Desc**
				Debit		Credit		Credit			
Totals											

Credit Purchases Journal										P1
				Accounts	**Equipment**	**Advertising**	**Other**			
Date	**Invoice #**	**Creditor**	**Ref**	**Payable**	**Purchases**	**Expense**	**Purchases**			**Desc**
				Credit	Debit	Debit	Debit			
Totals										

Cash Receipts Journal										CR1
						Sales	**Accounts**	**Cash**		
Date	**Billing #**	**Customer**	**Ref**	**Cash**		**Discount**	**Receivable**	**Sales**	**Other**	**Desc**

				Debit		Debit		Credit		Credit		Credit		
Totals														

Cash Disbursements Journal												CD1
						Purchase		**Accounts**		**Other**		
Date	**Chq #**	**Payee**	**Ref**	**Cash**		**Discount**		**Payable**		**Disbursements**		**Desc**
				Credit		Credit		Debit		Debit		
Totals												

General Journal				GJ1
Date	Account/Explanation	PR	Debit	Credit

Totals				

2. Prepare an accounts receivable subledger, accounts payable subledger, and a general ledger as shown below. Post the journals from part 1 to the subledgers and general ledger as shown in Section 2.4 of this chapter. You will need to create multiple Accounts Receivable and Accounts Payable subledgers, as well as general ledgers.

Accounts Receivable Subledger				
Name:				
Date	Ref	Debit	Credit	Balance

Accounts Payable Subledger				
Name:				
Date	Ref	Debit	Credit	Balance

General Ledger				
Name:				
Date	Ref	Debit	Credit	Balance

3. Prepare a trial balance from the general ledger accounts. Use the format shown in Section 2.3 of this chapter. Ensure that the trial balance debits equal the credits and that the subledgers balance to their respective accounts receivable and accounts payable control accounts.
4. Prepare an income statement, statement of changes in equity and a balance sheet as at June 30, 20XX. Use the format shown in Section 2.3 of this chapter.

---

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

2. Expenses, 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.

3. The issuance of share capital 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.

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CHAPTER OVERVIEW

Chapter 3: Financial Accounting and Adjusting Entries

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.

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.

3.1: The Operating Cycle
3.2: Adjusting Entries
3.3: The Adjusted Trial Balance
3.4: Using the Adjusted Trial Balance to Prepare Financial Statements
3.5: The Accounting Cycle
3.6: Summary of Chapter 3 Learning Objectives
3.7: Exercises

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3.1: The Operating Cycle

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 five 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.

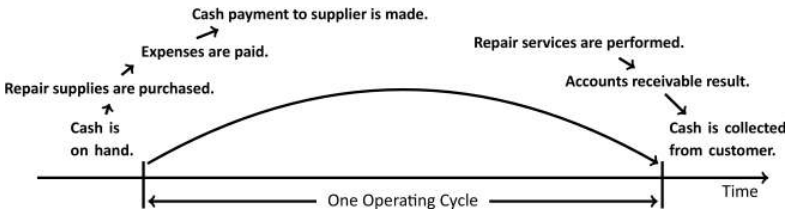


Figure 3.1 One Operating Cycle

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

GAAP provide guidance about when an economic activity should be recognized in financial statements. An economic activity is recognized when it meets two criteria:

1. it is probable that any future economic benefit associated with the item will flow to the business; and
2. it has a value that can be measured with reliability.

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	PR	Debit	Credit
	Accounts Receivable		XX	
	Revenue			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	PR	Debit	Credit
	Cash		XX	
	Accounts Receivable			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	PR	Debit	Credit
	Cash		XX	
	Revenue			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	PR	Debit	Credit
	Cash		XX	
	Unearned Revenue			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	PR	Debit	Credit
	Unearned Revenue		XX	
	Revenue			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.

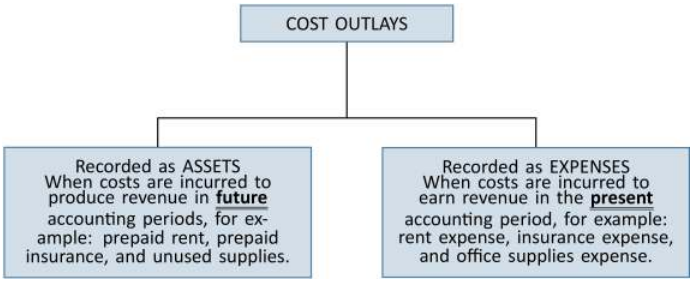


Figure 3.3 The Interrelationship Between Assets and Expense

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	PR	Debit	Credit
	Utilities Expense		XX	
	Accounts Payable (or Utilities Payable)			XX
	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	PR	Debit	Credit
	Accounts Payable (or Utilities Payable) ...		XX	
	Cash.....			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	PR	Debit	Credit
	Salaries Expense		XX	
	Cash.....			XX
	To record payment of January salaries.			

As a result of this entry, salaries expense is reported on the January income statement when cash is paid.

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	PR	Debit	Credit
	Prepaid Insurance.....		XX	
	Cash.....			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	PR	Debit	Credit
	Insurance Expense		XX	
	Prepaid Insurance.....			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 prepaid expenses, depreciation, unearned revenues, accrued revenues, and accrued expenses.

At the end of an accounting period, before financial statements can be prepared, the accounts must be reviewed for potential adjustments. This review is done by using the *unadjusted trial balance*. The 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.

Figure 3.4 Unadjusted Trial Balance of Big Dog Carworks Corp. at January 31, 2023

Big Dog Carworks Corp.			
Unadjusted Trial Balance			
At January 31, 2023			
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	Bank loan		$6,000
210	Accounts payable		700
247	Unearned revenue		400
320	Share capital		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

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 five types of adjusting entries as shown in Figure 3.5, each of which will be discussed in the following sections.



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

Figure 3.5 Five Types of Adjusting Entries

Adjusting Prepaid Asset Accounts

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

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

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

Prepaid Insurance
2,400

The balance resulted when the journal entry below was recorded:

Prepaid Insurance	2,400	
Cash		2,400

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

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

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jan 31	Insurance Expense		200	
	Prepaid Insurance.....			200
	To adjust for the use of one month of Prepaid Insurance.			

As shown below, the balance remaining in the Prepaid Insurance account is $2,200 after the adjusting entry is posted. The $2,200 balance represents the unexpired asset that will benefit future periods, namely, the 11 months from February to December, 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.

Insurance Expense		Prepaid Insurance	
		2,400	
200	←		200
		Bal. 2,200	

An expense account, Insurance Expense, is increased by the amount used.

An asset account, Prepaid Insurance, is decreased by the $200 of insurance coverage that was 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 Unearned Liability Accounts

On January 15, Big Dog received a $400 cash payment in advance of services being performed.

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

Unearned Repair Revenue
400

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

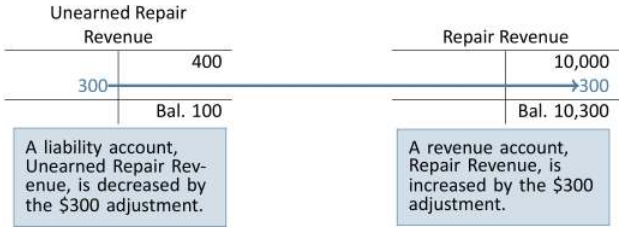
Cash	400	
Unearned Repair Rev.		400

This advance payment was originally recorded as unearned, 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	PR	Debit	Credit
Jan 31	Unearned Repair Revenue		300	
	Repair Revenue.....			300
	To adjust for repair revenue earned.			

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



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 Plant and Equipment Accounts

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	PR	Debit	Credit
	Depreciation Expense		XX	
	Accumulated Depreciation			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, 2023 unadjusted trial balance showed the following two plant and equipment assets:

Big Dog Carworks Corp.			
Unadjusted Trial Balance			
At January 31, 2023			
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:

Equipment	
3,000	

The balance resulted when this journal entry was recorded:

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	PR	Debit	Credit
Jan 31	Depreciation Expense, Equipment		25	
	Accumulated Depreciation, Equipment			25
	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, 2023 unadjusted trial balance.

The Truck general ledger accounts appears as:

Truck	
8,000	

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

Truck		8,000	
	Bank Loan		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	PR	Debit	Credit
Jan 31	Depreciation Expense, Truck		100	
	Accumulated Depreciation, Truck.....			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 for Accrued Revenues

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 notes receivable where the interest has been earned but not collected or recorded. The adjusting entry for accrued revenues is:

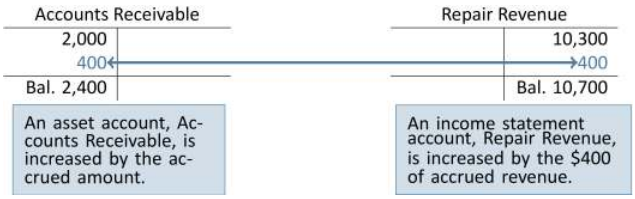
General Journal

Date	Account/Explanation	PR	Debit	Credit
	Receivable		XXX	
	Revenue			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	PR	Debit	Credit
Jan 31	Accounts Receivable		400	
	Repair Revenue.....			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 for Accrued Expenses

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	PR	Debit	Credit
	Expense		XXX	
	Payable			XXX
	To adjust for accrued expense.			

Accruing Interest Expense

For Big Dog Carworks Corp., the January 31, 2023 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.

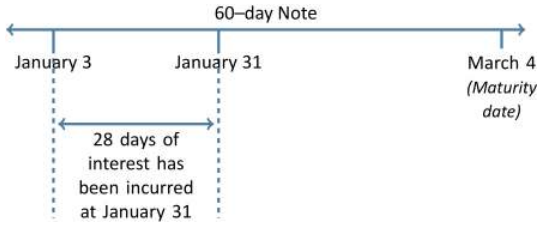


Figure 3.6 Interest Incurred During an Accounting Period

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

$$\text{Interest} = \text{Principal} \times \text{Interest rate} \times \frac{\text{Elapsed time in days}}{365}$$

The interest expense accrued at January 31 is calculated as:

$$\text{Interest} = \$6{,}000 \times 0.04 \times \frac{28}{365} = \$18 \text{ (rounded to nearest whole dollar)}$$

Interest is normally expressed as an annual rate. Therefore, the 28 days must be divided by the 365 days in a 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	PR	Debit	Credit
Jan 31	Interest Expense		18	
	Interest Payable			18
	To adjust for accrued interest; $6,000 X 4% X 28/365 = $18.41 (rounded to $18 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:



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

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Feb 28	Interest Expense		18	
	Interest Payable			18
	To adjust for accrued interest; $6,000 X 4% X 28/365 = $18.41 (rounded to $18 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	PR	Debit	Credit
Mar 4	Interest Expense		3	
	Interest Payable		36	
	Bank Loan		6,000	
	Cash			6039
	To record payment of the bank loan and interest; interest expense for March is $6,000 X 4% X 4/365 = $2.63 (rounded to $3 for illustrative purposes in this chapter).			

The $36 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 **$39 - $18** expensed in January, $18 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	PR	Debit	Credit
Jan 31	Income Tax Expense		500	
	Income Tax Payable			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 five types of adjustments discussed in the previous paragraphs are summarized in Figure 3.7.

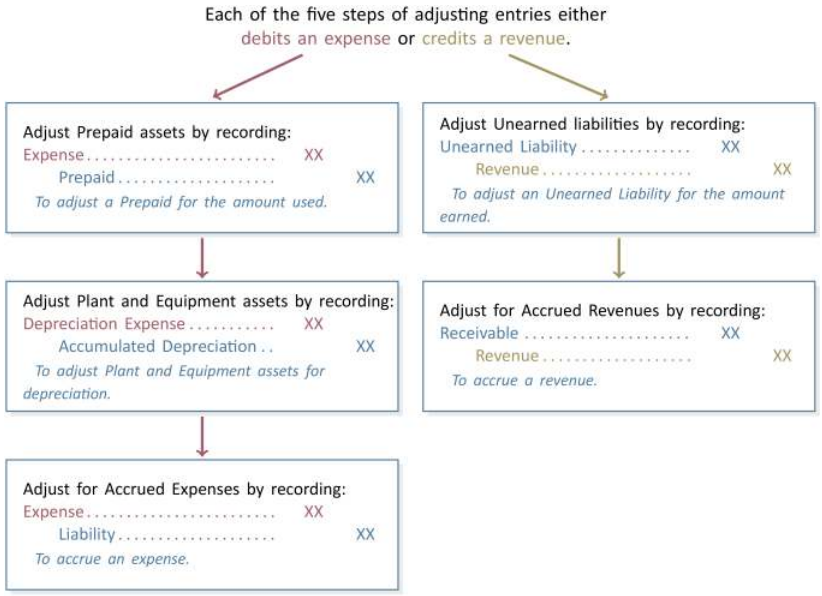


Figure 3.7 Summary of the Five Types of Adjusting Entries

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, 2023 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, 2023.

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.

Figure 3.8 BDCC's January 31, 2023 Adjusted Trial Balance

Big Dog Carworks Corp.		
Adjusted Trial Balance		
At January 31, 2023		
	Account Balance	
Account	*Debit*	*Credit*
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
Bank loan		6,000
Accounts payable		700
Interest payable		18
Unearned repair revenue		100
Income tax payable		500
Share capital		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	18	
Salaries expense	3,500	
Supplies expense	2,000	
Truck operation expense	700	
Income tax expense	500	
Total debits and credits	$28,143	$28,143

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.



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 changes in equity as shown below.



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



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 shareholders. The closing entries for Big Dog Carworks Corp. are shown in Figure 3.10.



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 $2,057 credit balance in the income summary. The income summary balance agrees to the net income reported on the income statement.

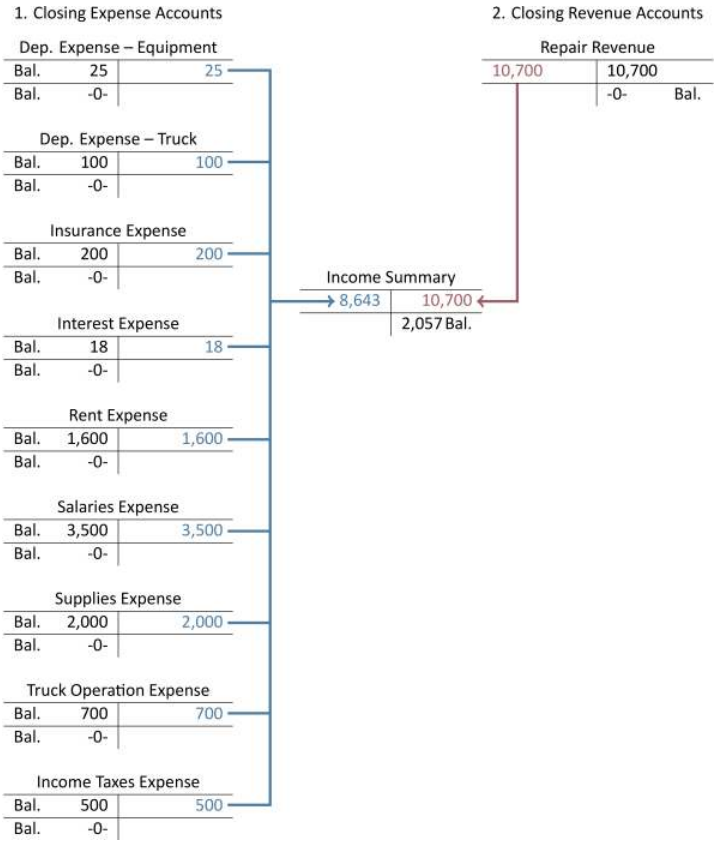


Figure 3.11 Closing Revenue and Expense Accounts

When the income summary is closed to retained earnings in the third closing entry, the $2,057 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



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	PR	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 $1,857. Notice that the $1,857 must agree to the retained earnings balance calculated on the statement of changes in equity.

4. Closing the Dividends Account



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.

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

LO1 – 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.

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

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

Expense..... XX
  Prepaid..... XX
To adjust prepaid for the amount used/expired.

Receivable..... XX
  Revenue..... XX
To adjust for accrued revenue.

Depreciation Expense..... XX
  Accumulated Depreciation..... XX
To allocate the cost of a plan or equipment asset over its useful life.

Expense..... XX
  Payable..... XX
To adjust for accrued expense.

Unearned Revenue..... XX
  Revenue..... XX
To adjust unearned amounts for amount earned.

LO3 – 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.

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

Financial statements are prepared based on adjusted account balances.

LO5 – 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.

LO6 – 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 three 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 plant and equipment asset accounts adjusted? Is the procedure similar to the adjustment of other asset and liability accounts at the end of an accounting period?
9. What is a *contra account* and why is it used?
10. How are liability accounts like Unearned Repair Revenue adjusted?
11. Explain the term *accruals*. Give examples of items that 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?

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3.4: Using the Adjusted Trial Balance to Prepare Financial Statements

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3.6: Summary of Chapter 3 Learning Objectives

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3.7: Exercises

EXERCISE 3–1 (LO1,2) Adjusting Entries

The following are account balances of Graham Corporation:

Account Title	*Amount in Unadjusted Trial Balance*	*Balance after Adjustment*
Interest Receivable	$ -0-	$110
Prepaid Insurance	1,800	600
Interest Payable	-0-	90
Salaries Payable	-0-	450
Unearned Rent	700	200

Required:

a. 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.
b. Reconstruct the adjusting entry that must have been recorded for each account.
c. Post these adjusting entries and agree ending balances in each T-account to the adjusted balances above.
d. List revenue and expense amounts for the period.

EXERCISE 3–2 (LO1,2) Adjusting Entries

The trial balance of Lauer Corporation at December 31, 2023 follows, before and after the posting of adjusting entries.

	Trial Balance		*Adjustments*		*Adjusted Trial Balance*	
	Dr.	*Cr.*	*Dr.*	*Cr.*	*Dr.*	*Cr.*
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
Share Capital		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	
Interest Expense	100				500	
Rent Expense	5,500				6,000	
Salaries Expense	8,000				9,000	
Totals	$35,900	$35,900			$38,800	$38,800

Required:

a. Indicate in the "Adjustments" column the debit or credit difference between the unadjusted trial balance and the adjusted trial balance.

b. 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, 2023:

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 2023, January 2024, and February 2024.
b. Office supplies on hand at December 31, 2023 amounted to $300.
c. The estimated income taxes for 2023 are $5,000.
d. All but $500 in the Unearned Commissions account has been earned in 2023.
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, 2023, its year-end ('Bal' = unadjusted balance):

Prepaid Advertising				**Accounts Payable**				**Share Capital**			
Bal.	1,000		500			Bal.	15,000			Bal.	8,000
							200				
							100	**Subscription Revenue**			
Unused Supplies							400				5,000
Bal.	750		400				800				
								Advertising Expense			
				Salaries Payable					500		
Equipment							700				
Bal.	21,750										
				Unearned Subscriptions				**Commissions Expense**			
Acc. Dep'n – Equipment					5,000	Bal.	10,000		800		
		Bal.	1,500								
			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, 2023:

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

Additional Information: The truck was purchased January 1, 2023. It has an estimated useful life of 4 years.

Required: Prepare the needed adjusting entry at December 31, 2023.

EXERCISE 3–6 (LO1,2) Adjusting Entries

The following unadjusted accounts are taken from the records of B Corp. at December 31, 2023:

Bank Loan				Interest Expense				Interest Payable			
			12,000		1,100						100

Additional Information: The bank loan was received on January 1, 2023. It bears interest at 10 per cent.

Required: Prepare the adjusting entry at December 31, 2023.

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, 2023.

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

Accounts Receivable			*110*	Share Capital			*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, 2023.
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, 2024.
2. Prepare the adjusting entry at March 31, 2024.
3. Prepare the subsequent cash entry on April 4, 2024.

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

Below is a trial balance for Quertin Quick Fix Ltd. at October 31, 2024 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, 2024												
	Unadjusted Trial Balance				**Adjustments**				**Adjusted Trial Balance**			
	Debit		Credit		Debit		Credit		Debit		Credit	
Accounts payable			$	225,000							$	225,500
Accounts receivable	$	325,000							$	395,000		
Accrued salaries payable				5,000								9,500
Accumulated depreciation, equipment		1,500										2,500
Advertising expense		1,500								1,500		
Cash		80,000								118,700		
Depreciation expense		800								1,800		
Equipment		150,000								150,000		
Land		150,000								150,000		
Maintenance service expenses		1,000								1,000		
Notes payabl				210,000								210,000

e											
Office supplies		5,000							5,000		
Prepaid advertising expenses		15,000							16,300		
Rent expense		14,000							14,000		
Retained earnings				37,800							37,800
Salaries expense		45,000							49,500		
Service revenue				300,000							370,000
Share capital				10,000							10,000
Unearned service revenue				10,000							50,000
Utilities expense		12,000							12,500		
	$	799,300	$	799,300				$	915,300	$	915,300

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, 2023, the following adjusted account balances appeared in the general ledger.

Prepaid Advertising		Accounts Payable		Share Capital	
1,000			13,250		8,000
Supplies				**Subscription Revenue**	
750					5,000
Equipment		**Salaries Payable**		**Advertising Expense**	
21,750			700	500	
Acc. Dep'n – Equipment		**Unearned Subscriptions**		**Commissions Expense**	
	1,500		10,000	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, 2023.

EXERCISE 3–12 (LO6) Closing Entries

Below is the adjusted trial balance for Quefort Ltd. as at September 30, 2024:

	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
Repair expense		7,800		
Notes payable				30,000
Office supplies		1,800		
Prepaid insurance expense		12,790		
Rent expense		22,500		
Retained earnings				65,470
Salaries expense		41,700		
Service revenue				276,000
Share capital				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, 2023. Assume all accounts have normal balances.

Accounts Payable	$ 4,400
Accounts Receivable	3,600
Accumulated Depreciation – Machinery	2,800
Accumulated Depreciation – Warehouse	8,000
Bank Loan	47,600
Cash	12,000
Commissions Earned	20,000
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
Retained Earnings	36,000
Salaries Expense	33,475
Salaries Payable	1,970
Share Capital	52,100
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:

	Balance	
	Unadjusted	*Adjusted*
(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, 2023, 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 2023, January 2024, and February 2024.
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, 2023.

Required: Prepare all necessary adjusting entries at December 31, 2023. 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, 2023, 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
Bank Loan	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, 2023.
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, 2023.
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, 2023. 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, 2023, 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.

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

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

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

Cash				Unearned Rent				Rent Earned			
	600						-0-				600

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

Unused Supplies				Supplies Expense			
				1,250			

d. Additional information: The monthly rent is $400.

Prepaid Rent				Rent Expense			
	1,200			4,400			

e. Additional information: Unrecorded wages at December 31 amount to $250.

Wages Expense				Wages Payable			
	6,000						-0-

f. Additional information: The bank loan bears interest at 10 per cent. The money was borrowed on January 1, 2023.

Bank Loan				**Interest Expense**			**Interest Payable**			
			8,000	600						100

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				**Utilities Expense**			**Utilities Payable**			
			1,000	1,200						200

h. Additional information: A $1,200 one-year insurance policy had been purchased effective February 1, 2023; there is no other insurance policy in effect.

Cash				**Prepaid Insurance**			**Insurance Expense**			
			1,200	600			600			

i. Additional information: The Unearned Rent Revenue balance applies to three months: November 2023, December 2023, and January 2024. $600 of the $900 has been earned as at December 31, 2023.

Unearned Rent Revenue				**Rent Earned**			
			900				-0-

j. Additional information: $2,000 of the total $25,200 balance in commission revenue has not been earned at December 31, 2023.

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

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, 2023 and had the following transactions during December:

Part A

a. Issued share capital for $5,000 cash.
b. Paid $1,200 for three months' rent: December 2023; January and February 2024.
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), Share Capital (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.

a. One month of the Prepaid Insurance has expired.
b. The December portion of the December 1 rent payment has expired.
c. A physical count indicates that $350 of supplies is still on hand.
d. The amount collected in transaction (m) is unearned at December 31.
e. 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.
f. The truck has an estimated useful life of 4 years.

Required:

1. 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).
2. Prepare all necessary adjusting entries. Omit descriptions.
3. Post the entries to general ledger T-accounts and calculate balances.
4. Prepare an adjusted trial balance at December 31, 2023.

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

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August 31, 2023:

	Balance	
	Debits	***Credits***
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
Bank Loan		47,600
Share Capital		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	$176,700	$176,700

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, 2023.
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, 2023.
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, 2024.

Smith and Smith Co.				
Unadjusted Trial Balance				
At June 30, 2024				
	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
Share capital				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, 2024.

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 changes in equity and a balance sheet as at June 30, 2024. (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, 2024, is the year-end, prepare the closing journal entries.
b. Prepare a post-closing trial balance at June 30, 2024.

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1. The maturity date is March 4, 2023 calculated as: January 31 less January 3 = 28 days + 28 days in February = 56 days + 4 days = March 4.

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CHAPTER OVERVIEW

Chapter 4: The Classified Balance Sheet and Related Disclosures

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 financial statements.

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.

4.1: Financial Statement Disclosure Decisions

4.2: Classified Balance Sheet

4.3: Notes to Financial Statements

4.4: Auditor's Report

4.5: Management's Responsibility for Financial Statements

4.6: Summary of Chapter 4 Learning Objectives

4.7: Exercises

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4.1: Financial Statement Disclosure Decisions

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 financial statements?

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 introduced and discussed in Chapter 1, including cost, the monetary unit, the business entity, timeliness, recognition, and going concern. These principles mean that accountants record transactions in one currency (for example, dollars). They assume the monetary currency retains its purchasing power. Changes in market values of assets are generally not recorded. The entity is expected to continue operating into the foreseeable future.

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. International Financial Reporting Standards generally do not recognize this increase until the entity actually disposes of the asset; accountants would continue to value the land at its $100,000 purchase cost. This practice is based on the application of the 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. For example, if the costs associated with financial information preparation are too high or if an amount is not sufficiently large or important, a business might implement a materiality policy for various types of asset purchases to guide how such costs are to be recorded. For example, a business might have a materiality policy for the purchase of office equipment whereby anything costing $100 or less is expensed immediately instead of recorded as an asset. In this type of situation, purchases of $100 or less are recorded as an expense instead of an asset to avoid having to record depreciation expense, a cost-benefit consideration that will not impact decisions made by external users of the business's financial statements.

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

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

In addition, the financial statements are often accompanied by an auditor's report and a statement entitled "Management's Responsibility for Financial Statements." Each of these items will be discussed below. Financial statement information must be disclosed for the most recent year 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*; and *intangible assets*. The asset and liability classifications are summarized below:

Assets	Liabilities
Non-current or long-term assets: • Long-term investments • Property, plant and equipment (PPE) • Intangible assets	Non-current or long-term liabilities

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, cheques, 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.

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 listed in order of their due dates, with any bank loans shown first. Examples of current liabilities include:

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

The **current portion of a long-term liability** 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, 2023 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, 2023 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: share capital and retained earnings.

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



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.

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, 2023		
Revenues		
Repair revenues		$10,000
Expenses		
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 2023 might be a material amount and therefore disclosed as a separate item on the income statement for the month ended January 31, 2023. 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, 2023

1. Nature of operations
   The principal activity of Big Dog Carworks Corp. is the servicing and repair of vehicles.
2. General information and statement of compliance with IFRS
   Big Dog Carworks Corp. is a limited liability company incorporated and domiciled in Canada. Its registered office and principal place of business is 123 Fox Street, Owlseye, Alberta, T1K 0L1, Canada. Big Dog Carworks Corp.'s shares are listed on the Toronto Stock Exchange.

   The financial statements of Big Dog Carworks Inc. have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued the International Accounting Standards Boards (IASB).

   The financial statements for the year ended December 31, 2023 were approved and authorised for issue by the board of directors on March 17, 2024.
3. Summary of accounting policies
   The financial statements have been prepared using the significant accounting policies and measurement bases summarized below.

   a. Revenue

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

   b. Operating expenses

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

   c. Borrowing costs

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

   d. Property, plant, and equipment

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

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

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

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

e. Income taxes

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

f. Share capital

Share capital represents the nominal value of shares that have been issued.

g. Estimation uncertainty

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

4. Property, plant, and equipment

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



5. Borrowings

Borrowings include the following financial liabilities measured at cost:

	Current		Non-Current	
	2023	**2022**	**2023**	**2022**
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	$39,000	$82,250	$163,145	$ -0-

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 2026.

6. Share capital

The share capital 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 2022 or 2023.

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 processes instituted by management of a company to direct, monitor, and measure the accomplishment of its objectives. This includes the prevention and detection of fraud and error. An audit seeks not certainty, but reasonable assurance that the financial statement information is not materially misstated.

The auditor's report is a structured statement issued by an independent examiner, usually a professional accountant, who is contracted by the company to report the audit's findings to the company's board of directors. 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.



4.5 Management's Responsibility for Financial Statements

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

The final piece of information often included with the annual financial statements is a statement describing management's responsibility for the accurate preparation and presentation of financial statements. This statement underscores the division of duties involved with the publication of financial statements. Management is responsible for preparing the financial statements, including estimates that underlie the accounting numbers. An example of an estimate is the useful life of long-lived assets in calculating depreciation.

The independent auditor is responsible for examining the financial statement information as prepared by management, including the reasonableness of estimates, and then expressing an opinion on their accuracy. In some cases, the auditor may assist management with aspects of financial statement preparation. For instance, the auditor may provide guidance on how a new accounting standard will affect financial statement presentation or other information disclosure. Ultimately, however, the preparation of financial statements is management's responsibility.

An example of a statement describing management's responsibility for the preparation and presentation of annual financial statements is shown below.





Summary of Chapter 4 Learning Objectives

LO1 – 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.

LO2 – Explain and prepare a classified balance sheet.

A classified balance sheet groups assets and liabilities as follows:

Assets:	**Liabilities:**
Current assets	Current liabilities
Non-current assets: • Property, plant, and equipment • Long-term investments • Intangible 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 three types of non-current assets: property, plant, and equipment (PPE), long-term investments, and intangible 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).

LO3 – 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.

LO4 – 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.

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

This report makes a statement describing management's responsibility for the accurate preparation and presentation of financial statements.

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 comprise 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: ASSETS = LIABILITIES + EQUITY
5. If ASSETS – LIABILITIES = 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 capitalisation? 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. What is BDCC management's responsibility with respect to the company's financial statements? Do the financial statements belong to management? the auditor? the board of directors? shareholders?

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4.2: Classified Balance Sheet

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4.3: Notes to Financial Statements

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4.4: Auditor's Report

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4.5: Management's Responsibility for Financial Statements

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4.6: Summary of Chapter 4 Learning Objectives

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4.7: 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, 2024, its fiscal year-end.

	Dr.	*Cr.*
Accounts Receivable	$8,000	
Accounts Payable		$7,000
Accumulated Depreciation – Buildings		1,000
Accumulated Depreciation – Equipment		4,000
Bank Loan (due 2025)		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 2027)		5,000
Prepaid Insurance	1,000	
Share Capital		48,000
Retained Earnings, Jan. 1 2024	-0-	2,000
Totals	$81,000	$75,000
Net Income	-0-	6,000
Totals	-0-	-0-

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:

Abbey Limited					
Balance Sheet					
As at November 30, 2023					
Assets			*Liabilities*		
Current			*Current*		
Cash	$1,000		Accounts Payable	$5,600	
Accounts Receivable	6,000		Notes Payable (due 2016)	2,000	
Building	12,000		Bank Loan (due 2022)	1,000	
Merchandise Inventory	3,000		Total Current Liabilities		$8,600
Total Current Assets		$22,000			
Non-current			*Non-current*		
Short-Term Investments	3,000		Mortgage Payable (due 2023)	7,000	
Equipment	1,500		Retained Earnings	1,000	
Unused Office Supplies	100		Salaries Payable	250	
Truck	1,350		Total Non-current Liabilities		8,250
Total Non-current Assets		5,950	Total Liabilities		16,850
			Equity		
			Share Capital		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		Share capital
	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, 2024, year-end accounts balances for Abled Appliance Repair Ltd. This is the business's third year of operations.

Cash	$80,000	Share capital	$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 equipment	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, 2024		
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
Share capital		??
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, 2024	
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
Bank loan 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
Share capital	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 changes in equity for May 31, 2024.

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, 2023:

Account Title	*Balance*
Accounts Payable	$125
Accounts Receivable	138
Building	400
Cash	250
Share Capital	400
Equipment	140
Land	115
Mortgage Payable (due 2022)	280
Bank Loan, 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, 2023, its second fiscal year-end.

	Account Balances	
	Dr.	***Cr.***
Accounts Payable		$8,350
Accounts Receivable	$18,700	
Accumulated Depreciation – Equipment		2,000
Advertising Expense	7,200	
Bank Loan, 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 Charges Expense	1,300	
Prepaid Insurance	1,300	
Prepaid Rent	600	
Retained Earnings		2,000
Rent Expense	17,950	
Revenue		80,000
Salaries Expense	39,000	
Share Capital		3,000
Telephone Expense	1,100	
Utilities Expense	3,600	
Totals	$109,950	$109,950

Note: No shares were issued during 2023.

Required:

1. Calculate net income for year ended December 31, 2023.
2. Prepare a statement of changes in equity for the year ended December 31, 2023.
3. Prepare a classified balance sheet at December 31, 2023.
4. By what amounts do total current liabilities exceed total current assets at December 31, 2023?
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?

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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

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balances.

MayBee Services Ltd.	
Trial Balance	
At June 30, 2024	
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
Share capital	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, 2025.

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, 2024	
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
Share capital	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.

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CHAPTER OVERVIEW

Chapter 5: Accounting for the Sale of Goods

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.

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, Canadian 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.

5.1: The Basics of Merchandising

5.2: The Purchase and Payment of Merchandise Inventory (Perpetual) Edit section

5.3: Merchandise Inventory- Sales and Collection (Perpetual)

5.4: Adjustments to Merchandise Inventory (Perpetual)

5.5: Merchandising Income Statement

5.6: Closing Entries for a Merchandiser

5.7: Appendix A- The Periodic Inventory System

5.8: Summary of Chapter 5 Learning Objectives

5.9: Exercises

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5.1: The Basics of Merchandising

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, n30" 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.

Figure 5.1 Differences Between the Income Statements of Service and Merchandising Companies

Service Company	***Merchandising Company***
Revenues	Sales
	Less: Cost of Goods Sold
	Equals: Gross Profit
Less: Expenses	*Less*: Expenses
Equals: Net Income	*Equals*: Net Income

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.

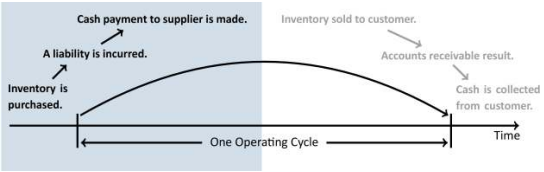


Figure 5.2 Purchase and Payment Portion of the Operating Cycle

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	PR	Debit	Credit
	Merchandise Inventory		3,000	
	Accounts Payable			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 colour. 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	PR	Debit	Credit
	Accounts Payable		300	
	Merchandise Inventory			300
	To record purchase allowance; incorrect colour.			

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, n45", 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 x 1% = $27]. The payment to the supplier would be recorded as:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Accounts Payable		2,700	
	Merchandise Inventory			27
	Cash			2,673
	To record payment on account within the discount period.			

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	PR	Debit	Credit
	Accounts Payable		2,700	
	Cash			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	PR	Debit	Credit
	Merchandise Inventory		900	
	Accounts Payable			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	PR	Debit	Credit
	Merchandise Inventory		125	
	Cash			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.

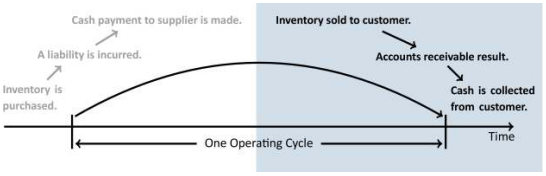


Figure 5.3 Sales and Collection Portion of the Operating Cycle

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

Assume the vehicle purchased by Excel is sold 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	PR	Debit	Credit
	Accounts Receivable		4,000	
	Sales			4,000
	To record the sale of merchandise on account.			

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cost of Goods Sold		2,798	
	Merchandise Inventory			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	PR	Debit	Credit
	Sales Returns and Allowances		100	
	Accounts Receivable			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	PR	Debit	Credit
	Accounts Receivable		3	
	Sales			3
	To record sale on credit.			

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cost of Goods Sold		1	
	Merchandise Inventory			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	PR	Debit	Credit
	Sales Returns and Allowances		3	
	Accounts Receivable			3
	To record sales return.			

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Merchandise Inventory		1	
	Cost of Goods Sold			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 sales terms of "2/10, n30." This means that the amount owed must be paid by the customer within 30 days ('n' = net); however, if the customer chooses to pay within 10 days, a 2% discount may be deducted from the amount owing.

Consider the sale of the vehicle for $3,900 ($4,000 less the $100 allowance for damage). Payment within 10 days entitles the customer to a $78 discount ($3,900 x 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	PR	Debit	Credit
	Cash		3,822	
	Sales Discounts		78	
	Accounts Receivable			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 totalled. 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	PR	Debit	Credit
	Cost of Goods Sold		XX	
	Merchandise Inventory			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	PR	Debit	Credit
	Merchandise Inventory		XX	
	Accounts Payable			XX

(b) To record purchase return and allowances:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Accounts Payable		XX	
	Merchandise Inventory			XX

(c) To record purchase discounts:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Accounts Payable		XX	
	Merchandise Inventory			XX

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

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Merchandise Inventory		XX	
	Accounts Payable			XX

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

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Accounts Receivable		XX	
	Sales			XX

AND

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cost of Goods Sold		XX	
	Merchandise Inventory			XX

(f) To record sales returns restored to inventory:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Sales Returns and Allowances		XX	
	Accounts Receivable			XX

AND

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Merchandise Inventory		XX	
	Cost of Goods Sold			XX

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

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Sales Returns and Allowances		XX	
	Accounts Receivable			XX

(h) To record discounts:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Sales Discounts		XX	
	Cash		XX	
	Accounts Receivable			XX

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

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cost of Goods Sold		XX	
	Merchandise Inventory			XX

The effect of these transactions on each of merchandise inventory and cost of goods sold is depicted below:

Merchandise Inventory (MI)		**Cost of Goods Sold (COGS)**	
(a) Purchase of MI	(b) Purchase Ret. & Allow.	(e) Cost of MI Sold	(f) Cost of sales returns restored to inventory
(d) Shipping Costs	(c) Purchase Discounts	(i) Shrinkage Adjustment	
(f) Sales Return (when restored to inventory)	(e) Sale of MI		
	(i) Shrinkage Adjustment		
Adjusted Balance Reported on the Balance Sheet		Adjusted Balance Reported on the Income Statement	

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, 2023.

XYZ Inc.				
Income Statement				
Month Ended December 31, 2023				
Sales				$100,000
Less: Sales discounts		$1,000		
Sales returns and allowances		500		1,500
Net sales				$98,500
Cost of goods sold				50,000
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		$28,000		
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		15,500		
Total operating expenses				43,500
Income from operations				$5,000
Other revenues and expenses:				
Rent revenue		$12,000		
Interest expense		1,500		10,500
Income before tax				$15,500
Income tax expense				3,000
Net income				$12,500

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 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	PR	Debit	Credit
	Purchases		XX	
	Accounts Payable			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	PR	Debit	Credit
	Accounts Payable		XX	
	Purchase Returns and Allowances			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	PR	Debit	Credit
	Accounts Payable		XX	
	Purchase Discounts			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	PR	Debit	Credit
	Transportation-In		XX	
	Cash or Accounts Payable			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	XX
*Net Cost of Goods Purchased is calculated as:	
Purchases	XX
Less: Purchase Returns and Allowances	XX
Less: Purchase Discounts	XX
Equals: Net Purchases	XX
Add: Transportation-In	XX
Equals: Net Cost of Goods Purchased	XX

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.



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, 2023		
	Debits	Credits
Cash	$15,000	
Merchandise inventory	2,000	
Accounts payable		$ 5,000
Common shares		8,000
Retained earnings		4,000
Totals	$17,000	$17,000

Summary of Chapter 5 Learning Objectives

LO1 – Describe merchandising and explain the financial statement components of sales, cost of goods sold, merchandise inventory, and gross profit; differentiate between the perpetual and periodic inventory systems.

Merchandisers buy and resell products. Merchandise inventory, an asset, is purchased from suppliers and resold to customers to generate sales revenue. The cost of the merchandise inventory sold is an expense called cost of goods sold. The profit realized on the sale of merchandise inventory before considering any other expenses is called gross profit. Gross profit may be expressed as a dollar amount or as a percentage. To track merchandise inventory and cost of goods sold in real time, a perpetual inventory system is used; the balance in each of Merchandise Inventory and Cost of Goods Sold is always up-to-date. In a periodic inventory system, a physical count of the inventory must be performed in order to determine the balance in Merchandise Inventory and Cost of Goods Sold.

LO2 – Analyze and record purchase transactions for a merchandiser.

In a perpetual inventory system, a merchandiser debits Merchandise Inventory regarding the purchase of merchandise for resale from a supplier. Any purchase returns and allowances or purchase discounts are credited to Merchandise Inventory as they occur to keep the accounts up-to-date.

LO3 – Analyze and record sales transactions for a merchandiser.

In a perpetual inventory system, a merchandiser records two entries at the time of sale: one to record the sale and a second to record the cost of the sale. Sales returns that are returned to inventory also require 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.

LO4 – Record adjustments to merchandise inventory.

A physical count of merchandise inventory is performed and the total compared to the general ledger balance of Merchandise Inventory. Discrepancies are recorded as an adjusting entry that debits cost of goods sold and credits Merchandise Inventory.

LO5 – Explain and prepare a 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.

LO6 – Explain the closing process for a merchandiser.

The steps in preparing closing entries for a merchandiser are the same as for a service company. The difference is that a merchandiser will need to close income statement accounts unique to merchandising such as: Sales, Sales Returns and Allowances, Sales Discounts, and Cost of Goods Sold.

LO7 – 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?

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5.9: Exercises

EXERCISE 5–1 (LO1)

Consider the following information of Jones Corporation over four years:

	2024	*2023*	*2022*	*2021*
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 2023 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, 2023. During the 2023, 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, 2023 for AngieJ Ltd.:

March 1	Purchased $25,000 of merchandise on account for terms 2/10, n30.
March 3	Sold merchandise to a customer for $5,000 for terms 1/10, n30. (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, n30. (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, n30.
March 18	Ordered merchandise inventory from a supplier totalling $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, 2023 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, n30.
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, n30. (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, n30.
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, 2023:

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, 2023. 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:

a. Prepare all closing entries. Assume cash dividends totalling $2,000 were declared during the year and recorded as a debit to Dividends Declared and a credit to Cash.
b. Calculate the June 30, 2023 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.

	A	*B*	*C*	*D*
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:

	A	B	C	D
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, 2023 to operate a merchandising business. It uses the perpetual inventory system. All its sales are on account with terms: 2/10, n30. Its transactions during July 2023 are as follows:

July 2	Issued share capital for $5,000 cash.
2	Purchased $3,500 merchandise on account from Blic Pens Ltd. for terms 2/10, n30.
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, n30.
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 n30.
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, n30.
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, n30.
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, 2023, the end of its fiscal year.

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec. 31	Sales		37,800	
	Income Summary			37,800
31	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, 2023, 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	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
Share Capital	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 changes in equity for the year ended December 31, 2023. 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, 2023.
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 2023. Their year-end is December 31.

Turret Retail Ltd.		
Trial Balance		
At December 31, 2023		
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)		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	
Share capital		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, 2023.
2. Prepare the closing entries for the year-ended December 31, 2023.
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, 2023. 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, 2023	
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)	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

Share capital	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:

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, 2023.

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CHAPTER OVERVIEW

Chapter 6: Assigning Costs to Merchandise

Learning Objectives

- LO1 – Calculate cost of goods sold and merchandise inventory using specific identification, first-in first-out (FIFO), and weighted average cost flow assumptions — 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 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, first-in first-out (FIFO), and weighted average cost flow assumptions — periodic.

Recording transactions related to the purchase and sale of merchandise inventory was introduced and discussed in Chapter 5. This chapter reviews how the cost of goods sold is calculated using various inventory cost flow assumptions. Additionally, issues related to merchandise inventory that remains on hand at the end of an accounting period are also explored.

6.1: Inventory Cost Flow Assumptions
6.2: Financial Statement Impact of Different Inventory Cost Flows
6.3: Lower of Cost and Net Realizable Value (LCNRV)
6.4: Estimating the Balance in Merchandise Inventory
6.5: Appendix A- Ratio Analysis—Merchandise Inventory Turnover
6.6: Appendix B- Inventory Cost Flow Assumptions Under the Periodic System
6.7: Summary of Chapter 6 Learning Objectives
6.8: Exercises

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6.1: Inventory Cost Flow Assumptions

Concept Self-Check

Use the following as a self-check while working through Chapter 6

1. What three inventory cost flow assumptions can be used in perpetual inventory systems?
2. What impact does the use of different inventory cost flow assumptions 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 effect on net income of an error in ending inventory values?
5. What methods are used to estimate ending inventory?
6. What ratio can be used to evaluate the liquidity of merchandise inventory?
7. What inventory cost flow assumptions 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 Cost Flow Assumptions

LO1 – Calculate cost of goods sold and merchandise inventory using specific identification, first in first-out (FIFO), and weighted average cost flow assumptions — 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 kilo in October and $7.00 a kilo 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, 2023. The company purchased five units during June as shown in Figure 6.1.

Figure 6.1 June Purchases and Purchase Price per Unit

	Purchase Transaction	
Date	*Number of units*	*Price per unit*
June 1	1	$1
5	1	2
7	1	3
21	1	4
28	1	5
	5	$15

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. For example, a car dealership tracks the cost of each vehicle purchased and sold. Alternatively, a business that sells

perishable items would want the oldest units to move out of inventory first to minimize spoilage. Finally, 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 three methods to calculate cost of goods and the resulting ending inventory based on an assumed flow. These methods are: specific identification, FIFO, 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 @ $10). As a result, gross profit would be $29 ($40 – 11). Ending inventory would be $4, the cost of the unit purchased on June 21.

The general ledger T-accounts for Merchandise Inventory and Cost of Goods Sold would show:



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	PR	Debit	Credit
	Accounts Receivable		40	
	Sales			40
	To record the sale of merchandise on account.			
	Cost of Goods Sold		11	
	Merchandise Inventory			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. Two such generally accepted methods, known as cost flow assumptions, are discussed next.

The First-in, First-out (FIFO) Cost Flow Assumption

First-in, first-out (FIFO) assumes that the first goods purchased are the first ones sold. A FIFO cost flow assumption makes sense when inventory consists of perishable items such as groceries and other time-sensitive goods.

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:



Figure 6.3 Cost of Goods Sold using FIFO

The entry to record the sale would be:

General Journal				
Date	Account/Explanation	PR	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 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). The weighted average cost of goods sold would be $12 (4 units @ $3). Sales still equal $40 resulting in a gross profit under weighted average of $28 ($40 – $12). The cost of the one remaining unit in ending inventory is $3.

The general ledger T-accounts for Merchandise Inventory and Cost of Goods Sold are:

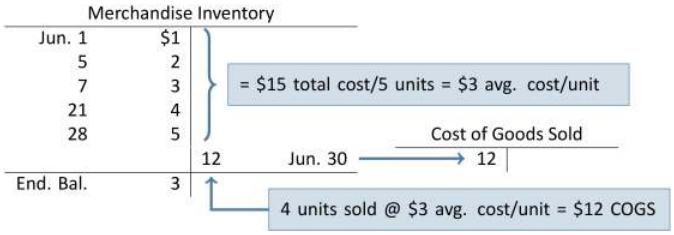


Figure 6.4 Cost of Goods Sold using Weighted Average

The entry to record the sale would be:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Accounts Receivable		40	
	Sales			40
	To record the sale of merchandise on account.			
	Cost of Goods Sold		12	
	Merchandise Inventory			12
	To record the cost of the sale.			

Cost Flow Assumptions: A Comprehensive Example

Recall that under the perpetual inventory system, cost of goods sold is calculated and recorded in the accounting system at the time when sales are recorded. In our simplified example, all sales occurred on June 30 after all inventory had been purchased. In reality, the purchase and sale of merchandise is 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:

Date	*Number of Units Sold*
June 3	1
8	1
23	1
29	1

To help with the calculation of cost of goods sold, an *inventory record card* will be used to track the individual transactions. This card records information about purchases such as the date, number of units purchased, and purchase cost per unit. It also records

cost of goods sold information: the date of sale, number of units sold, and the cost of each unit sold. Finally, the card records the balance of units on hand, the cost of each unit held, and the total cost of the units on hand. A partially-completed inventory record card is shown in Figure 6.5 below:

	Purchases/Shipping Costs/ (Purchase Returns/Discounts)			Cost of Goods Sold/ (Returns to Inventory)			Balance in Inventory		
Date	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 6.5 Inventory Record Card

In Figure 6.5, the inventory at the end of the accounting period is one unit. This is the number of units on hand according to the accounting records. A *physical* inventory count must still be done, generally at the end of the fiscal year, to verify the quantities actually on hand. As discussed in Chapter 5, any discrepancies identified by the physical inventory count are adjusted for as shrinkage.

As purchases and sales are made, costs are assigned to the goods using the chosen cost flow assumption. This information is used to calculate the cost of goods sold amount for each sales transaction at the time of sale. These costs will vary depending on the inventory cost flow assumption used. As we will see in the next sections, the cost of sales may also vary depending on *when* sales occur.

Comprehensive Example—Specific Identification

To apply specific identification, we need information about which units were sold on each date. Assume that specific units were sold as 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 6.6.

	Purchases/Shipping Costs/ (Purchase Returns/Discounts)			Cost of Goods Sold/ (Returns to Inventory)			Balance in Inventory		
Date	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 6.6 Inventory Record Card using Specific Identification

Notice in Figure 6.7 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 cost flow 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 6.7 Total Units Sold plus Total Units in Ending Inventory equals Total Units Available for Sale

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 6.8 Total Cost of Goods Sold plus Total Cost of Units in Ending Inventory equals Total Cost of Goods Available for Sale (Specific Identification)

Figure 6.8 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, and weighted average.

Comprehensive Example—FIFO (Perpetual)

Using the same information, we now apply the FIFO cost flow assumption as shown in Figure 6.9.

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 6.9 Inventory Record Card using FIFO (Perpetual)

When calculating the cost of the units sold in FIFO, the oldest unit in inventory will always be the first unit removed. For example, in Figure 6.9, on June 8, one unit is sold when the previous balance in inventory consisted of 2 units: 1 unit purchased on June 5 that cost $2 and 1 unit purchased on June 7 that cost $3. Because the unit costing $2 was in inventory first (before the June 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 6.9, there is one unit in ending inventory and it is assigned the $5 cost of the most recent purchase which was made on June 28.

The information in Figure 6.9 is repeated in Figure 6.10 to reinforce that goods available for sale equals the sum of goods sold and ending inventory.

	Purchases/Shipping Costs/ (Purchase Returns/Discounts)			Cost of Goods Sold/ (Returns to Inventory)			Balance in Inventory		
Date	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

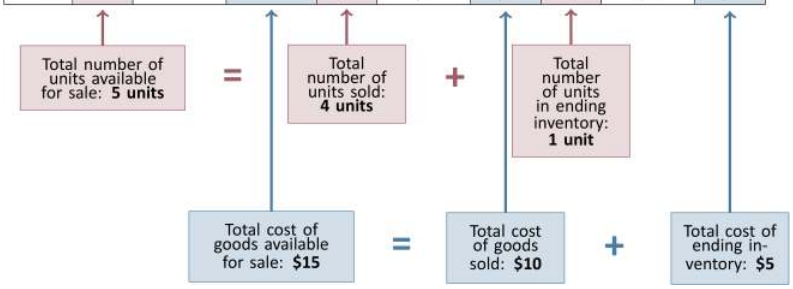


Figure 6.10 Total Goods Sold plus Ending Inventory equals Total Goods Available for Sale (FIFO Perpetual)

Comprehensive Example—Weighted Average (Perpetual)

The inventory record card transactions using weighted average costing are detailed in Figure 6.11. ***For consistency, all weighted average calculations will be rounded to two decimal places.*** When a perpetual inventory system is used, the weighted average is calculated each time a purchase is made. For example, after the June 7 purchase, the balance in inventory is 2 units with a total cost of $5.00 (1 unit at $2.00 + 1 unit at $3.00) resulting in an average cost per unit of $2.50 ($5.00 ÷ 2 units = $2.50). When a sale occurs, the cost of the sale is based on the most recent average cost per unit. For example, the cost of the sale on June 3 uses the $1.00 average cost per unit from June 1 while the cost of the sale on June 8 uses the $2.50 average cost per unit from June 7.

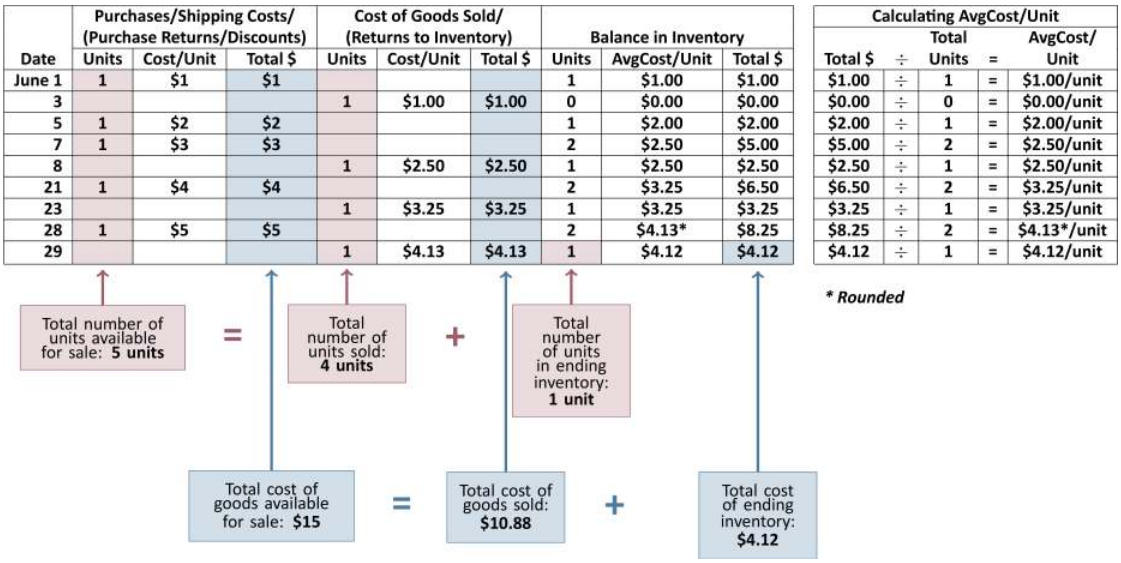
	Purchases/Shipping Costs/ (Purchase Returns/Discounts)			Cost of Goods Sold/ (Returns to Inventory)			Balance in Inventory		
Date	Units	Cost/Unit	Total $	Units	Cost/Unit	Total $	Units	AvgCost/Unit	Total $
June 1	1	$1	$1				1	$1.00	$1.00
3				1	$1.00	$1.00	0	$0.00	$0.00
5	1	$2	$2				1	$2.00	$2.00
7	1	$3	$3				2	$2.50	$5.00
8				1	$2.50	$2.50	1	$2.50	$2.50
21	1	$4	$4				2	$3.25	$6.50
23				1	$3.25	$3.25	1	$3.25	$3.25
28	1	$5	$5				2	$4.13*	$8.25
29				1	$4.13	$4.13	1	$4.12	$4.12

Calculating AvgCost/Unit				
Total $	÷	Total Units	=	AvgCost/ Unit
$1.00	÷	1	=	$1.00/unit
$0.00	÷	0	=	$0.00/unit
$2.00	÷	1	=	$2.00/unit
$5.00	÷	2	=	$2.50/unit
$2.50	÷	1	=	$2.50/unit
$6.50	÷	2	=	$3.25/unit
$3.25	÷	1	=	$3.25/unit
$8.25	÷	2	=	$4.13*/unit
$4.12	÷	1	=	$4.12/unit

** Rounded*

Figure 6.11 Inventory Record Card using Weighted Average Costing (Perpetual)

A common error made by students when applying weighted average occurs when the unit costs are rounded. For example, on June 28, the average cost per unit is rounded to $4.13 ($8.25 ÷ 2 units = $4.125/unit rounded to $4.13). On June 29, the cost of the unit sold is $4.13, the June 28 average cost per unit. Care must be taken to recognize that the total remaining balance in inventory after the June 29 sale is $4.12, calculated as the June 28 ending inventory total dollar amount of $8.25 less the June 29 total cost of goods sold of $4.13. Students will often incorrectly use the average cost per unit, in this case $4.13, to calculate the ending inventory balance. Remember that the cost of goods sold plus the balance in inventory must equal the goods available for sale as highlighted in Figure 6.12.



Date	Purchases/Shipping Costs/ (Purchase Returns/Discounts) Units	Cost/Unit	Total $	Cost of Goods Sold/ (Returns to Inventory) Units	Cost/Unit	Total $	Balance in Inventory Units	AvgCost/Unit	Total $
June 1	1	$1	$1				1	$1.00	$1.00
3				1	$1.00	$1.00	0	$0.00	$0.00
5	1	$2	$2				1	$2.00	$2.00
7	1	$3	$3				2	$2.50	$5.00
8				1	$2.50	$2.50	1	$2.50	$2.50
21	1	$4	$4				2	$3.25	$6.50
23				1	$3.25	$3.25	1	$3.25	$3.25
28	1	$5	$5				2	$4.13*	$8.25
29				1	$4.13	$4.13	1	$4.12	$4.12

Calculating AvgCost/Unit				
Total $	÷	Total Units	=	AvgCost/ Unit
$1.00	÷	1	=	$1.00/unit
$0.00	÷	0	=	$0.00/unit
$2.00	÷	1	=	$2.00/unit
$5.00	÷	2	=	$2.50/unit
$2.50	÷	1	=	$2.50/unit
$6.50	÷	2	=	$3.25/unit
$3.25	÷	1	=	$3.25/unit
$8.25	÷	2	=	$4.13*/unit
$4.12	÷	1	=	$4.12/unit

** Rounded*

Figure 6.12 Total Goods Sold plus Ending Inventory equals Total Goods Available for Sale (Weighted Average Perpetual)

Figure 6.13 compares the results of the three cost flow methods. Goods available for sale, units sold, and units in ending inventory are the same regardless of which method is used. Because each cost flow method allocates the cost of goods available for sale in a particular way, the cost of goods sold and ending inventory values are different for each method.

Figure 6.13 Comparing Specific Identification, FIFO, and Weighted Average

Cost Flow Assumption	Total Cost of Goods Available for Sale	Total Units Available for Sale	Total Cost of Goods Sold	Total Units Sold	Total Cost of Ending Inventory	Total Units in Ending Inventory
Specific Identification	$15.00	5	11.00	4	4.00	1
FIFO	15.00	5	10.00	4	5.00	1
Weighted Average	15.00	5	10.88	4	4.12	1

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 6.13).

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Accounts Receivable		10.00	
	Sales			10.00
	To record credit sale at a selling price of $10 per unit.			
	Cost of Goods Sold		3.25	
	Merchandise Inventory			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 6.14.

Figure 6.14 Effects of Different Cost Flow Assumptions

	Spec. Ident.	*FIFO*	*Wtd. Avg.*
Sales	$40.00	$40.00	$40.00
Cost of goods sold	11.00	10.00	10.88
Gross profit and net income	$29.00	$30.00	$29.12
Ending inventory (on the balance sheet)	$4.00	$5.00	$4.12

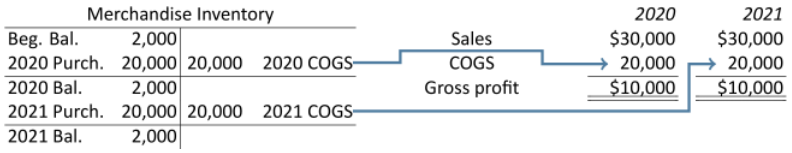
FIFO *maximizes* net income and ending inventory amounts when costs are rising. FIFO *minimizes* net income and ending inventory amounts when purchase costs are decreasing.

Because different cost flow assumptions can affect the financial statements, GAAP requires that the assumption 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 cost flow assumption 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.

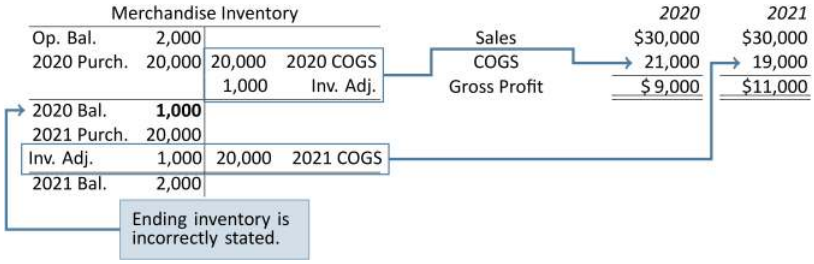
Effect of Inventory Errors on the Financial Statements

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, 2021, 2022, and 2023 was reported as $2,000 and that merchandise purchases during each of 2022 and 2023 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.



Assume now that ending inventory was misstated at December 31, 2022. 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 2022 as shown below instead of $20,000 as originally reported above. Because of the 2022 error, the 2023 beginning inventory was incorrectly reported above as $2,000 and should have been $1,000 as shown below. This caused the 2023 gross profit to be understated by $1,000 — cost of goods sold in 2023 should have been $19,000 as illustrated below but was originally reported above as $20,000.



As can be seen, income is misstated in both 2022 and 2023 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 opening inventory. This process can be illustrated by comparing gross profits for 2022 and 2023 in the above example. The sum of both years' gross profits is the same.

	Overstated Inventory	*Correct Inventory*
Gross profit for 2022	$10,000	$ 9,000
Gross profit for 2023	10,000	11,000
Total	$20,000	$20,000

6.3 Lower of Cost and Net Realizable Value (LCNRV)

LO3 – Explain and calculate lower of cost and net realizable value inventory adjustments.

In addition to the adjusting entry to record the shrinkage of merchandise inventory (discussed in Chapter 5), there is an additional adjusting entry to be considered at the end of the accounting period when calculating cost of goods sold and ending inventory values for the financial statements. Generally accepted accounting principles require that inventory be valued at the lesser amount of its *laid-down cost* and the amount for which it can likely be sold — its net realizable value (NRV). This concept is known as the lower of cost and net realizable value, or LCNRV. Note that the laid-down cost includes the invoice price of the goods (less any purchase discounts) plus transportation in, insurance while in transit, and any other expenditure made by the purchaser to get the merchandise to the place of business and ready for sale.

As an example, a change in consumer demand may mean that inventories become obsolete and need to be reduced in value below the purchase cost. This often occurs in the electronics industry as new and more popular products are introduced.

The lower of cost and net realizable value can be applied to individual inventory items or groups of similar items, as shown in Figure 6.15 below.

	Total Cost	Total NRV	LCNRV Unit Basis	LCNRV Group Basis
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 6.15 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 coloured 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	PR	Debit	Credit
	Cost of Goods Sold		50	
	Merchandise Inventory			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.

If white paper and coloured paper are considered a similar group, the calculations in Figure 6.15 above show they have a combined cost of $2,650 and a combined net realizable value of $2,700. LCNRV would therefore be $2,650. In this case, the cost is equal to the LCNRV so no adjusting entry would be required if applying LCNRV on a group basis.

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%
Cost of Goods Sold:			
Opening Inventory	$ 4,000		
Purchases	12,000		
Cost of Goods Available for Sale	16,000		
Less: Ending Inventory	(6,000)		
Cost of Goods Sold		10,000	67%
Gross Profit		$ 5,000	33%

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.

Cost of Goods Sold:	
Opening Inventory	$ 4,000
Purchases	12,000
Cost of Goods Available for Sale	$16,000
Less: Estimated Ending Inventory	?
Cost of Goods Sold	$10,000

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	10,000
Equals what must still be on hand	$ 6,000

Cost of Goods Sold:	
Opening Inventory	$ 4,000
Purchases	12,000
Cost of Goods Available for Sale	$16,000
Less: Estimated Ending Inventory	6,000
Cost of Goods Sold	?

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	6,000
Equals what must have been sold	$10,000

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 (opening 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 opening 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.



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.

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 x 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, opening 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.

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:

Cost of Goods Sold	÷	**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:

Cost of Goods Sold	÷	Average Merchandise Inventory
$3,000	÷	(($500+$700)/2)

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:

Cost of Goods Sold	÷	Average Merchandise Inventory
$3,000	÷	(($1,000+$1,400)/2)

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 favourable than Company B's.

6.6 Appendix B: Inventory Cost Flow Assumptions Under the Periodic System

LO6 – Calculate cost of goods sold and merchandise inventory using specific identification, first-in first-out (FIFO), and weighted average cost flow assumptions 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	PR	Debit	Credit
	Accounts Receivable		XX	
	Sales			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 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
Cost of Goods Sold:		
Opening Inventory	$ 1,000	
Purchases	5,000	
Goods Available for Sale	6,000	
Less: Ending Inventory	(2,000)	
Cost of Goods Sold		4,000
Gross Profit		$6,000

Even under the periodic inventory system, however, inventory cost flow assumptions need to be made (specific identification, FIFO, weighted average) when purchase prices change over time, as in a period of inflation. Further, different inventory cost flow assumptions 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 opening inventory at June 1, 2023 and that purchases were made as follows.

	Purchase Transaction	
Date	*Number of units*	*Price per unit*
June 1	1	$1
5	1	2
7	1	3
21	1	4
28	1	5
	5	$15

When recorded in the general ledger T-account "Purchases" (an income statement account), these transactions would be recorded as follows.

Purchases		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 cost flow assumptions, as discussed in the first part of the chapter:

Specific identification	$4
FIFO	5
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 6.16 below:

Figure 6.16 Effects of Different Cost Flow Assumptions: Periodic Inventory System

	Spec. Ident.	*FIFO*	*Wtd. Avg.*
Sales	$40	$40	$40
Cost of Goods Sold:			
Opening Inventory	-0-	-0-	-0-
Purchases	15	15	15
Goods Available for Sale	15	15	15
Less: Ending Inventory	(4)	(5)	(3)
Cost of Goods Sold	11	10	12
Gross Profit and Net Income	$29	$30	$28
Ending Inventory (Balance Sheet)	$ 4	$ 5	$ 3

Note that these results are the same as those calculated using the perpetual inventory method and assuming all sales take place on June 30 using specific identification (Figure 6.2), FIFO (Figure 6.3), and weighted average (Figure 6.4) cost flow assumptions, respectively.

As discussed in the appendix to Chapter 5, the ending inventory amount will be recorded in the accounting records when the income statement accounts are closed to the Income Summary at the end of the year. The amount of the closing entry for ending inventory is obtained from the income statement. Using the example above and assuming no other revenue or expense items, the closing entry to adjust ending inventory to actual under each inventory cost flow assumption would be as follows.

	Specific Identification	*FIFO*	*Weighted Average*
Merchandise Inventory (ending)	4	5	3
Sales	40	40	40
Income Summary	44	45	43
To close all income statement accounts with credit balances to the Income Summary and record ending inventory balance.			

Summary of Chapter 6 Learning Objectives

LO1 – Calculate cost of goods sold and merchandise inventory using specific identification, first-in first-out (FIFO), and weighted average cost flow assumptions—perpetual.

Cost of goods available for sale must be allocated between cost of goods sold and ending inventory using a cost flow assumption. Specific identification allocates cost to units sold by using the actual cost of the specific unit sold. FIFO (first-in first-out) allocates cost to units sold by assuming the units sold were the oldest units in inventory. Weighted average allocates cost to units sold by calculating a weighted average cost per unit at the time of sale.

LO2 – 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 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.

LO3 – Explain and calculate lower of cost and net realizable value inventory adjustments.

Inventory must be evaluated, at minimum, each accounting period to determine whether the net realizable value (NRV) is lower than cost, known as the lower of cost and net realizable value (LCNRV) of inventory. An adjustment is made if the NRV is lower than cost. LCNRV can be applied to groups of similar items or by item.

LO4 – 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.

LO5 – Explain and calculate merchandise inventory turnover.

The merchandise turnover is a liquidity ratio that measures how quickly inventory is sold. It is calculated as: COGS/Average Merchandise Inventory. Average merchandise inventory is the beginning inventory balance plus the ending inventory balance divided by two.

LO6 – Calculate cost of goods sold and merchandise inventory using specific identification, first-in first-out (FIFO), and weighted average cost flow assumptions—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. 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 is meant by the laid-down 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 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? 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 of inventory valuation? What does the term net *realisable value* mean?
10. When inventory is valued at LCNRV, 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?

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6.2: Financial Statement Impact of Different Inventory Cost Flows

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6.3: Lower of Cost and Net Realizable Value (LCNRV)

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6.4: Estimating the Balance in Merchandise Inventory

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6.5: Appendix A- Ratio Analysis—Merchandise Inventory Turnover

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6.6: Appendix B- Inventory Cost Flow Assumptions Under the Periodic System

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6.7: Summary of Chapter 6 Learning Objectives

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6.8: Exercises

EXERCISE 6–1 (LO1)

Laplante Inc. uses the perpetual inventory system. The following transactions took place during January 2023.

Date		*Units*	*Unit Cost*
Jan. 1	Opening Inventory	100	$1
7	Purchase #1	10	2
9	Sale #1	80	
21	Purchase #2	20	3
24	Sale #2	40	

Required: Using the table below, calculate cost of goods sold for the January 9 and 24 sales, and ending inventory using the FIFO cost flow assumption.

		Purchased (Sold)			*Balance*				
Date		*Units*	*Unit Cost*	*COGS*	*Units*		*Unit Cost*		*Total Cost*
Jan. 1	Opening 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:

i. on January 9, the specific units sold were 72 units from opening inventory and 8 units from the January 7 purchase and
ii. the specific units sold on January 24 were 23 units from opening 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.

Date		*Units*	*Unit Selling Price/Cost*
Jan. 1	Opening Inventory	2,000	$0.50
5	Sale #1	1,200	5.00
6	Purchase #1	1,000	2.00
10	Purchase #2	500	1.00
16	Sale #2	2,000	6.00
21	Purchase #3	1,000	2.50

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 four common accounting errors.

	2016 Statements				*2017 Statements*			
Errors	*Opening Invent.*	*Ending Invent.*	*2016 Total Assets*	*2016 Net Income*	*Opening Invent.*	*Ending Invent.*	*2017 Total Assets*	*2017 Net Income*
1. Goods purchased in 2022 were included in the December 31, 2022 inventory, but the transaction was not recorded until early 2023.	N/E							
2. Goods purchased in 2023 were included in December 31, 2022 inventory, and the transaction was recorded in 2022.	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, 2022 and December 31, 2023. The opening inventory for the 2022 statements is done.

EXERCISE 6–5 (LO2)

Partial income statements of Lilydale Products Inc. are reproduced below:

	2021	*2022*	*2023*
Sales	$30,000	$40,000	$50,000
Cost of Goods Sold	20,000	23,000	25,000
Gross Profit	$10,000	$17,000	$25,000

Required:

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:

Item	*Units*	*Cost/Unit*	*NRV/Unit*
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, 2023. Balton has an average gross profit of 35%. You have obtained the following information:

Inventory, May 1, 2023	$ 80,000
Purchases, May 1 - May 25	150,000
Sales, May 1 - May 25	300,000

Required:

a. Calculate the estimated amount of inventory lost in the fire.

b. 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:

a. Calculate the Merchandise Inventory Turnover for each of the years 2022 to 2025.
b. Is the change in Able Corp.'s Merchandise Inventory Turnover ratio favourable or unfavourable? 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, 2023:

Product A			
		Units	*Unit Cost/Selling Price*
Jan. 07	Purchase #1	8,000	$12.00
Mar. 30	Sale #1	9,000	16.00
May 10	Purchase #2	12,000	12.10
Jul. 04	Sale #2	14,000	17.00
Product B			
		Units	*Unit Cost/Selling Price*
Jan. 13	Purchase #1	5,000	$13.81
Jul. 15	Sale #1	1,000	20.00
Oct. 23	Purchase #2	7,000	14.21
Dec. 14	Sale #2	8,000	21.00

Opening inventory at January 1 amounted to 4,000 units at $11.90 per unit for Product A and 2,000 units at $13.26 per unit for Product B.

Required:

1. Prepare inventory record cards for Products A and B for the year using the weighted average inventory cost flow assumption.
2. Calculate total cost of ending inventory at December 31, 2023.
3. Calculate the gross profit percentage earned on the sale of
   i. Product A in 2023 and
   ii. Product B in 2023.

PROBLEM 6–2 (LO1) Challenge Question – Assigning Costs to Inventory

Below are various inventory related transactions:

Jan 1	Inventory, opening	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 6.9 of the text and with totals at the bottom. Assume that the FIFO method was used.
2. Calculate the gross profit and the gross profit percentage.
3. What is the ending inventory balance at January 20, 2023?

PROBLEM 6–3 (LO1) Assigning Costs to Inventory

Below are various inventory related transactions:

Purchases:

Feb 1	Opening 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 6.9 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, 2023?

PROBLEM 6–4 (LO2) Inventory Errors

The following table shows the following financial data for AAA Ltd. for the year ended December 31, 2023:

Financial Data		
For the year ended December 31, 2023		
	2022	**2023**
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 2022 was overstated by $45,000.

Required: Calculate the corrected cost of goods sold, net income, total assets and equity for 2022 and 2023.

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, 2023:

Financial Data		
For the year ended December 31, 2023		
	2022	**2023**
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 2022 was understated by $30,000.

Required: Calculate the corrected cost of goods sold, net income, total assets and equity for 2022 and 2023.

PROBLEM 6–6 (LO3) Lower of Cost and Net Realizable Value

Below are the inventory details for Almac Flooring Ltd.:

Ceramic Wall Tiles:	# of Units	Cost/Unit	NRV/Unit
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
Carrerra	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 2024:

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, 2024.

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 2024:

	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, 2024.

PROBLEM 6–9 (LO2)

Partial income statements of Schneider Products Inc. are reproduced below:

	2023	*2024*
Sales	$50,000	$50,000
Cost of Goods Sold	20,000	23,000
Gross Profit	$30,000	$27,000

The 2023 ending inventory was overstated by $2,000 during the physical count. The 2024 physical inventory count was done properly.

Required:

1. Calculate the impact of this error on the gross profit calculated for 2023 and 2024.
2. What is the impact of this error on total assets at the end of 2023 and 2024? Net assets?

PROBLEM 6–10 (LO3)

Reflex Corporation sells three products. The inventory valuation of these products is shown below for years 2022 and 2023.

	2022			*2023*		
	Cost	*Market*	*Unit Basis (LCNRV)*	*Cost*	*Market*	*Unit Basis (LCNRV)*
Product X	$14,000	$15,000	?	$15,000	$16,000	?
Product Y	12,500	12,000	?	12,000	11,500	?
Product Z	11,000	11,500	?	10,500	10,000	?
Total	?	?	?	?	?	?

Required: If Reflex values its inventory using LCNRV/unit basis, complete the 2022 and 2023 cost, net realizable value, and LCNRV calculations.

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CHAPTER OVERVIEW

Chapter 7: Cash and Receivables

Learning Objectives

- LO1 – 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.

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.

7.1: Internal Control
7.2: Petty Cash
7.3: Cash Collections and Payments
7.4: Accounts Receivable
7.5: Short-Term Notes Receivable
7.6: Appendix A- Ratio Analysis—Acid Test
7.7: Appendix B- Ratio Analysis—Accounts Receivable Turnover
7.8: Summary of Chapter 7 Learning Objectives
7.9: Exercises

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7.1: Internal Control

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 internal control and explain how it is applied to cash.

Assets are the lifeblood of a company. As such, they must be protected. This duty falls to managers of a company. The policies and procedures implemented by management to protect assets are collectively referred to as **internal controls**. An effective internal control program not only protects assets, but also aids in accurate recordkeeping, produces financial statement information in a timely manner, ensures compliance with laws and regulations, and promotes efficient operations. Effective internal control procedures ensure that adequate records are maintained, transactions are authorized, duties among employees are divided between recordkeeping functions and control of assets, and employees' work is checked by others. The use of electronic recordkeeping systems does not decrease the need for good internal controls.

The effectiveness of internal controls is limited by human error and fraud. Human error can occur because of negligence or mistakes. Fraud is the intentional decision to circumvent internal control systems for personal gain. Sometimes, employees cooperate in order to avoid internal controls. This *collusion* is often difficult to detect, but fortunately, it is not a common occurrence when adequate controls are in place.

Internal 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 recordkeeping, and employees need to be trained in the application of internal control procedures.

Financial statements prepared according to generally accepted accounting principles are useful not only to external users in evaluating the financial performance and financial position of the company, but also for internal decision making. There are various internal control mechanisms that aid in the production of timely and useful financial information. For instance, using a chart of accounts is necessary to ensure transactions are 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 afterward, 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: Cheques 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 cheques.

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 cheque 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 cheque. 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 cheque is prepared for the amount of the fund. The custodian of the fund cashes the cheque 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 cheque 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 totalling the petty cash fund amount. To demonstrate the management of a petty cash fund, assume that a $200 cheque is issued for the purpose of establishing a petty cash fund.

The journal entry is:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Petty Cash		200	
	Cash			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 added together and reported as one amount.

Assume the petty cash custodian has receipts totalling $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 cheque for $190.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Delivery Expense		100	
	Postage Expense		35	
	Office Supplies Expense		55	
	Cash			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 cheque. 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	PR	Debit	Credit
	Delivery Expense		100	
	Postage Expense		35	
	Office Supplies Expense		55	
	Cash Over/Short Expense		2	
	Cash			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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Delivery Expense		100	
	Postage Expense		35	
	Office Supplies Expense		55	
	Cash Over/Short Expense			4
	Cash			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 totalling $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 cheque for $35 is issued.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Delivery Expense		80	
	Postage Expense		30	
	Petty Cash			75
	Cash			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 cheque 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.

Book reconciling items	*Bank reconciling items*
Collection of notes receivable (added)	Outstanding deposits (added)
NSF cheques (subtracted)	Outstanding cheques (subtracted)
Bank charges (subtracted)	
Book errors (added or subtracted,	Bank errors (added or subtracted,
depending on the nature of the error)	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.

Cheques 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 cheque. NSF cheques must therefore be subtracted from the unreconciled book balance of cash on the bank reconciliation to reconcile cash.

Cheques 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 cheque was issued too long ago, known as a stale-dated cheque, an unsigned or illegible cheque, or the cheque shows the wrong account number). Returned cheques cause the general ledger cash account to be overstated. These cheques 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 cheque 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 cheque as $520 when the correct amount of the cheque 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 cheque 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 cheque is presented and accepted for payment (or *clears* the bank). Cheques 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 cheques**. Outstanding cheques mean that the bank statement cash balance is overstated. Therefore, outstanding cheques 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 cheque 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.



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.



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, 2023:

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 unreconciled 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

Cheques written that have cleared the bank are returned with the bank statement. These cheques are said to be *cancelled* because, once cleared, the bank marks them to prevent them from being used again. Cancelled cheques are compared to the company's list of cash payments. Outstanding cheques are identified using two steps:

a. Any outstanding cheques listed on the BDCC's March 31 bank reconciliation are compared to the cheques listed on the April 30 bank statement.

   For BDCC, all of the March outstanding cheques (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 cheques had not been paid by the bank in April, it would be subtracted as an outstanding cheque from the unreconciled bank balance on the bank reconciliation.

b. The cash payments listed in BDCC's accounting records are compared to the cheques on the bank statement. This comparison indicates that the following cheques are outstanding.

Cheque No.	*Amount*
606	$ 287
607	1,364
608	100
609	40
610	1,520

   Outstanding cheques 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 cheque 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 cheque 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 cheque 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.

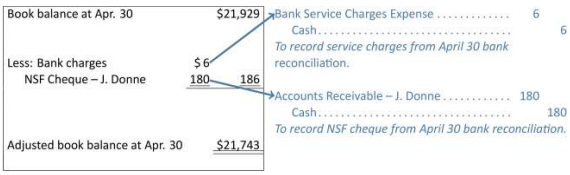


Figure 7.3 BDCC's April Bank Reconciliation

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.



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.



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	PR	Debit	Credit
	Cash		980	
	Credit Card Expense		20	
	Sales			1,000
	To record sale and related credit card fee.			
	Cost of Goods Sold		750	
	Merchandise Inventory			750
	To record cost of sales.			

The credit card fee is calculated as the $\$1{,}000 \text{ sale} \times 2\% = \$20$. 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.

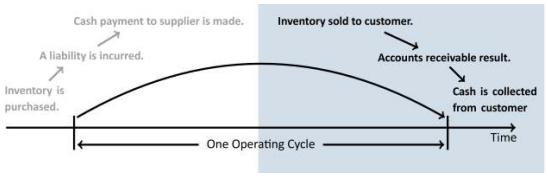


Figure 7.5 Revenue Portion of Operating Cycle

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. 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	1,400	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	PR	Debit	Credit
	Bad Debts Expense		XXX	
	Allowance for Doubtful Accounts			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.

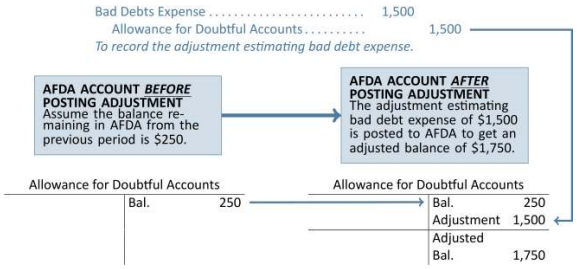
The Income Statement Method

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	*Credit Sales*	*Amounts Not Collected*
2020	$150,000	$1,000
2021	200,000	1,200
2022	250,000	800
	$600,000	$3,000

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 2023 and credit sales for 2023 amount to $300,000, bad debts expense would be estimated as $1,500 ($300,000 x 0.005). Under the income statement method, the $1,500 represents estimated bad debt expense and is recorded as:

This estimated bad debt expense is calculated without considering any existing balance in the AFDA account.



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, 2023

					Number of Days Past Due									
Customer	*Total*		*Not Yet 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				
Horngren Corp		4,000				2,000		1,000			$	1,000		
Perry Co. Ltd.		5,000				3,000		1,000				1,000		
Others		9,000				4,000						5,000		
Totals	$	25,000	$	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:

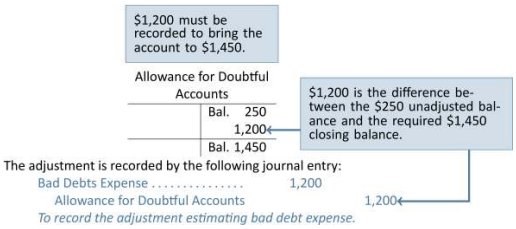
Number of Days Outstanding	*Not Yet Due*	*1–30*	*31–60*	*61–90*	*91–120*	*Over 120*
Rate of Uncollectibility	0.5%	1%	3%	5%	10%	40%

The calculation of expected uncollectible accounts receivable at December 31, 2023 would be as follows:



A total of $1,450 of accounts receivable is estimated to be uncollectible at December 31, 2023.

Under the balance sheet method, the estimated bad debt expense 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.



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	PR	Debit	Credit
	Bad Debts Expense		1,250	
	Allowance for Doubtful Accounts			1,250
	To record the adjustment estimating bad debt expense.			

The total estimated uncollectible accounts was $1,500 ($25,000 × 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, 2024 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	PR	Debit	Credit
	AFDA		1,000	
	Accounts Receivable – Bendix Inc.			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.

	Before Write-Off	*Write-Off*	*After Write-Off*
Accounts receivable	$25,000	Cr 1,000	$24,000
Less: Allowance for doubtful accounts	1,450	Dr 1,000	450
Net accounts receivable	$23,550		$23,550

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	PR	Debit	Credit
	Bad Debts Expense		XXX	
	AFDA			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	PR	Debit	Credit
	AFDA		XXX	
	Accounts Receivable			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	PR	Debit	Credit
	Accounts Receivable – Bendix Inc.		250	
	AFDA			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	PR	Debit	Credit
	Cash		250	
	Accounts Receivable – Bendix Inc.			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: Principal $\times$ Annual Interest Rate $\times$ 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, 2023 with the following entry:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 5	Notes Receivable - Bendix		5,000	
	Accounts Receivable - Bendix			5,000
	To record the conversion of a customer's account to a 5%, 60-day note dated December 5, 2015.			

Assuming a December 31, year-end for BDCC, the adjusting entry to accrue interest on December 31 would be:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 31	Interest Receivable		17.81	
	Interest Revenue			17.81
	To record the accrual of interest from December 5 to December 31.			

The interest of $17.81 was calculated as: $5,000 $\times$ 5% $\times$ 26/365[2] = $17.80822 rounded to $17.81. ***All interest calculations in this textbook are rounded to two decimal places.***

At maturity, February 3, 2024, BDCC collects the note plus interest and records:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Feb 3	Cash		5,041.10	
	Note Receivable - Bendix			5,000.00
	Interest Receivable			17.81
	Interest Revenue			23.29
	To record the collection of the principal and interest.			

The total interest realized on the note was $41.10 ($5,000 $\times$ 5% $\times$ 60/365 = $41.0959 rounded to $41.10). Part of the $41.10 total interest revenue was realized in 2023 ($17.81) and the rest in 2024 ($41.10 - $17.81 = $23.29). 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 + $41.10 = $5,041.10.

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, 2023. 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, 2023. BDCC would record the collection on October 31 as:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Oct 31	Cash		4,040	
	Note Receivable - Woodlow			4,000
	Interest Revenue			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:

Quick current assets	÷	**Current liabilities**

The acid-test ratios for three companies operating in a similar industry are shown below:

	Acid-Test Ratios		
Year	**Company A**	**Company B**	**Company C**
2022	0.56	1.3	8.6
2023	0.72	1.2	8.7

In 2022, 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 unfavourable in 2023, the change is favourable because the liquidity improved. So a company can have an unfavourable acid-test ratio but show a favourable change.

Company B's 2022 acid-test shows that it has favourable liquidity: $1.30 to cover each $1.00 of current liabilities as they come due. However, the change from 2022 to 2023 shows a decrease in the acid-test ratio which is unfavourable although Company B's acid-test still shows favourable liquidity. So a company can have a favourable acid-test ratio but an unfavourable change.

Company C's 2022 acid-test ratio indicates that it has favourable liquidity: $8.60 to cover each $1.00 of current liabilities as they come due. However, this is actually unfavourable 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 2023, Company C's acid-test ratio increased a bit and it is still excessive which is unfavourable. So the change was favourable but because the ratio is too high, it reflects an unfavourable 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 unfavourable 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:

Net credit sales (or revenues) ÷ **Average net accounts receivable**[4]

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:

	Accounts Receivable Turnover	
Year	**Company A**	**Company B**
2023	5.8	6.9

Company B is more efficient at collecting receivables than is Company A. The higher the ratio, the more favourable.

Summary of Chapter 7 Learning Objectives

LO1 – Define internal control and explain how it is applied to cash.

The purpose of internal controls is to safeguard the assets of a business. Since cash is a particularly vulnerable asset, policies and procedures specific to cash need to be implemented, such as the use of cheques and electronic funds transfer for payments, daily cash deposits into a financial institution, and the preparation of bank reconciliations.

LO2 – Explain and journalize petty cash transactions.

A petty cash fund is used to pay small, irregular amounts for which issuing a cheque would be inefficient. A petty cash custodian administers the fund by obtaining a cheque from the cash payments clerk. The cheque 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 cheque can be issued and cashed.

LO3 – 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 cheques, and bank errors. Reconciling items that affect the book balance are collections made by the bank on behalf of the company, NSF cheques, 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.

LO4 – 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.

LO5 – 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.

LO6 – 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.

LO7 – 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 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 cheque?
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 ageing 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?

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7.2: Petty Cash

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7.3: Cash Collections and Payments

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7.4: Accounts Receivable

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7.5: Short-Term Notes Receivable

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7.6: Appendix A- Ratio Analysis—Acid Test

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7.7: Appendix B- Ratio Analysis—Accounts Receivable Turnover

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7.8: Summary of Chapter 7 Learning Objectives

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7.9: Exercises

EXERCISE 7–1 (LO2)

The following transactions were made by Landers Corp. in March 2023.

Mar. 1	Established a petty cash fund of $200	
12	Reimbursed the fund for the following:	
	Postage	$10
	Office supplies	50
	Maintenance	35
	Meals (selling expenses)	25
		$120
18	Increased the fund by an additional $200	
25	Reimbursed the fund for the following:	
	Office supplies	$75
	Delivery charges	30
		$105
28	Reduced the amount of the fund to $350.	

Required: Prepare journal entries to record the petty cash transactions.

EXERCISE 7–2 (LO3)

The following information pertains to Ferguson Corp. at December 31, 2023, its year-end:

Cash per company records		$5,005
Cash per bank statement		7,000
Bank service charges not yet recorded in company records		30
Note collected by bank not yet recorded in company records:		
Amount of note receivable	$1,300	
Amount of interest	25	1,325
Fluet inc. cheque deducted in error by bank		200
December cheques 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, 2024		700

Required: Prepare a bank reconciliation and all necessary adjusting entries at December 31, 2023.

EXERCISE 7–3 (LO3)

The Cash general ledger account balance of Gladstone Ltd. was $2,531 at March 31, 2023. 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, 2023 was not yet recorded by the bank on the March statement.
b. A customer's cheque amounting to $700 and deposited on March 15 was returned NSF with the bank statement.
c. Cheque #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 cheque for $250 belonging to Global Corp. but charged by the bank to Gladstone Ltd. was included with the cancelled cheques returned by the bank.
f. There were $622 of outstanding cheques 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, 2023.

EXERCISE 7–4 (LO4)

Sather Ltd. had the following unadjusted account balances at December 31, 2023 (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, 2023 to be two per cent of sales.
   i. Prepare the appropriate adjusting entry to record the estimated uncollectible accounts at December 31, 2023.
   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, 2023 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, 2023.
   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:

	2022	*2023*
Accounts written off		
During 2022	$2,400	
During 2023		$1,000
Recovery of accounts written off		
Recovered in 2023		300
Allowance for doubtful accounts (adjusted balance)		
At December 31, 2021	8,000	
At December 31, 2022	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, 2023 uncollectible accounts by preparing an ageing of its accounts receivable. An amount of $10,000 was considered uncollectible at December 31, 2023.

Required:

a. Calculate the amount of bad debt expense for 2022.
b. What adjusting entry was recorded at December 31, 2022 to account for bad debts?
c. Calculate the amount of bad debt expense for 2023.
d. What adjusting entry was recorded at December 31, 2023 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. dishonoured (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:

	2023	*2022*	*2021*
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
Share capital	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 2022 and 2023 (round final calculations to two decimal places).
b. Was the change in each ratio from 2022 to 2023 favourable or unfavourable? 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

a. Additions to the reported general ledger cash balance.
b. Deductions from the reported general ledger cash balance.
c. Additions to the reported cash balance per the bank statement.
d. Deductions from the reported cash balance per the bank statement.
e. Information that has no effect on the current reconciliation.

Required: 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, 2023:

_____	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 cheque was not returned with the bank statement though it was paid by the bank.
_____	Cheques 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 cheque, which should have been charged to Gagetown Ltd.
_____	A $350 cheque 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 cheque 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, 2023, 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 cheque 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 cheque was issued to replenish the fund and increase it to $800.00. Petty cash currency was counted and totalled $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	Cheque issued to replenish petty cash. Petty cash was counted and totalled $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, 2023. Below is information that may relate to the task:

1. The cash balance as at November 30, 2023 was a debit balance of $23,500. The ending balance shown on the bank statement was $30,000.
2. Cheques that were outstanding at November 30 were:

Chq 236	$230
Chq 240	15

3. It was noted that Cheque 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 cheque 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, 2023.
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 2023. Thirty per cent of these were cash sales. During 2023, $25,000 of accounts receivable were written off as being uncollectible. In addition, $15,000 of the accounts that were written off in 2022 were unexpectedly collected in 2023. The December 31, 2022 adjusted balance in AFDA was a credit of $15,000. At its December 31, 2023 year-end, Tarpon had the following accounts receivable:

Age (days)	*Accounts Receivable*
1-30	$100,000
31-60	50,000
61-90	25,000
91-120	60,000
Over 120	15,000
Total	$250,000

Required:

1. Prepare journal entries to record the following 2023 transactions:
   a. The write-off of $25,000.
   b. The recovery of $15,000.
2. Calculate the unadjusted balance in AFDA at December 31, 2023.
3. Prepare the adjusting entry required at December 31, 2023 for each of the following scenarios:
   a. Bad debts at December 31, 2023 is based on three per cent of credit sales.
   b. Estimated uncollectible accounts at December 31, 2023 is estimated at five per cent of accounts receivable.
   c. Estimated uncollectible accounts at December 31, 2023 is calculated using the following aging analysis:

Age (days)	*Estimated Loss Percentage*
01-30	2%
31-60	4%
61-90	5%
91-120	10%
Over 120	50%

4. Calculate the December 31, 2023 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, 2022. It had the following transactions during 2022, 2023, and 2024.

Dec 31, 2022	Estimated uncollectible accounts as $5,000 (calculated as 2% of sales)
Apr 15, 2023	Wrote off the balance of Coulter, $700
Aug 8, 2023	Wrote off $3,000 of miscellaneous customer accounts as uncollectible
Dec 31, 2023	Estimated uncollectible accounts as $4,000 (1.5% of sales)
Mar 6, 2024	Recovered $200 from Coulter, whose account was written off in 2018; no further recoveries are expected
Sep 4, 2024	Wrote off as uncollectible $4,000 of miscellaneous customer accounts
Dec 31, 2024	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 2024 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, 2023:

	Account Balances	
	Debit	*Credit*
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, 2023.
4. Show how Accounts Receivable and the Allowance for Doubtful Accounts would appear on the December 31, 2023, balance sheet for parts (1) and (2).

PROBLEM 7–7 (LO5) Recording Short-term Notes Receivables Transactions

Below are transactions for Regal Co.:

2022	
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.
2023	
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, 2023 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, 2023 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, 2023
a)	Jan 1, 2023	$260,000	180 days	4.0%		
b)	Jan 15, 2023	180,000	3 months	5.0%		
c)	Jun 21, 2023	40,000	45 days	5.5%		
d)	Dec 1, 2023	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, 2023 (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, 2022, financial statements of Stonehedge Cutters Ltd.:

	2023	2022
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 2023. Round answer to two decimal places.
2. If the ratio was 5.25 from 2022, has the company become more efficient or not?

---

1. An 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.
2. When calculating interest based on days, use 365 days per year.
3. When calculating interest based on months, use 12 months per year.
4. Short-term notes receivable from customers would be included in this amount.

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CHAPTER OVERVIEW

Chapter 8: Long-lived Assets

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.

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.

8.1: Establishing the Cost of Property, Plant, and Equipment (PPE) Edit section
8.2: Depreciation
8.3: Partial Year Depreciation
8.4: Revising Depreciation
8.5: Impairment of Long-lived Assets
8.6: Derecognition of Property, Plant, and Equipment
8.7: Intangible Assets
8.8: Goodwill
8.9: Disclosure
8.10: Summary of Chapter 8 Learning Objectives Edit section
8.11: Exercises

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8.1: Establishing the Cost of Property, Plant, and Equipment (PPE) Edit section

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. Examples of various costs that may be incurred to prepare PPE for use are listed below.

	Capital Expenditures		
	Land	*Building*	*Equipment*
Costs to Acquire PPE	Purchase price Commission to real estate agent Legal fees	Purchase price Commission to real estate agent Legal fees	Invoice cost Transportation Insurance (during transportation)
Costs to Prepare PPE for Use	Costs of draining, clearing, and landscaping; demolition Assessments for streets and sewage system	Repair and remodelling costs before use Payments to tenants for premature termination of lease	Assembly Installation (including wages paid to company employees) Special floor foundations or supports Wiring Inspection Test run costs

To demonstrate, assume that equipment is purchased for $20,000. Additional costs include transportation costs $500, installation costs $1,000, construction costs for a cement foundation $2,500, and test run(s) costs to debug the equipment $2,000. The total capitalized cost of the asset to put it into use is $26,000.

Determining whether an outlay is a capital expenditure or a *revenue expenditure* is a matter of judgment. A **revenue expenditure** does not have a future benefit beyond one year. The concept of materiality enters into the distinction between capital and revenue expenditures. As a matter of expediency, an expenditure of $20 that has all the characteristics of a capital expenditure would probably be expensed rather than capitalized, because the time and effort required by accounting staff to capitalize and then depreciate the item over its estimated useful life is 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 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.

Not all asset-related expenditures incurred after the purchase of an asset are capitalized. An expenditure made to maintain PPE in satisfactory working order is a revenue expenditure and recorded as a debit to an expense account. Examples of these expenditures include: (a) the cost of replacing small parts of an asset that normally wear out (in the case of a truck, for example: new tires, new muffler, new battery); (b) continuing expenditures for maintaining the asset in good working order (for example, oil changes, antifreeze, transmission fluid changes); and (c) costs of renewing structural parts of an asset (for example, repairs of collision damage, repair or replacement of rusted parts).

Although some expenditures for repair and maintenance may benefit more than one accounting period, they may not be material in amount or they may have uncertain future benefits. They are therefore treated as expenses. These three criteria must all be met for an expenditure to be considered capital in nature.

1. Will it benefit more than one accounting period?
2. Will it enhance the service potential of the asset, or make it more valuable or more adaptable?
3. Is the dollar amount material?

Regardless of when an expenditure is incurred, if it meets the three criteria above it will always be a capital expenditure and debited to the appropriate asset account. If the expenditure does not meet all three criteria, then it is a revenue expenditure and is expensed.

Land

The purchase of land is a capital expenditure when 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 x 25%) and the Building account would be debited for the remaining 75% or $112,500 ($150,000 x 75% = $112,500 or $150,000 - $37,500 = $112,500) as shown in the following journal entry.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Land		37,500	
	Building		112,500	
	Cash			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 labour 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 lists individual accounts that fall under a common 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 kilometres 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.

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, 2022 with a $2,000 residual value and estimated productive life of 10,000 units. If 1,500 units were produced during 2022, the depreciation expense for the year ended December 31, 2022 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, 2022:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31	Depreciation Expense		2,700	
	Accumulated Depreciation			2,700
	To record depreciation expense using the Units-of-Production method; ($20,000 - $2,000)/10,000 units = $1.80/unit; $1.80/unit x 1,500 units = $2,700.			

The **carrying amount** or **net book value** of the asset (cost less accumulated depreciation) on the December 31, 2022 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 2023, depreciation expense for that year would be $3,600 ($1.80 per unit × 2,000 units). At December 31, 2023, the following adjusting entry would be recorded:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31	Depreciation Expense		3,600	
	Accumulated Depreciation			3,600
	To record depreciation expense using the Units-of-Production method; ($20,000 - $2,000)/10,000 units = $1.80/unit; $1.80/unit x 2,000 units = $3,600.			

The carrying amount (or net book value) at December 31, 2023 would be $13,700 ($20,000 – 2,700 – 3,600). If the equipment produces 1,000 units in 2024, 2,500 units in 2025, and 3,000 units in 2026, 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)*
2022	$20,000	1,500	$1.80	$2,700	$17,300
2023	17,300	2,000	1.80	3,600	13,700
2024	13,700	1,000	1.80	1,800	11,900
2025	11,900	2,500	1.80	4,500	7,400
2026	7,400	3,000	1.80	5,400	2,000
		10,000		$18,000	

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 × $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 2026. Depreciation expense and carrying amounts would be as follows each year:



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:

(a)	*(b)*	*(c)*	*(d)*
Year	*Carrying amount at start of year*	*Dep'n expense*	*Carrying amount at end of the year (b) – (c)*
2022	$20,000	$3,600	$16,400
2023	16,400	3,600	12,800
2024	12,800	3,600	9,200
2025	9,200	3,600	5,600
2026	5,600	3,600	2,000
		$18,000	

The carrying amount at December 31, 2026 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.



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 rule**, records half a year's depreciation regardless of when an asset purchase or disposal occurs during the year.

To demonstrate the half-year approach to calculating depreciation for partial periods, 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 2022 was $3,600 using the straight-line method. Because of the half-year rule, depreciation expense for 2022 would be $1,800 ($3,600 x .5) even though the asset was purchased on the first day of the fiscal year. Using the double-declining balance method, depreciation expense for 2022 under the half-year rule would be $4,000 ($8,000 $\times$ .5). Applying the half-year rule to the units-of-production depreciation for 2022, 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, 2022, 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 2023 is $12,800 ($20,000 - 3,600 - 3,600). Assume that on January 1, 2024, 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:

$$\frac{(\text{Remaining carrying amount} - \text{Revised residual value})}{\text{Estimated remaining useful life}}$$

$$= \frac{(\$12{,}800 - 5{,}000)}{6 \text{ years}}$$

$$= \$1{,}300 \text{ per year}$$

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. A subsequent capital expenditure can take one of two forms:

1. Addition (e.g., adding a garage to the back of an existing building or adding a skywalk in a factory)
2. Replacement (e.g., replacing the refrigeration unit in a long-haul truck or replacing the windows in a building).

To demonstrate the accounting for an addition, recall our original example where equipment was purchased on January 1, 2022 for $20,000; the estimated useful life and residual value were five years and $2,000, respectively. Assume that on January 4, 2023, 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	PR	Debit	Credit
Jan 4	Equipment – Heat Exchanger		12,000	
	Cash			12,000
	To record the addition of a heat exchanger to the equipment.			

The entry to record revised depreciation on December 31, 2023 is:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31	Depreciation Expense - Equipment		4,800	
	Accumulated Depreciation - Equipment			4,800
	To record revised straight-line depreciation; ($20,000 - $2,000)/5 years = $3,600/year; ($12,000 - $0)/10 years = $1,200/year; $3,600 + $1,200 = $4,800.			

The accounting for a replacement is more involved. The cost of the replaced item and its related accumulated depreciation must be removed from the accounting records when the replacement is capitalized recording any resulting gain or loss *as well as* calculating revised depreciation. Let's demonstrate, again using the $20,000 equipment purchased on January 1, 2022 with a five-year life and $2,000 residual value. Assume that on January 5, 2025 the engine in the equipment burned out and needed to be replaced. The PPE subledger showed that the engine had an original cost of $8,000, useful life of five years, and residual value of $1,000 resulting in a carrying amount as at January 5, 2025 of $3,800 ($8,000 cost – $4,200 accumulated depreciation). The entry to dispose of the old engine and remove it from the accounting records is (the old engine was scrapped and not sold because it was burned out):

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jan 5	Accum. Dep. – Equip. – Engine		4,200	
	Loss on Disposal		3,800	
	Equipment – Engine			8,000
	To record the scrapping of the burned out equipment engine; ($8,000 - $1,000)/5 years = $1,400/year depreciation X 3 years = $4,200 accumulated depreciation.			

Notice in the entry above that the cost of the old engine and the accumulated depreciation must be individually removed from the accounting records. Since the asset is not completely depreciated and was scrapped, the $3,800 carrying amount represents a loss. If the engine had been sold, the gain or loss would have been calculated as the difference between its carrying value and the cash proceeds. Losses (as well as gains) are reported on the income statement under *Other Revenues and Expenses*. **A common error made by students is to debit loss on disposal and credit equipment–engine for the carrying amount; this is incorrect.** After

posting the entry to dispose of the old engine, the account balances in the Equipment account and its related Accumulated Depreciation account would be as follows.

Equipment				Accumulated Depreciation – Equipment			
Jan. 1, 2022	20,000	8,000	Jan. 5, 2018			3,600	Dec. 31, 2015
						3,600	Dec. 31, 2016
						3,600	Dec. 31, 2017
				Jan. 5, 2025	4,200		
Balance	12,000					6,600	Balance

The entry to record the new engine purchased for $12,000 cash (estimated life 8 years; estimated zero residual value) is:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jan 5	Equipment - Engine		12,000	
	Cash			12,000
	To record the new engine with estimated useful life of 8 years and estimated residual value of zero.			

Alternatively, the entries to dispose of the old engine and record the addition of the new engine can be combined into one compound entry as follows:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jan 5	Accum. Dep. – Equip. – Engine (old)		4,200	
	Loss on Disposal		3,800	
	Equipment – Engine (new)		12,000	
	Equipment – Engine (old)			8,000
	Cash			12,000
	To record the scrapping of the burned out equipment engine and its replacement with a new engine.			

Assuming the useful life and residual value of the equipment did not change and the new engine had an estimated useful life of eight years and an estimated residual value of zero, the entry to record revised depreciation on December 31, 2025 is:

The previous example emphasizes the importance of maintaining a PPE subledger in order to apply the concept of *componentization*. **Componentization** requires each *major component* that has a different estimated useful life than the rest of an asset to be recorded and depreciated separately. For instance, assume a commercial airliner is purchased for $100 million ($100M) on January 1, 2022 with the following components: airframe, engines, landing gear, interior, and other parts. Original cost, estimated residual value, estimated useful lives, depreciation method to be used, serial numbers where applicable, and other relevant information are recorded in the PPE subledger.

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 compare the **recoverable amount** of a long-lived asset with its carrying amount (cost less accumulated depreciation) at the end of each reporting period. The recoverable amount is the fair value

of the asset at the time less any estimated costs to sell it. If the recoverable amount is lower than the carrying amount, an **impairment loss** must be recorded.

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, 2022 with an estimated useful life of five years and a residual value of $2,000. Assume straight-line depreciation has been recorded for 2022 and 2023 at $3,600 per year. At December 31, 2023, the carrying amount of the equipment is $12,800 ($20,000 – 3,600 – 3,600). At that point management determines that new equipment with equivalent capabilities can be purchased for much less than the old equipment due to technological changes. As a result, the recoverable value of the original equipment at December 31, 2023 is estimated to be $7,000. Because the recoverable amount 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	PR	Debit	Credit
Dec 31	Impairment Loss		5,800	
	Equipment			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 2024, 2025, and 2026, calculated as follows (assume no change to original useful life and residual value):

$$\frac{(\text{Revised carrying amount} - \text{Revised residual value})}{\text{Remaining useful life}}$$
$$= \frac{(\$7{,}000 - \$2{,}000)}{\text{3 years remaining useful life}}$$
$$= \$1{,}667 \text{ per year}$$

Impairment losses can be reversed in subsequent years if the recoverable amount of the asset exceeds the carrying amount. Also, if the fair value of a PPE asset can be reliably measured, it can be revalued to more than its original cost. However, the revaluation process needs to be conducted thereafter on a regular basis. These topics are not dealt with here, as they are beyond the scope of introductory financial accounting.

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	PR	Debit	Credit
	Depreciation Expense		XXX	
	Accumulated Depreciation			XXX
	To update depreciation for partial period.			

2. Record the disposal including any resulting gain or loss by

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Cash (if any, or other assets received)		XXX	
	Accumulated Depreciation		XXX	
	Loss on Disposal		XXX	
	OR Gain on Disposal			XXX
	PPE Asset (such as Equipment)			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	
2022	20,000	2022	3,600
		2023	3,600
		2024	3,600
		2025	3,600
		2026	3,600
			18,000

Assume that the equipment is sold at the end of 2026, 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 on disposal	$-0-

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31	Cash		2,000	
	Accumulated Dep. – Equipment		18,000	
	Equipment			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.

Cost	$20,000
Accumulated depreciation	(18,000)
Carrying amount	2,000
Proceeds of disposition	(3,000)
Gain on disposal	$(1,000)

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31	Cash		3,000	
	Accumulated Dep. – Equipment		18,000	
	Gain on Disposal			1,000
	Equipment			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	2,000
Proceeds of disposition	(500)
Loss on disposal	$1,500

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31	Cash		500	
	Accumulated Dep. – Equipment		18,000	
	Loss on Disposal		1,500	
	Equipment			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. 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:

Cash paid	+	Fair value of asset traded	=	Cost of new asset
$22,500	+	1,800	=	$24,300

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, 2027 to record the purchase of the new equipment and trade-in of the old equipment is:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Equipment (new)		24,300	
	Accumulated Dep. – Equipment (old)		18,000	
	Loss on Disposal		200	
	Equipment (old)			20,000
	Cash			22,500
	To record trade-in.			

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.

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**. The characteristics of various types of intangible assets are discussed below.

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 specified period. This period varies depending on the nature of the product or process patented, and on the legislation in effect. Modifications to the original product or process can result in a new patent being granted, in effect extending the life of the original patent.

Patents are recorded at cost. If purchased from an inventor, the patent's cost is easily identified; if developed internally, the patent's cost includes all expenditures incurred in the development of the product or process, including salaries and benefits of staff involved.

Copyrights

A **copyright** is another intangible asset that confers on the holder an exclusive legal privilege to publish a literary or artistic work. In this case, the state grants control over a published or artistic work for the life of the copyright holder (often the original artist) and for a specified period afterward. This control extends to the reproduction, sale, or other use of the copyrighted material.

Trademarks

A **trademark** is a symbol or a word used by a company to identify itself or one of its products in the marketplace. Symbols are often logos printed on company stationery or displayed at company offices, on vehicles, or in advertising. A well-known example is Coke®. The right to use a trademark can be protected by registering it with the appropriate agency. The symbol '®' denotes that a trademark is registered.

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.

Another example of a franchise is one granted by government for the provision of certain services within a given geographical location: for example, television stations and telephone services authorized by the telecommunications branch of the state, or garbage collection authorized within a given community.

In addition to the payment of an initial franchise fee, which is capitalized, a franchise agreement usually requires annual payments. These payments are considered operating expenses.

Computer Software

Computer software programs may be developed by a company, patented, and then sold to customers for use on their computers. Productivity software like Microsoft Office® is an example. The cost of acquiring and developing computer software programs is recorded as an intangible asset, even if it is stored on a physical device like a computer. However, computer software that is integral

to machinery – for instance, software that is necessary to control a piece of production equipment – is included as the cost of the equipment and classified as PPE.

Capitalization of Intangible Assets

Normally, intangible assets are measured at cost at the time of acquisition and are reported in the asset section of a company's balance sheet under the heading "Intangible Assets." The cost of an acquired intangible asset includes its purchase price and any expenditures needed to directly prepare it for its intended use.

There are special rules regarding intangible assets with a finite life and an indefinite life. Detailed discussion of these topics is beyond the scope of this textbook. It will be assumed that all intangibles being discussed in this textbook have a finite life.

Amortization of Intangible Assets

Plant and equipment assets are depreciated. Intangible assets are also depreciated but the term used is *amortization* instead of depreciation. **Amortization** (of intangible assets) is the systematic process of allocating the cost of intangible assets over their estimated useful lives using the straight-line, double-declining-balance, units-of-production or other method deemed appropriate.

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, 2023. The entry to record the purchase is:

General Journal

Date	Account/Explanation	PR	Debit	Credit
July 1	Patent		20,000	
	Cash			20,000
	To record the purchase of a patent, an intangible asset.			

Assuming the patent will last 40 years with no residual value, and amortization is calculated to the nearest whole month, amortization expense will be recorded at the December 31, 2023 year end as:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31	Amortization Expense - Patent		250	
	Accumulated Amortization - Patent			250
	To record amortization on the patent; ($20,000 – 0)/40 years = $500/year; $500 x 6/12 = $250.			

Notice that an accumulated amortization account[1] 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	$9M

Why would BDCC pay $10M for assets with a fair value of only $9M? The extra $1M represents *goodwill*. **Goodwill** is the excess paid over the fair value of the net assets when one company buys another, and represents the value of the purchasee's ability to generate superior earnings compared to other companies in the same industry.

Goodwill is the combination of a company's assets which cannot be separately identified – such as a well-trained workforce, better retail locations, superior products, or excellent senior managers – the value of which is recognized only when a significant portion of the business is purchased by another company.

Recall that among other characteristics, intangible assets must be separately identifiable. Because components of goodwill are not separately identifiable, goodwill is not considered an intangible asset. However, it does have future value and therefore is recorded as a long-lived asset under its own heading of "Goodwill" on the balance sheet.

The 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 notes to the financial statements need to disclose the following:

- details of each class of assets (e.g., land; equipment including separate parts; patents; goodwill)
- measurement basis (usually historical cost)
- type of depreciation and amortization methods used, including estimated useful lives
- cost and accumulated depreciation at the beginning and end of the period, including additions, disposals, and impairment losses
- whether the assets are constructed by the company for its own use (if PPE) or internally developed (if intangible assets).

Examples of appropriate disclosure of long-lived assets were shown in notes 3(d) and 4 of BDCC's financial statements in Chapter 4.

Summary of Chapter 8 Learning Objectives

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. A capital expditure 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 does not have a future benefit beyond one year so is expensed. The details regarding a PPE asset are maintained in a PPE subsidiary ledger.

LO2 – Explain, calculate, and record depreciation using the units-of-production, straight-line, and double-declining balance methods.

Depreciation, an application of matching, 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
$\frac{\text{Cost} - \text{Estimated Residual Value}}{\text{Estimated Total Units of Production}}$ = Depreciation Expense/Unit	$\frac{\text{Cost} - \text{Estimated Residual Value}}{\text{Estimated Total Useful Life}}$ = Depreciation Expense/Period	Carrying Amount $\times$ 2/n where n = estimated useful life = 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.

LO3 – 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 rule. The half-year rule assumes six months of depreciation in the year of acquisition and year of derecognition regardless of the actual date these occurred.

LO4 – 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

LO5 – Explain, calculate, and record the impairment of long-lived assets.

The **recoverable amount** of a long-lived asset must be compared with its carrying amount (cost less accumulated depreciation) at the end of each reporting period. The recoverable amount is the fair value of the asset at the time less any estimated costs to sell it. If the recoverable amount is lower than the carrying amount, an **impairment loss** must be recorded as:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Impairment Loss		XXX	
	Equipment			XXX
	To record impairment loss.			

Impairment losses can be reversed in subsequent years if the recoverable amount of the asset exceeds the carrying amount. Also, if the fair value of a PPE asset can be reliably measured, it can be revalued to more than its original cost.

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	PR	Debit	Credit
	Depreciation Expense		XXX	
	Accumulated Depreciation.....			XXX
	To update depreciation for partial period.			

2. Record the disposal including any resulting gain or loss by

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Cash (if any, or other assets received)		XXX	
	Accumulated Depreciation		XXX	
	Loss on Disposal		XXX	
	OR Gain on Disposal			XXX
	PPE Asset (such as Equipment)			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.

LO7 – Explain and record the acquisition and amortization of intangible assets.

Intangible assets are long-lived assets that arise from legal rights and do not have physical substance. Examples include patents, copyrights, trademarks, and franchises. Intangibles are amortized using 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.

LO8 – Explain goodwill and identify where on the balance sheet it is reported.

Goodwill is a long-lived asset that does not have physical substance but it is NOT an intangible. When one company buys another company, goodwill is the excess paid over the fair value of the net assets purchased and represents the value of the purchasee's ability to generate superior earnings compared to other companies in the same industry. Goodwill appears in the asset section of the balance sheet under its own heading of "Goodwill".

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 notes to the financial statements need to disclose the following:

- details of each class of assets (e.g., land; equipment including separate parts; patents; goodwill)
- measurement basis (usually historical cost)
- type of depreciation and amortization methods used, including estimated useful lives
- cost and accumulated depreciation at the beginning and end of the period, including additions, disposals, and impairment losses

whether the assets are constructed by the company for its own use (if PPE) or internally developed (if intangible assets).

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. List the three criteria used to determine whether a replacement part for equipment is considered a capital or revenue expenditure.
7. When one long-lived asset is exchanged for another, how is the cost of the newly-acquired asset determined?
8. What is depreciation?
9. 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.
10. Assume that you have recently purchased a new sports car. Is a usage or a time-based method preferable for recording depreciation? Why?
11. 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?
12. What is the formula for calculating the declining balance method of depreciation? ...the straight-line method?
13. What is the double-declining balance rate of depreciation for an asset that is expected to have a ten-year useful life?
14. Explain two types of partial-year depreciation methods.
15. 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.
16. Explain the effect on the calculation of depreciation expense for capital expenditures made subsequent to the initial purchase of plant or equipment.
17. Explain the process for determining whether the value of a long-lived asset has been impaired, and the required adjustments to the accounting records.
18. 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?
19. Why are the significant parts of property, plant, and equipment recorded separately?
20. When does the disposal of PPE not result in a gain or loss?
21. What is a trade-in? Explain whether a trade-in is the same as the sale of an asset.
22. 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?

23. How is the cost of a new capital asset calculated when a trade-in is involved?
24. How are intangible assets different from property, plant, and equipment? the same?
25. What is a patent? Assume a patent's legal life is twenty years. Does a patent's useful life correspond to its legal life? Why or why not? Support your answer with an example.
26. How does a copyright differ from a trademark? Give an example of each.
27. What is goodwill? Why is a company's internally-generated goodwill usually not recorded in its accounting records?
28. How are intangible assets valued, and what are their financial statement disclosure requirements?

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8.11: 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, 2023. 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 2023, 2024, 2025, 2026 and 2027 using

a. The straight-line method
b. The double-declining balance method.

EXERCISE 8–5 (LO2)

Mayr Inc. began a business on January 1, 2023. 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 2023, 2024, 2025, and 2026 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, 2023 for $25,000. The estimated useful life of the car was five years or 500,000 kms. Estimated residual value was $5,000. The car was driven 120,000 kms. in 2023 and 150,000 kms. in 2024. Penny Corp.'s year end is December 31.

Required:

a. Applying the half-year rule, calculate depreciation for 2023 and 2024 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 2023 and 2024 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, 2023 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 2025, 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, 2025.

EXERCISE 8–8 (LO4)

Denton Inc. purchased machinery on January 1, 2023 for $140,000 cash. It had an estimated useful life of five years and no residual value. On January 1, 2024, 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, 2023.
b. Prepare the entry to record revised depreciation for the year ended December 31, 2024.

EXERCISE 8–9 (LO5)

As part of its December 31, 2023 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, 2023:

Asset	*Date of Purchase*	*Depreciation Method*	*Cost*	*Estimated Residual*	*Estimated Useful life*	*Accumulated Depreciation*	*Recoverable Amount*
Land	Sept. 1/2022	N/A	$100,000	N/A	N/A	N/A	$115,000
Building	Dec. 1/2022	SL	890,000	$250,000	20	$34,667	870,000
Machinery	Dec. 1/2022	SL	400,000	150,000	10	27,083	350,000

DDB = Double-declining-balance; SL = Straight-line; U = Units-of-production; N/A = Not applicable

Required:

a. Record any impairment losses at December 31, 2023.
b. Record depreciation expense for the year ended December 31, 2024 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, 2023:

	Debits	*Credits*
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, 2023, 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, 2025, 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, 2023 to record the purchase of the copyright.
b. December 31, 2023, Willis's year-end, to record amortization of the copyright.
c. October 1, 2025.

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 cheque from Arrow to Jones for $140,000; bank loan assumed by Arrow, $100,000. Legal, accounting, and brokerage fees amounted to $20,000.

It was Arrow's intention to build homes on the property after sub-dividing. Crops on the farm were sold for $6,000; a house, 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, 2021, 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 kms
Residual value	$8,000
Mileage in 2021	15,000 kms

Required:

1. Assuming that the company depreciates on the basis of 50% each in the years of acquisition and disposal, calculate the depreciation for 2022 under each of the methods below. Round your final answer to nearest whole dollar.
   a. Usage based (Units of Production)
   b. Straight-line
   c. Double-declining balance – round percentage to two decimal places.
2. Compare the carrying amount for 2021 under each of these methods.
3. Which of the three methods results in the lowest net income for 2021?
4. Which of the three methods results in the lowest net income for 2022 if 25,000 kms were driven?

PROBLEM 8–3 (LO2,6)

Janz Corporation purchased a piece of machinery on January 1, 2023. The company's year-end is December 31. The following information is available regarding the machinery:

	Estimated	*Estimated*	*Depreciation*
Cost	*Useful Life*	*Residual Value*	*Method*
$95,000	9,000 units	$5,000	Units-of-Production

Assume actual output was:

Year	*Actual Units Produced*
2023	2,000
2024	3,000
2025	2,800
2026	2,900

The machinery was sold on January 15, 2027 for $12,000.

Required:

1. Calculate the depreciation expense for each of 2023 through to 2026 inclusive.
2. What is the balance of accumulated depreciation at the end of 2026?
3. What is the carrying amount of the machinery shown on the balance sheet at the end of 2026?
4. Prepare the entry on January 15, 2027 to record the sale of the machinery.

PROBLEM 8–4 (LO1,2,4)

The following are details about an equipment purchase on January 1, 2021:

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, 2024, 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 2024 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, 2015, 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, 2022, 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 2022. 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, 2021.
2. Calculate and record the depreciation expense at December 31, 2022.

3. Record the journal entries if the machine is sold on July 31, 2023 for $80,000.

PROBLEM 8–6 (LO4,6)

On August 1, 2015 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: 2022: 11,000; 2023: 25,000; and 2024: 35,000.

On January 1, 2021, the company traded in the original equipment for new production equipment. The company paid and 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 2022, 2023 and 2024
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, 2022. 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, 2024, 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, 2024.
3. The amortization of the patents at December 31, 2024.
4. Prepare a partial balance sheet for the intangible assets section at December 31, 2024 in good form, with proper disclosures.

PROBLEM 8–8 (LO1,2)

Global Flow Inc. purchased a computer on January 1, 2022 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, 2022	Added storage capacity at a cost of $1,000. This had no effect on residual value or estimated useful life.
Apr 1, 2023	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 2022 and 2023 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.

1. IFRS 2014, IAS 38, para. 98; effective January 1, 2016 but can be applied sooner.

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CHAPTER OVERVIEW

Chapter 9: Debt Financing - Current and Long-term Liabilities

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.

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.

9.1: Current versus Long-term Liabilities
9.2: Exercises
9.3: Known Current Liabilities
9.4: Estimated Current Liabilities
9.5: Long-Term Liabilities—Bonds Payable
9.6: Long-term Liabilities—Loans Payable
9.7: Appendix A- Present Value Calculations
9.8: Appendix B- Additional Payroll Transactions
9.9: Appendix C- The Effective Interest Rate Method
9.10: Summary of Chapter 9 Learning Objectives

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9.1: Current versus Long-term Liabilities

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.:



Based on this information, the liabilities section of the December 31, 2023 balance sheet would appear as follows:



The $20,000 notes payable, due November 30, 2024 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, 2023 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 liabilities are amounts owing to employees. Employee income taxes, Canada Pension Plan (CPP, or Quebec Pension Plan in Quebec), Employment Insurance (EI), union dues, health insurance, and other amounts are deducted by the employer from an employee's salary or wages. 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. To demonstrate the journal entries to record a business's payroll liabilities for its two employees, assume the following payroll record:

Deductions						Payment	Distribution	
EI	**Income Taxes**	**Health Ins.**	**CPP**	**Union Dues**	**Total Deductions**	**Net Pay**	**Sales Salaries Expense**	**Office Salaries Expense**
25.84	285.00	55.00	62.16	105.00	533.00	1,027.00	1,560.00	
16.50	114.00	55.00	51.50	75.00	312.00	663.00		975.00
42.34	399.00	110.00	113.66	180.00	845.00	1,690.00	1,560.00	975.00

The employer's journal entries would be:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Sales Salaries Expense		1,560.00	
	Office Salaries Expense		975.00	
	EI Payable			42.34
	Employee Income Taxes Payable			399.00
	Employee Health Insurance Payable			110.00
	CPP Payable			113.66
	Employee Union Dues Payable			180.00
	Salaries Payable			1,690.00
	To record payroll.			

General Journal

Date	Account/Explanation	PR	Debit	Credit
	EI Expense		59.28	
	CPP Expense		113.66	
	EI Payable			59.28
	CPP Payable			113.66
	To record the employer's portions of EI and CPP calculated as 1.4 times (42.34 x 1.4) and 1 times (113.66 x 1) the employees' portion.			

For EI and CPP, both the employee and employer are responsible for making payments to the government. At the time of writing, the employer's portion of EI was calculated as 1.4 times the employee's EI amount. For CPP, the employer is required to pay the same amount as the employee. EI, CPP, and federal/provincial income tax amounts payable are based on rates applied to an employee's gross earnings. The rates are subject to change each tax year. The actual rates for EI, CPP, and federal/provincial income tax can be viewed online at Canada Revenue Agency's website: http://www.cra-arc.gc.ca.

Sales Taxes

Sales taxes are also classified as known current liabilities. There are two types of sales taxes in Canada: federal *Goods and Services Tax (GST)* and *Provincial Sales Tax (PST)*. The **Goods and Services Tax (GST)** is calculated as 5% of the selling price of *taxable supplies*. For example, if a business is purchasing supplies with a selling price of $1,000, the GST is $50 (calculated as $1,000 x 5%). **Taxable supplies** are the goods or services on which GST applies. GST is not applied to **zero-rated supplies** (prescription drugs, groceries, and medical supplies) or **exempt supplies** (services such as education, health care, and financial). Sellers of taxable supplies are **registrants**, businesses registered with Canada Revenue Agency that sell taxable supplies and collect GST on behalf of the *Receiver General for Canada*. The **Receiver General for Canada** is the federal government body to which all taxes, including federal income tax, are remitted. Registrants also pay GST on the purchase of taxable supplies recording an **input tax credit** for the GST paid. Total input tax credits, or GST receivable, less GST payable is the amount to be remitted/refunded.

Provincial Sales Tax (PST) is the provincial sales tax paid by the *final* consumers of products. The PST rate is determined provincially. PST is calculated as a percentage of the selling price. Quebec's equivalent to PST is called the Quebec Sales Tax (QST).

The Harmonized Sales Tax (HST) is a combination of GST and PST that is used in some Canadian jurisdictions. Figure 9.1 summarizes sales taxes across Canada.

Figure 9.1 Sales Taxes in Canada[1]

	GST	PST	QST	HST
Alberta	5%	-	-	-
British Columbia	5%	7%	-	-
Manitoba	5%	7%	-	-
Northwest Territories	5%	-	-	-
Nunavut	5%	-	-	-
Saskatchewan	5%	5%	-	-
Yukon	5%	-	-	-
Quebec	5%	-	9.975%	-
Newfoundland and Labrador	-	-	-	13%
New Brunswick	-	-	-	13%
Nova Scotia	-	-	-	15%
Ontario	-	-	-	13%
Prince Edward Island	-	-	-	14%

To demonstrate how sales taxes are recorded, let us review an example. Assume Perry Sales, out of Saskatchewan, purchased $2,400 of merchandise inventory on account from a supplier, Carmen Inc., also in Saskatchewan. Perry Sales then sold this merchandise inventory to a customer for cash of $3,600. Perry Sales' entries for the purchase, subsequent sale of merchandise, and remittance of sales taxes are:

GST receivable is debited. Because Perry Sales is a merchandiser and therefore not the final consumer, there is no PST.

Merchandise Inventory	2,400.00	
GST Receivable	120.00	
Accounts Payable – Carmen Inc.		2,520.00
To record purchase of merchandise inventory on account.		

The previous $120 debit to GST receivable plus the $180 credit to GST payable in this entry result in a balance owing to the government of $60.

Cash	3,960.00	
Sales		3,600.00
PST Payable		180.00
GST Payable		180.00
To record cash sale.		
Cost of Goods Sold	2,400.00	
Merchandise Inventory		2,400.00
To record the cost of the sale.		

PST and GST are remitted to the appropriate government authority.

PST Payable	180.00	
GST Payable	180.00	
GST Receivable		120.00
Cash		240.00
To record remittance of sales taxes.		

Short-term Notes Payable

Short-term notes receivable were discussed in Chapter 7. A short-term note payable is identical to a note receivable except that it is a current liability instead of an asset. In Chapter 7, BDCC's customer Bendix Inc. was unable to pay its $5,000 account within the normal 30-day period. The receivable was converted to a 5%, 60-day note receivable dated December 5, 2023. The following example contrasts the entries recorded by BDCC for the note receivable to the entries recorded by Bendix Inc. for its note payable.

Entries in BDCC's records for the note receivable:			Entries in Bendix Inc.'s records for the note payable:		
Notes Receivable – Bendix	5,000		Accounts Payable – BDCC	5,000	
Accounts Receivable – Bendix		5,000	Notes Payable – BDCC		5,000
To record the conversion of a customer's account to a 5%, 60-day note dated December 5, 2015.			*To record the conversion of a supplier's account to a 5%, 60-day note dated December 5, 2015.*		
Interest Receivable	17.81		Interest Expense	17.81	
Interest Revenue		17.81	Interest Payable		17.81
To record the adjusting entry on December 31 to accrue interest from December 5 to December 31.			*To record the adjusting entry on December 31 to accrue interest from December 5 to December 31.*		
Cash	5,041.10		Notes Payable – BDCC	5,000.00	
Note Receivable – Bendix		5,000.00	Interest Expense	23.29	
Interest Receivable		17.81	Interest Payable	17.81	
Interest Revenue		23.29	Cash		5,041.10
To record the collection of the principal and interest at maturity on February 3, 2016.			*To record the payment of the principal and interest at maturity on February 3, 2016.*		

Notice that the dollar amounts in the entries for BDCC are identical to those for Bendix. The difference is that BDCC is recognizing a receivable from Bendix while Bendix is recognizing a payable to BDCC.

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, the following entry that estimates the amount of warranty expense and related liability must be recorded:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Warranty Expense		XXX	
	Estimated Warranty Liability			XXX
	To record estimated warranty expense and related liability.			

When the warranty work is actually performed, assuming both parts and labour, the following is recorded:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Estimated Warranty Liability		XXX	
	Parts Inventory			XXX
	Wages Payable			XXX
	To record the actual costs of parts and labour 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, 2023 will be $300,000. This translates into $25,000 of income tax to be accrued at the end of each month ($300,000 ÷ 12 months = $25,000/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	PR	Debit	Credit
	Income Tax Expense		25,000	
	Income Tax Payable			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	PR	Debit	Credit
	Income Tax Payable		25,000	
	Cash.....			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	PR	Debit	Credit
Dec 31	Income Tax Expense.....		22,000	
	Income Tax Payable			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 one of the following two criteria are satisfied:

1. it is not probable or
2. it cannot be reliably estimated.

A liability that is determined to be contingent is not recorded, rather it is disclosed in the notes to the financial statements except when there is a remote likelihood of its existence. An example of a contingent liability is a lawsuit where it is probable there will be a loss but the amount cannot be reliably determined. 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 reliably 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.

Contingent assets, on the other hand, are not recorded until actually realized. If a contingent asset is probable, it is disclosed in the notes to the financial statements.

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 contract called a **bond indenture** is prepared between the corporation and the future bondholders. It specifies the terms with which the corporation will comply, such as how much interest will be paid and when. Another of these terms may be a restriction on further borrowing by the corporation in the future. A **trustee** is appointed to be an intermediary between the corporation and the bondholder. The trustee administers the terms of the indenture.

Ownership of a bond certificate carries with it certain rights. These rights are printed on the actual certificate and vary among bond issues. 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.

Bond Authorization

Every corporation is legally required to follow a well-defined sequence in authorizing a bond issue. The bond issue is presented to the board of directors by management and must be approved by shareholders. Legal requirements must be followed and disclosure in the financial statements of the corporation is required.

Shareholder approval is an important step because bondholders are creditors with a prior claim on the corporation's assets if liquidation occurs. Further, dividend distributions may be restricted during the life of the bonds, and those shareholders affected usually need to approve this. These restrictions are typically reported to the reader of financial statements through note disclosure.

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, 2023. The amount of authorized bonds, their interest rate, and their maturity date can be shown in the accounts as follows:



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 favourable. 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 share capital 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.

3. **Assets of the Corporation to Be Pledged**

   Whether or not long-lived assets like property, plant, and equipment are pledged as security is an important consideration for bondholders because doing so helps to safeguard their investments. This decision is also important to the corporation because pledging all these assets may restrict future borrowings. The total amount of authorized bonds is usually a fraction of the pledged assets, such as 50%. The difference represents a margin of safety to bondholders. The value of these assets can shrink substantially but still permit reimbursement of bondholders should the company be unable to pay the bond interest or principal, and need to sell the pledged assets.

Bond Characteristics

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.

Registered bonds require the name and address of the owner to be recorded by the corporation or its trustee. The title to **bearer bonds** passes on delivery of the bonds to new owners and is not tracked. Payment of interest is made when the bearer clips coupons attached to the bond and presents these for payment. Bearer bonds are becoming increasingly rare.

When **serial bonds** are issued, the bonds have differing maturity dates, as indicated on the bond contract. Investors are able to choose bonds with a term that agrees with their investment plans. For example, in a $30 million serial bond issue, $10 million worth of the bonds may mature each year for three years.

The issue of bonds with a **call provision** permits the issuing corporation to redeem, or call, the bonds before their maturity date. The bond indenture usually indicates the price at which bonds are callable. Corporate bond issuers are thereby protected in the event that market interest rates decline below the bond contract interest rate. The higher interest rate bonds can be called to be replaced by bonds bearing a lower interest rate.

Some bonds allow the bondholder to exchange bonds for a specified type and amount of the corporation's share capital. 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	PR	Debit	Credit
	Cash		1,000	
	Bonds Payable			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, 2023 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 = 1.2 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, 2023 is:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		1,009	
	Bonds Payable			1,000
	Premium on Bonds Payable			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:

Liabilities		
Current		
Bonds payable	$1,000	
Add: Premium on bonds payable	9	$1,009

On the maturity date of December 31, 2023, the interest expense of $80 is paid, bondholders are repaid, and the premium is written off as a reduction of interest expense.

These three journal entries would be made:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31	Interest Expense		80	
	Cash			80
	To record interest paid on bonds.			

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31	Bonds Payable		1,000	
	Cash			1,000
	To record payment of bonds.			

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31	Premium on Bonds Payable		9	
	Interest Expense			9
	To record write-off of premium against interest.			

Alternatively, a single entry would be preferable as follows:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31	Interest Expense		71	
	Premium on Bonds Payable		9	
	Bonds Payable		1,000	
	Cash			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*.

The journal entry to record the transaction on January 1, 2023 is:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		991	
	Discount on Bonds Payable		9	
	Bonds Payable			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:

Liabilities		
Current		
Bonds payable	$1,000	
Less: Discount on bonds payable	(9)	$991

On December 31, 2023, when the bonds mature, the following entries would be recorded:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31	Interest Expense		80	
	Cash			80
	To record interest paid on bonds.			

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31	Bonds Payable		1,000	
	Cash			1,000
	To record payment of bonds.			

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31	Interest Expense		9	
	Discount on Bonds Payable			9
	To record write-off of discount against interest.			

Alternatively, a single entry would be preferable as follows:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31	Interest Expense		89	
	Bonds Payable		1,000	
	Discount on Bonds Payable			9
	Cash			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, 2023, 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	PR	Debit	Credit
Sept 1, 2023	Cash		102,667	
	Bond payable			100,000
	Interest payable			2,667

To record the first semi-annual interest payment on November 1 and zero out the interest payable:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Nov 1, 2023	Interest payable		2,667	
	Bond interest expense		1,333	
	Cash ($100,000 × 8% × 6 ÷ 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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2023	Interest expense		1,333	
	Interest payable ($100,000 × 8% × 2 ÷ 12)			1,333

At maturity, the May 1, 2026, entry would be:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
May 1, 2026	Bond payable		100,000	
	Cash			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, 2020, Angen Ltd. issued bonds with a par value of $500,000 at 99, due in 2026. On January 1, 2024, 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, 2024, would be calculated as follows:

Carrying value on call date	$497,000
Re-acquisition price ($500,000 × 101)	505,000
Loss on redemption	$8,000

Angen Ltd. would make the following entry:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1, 2024	Bond Payable		500,000	
	Loss on redemption of bonds		8,000	
	Cash			505,000
	Discount on Bonds Payable			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, 2023 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	PR	Debit	Credit
Jan 1	Cash		100,000	
	Long-Term Note Payable			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 9.2 illustrates this effect.



Figure 9.2 Effect of Blended Interest and Principal Payments

Figure 9.2 can be used to construct the journal entries to record the loan payments at the end of each year:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec. 31, 2023	Interest Expense		10,000	
	Loan Payable		30,211	
	Cash			40,211
Dec. 31, 2024	Interest Expense		6,979	
	Loan Payable		33,232	
	Cash			40,211
Dec. 31, 2025	Interest Expense		3,654	
	Loan Payable		36,557	
	Cash			40,211

The amounts in Figure 9.2 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 9.3:

Figure 9.3 Current and Long-term Portions of Loan Principal

A	*B*	*C*	*D*
Year ended Dec. 31	*Ending loan balance per general ledger (Fig 9.2, Col. E)*	*Current portion (Fig. 9.2, Col. C)*	*(B – C) Long-term portion*
2023	$69,788	$33,232	$36,557
2024	36,557	36,557	-0-
2025	-0-	-0-	-0-

Balance sheet presentation would be as follows at the end of 2015, 2016, and 2017:

	2023	*2024*	*2025*
Current liabilities			
Current portion of bank loan	$33,232	$36,557	$-0-
Long-term liabilities			
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 × 110% = $1.10). The increase of 10 cents results from the interest on $1 for the year. Conversely, if you are to pay $1.10 one year from today, the *present value* is $1 — the amount you would need to invest today at 10% to receive $1.10 in one year's time ($1.10/110% = $1). The exclusion of applicable interest in calculating present value is referred to as *discounting*.

If the above $1.10 amount at the end of the first year is invested for an additional year at 10% interest, its future value would be $1.21 ($1.10 x 110%). This consists of the original $1 investment, $.10 interest earned in the first year, and $.11 interest earned during the second year. Note that the second year's interest is earned on both the original $1 and on the 10 cents interest earned during the first year. This increase provides an example of *compound interest* — interest earned on interest.

The following formula can be used to calculate this:

$$\mathrm{FV} = \mathrm{PV} \times (1+i)^n$$

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 $\mathrm{FV} = \$1[(1+.1)^2]$, 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

$$\mathrm{PV} = \frac{\mathrm{FV}}{(1+i)^n}$$

Substituting the values of our example,

$$\mathrm{PV} = \frac{\$1.21}{(1+.1)^2}$$

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, 2023 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 ÷ 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 = 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 ÷ 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 = 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

Net pay calculations

A business maintains a **Payroll Register** that summarizes the hours worked for each employee per pay period. The payroll register details an employee's regular pay plus any overtime pay *before* deductions, known as **gross pay**. An employee is paid their **net pay** (gross pay less total deductions). **Payroll deductions** are amounts subtracted by the employer from an employee's gross pay. Deductions are also known as withholdings or withheld amounts. Deductions can vary depending on the employer. Some deductions are optional and deducted by the employer based on directions made by the employee. Examples of optional deductions include an employee's charitable donations or Canada Savings Bonds contributions.

Certain payroll deductions are required by law. Deductions legally required to be deducted by the employer from an employee's gross pay are income tax, Employment Insurance (EI), and Canada Pension Plan (CPP or QPP in Quebec). The amount of legally required deductions is prescribed and based on an employee's income. For more detailed information regarding the calculation of these deductions, go to: http://www.cra-arc.gc.ca/tx/bsnss/tpcs/pyrll/clcltng/menu-eng.html

Other deductions that are often withheld by employers include union dues and health care premiums.

All deductions withheld by employers must be paid to the appropriate authority. For example, income tax, EI, and CPP must be paid to the Receiver General for Canada. Charitable donations withheld by an employer would be paid to the charity as directed by the employee.

Recording Payroll

The entry made by the employer to record payroll would debit the appropriate salary or wage expense category and credit:

1. Salaries Payable or Wages Payable for the net pay and
2. Each deduction such as EI Payable, CPP Payable, etc.

To demonstrate, assume the following payroll information for Wil Stavely and Courtney Dell:

		Deductions				Distribution	
	Gross Pay	**Income Tax**	**EI**	**CPP**	**Net Pay**	**Exec Salaries**	**Office Wages**
Dell, Courtney	5,800	1,160	106	280	4,254	5,800	
Stavely, Will	3,500	700	70	170	2,560		3,500

The payroll journal entry would be:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Exec Salaries Expense		5,800	
	Office Wages Expense		3,500	
	Employee Income Tax Payable			1,860
	EI Payable			176
	CPP (or QPP) Payable			450
	Salaries Payable			6,814
	To record payroll.			

Recording Employer's CPP and EI Amounts

As already indicated, employers are legally required to deduct/withhold an employee's amount for each of the following from an employee's gross pay:

1. the employee's amount for Canada Pension Plan (CPP or QPP in Quebec) and
2. the employee's amount for Employment Insurance (EI).

The employer is required by law to pay Employment Insurance (EI) at the rate of 1.4 times the EI withheld from each employee. For example, if the employer withheld $100 of EI from Employee A's gross pay, the employer would have to pay EI of $140 (calculated as $100 x 1.4). Therefore, the total amount of EI being paid to the government regarding Employee A is $240 (calculated as the employee's portion of $100 plus the employer's portion of $140).

The employer is also required by law to pay CPP (or QPP in Quebec) of an amount that equals the employee amount. For example, if the employer withheld $50 of CPP from Employee A's gross pay, the employer would have to pay CPP of $50. Therefore, the total amount of CPP being paid to the government regarding Employee A is $100 (calculated as the employee's portion of $50 plus the employer's portion of $50).

The journal entry to record the employer's amounts above for EI and CPP would be:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	EI Expense		140	
	CPP (or QPP) Expense		50	
	EI Payable			140
	CPP (or QPP) Payable			50
	To record employer's EI and CPP amounts.			

Employer's Entries to Pay the Payroll Deductions

Employers are required by law to pay/remit to the Receiver General for Canada all income tax, EI, and CPP amounts deducted/withheld from employees along with the employer's portion of EI and CPP. Any other amounts deducted/withheld from employees such as union dues, health care premiums, or charitable donations must also be paid/remitted to the appropriate organizations. The journal entry to record these payments/remittances by the employer would debit the respective liability account and credit cash. For example, using the information from our previous example, we know that the employer withheld from the employee's gross pay $100 of EI and $50 of CPP. Additionally, the employer recorded its share of the EI ($140) and CPP ($50) amounts. The total EI to be paid is therefore $240 and the total CPP $100. The payment by the employer would be:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	EI Payable		240	
	CPP (or QPP) Payable		100	
	Cash			340
	To record employer's EI and CPP amounts.			

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	PR	Debit	Credit
	Benefits Expense		XX	
	Health Insurance Payable			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	PR	Debit	Credit
	Benefits Expense		XX	
	Estimated Vacation Liability			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 market spot rate or by performing a present value calculation. Use of the market spot 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, 2023, Impala Ltd. issued a 10-year, 8%, $500,000 face value bond at a spot rate 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 spot rate 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	PR	Debit	Credit
May 1, 2023	Cash		510,000	
	Bond payable			500,000
	Premium on bonds payable			10,000

Below is a portion of the effective interest rate method table:

	Payment	Interest 3.8547%	Amortization of Premium	Balance
May 1, 2023				510,000
Nov 1, 2023	20,000	19,659	341	509,659
May 1, 2024	20,000	19,646	354	509,305
Nov 1, 2024	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	PR	Debit	Credit
Nov 1, 2023	Interest expense		19,659	
	Premium on bonds payable		341	
	Cash			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, 2023, 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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2023	Interest expense (19,646 × 2 ÷ 6)		6,549	
	Premium on bonds payable (354 × 2 ÷ 6)		118	
	Interest payable			6,667

To record the interest payment on May 1, 2024, interest expense and amortization will be for the remainder of the table amounts of $19,646 and $354 respectively:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
May 1, 2024	Interest expense (19,646 − 6,549)		13,097	
	Interest payable		6,667	
	Premium on bonds payable (354 − 118)		236	
	Cash			20,000

To record the interest payment on November 1, 2024:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Nov 1, 2024	Interest expense		19,632	
	Premium on bonds payable		368	
	Cash			20,000

At maturity, the May 1, 2033, entry would be:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
May 1, 2033	Bond payable		500,000	
	Cash			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:

20,000	PMT	(where semi-annual interest using the stated or face rate is $500,000 × 8% × 6 ÷ 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 market spot rate been used, this bond would be trading at a spot rate 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 × 0.93496).

General Journal				
Date	Account/Explanation	PR	Debit	Credit
May 1, 2023	Cash		467,480	
	Discount on bonds payable		32,520	
	Bond payable			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:

	Payment	Interest 4.5%	Amortization of Discount	Balance
May 1, 2023				467,480
Nov 1, 2023	20,000	21,037	1,037	468,517
May 1, 2024	20,000	21,083	1,083	469,600
Nov 1, 2024	20,000	21,132	1,132	470,732
May 1, 2025	20,000	21,183	1,183	471,915
Nov 1, 2025	20,000	21,236	1,236	473,151
May 1, 2026	20,000	21,292	1,292	474,443
Nov 1, 2026	20,000	21,350	1,350	475,793
May 1, 2027	20,000	21,411	1,411	477,203
Nov 1, 2027	20,000	21,474	1,474	478,677
May 1, 2028	20,000	21,540	1,540	480,218
Nov 1, 2028	20,000	21,610	1,610	481,828
May 1, 2029	20,000	21,682	1,682	483,510
Nov 1, 2029	20,000	21,758	1,758	485,268
May 1, 2030	20,000	21,837	1,837	487,105
Nov 1, 2030	20,000	21,920	1,920	489,025
May 1, 2031	20,000	22,006	2,006	491,031
Nov 1, 2031	20,000	22,096	2,096	493,127
May 1, 2032	20,000	22,191	2,191	495,318
Nov 1, 2032	20,000	22,289	2,289	497,607
May 1, 2033	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	PR	Debit	Credit
Nov 1, 2023	Interest expense (467,480 × 4.5%)		21,037	
	Discount on bonds payable			1,037
	Cash			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, 2023, the table shows interest of $21,083 and bond amortization of $1,083 at May, 2024. Prorating these amounts for November and December, or two months, results in the following entry

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2023	Interest expense (21,083 × 2 ÷ 6)		7,028	
	Discount on bonds payable (1,083 × 2 ÷ 6)			361
	Interest payable			6,667

To record the interest payment on May 1, 2024, 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	PR	Debit	Credit
May 1, 2024	Interest expense (21,083 − 7,028)		14,055	
	Interest payable		6,667	
	Discount on bonds payable (1,083 − 361)			722
	Cash			20,000

At maturity, the May 1, 2033, entry would be:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
May 1, 2033	Bond payable		500,000	
	Cash			500,000

Summary of Chapter 9 Learning Objectives

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. 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.

LO2 – Record and disclose known current liabilities.

Known current liabilities are those where the payee, amount, and timing of payment are known. Payroll liabilities are a type of known current liability. Employers are responsible for withholding from employees amounts including Employment Insurance (EI), Canada Pension Plan (CPP), and income tax, and then remitting the amounts to the appropriate authority. Sales taxes, including the Goods and Services Tax (GST) and Provincial Sales Tax (PST), must be collected by registrants and subsequently remitted to the Receiver General for Canada. 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.

LO3 – 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. Contingent liabilities are neither a known liability nor an estimated liability and are not recorded if they are determined to exist. A contingent liability exists when it is not probable or it cannot be realiably estimated. A contingent liability is disclosed in the notes to the financial statements.

LO4 – 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: secured or unsecured, as well as registered or bearer bonds. 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.

LO5 – 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 unamortised 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 amortise 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?

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9.2: Exercises

EXERCISE 9–1 (LO1)

Ajam Inc. shows the following selected adjusted account balances at March 31, 2024:

Accounts Payable	$ 58,000
Wages Payable	102,000
Accumulated Depreciation – Machinery	69,000
Income Taxes Payable	92,000
Note Payable, due May 15, 2026	108,000
Note Payable, due November 30, 2024	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, 2024 balance sheet.

EXERCISE 9–2 (LO2)

On June 7, 2024, Dilby Mechanical Corp. completed $50,000 of servicing work for a client and billed them for that amount plus GST of $2,500 and PST of $3,500; terms are n20.

Required:

a. Prepare the journal entry as it would appear in Dilby's accounting records.
b. Assume the receivable established on June 7 was collected on June 27. Record the entry.

EXERCISE 9–3 (LO2)

Libra Company borrowed $300,000 by signing a 3.5%, 45-day note payable on July 1, 2024. 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, 2024.
b. Prepare the entry to accrue interest on July 31, 2024.
c. On what date will this note mature?
d. Prepare the entry to record the payment of the note on the due date.

EXERCISE 9–4 (LO3)

On January 23, 2024, 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, 2024, 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, 2024, calculate the balance at January 31, 2024 after the entries above were posted.

EXERCISE 9–5 (LO2)

An extract from the trial balance of Paragon Corporation at December 31, 2023 is reproduced below:

		Amount in unadjusted trial balance	*Amount in adjusted trial balance*
a.	Salaries expense (J. Smith)	$50,000	$52,000
b.	Employee income taxes payable	-0-	500
c.	Employment insurance payable	1,000	96
d.	Government pension payable	-0-	160

Additional Information: Employees pay 2% of their gross salaries to the government employment insurance plan and 4% of gross salaries to the government pension plan. The company matches employees' government pension contributions 1 to 1, and employment insurance contributions 1.4 to 1.

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, 2024 to employee J. Smith and the Government of Canada.

EXERCISE 9–6 (LO3)

Paul's Roofing Corporation paid monthly corporate income tax instalments of $500 commencing February 15, 2023. The company's income before income taxes for the year ended December 31, 2023 was $15,000. The corporate income tax rate is 40%. Paul's Roofing paid the 2023 corporate income taxes owing on January 31, 2024.

Required:

a. Record the February 15, 2023 payment.
b. Record the 2023 corporate income tax expense.
c. Record the January 31, 2024 payment.

Leong Corporation was authorized to issue $500,000 face value bonds on January 1, 2022. The corporation issued $100,000 of face value bonds on that date. The bonds will mature on December 31, 2025. 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.

EXERCISE 9–7 (LO4)

Leong Corporation was authorized to issue $500,000 face value bonds on January 1, 2022. The corporation issued $100,000 of face value bonds on that date. The bonds will mature on December 31, 2025. 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, 2022 and for December 31, 2022.

EXERCISE 9–8 (LO4) Bonds Issued at a Discount and Retired

On January 1, 2022, 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, 2022.
   iii. The amortization of the discount on June 30, 2022 (use the straight-line method of amortization).
b. Calculate the amount of interest paid in cash during 2022 and the amount of interest expense that will appear in the 2022 income statement.
c. Prepare a partial balance sheet at December 31, 2022 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, 2024.
e. Prepare the journal entry on January 1, 2023, assuming the bonds were called at 102.

EXERCISE 9–9 (LO4) Bonds Issued at a Premium and Retired

On January 1, 2024, 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, 2024.
   iii. The amortization of the premium on June 30, 2024 (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, 2024 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, 2027 when the bonds were called at 106.

EXERCISE 9–10 (LO4) Bonds Issued between Interest Dates

On September 1, 2022, 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 2023.
c. The bond at maturity.
d. Prepare a partial balance sheet at December 31, 2023 showing how the bonds and interest payable should be shown on the balance sheet.

EXERCISE 9–11 (LO5) Long Term Loan Payable

Rosedale Corp. obtained a $50,000 loan from Second Capital Bank on January 1, 2026. 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, 2026. (Hint: The current portion of a long-term liability must be reported.)

EXERCISE 9–12 (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, unamortised is subtracted from the face value of the bond.

d. In computing the carrying amount of a bond, unamortised 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 9–13 (LO4)

On January 1, 2024, 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 9–14 (LO4)

On January 1, 2024, 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, 2024.

EXERCISE 9–15 (LO5)

Rosedale Corp. obtained a $50,000 loan from Second Capital Bank on January 1, 2023. 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, 2023. It purchased a piece of heavy equipment for $95,000 on January 2, 2024. 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 2024.

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					
	A	*B*	*C*	*D*	*E*
Year Ended Dec. 31	*Beginning Loan Balance*	*Interest Expense*	*(D – B) Reduction of Loan Payable*	*Total Loan Payment*	*(A – C) Ending Loan Balance*
2024					
2025					
2026					
2027					

3. Prepare the journal entry to record the last loan payment.
4. Prepare a partial balance sheet showing the loan liability at December 31, 2025

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1. These were the sales tax rates in effect at the time of writing, July 2014.

2. Present Value (PV) calculations can be done using tables or a business calculator. Table values are rounded causing results to be less accurate. Since business calculators have PV functionality, all PV calculations should be done using a calculator. PV calculations are reviewed in Section 9.6. Given the variety of calculators on the market, students should take responsibility for knowing how to do PV calculations using their own calculator.

2. Employee's $100 portion + Employer's $140 portion

4. Employee's $50 portion + Employer's $50 portion

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9.3: Known Current Liabilities

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9.4: Estimated Current Liabilities

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9.5: Long-Term Liabilities—Bonds Payable

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9.10: Summary of Chapter 9 Learning Objectives

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CHAPTER OVERVIEW

Chapter 10: Equity Financing

Learning Objectives

- LO1 – Identify and explain characteristics of the corporate form of organization and classes of shares.
- LO2 – Record and disclose preferred and common share transactions including share splits.
- LO3 – Record and disclose cash dividends.
- LO4 – Record and disclose share dividends.
- LO5 – Calculate and explain the book value per share ratio.

Corporations sometimes finance a large portion of their operations by issuing equity in the form of shares. This chapter discusses in detail the nature of the corporate form of organization, the different types of shares used to obtain funds for business activities, and how these transactions are recorded. It also expands on the concept of dividends.

10.1: The Corporate Structure
10.2: Recording Share Transactions
10.3: Cash Dividends
10.4: Share Dividends
10.5: Book Value
10.6: Appendix A- Reporting for Multiple Classes of Shares
10.7: Summary of Chapter 10 Learning Objectives Edit section
10.8: Exercises

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10.1: The Corporate Structure

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 shares can a corporation issue to investors?
3. What are the rights of common shareholders in a corporation?
4. How are the rights of common shareholders different from those of preferred shareholders?
5. How are share transactions recorded?
6. When both preferred and common shares 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 share split?
10. How does a share split affect equity?
11. How are cash dividends recorded?
12. What is a share dividend and how is it recorded?
13. How does a share dividend affect equity?
14. What is book value and how is it calculated?

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 shares.

The accounting equation expresses the relationship between assets owned by a corporation and the claims against those assets by creditors and shareholders. Accounting for equity in a corporation requires a distinction between the two main sources of shareholders' equity: share capital and retained earnings. Their relationship to the accounting equation is shown in Figure 10.1.

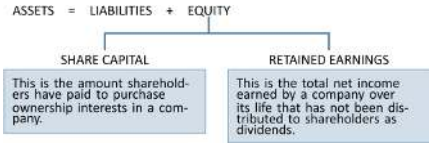


Figure 10.1 Share Capital Versus Retained Earnings

Corporate Characteristics

A unique characteristic of corporations is that they are legally separate from their owners, who are called **shareholders**. Each unit of ownership of a corporation is called a **share**. If a corporation issues 1,000 shares and you own 100 of them, you own 10% of the company. Corporations can be *privately-held* shares or *publicly-held* shares. A privately-held corporation's shares are not issued for sale to the general public. A publicly-held corporation offers its shares for sale to the general public, sometimes on a stock market like the Toronto Stock Exchange or the New York Stock Exchange.

A corporation has some of the same rights and obligations as individuals. For instance, it pays income taxes on its earnings, can enter into legal contracts, can own property, and can sue and be sued. A corporation also has distinctive features. It is separately regulated by law, has an indefinite life, its owners have limited liability, and it can usually acquire capital more easily than an individual. These features are discussed below.

- **Creation by law**

A corporation is formed under legislation enacted by a country or a political jurisdiction within it. For instance, in Canada a corporation can be formed under either federal or provincial laws. Although details may vary among jurisdictions, a legal document variously described as *articles of incorporation*, a *memorandum of association*, or *letters patent* is submitted for consideration to the appropriate government by prospective shareholders. The document lists the classes or types of shares that will be issued as well as the total number of shares of each class that can be issued, known as the **authorized** number of shares.

When approved, the government issues a certificate of incorporation. Investors then purchase shares from the corporation. They meet and elect a board of directors. The board formulates corporation policy and broadly directs the affairs of the corporation. This includes the appointment of a person in charge of day-to-day operations, often called a president, chief executive officer, or similar title. This person in turn has authority over the employees of the corporation.

A shareholder or group of shareholders who control more than 50% of the voting shares of a corporation are able to elect the board of directors and thus direct the affairs of the company. In a large public corporation with many shareholders, minority shareholders with similar ideas about how the company should be run sometimes delegate their votes to one person who will vote on their behalf by signing a proxy statement. This increases their relative voting power, as many other shareholders may not participate in shareholders' meetings.

Shareholders usually meet annually to vote for a board of directors — either to re-elect the current directors or to vote in new directors. The board meets regularly, perhaps monthly or quarterly, to review the operations of the corporation and to set policies for future operations. The board may decide to distribute some assets of the corporation as a dividend to shareholders. 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 shares 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 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 shareholders 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 shareholders. This situation is in direct contrast to a proprietorship or a partnership. In these forms of organization, creditors have full recourse to the personal assets of the proprietorship or partners if the business is unable to 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 shares 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, and the ease with which ownership can be transferred — shares are simply purchased or sold. Large amounts of capital can be raised by a corporation because the risks and rewards of ownership can be spread among many investors.

A corporation only receives money when shares are first issued. Once a share is issued, it can be bought and sold a number of times by various investors. These subsequent transactions between investors do not affect the corporation's balance sheet.

Income Taxes on Earnings

Because corporations are considered separate legal entities, they pay income taxes on their earnings. To encourage risk-taking and entrepreneurial activity, certain types of corporations may be taxed at rates that are lower than other corporations and individual shareholders' income tax rates. This can encourage research and development activity or small-company start-ups, for instance.

Classes of Shares

There are many types of shares, with differences related to voting rights, dividend rights, liquidation rights, and other preferential features. The rights of each shareholder depend on the class or type of shares held.

Every corporation issues **common shares**. The rights and privileges usually attached to common shares are outlined below.

- The right to participate in the management of the corporation by voting at shareholders' meetings (this participation includes voting to elect a board of directors; each share normally corresponds to one vote).
- The right to receive dividends when they are declared by the corporation's board of directors.
- The right to receive assets upon liquidation of the corporation.
- The right to appoint auditors through the board of directors.

For other classes of shares, some or all of these rights are usually restricted. The articles of incorporation may also grant the shareholders the **pre-emptive** right to maintain their proportionate interests in the corporation if additional shares are issued.

If the company is successful, common shareholders may receive dividend payments. As well, the value of common shares may increase. Common shareholders can submit a proposal to raise any matter at an annual meeting and have this proposal circulated to other shareholders at the corporation's expense. If the corporation intends to make fundamental changes in its business, these shareholders can often require the corporation to buy their shares at their fair value. In addition, shareholders 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 shares in order to appeal to as large a group of investors as possible. This permits different risks to be assumed by different classes of shareholders in the same company. For instance, a corporation may issue common shares but divide these into different classes like class A and class B common shares. When dividends are declared, they might only be paid to holders of class A shares.

Preferred shares is a class of share where the shareholders are entitled to receive dividends before common shareholders. These shares usually do not have voting privileges. Preferred shareholders typically assume less risk than common shareholders. In return, they receive only a limited amount of dividends. Issuing preferred shares allows a corporation to raise additional capital without requiring existing shareholders to give up control. Preferred shares are listed before common shares in the equity section of the balance sheet. Other characteristics of preferred shares and dividend payments are discussed later in this chapter.

The shares 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 shares**). The meaning of these terms is summarized in Figure 10.2:

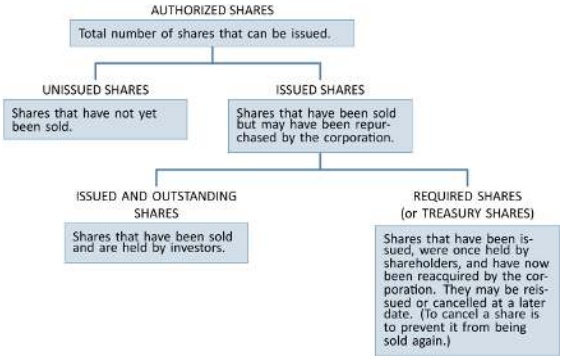


Figure 10.2 Status of Shares

The Debt Versus Equity Financing Decision

Many factors influence management in its choice between the issue of debt and the issue of share capital. One of the most important considerations is the potential effect of each of these financing methods on the present shareholders.

Consider the example of Old World Corporation, which has 100,000 common shares 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 three financing options:

1. Issue 12% debt, due in three years
2. Issue 300,000 preferred shares at $100 each (dividend $8 per share annually)
3. Issue an additional 200,000 common shares at $150 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.

	Plan 1:		*Plan 2:*		*Plan 3:*	
	Issue Debt		Issue Preferred Shares		Issue Common Shares	
Income before interest and income taxes	$	6,000,000	$	6,000,000	$	6,000,000
Less: Interest expense ($30M x 12%)		(3,600,000)		-0-		-0-
Income before taxes	$	2,400,000	$	6,000,000	$	6,000,000
Less: Income taxes assumed to be 50%		(1,200,000)		(3,000,000)		(3,000,000)
Net income		1,200,000		3,000,000		3,000,000
Less: Preferred dividends (300,000 x $8 per share)		-0-		(2,400,000)		-0-
Net income available to common shareholders	$	1,200,000	$	600,000	$	3,000,000
Number of common shares outstanding		100,000		100,000		300,000
Earnings per common share[1]	$	12	$	6	$	10

$$\frac{\text{Net income}}{\text{Number of common shares outstanding}}$$

EPS is quoted in financial markets and is disclosed on the income statement of publicly-traded companies. It is discussed in more detail in Chapter 12.

Plan 1, the issue of debt, has several advantages for existing common shareholders.

- **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 common share would be $12. This EPS is greater than the EPS earned through financing with either preferred shares or additional common shares. On this basis alone, the issue of debt is more financially attractive to existing common shareholders.

- **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 shareholders because ownership would be distributed over a larger number of shareholders, or concentrated in the hands of one or a few new owners. In the Old World case, issuing common shares would increase the number threefold from 100,000 to 300,000 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 50% income tax rate, the after-tax interest expense to the corporation is only 6% (12% x 50%), with the other 6% being used to offset income tax that would be otherwise due. However, for preferred shares 8% ($8/$100) of the money raised will be paid to the new shareholders as preferred dividends in the first year.

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. Shares do not have to be repaid.

10.2 Recording Share Transactions

LO2 – Record and disclose preferred and common share transactions including share splits.

Shares have a **stated (or *nominal*) value**—the amount for which they are issued. Alternatively, but rarely, shares will have a **par-value** which is the amount stated in the corporate charter below which shares cannot be sold upon initial offering. For consistency, we will assume all shares have a stated value.

To demonstrate the issuance and financial statement presentation of shares, assume that New World Corporation is authorized to issue share capital consisting of an unlimited number of voting common shares and 100,000 non-voting preferred shares.

Transaction 1: On January 1, 2023, New World sells 1,000 common shares to its first shareholders for $10 per share, or $10,000 cash. New World records the following entry:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		10,000	
	Common Shares			10,000
	To record the issuance of 1,000 common shares at $10 per share.			

Transaction 2: On February 1, 2023, 2,500 preferred shares are issued to the owner of land and buildings that have a fair value of $35,000 and $50,000, respectively. The journal entry to record this transaction is:

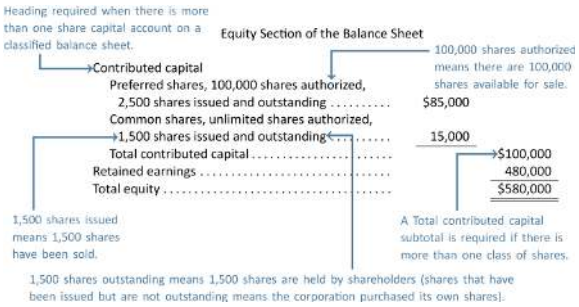
General Journal				
Date	Account/Explanation	PR	Debit	Credit
Feb 1	Land		35,000	
	Building		50,000	
	Preferred Shares			85,000
	To record the issuance of 2,500 preferred shares in exchange for land and buildings.			

Usually, one or more individuals decide to form a corporation and before the corporation is created, may then use their own funds to pay for legal and government fees, travel and promotional costs, and so on. When the corporation is legally formed, it is not unusual for the corporation to issue shares to these organizers for these amounts. These expenditures are referred to as organization costs (start-up costs) and are expensed.

Transaction 3: On March 1, 2023, 500 common shares are issued to the organizers of New World to pay for their services, valued at $5,000. The journal entry to record this transaction is:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Mar 1	Organization Expense		5,000	
	Common Shares			5,000
	To record the issuance of 500 common shares in exchange for organization efforts.			

Assuming no further share transactions and a retained earnings balance of $480,000, the equity section of the New World Corporation balance sheet would show the following at December 31, 2023:



Transaction 4: Corporate legislation permits a company to reacquire some of its shares, provided that the purchase does not cause insolvency. A company can repurchase and then cancel the repurchased shares. When repurchased shares are cancelled, they are no longer issued and no longer outstanding. A company can also repurchase shares and then hold them in treasury. Treasury shares are issued but not outstanding. A company can use treasury shares for purposes such as giving to employees as an incentive or bonus.

Assume that New World Corporation decides to repurchase 200 common shares on December 1, 2024 and hold them in treasury. Assume that the price of each share is the average issue price of the outstanding common shares, or $10. The journal entry to record the repurchase is:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 1	Common Shares		2,000	
	Cash			2,000
	To record the repurchase of 200 common shares at $10 per share to be held in treasury.			

Assuming no further transactions, the equity section of the New World Corporation balance sheet would show the following at December 31, 2024:

Equity Section of the Balance Sheet		
Contributed capital		
Preferred shares, 100,000 shares authorized, 2,500 shares issued and outstanding	$85,000	
Common shares, unlimited shares authorized, 1,500 shares issued; 1,300 shares outstanding	13,000	
Total contributed capital		$98,000
Retained earnings		480,000
Total equity		$578,000

Notice that the repurchase of shares caused a decrease in both the paid-in capital for the common shares ($2,000 decrease) and in the number of shares outstanding decreased (decreased by 200 shares). If the 200 shares had been cancelled, both the number of shares issued and outstanding would have decreased by 200 shares.

Transaction 5: Shares Retirement

If New World Corporation decides to repurchase and cancel 100 common shares on December 15, 2024. Assume that the purchase price is $9, which is less than the average issue price of $10 per share. The entry would be:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 15	Common Shares ($10 × 100 shares)		1,000	
	Contributed surplus, shares retirement			100
	Cash ($9 × 100 shares)			900
	To record the repurchase of 100 common shares at $9 per share.			

The contributed surplus account is reported in the equity section of the balance sheet, below the share capital accounts. The share capital accounts and the contributed capital account are then subtotalled and reported as ***total contributed capital*** of $99,100 as shown below:

Equity Section of the Balance Sheet		
Contributed capital		
Preferred shares, 100,000 shares authorized, 2,500 shares issued and outstanding	$85,000	
Common shares, unlimited shares authorized, 1,400 shares issued and outstanding	14,000	
Contributed surplus	100	
Total contributed capital		$99,100
Retained earnings		480,000
Total equity		$579,100

If New World Corporation also repurchases and cancels another 150 common shares on December 17, 2024, at a price of $11, this is more than the average issue price of $10 per share, and the entry would be:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 17	Common Shares ($10 × 150 shares)		1,500	
	Contributed suplus, shares retirement		100	
	Retained earnings		50	
	Cash ($11 × 150 shares)			1650
	To record the repurchase of 150 common shares at $11 per share.			

The excess of the purchase price of $11 over the average shares issue price of $10 totals $150 for 150 shares. This would be debited to retained earnings. However, in this case, New World already has contributed surplus of $100 from the December 15 shares cancellation, so this amount must be reversed first. The remainder, or $50, is debited to retained earnings.

Share Splits

A corporation may find its shares are selling at a high price on a stock exchange, perhaps putting them beyond the reach of many investors. To increase the marketability of a corporation's shares, management may opt for a **share split**. A share split increases the number of shares issued and outstanding, and lowers the cost of each new share. The originally-issued shares are exchanged for a larger number of new shares.

Assume that on December 1, 2023 New World Corporation declares a 3-for-1 common share split. This results in three new common shares replacing each currently-issued and outstanding common share. The number of issued and outstanding shares has now been tripled. The market price of each share will decrease to about one-third of its former market price. Since there is no change in the dollar amount of common shares, no debit-credit entry is required to record the share split. Instead, a memorandum entry would be recorded in the general ledger indicating the new number of shares issued and outstanding, as follows:

Common Shares — Acct. No. 320

Date	Description	Debit	Credit	Dr/Cr	Balance
2023					
Dec. 1	Memorandum Entry: Because of a 3-for-1 share split, the issued and outstanding common shares increased, respectively, from 1,500 and 1,300 to 4,500 and 3,900.				

The dollar amount shown on the balance sheet and statement of changes in equity will not change. The only change is an increase in the number of issued and outstanding common shares. After the share split, the equity section of the New World Corporation would appear as follows:

The number of common shares issued changed from 1,500 shares before the share split to 4,500 after the share split.

Equity Section of the Balance Sheet

The paid-in capital is not affected by a share split.

Contributed capital		
Preferred shares, 100,000 shares authorized, 2,500 shares issued and outstanding	$85,000	
Common shares, unlimited shares authorized, 4,500 shares issued; 3,900 shares outstanding	13,000	
Total contributed capital		$98,000
Retained earnings		480,000
Total equity		$578,000

The number of common shares outstanding changed from 1,300 shares before the share split to 3,900 after the share split.

10.3 Cash Dividends

LO3 – Record and disclose cash dividends.

Both creditors and shareholders are interested in the amount of assets that can be distributed as dividends. Dividends The paid-in share capital is not available for distribution as dividends. This helps protect creditors by preventing shareholders from withdrawing assets as dividends to the point where remaining assets become insufficient to pay creditors. For example, assume total assets are $40,000; total liabilities $39,000; and total equity $1,000, consisting of $900 in common shares and $100 of retained earnings. The maximum dividends that could be declared in this situation is $100, the balance in retained earnings.

Dividend Policy

Sometimes the board of directors may choose not to declare any dividends. There may be financial conditions in the corporation that make the payment impractical.

- **Consideration 1: There may not be adequate cash**

Corporations regularly reinvest their earnings in assets in order to make more profits. In this way, growth occurs and reliance on creditor financing can be minimized. As a result, there may not be enough cash on hand to declare and pay a cash dividend. The assets of the corporation may be tied up in property, plant, and equipment, for instance.

- **Consideration 2: A policy of the corporation may preclude dividend payments**

Some corporations pay no dividends. Instead, they reinvest their earnings in the business. Shareholders generally benefit through increased earnings, reflected in increased market price for the corporation's shares. A stated policy to this effect can apprise investors. This type of dividend policy is often found in growth-oriented corporations.

- **Consideration 3: No legal requirement that dividends have to be paid**

The board of directors may decide that no dividends should be paid. Legally, there is no requirement to do so. If shareholders are dissatisfied, they can elect a new board of directors or sell their shares.

- **Consideration 4: Dividends may be issued in shares of the corporation rather than in cash**

Share dividends may be issued to conserve cash or to increase the number of shares to be traded on the stock market. Shares dividends are discussed in Section 10.4.

Dividend Declaration

Dividends can be paid only if they have been officially declared by the board of directors. The board must pass a formal resolution authorizing the dividend payment. Notices of the dividend are then published. Once a dividend declaration has been made public, the dividend becomes a liability and must be paid. An example of a dividend notice is shown in Figure 10.3.

> New World Corporation
> Dividend Notice
>
> On May 25, 2023 the board of directors of New World Corporation declared a dividend of $0.50 per share on common shares outstanding (3,900). The dividend will be paid on June 26, 2023 to shareholders of record on June 7, 2023.
>
> By order of the board
>
> [signed]
> Lee Smith
> Secretary
> May 25, 2023

Figure 10.3 An Example of a Dividend Notice

There are three dates associated with a dividend. Usually dividends are declared on one date, the **date of declaration** (May 25, 2023 in this case); they are payable to shareholders on a second date, the date of record (June 7, 2023); and the dividend is paid on a third date, the **date of payment** (June 26, 2023).

Date of Declaration

The dividend declaration provides an official notice of the dividend. It specifies the amount of the dividend as well as which shareholders will receive the dividend. The liability for the dividend is recorded in the books of the corporation at its declaration date.

The following entry would be made in the general ledger of New World Corporation on May 25, 2023, the date of declaration:

General Journal

Date	Account/Explanation	PR	Debit	Credit
May 25	Cash Dividends Declared		1,950	
	Dividends Payable			1,950
	To record $0.50 per common share cash dividend declared; 3,900 shares x $0.50/share = $1,950.			

OR

General Journal

Date	Account/Explanation	PR	Debit	Credit
May 25	Retained Earnings		1,950	
	Dividends Payable			1,950
	To record $0.50 per common share cash dividend declared; 3,900 shares x $0.50/share = $1,950.			

If, as shown in the second entry above, retained earnings is debited instead of cash dividends declared, a closing entry is not required for dividends during the closing process.

Date of Record

Shareholders who own shares on the date of record will receive the dividend even if they have sold the shares before the dividend is actually paid. No journal entry is made in the accounting records for the date of record.

Date of Payment

The dividend is paid on this date and recorded as:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Dividends Payable		1,950	
	Cash			1,950
	To record payment of dividend.			

Preferred Shareholder Dividends

Preferred shares are offered to attract investors who have lower tolerance for risk than do common shareholders. Preferred shareholders are content with a smaller but more predictable share of a corporation's profits. For instance, preferred shareholders are entitled to dividends before any dividends are distributed to common shareholders. Also, most preferred shares specifically state what amount of dividends their holders can expect each year. For example, owners of $8 preferred shares would be paid $8 per share held each year. These dividends are often paid even if the corporation experiences a net loss in a particular year.

Preferred shares may also have other dividend preferences, depending on what rights have been attached to preferred shares at the date of incorporation. One such preference is the accumulation of undeclared dividends from one year to the next — referred to as *cumulative dividends*. Discussion of other preferences is beyond the scope of this introductory textbook. Cumulative dividends are discussed in the next section.

Cumulative Dividend Preferences

Cumulative preferred shares require that any unpaid dividends accumulate from one year to the next and are payable from future earnings when a dividend is eventually declared by a corporation. These accumulated dividends must be paid before any dividends are paid on common shares. The unpaid dividends are called **dividends in arrears**. Dividends in arrears are

not recorded as a liability on the balance sheet of the company until they have been declared by the board of directors. However, disclosure of dividends in arrears must be made in a note to the financial statements.

If a preferred share is **non-cumulative**, a dividend not declared by the board of directors in any one year is never paid to shareholders.

10.4 Share Dividends

LO4 – Record and disclose share dividends.

A **share dividend** is a dividend given to shareholders in the form of shares rather than cash. In this way, the declaring corporation is able to retain cash in the business and reduce the need to finance its activities through borrowing. Like a cash dividend, a share dividend reduces retained earnings. However, a share dividend does not cause assets to change. Instead, it simply transfers an amount from retained earnings to contributed capital. Total assets, total liabilities, and total equity remain unchanged when there is a share dividend. Like a cash dividend, there are three dates regarding a share dividend: date of declaration, date of record, and date of distribution. Notice that there is no 'date of payment' as there was for a cash dividend. This is because there is no cash payment involved for a share dividend. Instead, shares are distributed, or given, to the shareholders.

Accounting for Share Dividends

To demonstrate a share dividend, assume that the Sherbrooke Corporation declares a 10% share dividend to common shareholders. The share dividend is declared on December 15, 2015 payable to shareholders of record on December 20, 2023. The share dividend is distributed on January 10, 2016. At the time of the dividend declaration, the shares were trading on the stock exchange at $4 per share and the equity of the corporation consisted of the following:

Common shares; 20,000 shares authorized; 5,000 shares issued and outstanding	$25,000
Retained earnings	100,000
Total equity	$125,000

The 10% share dividend equals 500 shares (calculated as 5,000 outstanding shares x 10% share dividend). The market price on the date of declaration is used to record a share dividend. On the declaration date, the journal entry to record the share dividend is:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 15	Share Dividends Declared		2,000	
	Common Share Dividends Distributable			2,000
	To record declaration of share dividend; 5,000 shares x 10% = 500 shares; 500 shares x $4 = $2,000.			

OR

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 15	Retained Earnings		2,000	
	Common Share Dividends Distributable			2,000
	To record declaration of share dividend; 5,000 shares x 10% = 500 shares; 500 shares x $4 = $2,000.			

If, as shown in the second entry above, retained earnings is debited instead of share dividends, a closing entry is not required for dividends during the closing process. Common Share Dividends Distributable is an equity account, specifically, a share capital account.

On the share dividend distribution date, the following entry is recorded:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jan 10	Common Share Dividends Distributable		2,000	
	Common Shares			2,000
	To record distribution of share dividend.			

The effect of these entries is to transfer $2,000 from retained earnings to share capital. No assets are paid by the corporation when the additional shares are issued as a share dividend, and therefore the total equity remains unchanged.

Is There Any Change in the Investor's Percentage of Corporate Ownership Because of a Share Dividend?

Since a share dividend is issued to all shareholders of a particular class, as a result of a share dividend, each shareholder has a larger number of shares. However, ownership percentage of the company remains the same for each shareholder, as illustrated below, for the four shareholders of Sherbrooke Corporation.

Each shareholder has received a 10% share dividend but their ownership percentage of the company remains constant. Since total equity does not change when there is a share dividend, the proportion owned by each shareholder does not change.

	Corporate ownership			
	Before share dividend		*After share dividend*	
Shareholder	Shares	Percent	Shares	Percent
1	1,000	20%	1,100	20%
2	500	10%	550	10%
3	2,000	40%	2,200	40%
4	1,500	30%	1,650	30%
	5,000	100%	5,500	100%

10.5 Book Value

LO5 – Calculate and explain the book value per share ratio.

The **book value** of a share is the amount of net assets represented by one share. When referring to common shares, book value represents the amount of net assets not claimed by creditors and preferred shareholders. When referring to preferred shares, book value represents the amount that preferred shareholders would receive if the corporation were liquidated.

$$\text{Book value per preferred share} = \frac{\text{Paid-in capital for preferred shares plus dividends in arrears}}{\text{Number of preferred shares outstanding}}$$

$$\text{Book value per common share} = \frac{\text{Total equity less (paid-in capital for preferred shares plus dividends in arrears)}}{\text{Number of common shares outstanding}}$$

Calculation of the Book Value of Shares

The calculation of the book value of preferred and common shares can be illustrated by using the following data:

Equity Section of the Balance Sheet		
Contributed capital		
Preferred shares; 5,000 shares authorized; 1,000 shares issued and outstanding	$10,000	
Common shares; 200,000 shares authorized; 60,000 shares issued and outstanding	20,000	
Total contributed capital		$30,000
Retained earnings		105,000
Total equity		$135,000

Book value is calculated as:

Preferred shares		*Common shares*	
Dividends in arrears	$ 5,000	Total equity	$135,000
Plus: Paid-in capital	10,000	*Less:* Preferred claims	15,000
Balance	$15,000	Balance	$120,000
Shares outstanding	1,000	Shares outstanding	60,000
Book value per share	$15	Book value per share	$2

Comparison of book value with market value provides insight into investors' evaluations of the corporation. For instance, if the book value of one common share of Corporation A is $20 and its common shares are traded on a public stock exchange for $40 per share (market value), it is said to be trading for "two times book value." If Corporation B is trading for three times book value, investors are indicating that the future profit prospects for corporation B are higher than those for Corporation A. They are willing to pay proportionately more for shares of Corporation B than Corporation A, relative to the underlying book values.

Some shares regularly sell for less than their book value on various stock exchanges. This does not necessarily mean they are a bargain investment. The market price of a share is related to such factors as general economic outlook and perceived potential of the company to generate earnings.

10.6 Appendix A: Reporting for Multiple Classes of Shares

Multiple classes of shares are to be separately reported in the financial statements. For example, in Section 10.5 the equity portion of the balance sheet has separated the preferred shares and common shares. This provides important information about the composition of the company's share capital for its shareholders and creditors. Recall that preferred shares are entitled to receive dividends before common shareholders.

Another statement affected by multiple classes of shares is the statement of changes in equity, where multiple classes of shares are to be separately reported, as shown below using some sample data:

Sample Company Ltd.							
Statement of Changes in Equity							
For the year ended December 31, 2023							
	Preferred Shares		Common Shares		Retained Earnings	Total Equity	
Jan 1, 2023, opening balance	$	5,000	$	15,000	$ 80,000	$	100,000
Additional shares issued		5,000		5,000			10,000
Dividends declared					(12,000)		(12,000)
Net income					20,000		20,000
Dec 31, 2023, closing balance	$	10,000	$	20,000	$ 88,000	$	118,000

Summary of Chapter 10 Learning Objectives

LO1 – Identify and explain characteristics of the corporate form of organization and classes of shares.

A corporation is a legal entity that is separate from its owners, known as shareholders. The board of directors is responsible for corporate policy and broad direction of the corporation, including hiring the person in charge of day-to-day operations. A corporation has an indefinite life, its shareholders have limited liability, it can acquire capital more easily than a sole proprietorship or partnership, and it pays income taxes on its earnings since it is a separate legal entity. A corporation can issue common and preferred shares. Common shares have voting

rights while preferred shares do not. Preferred shares are listed before common shares in the equity section of the balance sheet. Preferred shareholders are entitled to receive dividends before common shareholders. Authorized shares are the total number of shares that can be issued or sold. Shares that have been issued can be repurchased by the corporation and either held in treasury for subsequent sale/distribution or cancelled. Outstanding shares are those that have been issued and are held by shareholders. Shares repurchased by a corporation are not outstanding shares.

LO2 – Record and disclose preferred and common share transactions including share splits.

Common and preferred shares can be issued for cash or other assets. Organization costs are expensed when incurred and organizers sometimes accept shares in lieu of cash for their work in organizing the corporation. When more than one type of share has been issued, the equity section of the balance sheet must be classified by including a Contributed Capital section. When a corporations shares are selling at a high price, a share split may be declared to increase the marketability of the shares. There is no journal entry for a share split. Instead, a memorandum entry is entered into the records detailing the split. A share split increases the number of shares but does not change any of the dollar amounts on the financial statements.

LO3 – Record and disclose cash dividends.

Cash dividends are a distribution of earnings to the shareholders and are declared by the board of directors. On the declaration date, cash dividends declared (or retained earnings) is debited and dividends payable is credited. On the date of record, no journal entry is recorded. Shareholders who hold shares on the date of record are eligible to receive the declared dividend. On the date of payment, dividends payable is debited and cash is credited. Preferred shares may have a feature known as cumulative or non-cumulative. Cumulative preferred shares accumulate undeclared dividends from one year to the next. These unpaid dividends are called dividends in arrears. When dividends are subsequently declared, dividends in arrears must be paid before anything is paid to the other shareholders. Non-cumulative preferred shares do not accumulate undeclared dividends.

LO4 – Record and disclose share dividends.

Share dividends distribute additional shares to shareholders and are declared by the board of directors. On the declaration date, share dividends declared (or retained earnings) is debited and common share dividends distributable, a share capital account, is credited. When the share dividend is distributed to shareholders, the Common Share Dividends Distributable account is debited and common shares is credited. Share dividends cause an increase in the number of shares issued and outstanding but do not affect account balances. Share dividends simply transfer an amount from retained earnings to share capital within the equity section of the balance sheet.

LO5 – Calculate and explain the book value per share ratio.

The book value of a share is the amount of net assets represented by one share. Book value per common share is the amount of net assets not claimed by creditors and preferred shareholders. Preferred book value per share is the net assets that preferred shareholders would receive if the corporation were liquidated.

Discussion Questions

1. What are some advantages of the corporate form of organization?
2. What is meant by *limited liability* of a corporation?
3. What rights are attached to common shares? Where are these rights indicated?
4. What is a board of directors and whom does it represent? Are the directors involved in the daily management of the entity?
5. Describe:
    a. two main classes of shares that can be issued by a corporation; and
    b. the different terms relating to the status of a corporation's shares.
6. In what ways can shares be "preferred"? In which ways are they similar to common shares? Different from common shares?
7. Why do corporations sometimes opt for a share split?
8. Identify the major components of the equity section of a balance sheet. Why are these components distinguished?
9. How can retained earnings be said to be reinvested in a corporation?
10. What are the main issues a board of directors considers when making a dividend declaration decision?
11. Even if a corporation is making a substantial net income each year, why might the board of directors decide to not pay any cash dividends?
12. Distinguish among the date of dividend declaration, the date of record, and the date of payment.
13. What is the difference in accounting between cash dividends and share dividends?
14. Explain the different dividend preferences that may be attached to preferred shares. Why would preferred shares have these preferences over common shares? Does it mean that purchasing preferred shares is better than purchasing common shares?
15. What are dividends in arrears? Are they a liability of the corporation?
16. How does a share dividend differ from a share split?
17. Does a share dividend change an investor's percentage of corporate ownership? Explain, using an example.

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10.2: Recording Share Transactions

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10.3: Cash Dividends

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10.4: Share Dividends

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10.5: Book Value

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10.6: Appendix A- Reporting for Multiple Classes of Shares

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10.7: Summary of Chapter 10 Learning Objectives Edit section

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10.8: Exercises

EXERCISE 10–1 (LO1,2)

Bagan Corporation, a profitable growth company with 200,000 shares of common shares outstanding, is in need of $40 million in new funds to finance a required expansion. Management has three options:

1. Sell $40 million of 12% bonds at face value.
2. Sell preferred shares: 400,000, $10 shares at $100 per share.
3. Sell an additional 200,000 common shares at $200 per share.

Operating income (before interest and income taxes) upon completion of the expansion is expected to average $12 million per year; assume an income tax rate of 50 per cent.

Required:

a. Complete the schedule below.

	12%	*Preferred*	*Common*
	Bonds	*Shares*	*Shares*
Income before interest and income taxes			
Less: Interest expense			
Income before taxes			
Less: Income taxes at 50%			
Net income			
Less: Preferred dividends			
Net income available to common shareholders			
Number of common shares outstanding			
Earnings per common share			

- Which financing option is most advantageous to the common shareholders? Why?

EXERCISE 10–2 (LO2)

A tract of land valued at $50,000 has been given to a corporation in exchange for 1,000 preferred shares.

Required:

a. Prepare the journal entry to record the transaction.
b. Where would the transaction be classified in the balance sheet?

EXERCISE 10–3 (LO1,2)

The equity section of Gannon Oilfield Corporation's balance sheet at December 31, 2023 is shown below.

Preferred Shares	
Authorized – 100 shares	
Issued and Outstanding – 64 Shares	$3,456
Common Shares	
Authorized – 2,000 Shares	
Issued and Outstanding – 800 Shares	1680
Retained Earnings	600

Required:

a. What is the average price received for each issued preferred share?
b. What is the average price received for each issued common share?
c. What is the total contributed capital of the company?

EXERCISE 10–4 (LO3)

Strada Controls Inc. has 100,000 common shares outstanding on January 1, 2023. On May 25, 2023, the board of directors declared a semi-annual cash dividend of $1 per share. The dividend will be paid on June 26, 2023 to shareholders of record on June 7, 2023.

Required: Prepare journal entries for

a. The declaration of the dividend.
b. The payment of the dividend.

EXERCISE 10–5 (LO1,3)

Landers Flynn Inc. has 1,000, $5 cumulative preferred shares outstanding. Dividends were not paid last year. The corporation also has 5,000 common shares outstanding. Landers Flynn declared a $14,000 cash dividend to be paid in the current year.

Required:

a. Calculate the dividends received by the preferred and common shareholders
b. If the preferred shares were non-cumulative, how would your answers to part (a) above change?

EXERCISE 10–6 (LO1,3)

The following note appeared on the balance sheet of Sabre Rigging Limited:

> As of December 31, 2023, dividends on the 1,000 issued and outstanding shares of cumulative preferred shares were in arrears for three years at the rate of $5 per share per year or $15,000 in total.

Required:

a. Does the $15,000 of dividends in arrears appear as a liability on the December 31, 2023 balance sheet? Explain your answer.
b. Why might the dividends be in arrears?
c. The comptroller of Sabre Rigging projects net income for the 2020 fiscal year of $35,000. When the company last paid dividends, the directors allocated 50 per cent of current year's net income for dividends. If dividends on preferred shares are declared at the end of 2020 and the established policy of 50 per cent is continued, how much will be available for dividends to the common shareholders if the profit projection is realized?

EXERCISE 10–7 (LO1,2,3,4)

The December 31, 2022 balance sheet for Arrow Streaming Corporation shows that as of that date it issued a total of 10,000 common shares for $140,000. On April 1, 2023 Arrow Streaming declared a 10 per cent share dividend, payable on April 15 to shareholders of record on April 10. The market value of Arrow's shares on April 1 was $15. On June 1, the company declared a $2 cash dividend per share to common shareholders of record on June 10, and paid the dividend on June 30. Assume the year end of the corporation is December 31.

Required: Prepare journal entries for the above transactions, including closing entries.

EXERCISE 10–8 (LO2,5)

The equity section of Pembina Valley Manufacturing Limited's balance sheet at December 31, 2023 is shown below.

Share Capital	
Preferred Shares, Cumulative	
Authorized – 500 shares	
Issued and Outstanding – 300 Shares	$300
Common Shares	
Authorized – 100 Shares	
Issued and Outstanding – 20 Shares	500
Total Contributed Capital	800
Retained Earnings	192
Total Equity	$992

Note: There were $30 of dividends in arrears on the preferred shares at December 31, 2019.

Required:

a. Calculate the December 31, 2023 book value per share of
   i. the preferred shares; and
   ii. the common shares.

b. Assume that the common shares were split 2 for 1 on January 2, 2024 and that there was no change in any other account at that time. Calculate the new book value of common shares immediately following the share split.

EXERCISE 10–9 (LO2)

Essential Financial Service Corp. was incorporated on January 1, 2023 to prepare business plans for small enterprises seeking bank financing.

Required: Prepare journal entries to record the following transactions on January 2, 2023:

a. Received an incorporation charter authorizing the issuance of an unlimited number of no par-value common shares and 10,000, 4% preferred shares.
b. Issued in exchange for incorporation costs incurred by shareholders 10,000 common shares at $1.
c. Issued for cash 1,000 preferred shares at $3 each.

EXERCISE 10–10 (LO4)

The shareholders' equity section of Lakeview Homes Corporation's statement of financial position at December 31, 2023 is reproduced below:

Shareholders' Equity		
Common shares		
Authorized unlimited shares, issued 5,000 shares	$	20,000
Retained earnings		100,000
Total shareholders' equity	$	120,000

On January 15, 2023, Lakeview Homes declared a 10 per cent share dividend to holders of common shares. At this date, the common shares of the corporation were trading on the stock exchange at $10 each. The share dividend was issued February 15, 2023.

Required: Prepare the journal entries to record the share dividend.

EXERCISE 10–11 (LO2,3,4)

Blitz Power Tongs Inc. received a charter that authorized it to issue an unlimited number of common shares. The following transactions were completed during 2018:

Jan 5	Issued 10 common shares for a total of $150 cash.
Jan 12	Exchanged 50 shares of common shares for assets listed at their fair values: machinery – $100; building – $100; land – $50.
Feb 28	Declared a 10% share dividend. Market value is $7 per share. Net income to date is $60.
Mar 15	Issued the share dividend.
Dec 31	Closed the 2023 net income of $200 from the Income Summary account in the general ledger to the Retained Earnings account.
Dec 31	Declared a $1 per share cash dividend.

Required:

a. Prepare journal entries for the 2023 transactions, including closing entries.
b. Prepare the shareholders' equity section of the statement of financial position at:
   i. January 31, 2023
   ii. February 28, 2023
   iii. December 31, 2023

EXERCISE 10–12 (LO1)

The board of directors of Oolong Ltd. is planning to expand its manufacturing facilities. To raise the $1.5 million capital needed, the following financing methods are being considered:

i. Sell $1.5 million of 10% bonds at face value.
ii. Sell $10 preferred shares: 15,000 shares at $100 a share (no other preferred shares are outstanding).
iii. Sell another 30,000 shares of common shares at $50 a share (currently 20,000 common shares are outstanding).

Income before interest and income taxes is expected to average $750,000 per year following the expansion; the income tax rate is 30%.

Required:

a. Calculate the earnings per common share for each alternative.
b. Which financing method will the shareholders most likely prefer and why?

EXERCISE 10–13 (LO2,3)

At December 31, 2022, the shareholders' equity section of the statement of financial position for Belfast Steel Ltd. totalled $30,000,000. Following are the balances of various general ledger accounts at that date.

Preferred shares, $1.00, cumulative	Issued 100,000 shares	$	1,000,000
Common shares	Issued 1,250,000 shares		25,000,000
Retained earnings			4,000,000

The following transactions occurred during 2019:

Feb 20	A cash dividend of $0.50 per preferred share was declared, payable Mar 1 to shareholders of record on Feb 25.
Mar 1	Payment of previously declared dividend on preferred shares was made.
Apr 15	A cash dividend on common shares of $0.60 per share was declared, payable Jun 10 to shareholders of record on May 1.
Jun 10	Payment of the previously-declared dividend on common shares was made.
Aug 1	10,000 common shares were issued for $250,000 cash.
Dec 31	A cash dividend totalling $425,000 was declared and paid.

Required:

a. Prepare journal entries for the 2023 transactions. Separate the dividends for preferred and common shares into the two classes of shares.
b. Prepare the statement of changes in equity for the year ended December 31, 2023 assuming net income for the year amounted to $500,000.

EXERCISE 10–14 (LO2,3)

Bray Co. was authorized to issue 10,000 $2.00 preferred shares and unlimited common shares. December 31 is Bray's year-end. During 2016, its first year of operations, the following selected transactions occurred:

i. January 15: Issued 32,000 common shares to the corporation's organizers in exchange for services to get the company operational. Their efforts are estimated to be worth $15,000.
ii. February 20: 15,000 common shares were issued for cash of $6 per share.
iii. March 7: 4,500 preferred shares were issued for cash totalling $90,000.
iv. April 9: 60,000 common shares were issued in exchange for land and building with appraised values of $300,000 and $120,000 respectively.
v. May 1: 3,500 of the preferred shares were issued for a cash price of $18.00 per share.
vi. May 15: Declared and paid dividends to the shareholders of record May 18. Total cash paid dividends was $50,000.
vii. Junuary 5: 16,000 of the common shares were issued for a cash total of $112,000.
viii. July 15: 2,000 preferred shares and 20,000 common shares were issued for a cash price of $17.50 and $7.50 respectively.
ix. December 31: The company closed all its temporary accounts. The Income Summary account showed a debit balance of $25,000.

Required:

a. Prepare journal entries for each of the items above during Bray's first year of operations.
b. Prepare the equity section of the balance sheet in good form with all disclosures and subtotals, for the year ended December 31, 2023.

EXERCISE 10–15 (LO2,3)

The partial balance sheet for the Carman Corp. reported the following components of equity on December 31, 2016:

Carman Corp.		
Equity Section of the Balance Sheet		
December 31, 2022		
Contributed capital:		
Preferred shares, $1.50 cumulative, 20,000 shares authorized;		
10,000 shares issued and outstanding	$	150,000
Common shares, unlimited shares authorized;		
25,000 shares issued and outstanding.		250,000
Total contributed capital	$	400,000
Retained earnings		250,000
Total equity	$	650,000

In 2023, Carman Corp. had the following transactions affecting the various equity accounts:

Jan 4	Sold 15,000 common shares at $11 per share.
Jan 8	The directors declared a total cash dividend of $57,500 payable on Jan. 31 to the Jan. 21 shareholders of record. Dividends had not been declared for 2015 and 2016. All of the preferred shares had been issued during 2015.
Jan 31	Paid the dividends declared on January 8.
July 1	Sold preferred shares for a total of $77,500. The average issue price was $15.50 per share.
Aug 7	The directors declared a $1.00 dividend per common share cash dividend payable on Aug. 31 to the Aug. 20 shareholders of record.
Aug 31	Paid the dividends declared on Aug 7.

Required:

a. Prepare journal entries to record the transactions for 2023.
b. Prepare a statement of changes in equity for the year ended December 31, 2023. For purposes of preparing this statement, assume that the retained earnings balance at December 31, 2023 was $102,500.
c. Prepare the equity section of the company's balance sheet as at December 31, 2023 in good form with all required disclosures and subtotals.

d. Calculate the book value per preferred share and per common share as at December 31, 2022 and December 31, 2023. Round final answer to nearest two decimal places.

Problems

PROBLEM 10–1 (LO2)

Following is the equity section of Critter Contracting Inc. shown before and after the board of directors authorized a 5 for 1 share split on April 15, 2023.

Before split		**After split**	
Equity		*Equity*	
Common Shares		Common Shares	
Authorized – 5,000 Shares		Authorized – ? Shares	
Issued and Outstanding		Issued and Outstanding	
– 1,000 Shares	$100,000	– ? Shares	$?

Required:

1. Complete the equity section of the balance sheet after the split.
2. Record a memorandum indicating the new number of shares.
3. If the market value per share was $40 before the split, what would be the market value after the split? Why?

PROBLEM 10–2 (LO3,4)

The equity section of TWR Contracting Inc.'s December 31, 2022 balance sheet showed the following:

Equity	
Share Capital	
Preferred Shares, $0.60, Cumulative, Issued and Outstanding – 40 Shares	$ 400
Common Shares, Issued and Outstanding – 2,000 Shares	2,000
Total Contributed Capital	2,400
Retained Earnings	900
Total Equity	$3,300

The following transactions occurred during 2023:

Feb. 15	Declared the regular $0.30 per share semi-annual dividend on its preferred shares and a $0.05 per share dividend on the common shares to holders of record March 5, payable April 1.
Apr. 1	Paid the dividends declared on February 15.
May 1	Declared a 10 per cent share dividend to common shareholders of record May 15 to be issued June 15, 2016. The market value of the common shares at May 1 was $2 per share.
June 15	Distributed the dividends declared on May 1.
Aug. 15	Declared the regular semi-annual dividend on preferred shares and a dividend of $0.05 on the common shares to holders of record August 31, payable October 1.
Oct. 1	Paid the dividends declared on August 15.
Dec. 15	Declared a 10 per cent share dividend to common shareholders of record December 20 to be issued on December 27, 2019. The market value of the common shares at December 15 was $3 per share.
Dec. 27	Distributed the dividends declared on December 15.
Dec. 31	Net income for the year ended December 31, 2023 was $1,400.

Required:

1. Prepare journal entries to record the 2023 transactions, including closing entries for the December 31 year end date. Show calculations. Descriptive narrative is not needed.
2. Prepare the statement of changes in equity for the year ended December 31, 2023.

PROBLEM 10–3 (LO1,2,3,4)

The equity section of Wondra Inc.'s December 31, 2022 balance sheet showed the following:

Contributed Capital	
Preferred Shares; $0.50 cumulative; unlimited shares authorized; 30,000 shares issued and outstanding	$ 480,000
Common Shares; unlimited shares authorized; 70,000 shares issued and outstanding	560,000
Total contributed capital	$1,040,000
Retained Earnings	95,000
Total Equity	$1,135,000

At December 31, 2022 there were $15,000 of dividends in arrears.

The following transactions occurred during 2023:

Feb. 10	Declared a total dividend of $32,000 to shareholders of record on February 15, payable March 1.
Mar. 1	Paid dividends declared February 10.
5	Issued for cash 2,000 preferred shares at $18 each.
Apr. 15	The Board of Directors declared a 2:1 split on the preferred and common shares.
Jun. 22	Issued for cash 20,000 common shares at $4.00 per share.
Nov. 10	Declared a 20% share dividend to common shareholders of record on Nov. 14, distributable Dec. 15. The market price of the shares on Nov. 10 was $3.50.
Dec. 15	Distributed share dividend declared on November 10.
Dec. 31	Closed the Income Summary account which had a credit balance of $290,000.
31	Closed the dividend accounts.

Required:

1. Journalize the 2023 transactions.
2. Prepare the equity section of the December 31, 2023 balance sheet.

PROBLEM 10–4 (LO1,2,5)

The following is the equity section of the balance sheet of Tridon Construction Limited at December 31, 2023.

Equity	
Share Capital	
Common Shares	
Authorized – 500 shares	
Issued and Outstanding – 300 Shares	$3,070
Retained Earnings	500
Total Equity	$3,570

Required:

1. What is the paid-in capital per common share? ...the book value per common share? Round calculations to two decimal places.
2. On December 31, the Tridon Construction common shares traded at $24. Why is the market value different from the book value of commons shares?

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1. The amount of net income earned in a year can be divided by the number of common shares outstanding to establish how much return has been earned for each outstanding share. EPS is calculated as:

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CHAPTER OVERVIEW

Chapter 11: The Statement of Cash Flows

Learning Objectives

- LO1 – Explain the purpose of the statement of cash flows.
- LO2 – Prepare a statement of cash flows.
- LO3 – Interpret a statement of cash flows.

Details about the amount of cash received and paid out during an accounting period are not shown on the balance sheet, income statement, or statement of changes in equity. This information is disclosed on the statement of cash flows (SCF). This chapter discusses the purpose of the statement of cash flows, the steps in preparing the SCF, as well as how to interpret various sections of the statement of cash flows.

11.1: Financial Statement Reporting
11.2: Preparing the Statement of Cash Flows
11.3: Interpreting the Statement of Cash Flows
11.4: Appendix A- Putting It All Together- Corporate Financial Statements
11.5: Appendix B- Statement of Cash Flows – Direct Method
11.6: Summary of Chapter 11 Learning Objectives
11.7: Exercises

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11.1: Financial Statement Reporting

Concept Self-Check

Use the following as a self-check while working through Chapter 11.

1. What is the definition of cash and cash equivalents?
2. Why is a statement of cash flows prepared?
3. What are the three sections of a statement of cash flows?
4. What two methods can be used to prepare the operating activities section of the statement of cash flows?
5. Why is depreciation expense an adjustment in the operating activities section of the statement of cash flows?
6. Where are dividend payments listed on the statement of cash flows?
7. In what section of the statement of cash flows are the cash proceeds resulting from the sale of a non-current asset listed?
8. Where on the statement of cash flows is a long-term bank loan payment identified?

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.

11.1 Financial Statement Reporting

11.3 Interpreting the Statement of Cash Flows

LO3 – Interpret a statement of cash flows.

Readers of financial statements need to know how cash has been used by the enterprise. The SCF provides external decision makers such as creditors and investors with this information. The statement of cash flows provides information about an enterprise's financial management policies and practices. It also may aid in predicting future cash flows, which is an important piece of information for investors and creditors.

The *quality* of earnings as reported on the income statement can also be assessed with the information provided by the SCF. The measurement of net income depends on a number of accruals and allocations that may not provide clear information about the cash-generating power of a company. Users will be more confident in a company with a high correlation between cash provided by operations and net income measured under the accrual basis. Recall, for instance, that although Example Corporation has net income of $80,000 during 2016, its net cash inflow from operations is only $70,000, chiefly due to the large increase in inventory levels. Although net cash flow from operations is still positive, this discrepancy between net income and cash flow from operations may indicate looming cash flow problems, particularly if the trend continues over time.

Example Corporation's SCF also reveals that significant net additions to plant and equipment assets occurred during the year ($1,070,000), financed in part by cash flow from operating activities but primarily by financing activities. These activities included the assumption of loans and issue of shares that amounted to $847,000, net of dividend payments ($500,000 from issuing a long-term loan plus $410,000 from issuing shares less $63,000 for payment of dividends).

It appears that a significant plant and equipment asset acquisition program may be underway, which may affect future financial performance positively. This expansion has been financed mainly by increases in long-term debt and the issuance of common shares. However, the magnitude of the plant and equipment asset purchases, coupled with the payment of the dividends to shareholders, has more than offset cash inflows from operating and financing activities, resulting in a net overall decrease in cash of $123,000. Though the current cash expenditure on long-term productive assets may be a prudent business decision, it has resulted in (hopefully temporary) adverse effects on overall cash flow.

The SCF is not a substitute for an income statement prepared on the accrual basis. Both statements should be used to evaluate a company's financial performance. Together, the SCF and income statement provide a better basis for determining the enterprise's ability to generate funds from operations and thereby meet current obligations when they fall due (liquidity), pay dividends, meet recurring operating costs, survive adverse economic conditions, or expand operations with internally-generated cash.

The SCF highlights the amount of cash available to a corporation, which is important. Excess cash on hand is unproductive. Conversely, inadequate cash decreases liquidity. Cash is the most liquid asset, and its efficient use is one of the most important tasks of management. Cash flow information, interpreted in conjunction with other financial statement analyses, is useful in assessing the effectiveness of the enterprise's cash management policies.

Readers who wish to evaluate the financial position and results of an enterprise's operations also require information on cash flows produced by investing and financing activities. The SCF is the only statement that explicitly provides this information. By examining the relationship among the various sources and uses of cash during the year, readers can also focus on the effectiveness of management's investing and financing decisions and how these may affect future financial performance.

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11.2: Preparing the Statement of Cash Flows

Learning Objectives

- **LO1 – Explain the purpose of the statement of cash flows.**

Cash flow is an important factor in determining the success or failure of a corporation. It is quite possible for a profitable business to be short of cash. As discussed in Chapter 7, a company can have liquidity issues because of large amounts of cash tied up in inventory and accounts receivable, for instance. Conversely, an unprofitable business might have sufficient cash to pay its bills if it has access to enough financing from loans or by issuing share capital.

We know that the financial activities of a corporation are reported through four financial statements: a balance sheet, an income statement, a statement of changes in equity, and a statement of cash flows (SCF). Statement of cash flowsThis chapter discusses the statement of cash flows in detail.

The SCF identifies the sources (inflows) and uses (outflows) of cash during the accounting period. It explains why the cash balance at the end of the accounting period is different from that at the beginning of the period by describing the enterprise's *financing*, *investing*, and *operating* activities.

Cash flow information is useful to management when making decisions such as purchasing equipment, plant expansion, retiring long-term debt, or declaring dividends. The SCF is useful to external users when evaluating a corporation's financial performance.

The SCF, together with the income statement, provides a somewhat limited means of assessing future cash flows because these statements are based on historical, not prospective data. Nevertheless, the ability to generate cash from past operations is often an important indication of whether the enterprise will be able to meet obligations as they become due, pay dividends, pay for recurring operating costs, or survive adverse economic conditions.

For SCF purposes, cash includes cash and cash equivalents — assets that can be quickly converted into a known amount of cash, such as short-term investments that are not subject to significant risk of changes in value. For our purposes, an investment will be considered a cash equivalent when it has a maturity of three months or less from the date of acquisition.

Because of differences in the nature of each entity and industry, management judgment is required to determine what assets constitute cash and cash equivalents for a particular firm. This decision needs to be disclosed on the SCF or in a note to the financial statements as shown in the following example:

Note X

Cash and cash equivalents consist of cash on deposit and short-term investments held for the purposes of meeting cash commitments within three months from the balance sheet date. Cash and cash equivalents consist of the following:

	($000s)		
	2024	2023	2022
Cash on Deposit	$20	$30	$50
Short-term Investments	36	31	37
	$56	$61	$87

For simplicity, examples throughout this chapter involving cash and cash equivalents will include only cash.

Cash flows result from a wide variety of a corporation's activities as cash is received and disbursed over a period of time. Because the income statement is based on accrual accounting that matches expenses with revenues, net income most often does not reflect cash receipts and disbursements during the time period they were made. As we will see, the statement of cash flows converts accrual net income to a cash basis net income.

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11.3: Interpreting the Statement of Cash Flows

Learning Objectives

- **LO2 – Prepare a statement of cash flows.**

The general format for a SCF is shown in Figure 11.1. The SCF details the cash inflows and outflows that caused the beginning of the period cash account balance to change to its end of period balance.

Figure 11.1 General Format for a Statement of Cash Flows

Name of Company		
Statement of Cash Flows		
For the Period Ended		
Cash flows from operating activities:		
[Each operating inflow/outflow is listed]		
Net cash inflow/outflow from operating activities	$	XX
Cash flows from investing activities:		
[Each investing inflow/outflow is listed]		
Net cash inflow/outflow from investing activities		XX
Cash flows from financing activities:		
[Each financing inflow/outflow is listed]		
Net cash inflow/outflow from financing activities		XX
Net increase/decrease in cash	$	XX
Cash at beginning of period		XX
Cash at end of period	$	XX

Notice that the cash flows in Figure 11.1 are separated into three groups: cash flows from operating, investing, and financing activities. Grouping or classifying cash flows is a key component of preparing a SCF.

Classifying Cash Flows—Operating Activities

Cash flow from operating activities represents cash flows generated from the principal activities that produce revenue for a corporation, such as selling products, and the related expenses reported on the income statement. Because of accrual accounting, the net income reported on the income statement includes noncash transactions. For example, revenue earned on account is included in accrual net income but it does not involve cash (debit accounts receivable and credit revenue). Therefore, the operating activities section of the SCF must convert accrual net income to a cash basis net income. There are two generally accepted methods for preparing the operating activities section of the SCF, namely the direct method and the indirect method. This chapter illustrates the indirect method because it is more commonly used in Canada. The direct method is addressed in a different textbook. Both methods result in the same cash flows from operating activities — it is the way in which the number is calculated that differs. The method used has an impact on only the operating activities section and not on the investing or financing activities sections.

In using the indirect method for preparing the operating activities section, the accrual net income is adjusted for changes in current assets (except cash), current liabilities (except dividends payable), depreciation expense, and gains/losses on the disposition of non-current assets. Figure 11.2 illustrates the effect of these items on the SCF.

Figure 11.2 Detailed Adjustments to Convert Accrual Net Income to a Cash Basis

Cash flows from operating activities:		
Net income/net loss	$	XX
Adjustments to reconcile net income/loss to cash provided/used by operating activities:		
Add: Decreases in current assets (except Cash)		XX
Subtract: Increases in current assets (except Cash)		XX
Add: Increases in current liabilities (except Dividends payable)		XX
Subtract: Decreases in current liabilities (except Dividends payable)		XX
Add: Depreciation expense		XX
Add: Losses on disposal of non-current assets		XX
Subtract: Gains on disposal of non-current assets		XX
Net cash inflow/outflow from operating activities	$	XX

Decreases in current assets are added back as an adjustment to net income because, for example, a decrease in accounts receivable indicates that cash was collected from credit customers (debit cash and credit accounts receivable) yet it is not part of accrual net income, so the cash collected must be added. An increase in accounts receivable indicates that sales on account were recorded (debit accounts receivable and credit sales) so it is part of accrual net income. However, since no cash was collected, this must be subtracted from accrual net income to adjust it to a cash basis.

Increases in current liabilities are added back as an adjustment to net income because, for example, an increase in accounts payable indicates that a purchase/expense was made on account (debit expense and credit accounts payable) so it was subtracted in calculating accrual net income. However, since no cash was paid, this must be added back to accrual net income to adjust it to a cash basis. A decrease in accounts payable indicates that a payment was made to a creditor (debit accounts payable and credit cash) yet it is not part of accrual net income so the cash paid must be subtracted.

Depreciation expense is subtracted in calculating accrual net income. However, an analysis of the journal entry shows that no cash was involved (debit depreciation expense and credit accumulated depreciation), so it must be added back to adjust the accrual net income to a cash basis.

A loss on the disposal of a non-current asset is added back as an adjustment to net income because, in analyzing the journal entry when losses occur (e.g., debit cash, debit loss, credit land), the loss represents the difference between the cash proceeds and the book value of the non-current asset. Since a loss is subtracted on the income statement and does not represent a cash outflow, it is added back to adjust the accrual net income to a cash basis. The same logic applies for a gain on the disposal of a non-current asset.

Classifying Cash Flows—Investing Activities

Cash flows from investing activities involve increases and decreases in long-term asset accounts. These include outlays for the acquisition of property, plant, and equipment, as well as proceeds from their disposal. Figure 11.3 illustrates the effect of these items on the SCF.

Figure 11.3 Detail of Inflows/(Outflows) From Investing Activities

Cash flows from investing activities:		
Cash proceeds from sale of non-current assets	XX	
Cash paid to purchase non-current assets	XX	
Net cash inflow/outflow from investing activities		XX

Classifying Cash Flows—Financing Activities

Cash flows from financing activities result when the composition of the debt and equity capital structure of the entity changes. This category is generally limited to increases and decreases in long-term liability accounts and share capital accounts such as common and preferred shares. These include cash flows from the issue and repayment of debt, and the issue and repurchase of share capital. Dividend payments are generally considered to be financing activities, since these represent a return to shareholders on the original capital they invested. Figure 11.4 illustrates the effect of these items on the SCF.

Figure 11.4 Detail of Inflows/(Outflows) From Financing Activities

Cash flows from financing activities:		
Cash proceeds from issuance of shares	XX	
Cash paid for repurchase of shares	XX	
Cash proceeds from borrowings	XX	
Cash repayments of borrowings	XX	
Cash paid for dividends	XX	
Net cash inflow/outflow from financing activities		XX

Classifying Cash Flows—Noncash Investing and Noncash Financing Activities

There are some transactions that involve the direct exchange of non-current balance sheet items so that cash is not affected. For example, noncash investing and noncash financing activities would include the purchase of a non-current asset by issuing debt or share capital, the declaration and issuance of a share dividend, retirement of debt by issuing shares, or the exchange of noncash assets for other noncash assets. Although noncash investing and noncash financing activities do not appear on the SCF, the full disclosure principle requires that they be disclosed either in a note to the financial statements or in a schedule on the SCF.

Now, let us demonstrate the preparation of a SCF using the balance sheet, income statement, and statement of changes in equity of Example Corporation shown below.

Example Corporation				
Balance Sheet				
At December 31				
($000s)				
	2023		*2022*	
Assets				
Current assets				
Cash	$	27	$	150
Accounts receivable		375		450
Merchandise inventory		900		450
Prepaid expenses		20		10
Total current assets		1,322		1,060
Property, plant, and equipment				
Land		70		70
Buildings		1,340		620
Less: Accumulated depreciation - buildings		(430)		(280)
Machinery		1,130		920
Less: Accumulated depreciation - machinery		(250)		(240)
Total property, plant, and equipment		1,860		1,090
Total assets	$	3,182	$	2,150
Liabilities				
Current liabilities				
Accounts payable	$	235	$	145
Dividends payable		25		30
Income taxes payable		40		25
Total current liabilities		300		200
Long-term loan payable		1,000		500
Total liabilities		1,300		700
Equity				
Common shares		1,210		800
Retained earnings		672		650
Total equity		1,882		1,450
Total liabilities and equity	$	3,182	$	2,150

Example Corporation				
Income Statement				
For the Year Ended December 31, 2023				
($000s)				
Sales			$	1,200
Cost of goods sold				674
Gross profit				526
Operating expenses				
Selling, general, and administration	$	115		
Depreciation		260		375
Income from operations				151
Other revenues and expenses				

Interest expense		26		
Loss on disposal of machinery		10		36
Income before income taxes				115
Income taxes				35
Net Income			$	80

Example Corporation				
Statement of Changes in Equity				
For the Year Ended December 31, 2023				
($000s)				
	Share Capital		*Retained Earnings*	*Total Equity*
Opening balance	$	800	$ 650	$ 1,450
Common shares issued		410	-	410
Net income		-	80	80
Dividends declared		-	(58)	(58)
Ending balance	$	1,210	$ 672	$ 1,882

The SCF can be prepared from an analysis of transactions recorded in the Cash account. Accountants summarize and classify these cash flows on the SCF for the three major activities noted earlier, namely operating, investing, and financing. To aid our analysis, the following list of additional information from the records of Example Corporation will be used.

Additional Information

1. A building was purchased for $720 cash.
2. Machinery was purchased for $350 cash.
3. Machinery costing $140 with accumulated depreciation of $100 was sold for $30 cash.
4. Total depreciation expense of $260 was recorded during the year; $150 on the building and $110 on the machinery.
5. Example Corporation received $500 cash from issuing a long-term loan with the bank.
6. Shares were issued for $410 cash.
7. $58 of dividends were declared during the year.

Analysis of Cash Flows

There are different ways to analyze cash flows and then prepare the SCF; only one of those techniques will be illustrated here using the following steps.

1. Set up a cash flow table.
2. Calculate the changes in each balance sheet account.
3. Calculate and analyze the changes in retained earnings and dividends payable (if there is a Dividends Payable account).
4. Calculate and analyze the changes in the noncash current assets and current liabilities (excluding Dividends Payable account).
5. Calculate and analyze changes in non-current asset accounts
6. Calculate and analyze changes in Long-term Liability and Share Capital accounts.
7. Reconcile the analysis.
8. Prepare a statement of cash flows.

Step 1: Set up a cash flow table

Set up a table as shown below with a row for each account shown on the balance sheet. Enter amounts for each account for 2022 and 2023. Show credit balances in parentheses. Total both columns and ensure they equal zero. The table should appear as follows after this step has been completed:

	Balance	
	($000s)	
Account	*2023 Dr. (Cr.)*	*2022 Dr. (Cr.)*
Cash	27	150
Accounts receivable	375	450
Merchandise inventory	900	450
Prepaid expenses	20	10
Land	70	70
Buildings	1,340	620
Accum. dep.- buildings	(430)	(280)
Machinery	1,130	920
Accum. dep.- machinery	(250)	(240)
Accounts payable	(235)	(145)
Dividends payable	(25)	(30)
Income taxes payable	(40)	(25)
Long-term loan payable	(1,000)	(500)
Share capital	(1,210)	(800)
Retained earnings	(672)	(650)
Total	-0-	-0-

Step 2: Calculate the change in cash

Add two columns to the cash flow table. Calculate the net debit or net credit change in cash and insert this change in the appropriate column. This step is shown below.

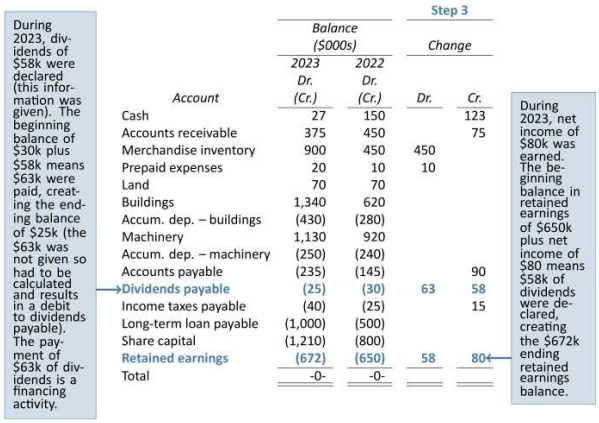
	Balance ($000s)		*Step 2 Change*	
Account	*2023 Dr. (Cr.)*	*2022 Dr. (Cr.)*	*Dr.*	*Cr.*
Cash	27	150		123
Accounts receivable	375	450		
Merchandise inventory	900	450		
Prepaid expenses	20	10		
Land	70	70		
Buildings	1,340	620		
Accum. dep. – buildings	(430)	(280)		
Machinery	1,130	920		
Accum. dep. – machinery	(250)	(240)		
Accounts payable	(235)	(145)		
Dividends payable	(25)	(30)		
Income taxes payable	(40)	(25)		
Long-term loan payable	(1,000)	(500)		
Share capital	(1,210)	(800)		
Retained earnings	(672)	(650)		
Total	-0-	-0-		

Cash has decreased by $123k. This is the amount that the SCF analysis must reconcile to.

Step 3: Calculate and analyze the changes in retained earnings and dividends payable (if there is a Dividends Payable account)

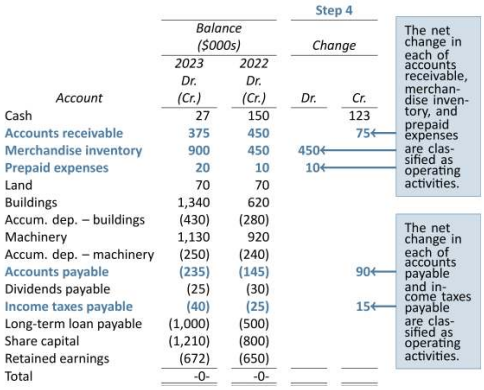
When we calculate the changes for each of retained earnings and dividends payable, the net difference may not always reflect the causes for change in these accounts. For example, the net difference between the beginning and ending balances in retained earnings is an increase of $22 thousand. However, two things occurred to cause this net change: a net income of $80 thousand (a debit to income summary and a credit to retained earnings) and dividends of $58 thousand that were declared during the year per the additional information (a debit to retained earnings of $58k and a credit to dividends payable of $58k). ***The net income of $80 thousand is the starting position in the operating activities section of the SCF (see Figure 11.5).***

The change in the dividends payable balance was also caused by two transactions — the dividend declaration of $58 thousand (a debit to retained earnings and a credit to dividends payable) and a $63 thousand payment of dividends (a debit to dividends payable and a credit to cash). ***The $63 thousand cash payment is subtracted in the financing activities section of the SCF (see Figure 11.5).*** Dividends payable can change because of two transactions, as in this example, or because of one transaction, which could be either a dividend declaration with no payment of cash, or a payment of the dividend payable and no dividend declaration. Step 3 as it applies to Example Corporation is detailed below.



Step 4: Calculate and analyze the changes in the noncash current assets and current liabilities (excluding Dividends Payable account)

Calculate the net debit or net credit changes for each current asset and current liability account on the balance sheet and insert these changes in the appropriate column. Step 4 as it applies to Example Corporation is detailed below. ***The $75 thousand decrease in accounts receivable is added in the operating activities section of the SCF, the $450 thousand increase in merchandise inventory is subtracted, the $10 thousand increase in prepaid expenses is subtracted, the $90 thousand increase in accounts payable is added, and the $15 thousand increase in income taxes payable is added (see Figure 11.5).***



Step 5: Calculate and analyze changes in non-current asset accounts

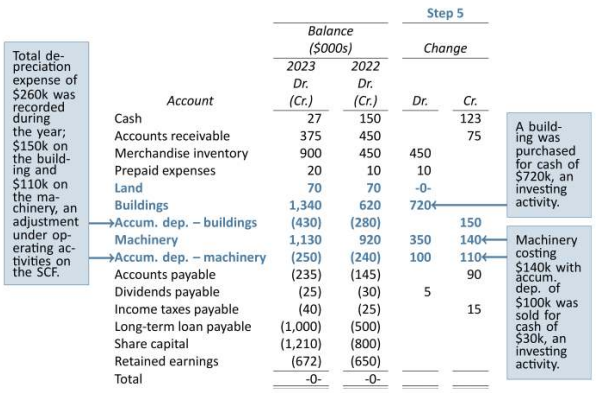
Changes in non-current assets are classified as investing activities. There was no change in the Land account. We know from the additional information provided that buildings and machinery were purchased and that machinery was sold.

Buildings were purchased for $720 thousand (a debit to buildings and a credit to cash). ***The cash payment of $720 thousand is shown in the investing activities section (see Figure 11.5)***.

Accumulated depreciation–buildings is a non-current asset account and it increased by $150 thousand. This change was caused by a debit to depreciation expense and a credit to accumulated depreciation–building. We know from an earlier discussion that depreciation expense is an adjustment in the operating activities section of the SCF therefore ***the $150 thousand is added in the operating activities section (see Figure 11.5)***.

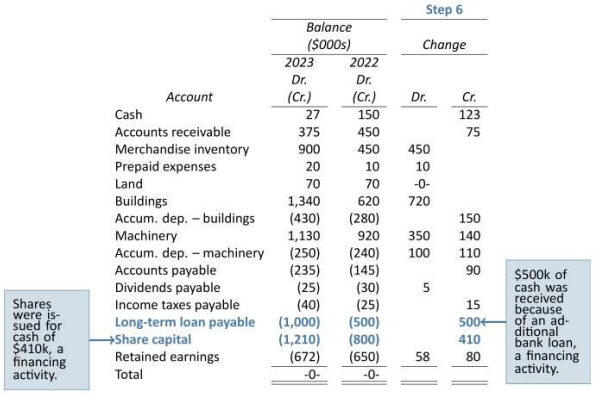
Two transactions caused machinery to change. First, the purchase of $350 thousand of machinery (debit machinery and credit cash); ***the $350 thousand cash payment is shown in the investing activities section (see Figure 11.5).*** Second, machinery costing $140 thousand with accumulated depreciation of $100 thousand was sold for cash of $30 thousand resulting in a loss of $10 thousand. ***The cash proceeds of $30 thousand is shown in the investing activities section of the SCF and the $10 thousand loss is added in the operating activities section (see Figure 11.5).***

Accumulated depreciation–machinery not only decreased $100 thousand because of the sale of machinery but it increased by $110 thousand because of depreciation (debit depreciation expense and credit accumulated depreciation–machinery). ***The $110 thousand of depreciation expense is added in the operating activities section of the SCF (see Figure 11.5).***



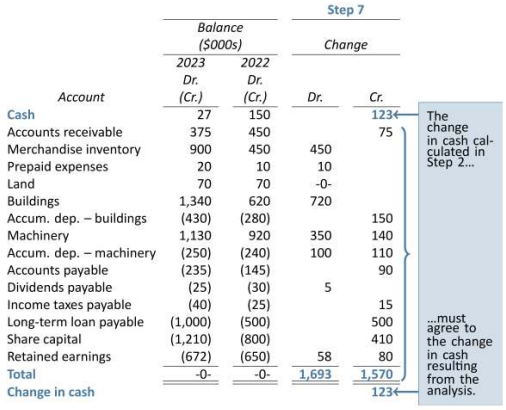
Step 6: Calculate and analyze changes in Long-term Liability and Share Capital accounts

Changes in Long-term Liability and Share Capital accounts result from financing activities. We know from the additional information provided earlier that Example Corporation received cash of $500k from a bank loan (debit cash and credit long-term loan payable) and issued shares for $410k cash (debit cash and credit share capital). ***The $500 thousand cash proceeds from the bank loan and $410 thousand cash proceeds from the issuance of shares are listed in the financing section of the SCF (see Figure 11.5)***.



Step 7: Reconcile the analysis

The analysis is now complete. Add the debit and credit changes, excluding the change in cash. The total debits of $1,693 less the total credits of $1,570 equal a difference of $123 which reconciles to the decrease in cash calculated in Step 2.



The information in the completed analysis can be used to prepare the statement of cash flows shown in Figure 11.5.

Figure 11.5 Statement of Cash Flows for Example Corporation

Example Corporation			
Statement of Cash Flows			
For the Year Ended December 31, 2023			
($000s)			
Cash flows from operating activities:			
Net income		$	80
Adjustments to reconcile net income			
cash provided by operating activities:			
Decrease in accounts receivable			75
Increase in merchandise inventory			(450)
Increase in prepaid expenses			(10)
Increase in accounts payable			90
Increase in income taxes payable			15
Depreciation expense			260
Loss on disposal of machinery			10
Net cash inflow from operating activities		$	70
Cash flows from investing activities:			
Proceeds from sale of machinery	30		
Purchase of building	(720)		
Purchase of machinery	(350)		
Net cash outflow from investing activities			(1,040)
Cash flows from financing activities:			
Payment of dividends	(63)		
Proceeds from bank loan	500		
Issuance of shares	410		
Net cash inflow from financing activities			847
Net decrease in cash		$	(123)
Cash at beginning of year			150
Cash at end of year		$	27

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11.4: Appendix A- Putting It All Together- Corporate Financial Statements

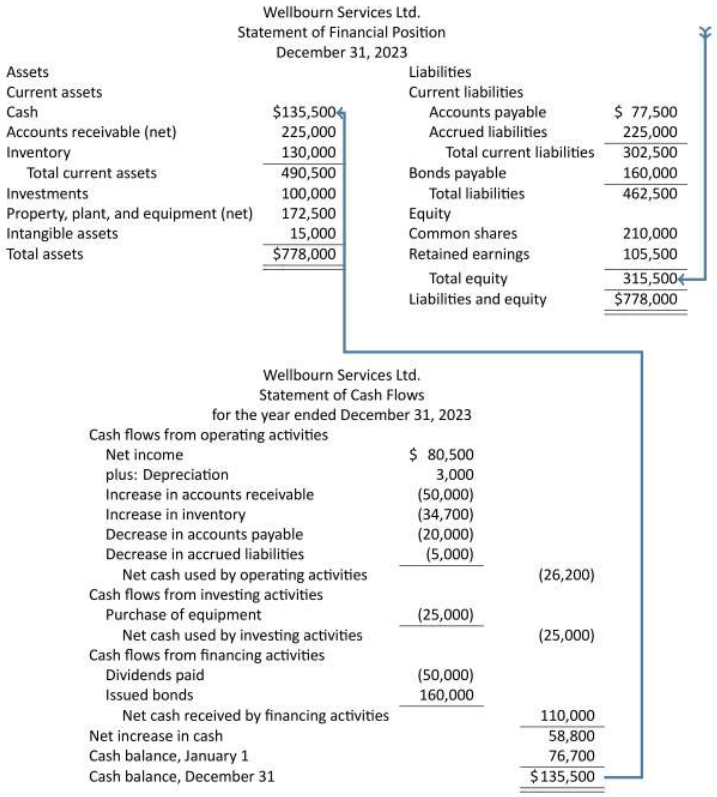
The core financial statements connect to complete an overall picture of the company's operations and its current financial state. It is important to understand how these reports connect; therefore, a review of some simplified financial statements for Wellbourn Services Ltd. is presented below.

Wellbourn Services Ltd.
Statement of Income
for the year ended December 31, 2023

Revenues:		
Sales	$ 250,000	
Services revenue	53,000	
Total revenue		$ 303,000
Operating expenses:		
Cost of good sold	100,000	
Depreciation expense	3,000	
Rent expense	20,000	
Salaries expense	65,000	
Total operating expense		188,000
Income from continuing operations before tax		115,000
Income tax		34,500
Net income		$ 80,500
Earnings per share		$ 24

Wellbourn Services Ltd.
Statement of Changes in Equity
for the year ended December 31, 2023

	Common Shares	Retained Earnings	Total
Balance, January 1	$200,000	$75,000	$275,000
Net income		80,500	80,500
Issuance of common shares	10,000		10,000
Dividends declared		(50,000)	(50,000)
Balance, December 31	$210,000	$105,500	$315,500



Wellbourn Services Ltd.
Statement of Financial Position
December 31, 2023

Assets		Liabilities	
Current assets		Current liabilities	
Cash	$135,500	Accounts payable	$ 77,500
Accounts receivable (net)	225,000	Accrued liabilities	225,000
Inventory	130,000	Total current liabilities	302,500
Total current assets	490,500	Bonds payable	160,000
Investments	100,000	Total liabilities	462,500
Property, plant, and equipment (net)	172,500	Equity	
Intangible assets	15,000	Common shares	210,000
Total assets	$778,000	Retained earnings	105,500
		Total equity	315,500
		Liabilities and equity	$778,000

Wellbourn Services Ltd.
Statement of Cash Flows
for the year ended December 31, 2023

Cash flows from operating activities		
Net income	$ 80,500	
plus: Depreciation	3,000	
Increase in accounts receivable	(50,000)	
Increase in inventory	(34,700)	
Decrease in accounts payable	(20,000)	
Decrease in accrued liabilities	(5,000)	
Net cash used by operating activities		(26,200)
Cash flows from investing activities		
Purchase of equipment	(25,000)	
Net cash used by investing activities		(25,000)
Cash flows from financing activities		
Dividends paid	(50,000)	
Issued bonds	160,000	
Net cash received by financing activities		110,000
Net increase in cash		58,800
Cash balance, January 1		76,700
Cash balance, December 31		$135,500

As can be seen from the flow of the numbers above, the net income from the statement of income is closed to retained earnings.

The statement of changes in equity total column flows to the equity section of the balance sheet. Finally, the **statement of cash flows** (SCF) ending cash balance must be equal to the cash ending balance reported in the balance sheet, which completes the loop of interconnecting accounts and amounts.

Statement of Income with Discontinued Operations

Single-step and Multiple-step Statement of Income

Companies can choose whichever format best suits their reporting needs. Smaller companies tend to use the simpler single-step format, while larger companies tend to use the multiple-step format.

The Wellbourn Services Ltd. statement of income, shown earlier, is an example of a typical **single-step** income statement. For this type of statement, revenue and expenses are each reported in the two sections for continuing operations. Discontinued operations are separately reported below the continuing operations. The separate disclosure and format for the discontinued operations section is a reporting requirement and is discussed and illustrated below. The single-step format makes the statement simple to complete and keeps sensitive information out of the hands of competitive companies, but provides little in the way of analytical detail.

The **multiple-step** income statement format provides much more detail. Below is an example of a multiple-step statement of income for Toulon Ltd. for the year ended December 31, 2023.

Multiple-step format - typical sections and subtotals:

		2023	2022
Heading	Toulon Ltd. Statement of Income for the year ended December 31, 2023 In $000's except per share amounts		
Gross profit section with subtotal	Sales	$6,260	$5,008
	Cost of goods sold	2,500	1,750
	Gross profit	3,760	3,258
Operating expenses with subtotal	Operating expenses		
	Salaries and benefits expense	650	520
	Depreciation expense	35	20
	Travel and entertainment expense	150	120
	Advertising expense	55	45
	Freight-out expenses	10	8
	Supplies and postage expense	5	4
	Telephone and internet expense	15	12
	Legal and professional expenses	8	6
	Insurance expense	6	5
		934	740
	Income from operations	2,826	2,518
Non-operationing section with subtotal	Other revenue and expense		
	Interest income from investments	5	5
	Gain from sale of trade investments	4	0
	Interest expense	(2)	(3)
		7	2
	Income from continuing operations before income tax	2,833	2,520
Income tax expense	Income tax expense	850	680
Subtotal from continuing operatings	Income from continuing operations	1,983	1,840
Discontinued	Discontinued operations		
	Loss from disposal of division (net of tax of $63,000)	(147)	0
		(147)	0
Net income (profit or loss)	Net income	1,836	1,840
Earnings per share	Basic earnings per share		
	Continuing operations	$16.32	$13.25
	Discontinued operations	(1.21)	0

The multiple-step format with its section subtotals makes performance analysis and ratio calculations such as gross profit margins easier to complete and makes it easier to assess the company's future earnings potential. The multiple-step format also enables investors and creditors to evaluate company performance results from continuing and ongoing operations having a high predictive value separately, compared to non-operating or unusual items having little predictive value.

Operating Expenses

As discussed in an earlier chapter, expenses from operations can be reported by their nature and, optionally, by function. **Expenses by nature** relate to the type of expense or the source of expense such as salaries, insurance, advertising, travel and entertainment, supplies expense, depreciation and amortization, and utilities expense, to name a few. The statement for Toulon Ltd. is an example of reporting expenses by nature.

Expenses by function relate to how various expenses are incurred within the various departments and activities of a company such as selling and administrative expenses.

The sum of all the revenues, expenses, gains, and losses to this point represents the **income or loss from continuing operations**. This is a key component used in performance analysis.

Income Tax Allocations

This is the process of allocating income tax expense to various categories within the statement of income such as income from continuing operations before taxes and discontinued operations. The purpose of these allocations is to make the information within the statements more informative and complete. For example, Toulon's statement of income for the year ending December 31, 2023, allocates tax at a rate of 30% to the following:

- Income from continuing operations of $850,000 ($2,833,000 × 30%)
- Loss from disposal of discontinued operations of $63,000

Discontinued operations

Sometimes companies will sell or shut down certain business operations because the operating segment is no longer profitable, or they may wish to focus their resources on other business operations. Examples are a major business line or geographical area. If the discontinued operation has not yet been sold, then *there must be a formal plan in place to dispose of the component within one year and to report it as a discontinued operation*.

The items reported in this section of the statement of income are to be reported net of tax, with the tax amount disclosed.

Earnings per Share

Basic earnings per share represent the amount of income attributable to each outstanding common share, as shown in the calculation below:

$$\text{Basic earnings per share (EPS)} = \frac{\text{Net income} - \text{preferred dividends}}{\text{Number of common shares outstanding}}$$

The earnings per share amounts are not required for private companies. This is because ownership of privately owned companies is often held by only a few investors, compared to publicly-traded companies where shares are held by many investors.

Basic earnings per share are to be reported on the face of the statement of income as follows:

- Basic EPS from continuing operations
- Basic EPS from discontinued operations, if any

If the outstanding common shares for Toulon was 121,500, the EPS from continuing operations would be $16.32 ($1{,}983{,}000 \div 121{,}500$) and $(1.21) from discontinued operations ($\$147{,}000$ loss $\div 121{,}500$), as reported in their statement above. There is also a requirement to report diluted EPS but this is beyond the scope of this course.

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11.5: Appendix B- Statement of Cash Flows – Direct Method

The Importance of Cash Flow – For Better, For Worse, For Richer, For Poorer...

A business is a lot like a marriage. It takes work to make it succeed. One of the keys to business success is managing and maintaining adequate cash flows. In the field of financial management, there is an old saying that *revenue is vanity, profits are sanity, but cash is king*. In other words, a firm's revenues and profits may look spectacular, but this does not guarantee there will be cash in the bank. Without cash, a business cannot pay its bills and it will ultimately not survive.

Let's take a look at the distinctions between revenue and profits, and cash, using a numeric example for a new business:

Income Statement			Cash Flows		
Revenue*	$	1,000,000	Revenue (cash received)	$	400,000
Cost of goods sold**		(500,000)	Cost of goods sold (paid in cash)		(300,000)
Gross profit		500,000	Net cash		100,000
Operating expenses***		200,000	Operating expenses (paid in cash)		90,000
Net income/net profit	$	300,000	Net cash	$	10,000

* Sales of $400,000 were paid in cash

** Purchases of $300,000 were paid in cash

*** Operating expenses of $90,000 were cash paid

Revenue is reported in the income statement as $1 million which is a sizeable amount, but only $400,000 was cash paid by customers. (The rest is reported as accounts receivable.) Gross profit is reported in the income statement as $500,000. This is also a respectable number, but only $100,000 translates into a positive cash flow, because only some of the inventory purchases were paid in cash. (The rest of the inventory is reported as accounts payable.) The company must still pay some of its operating expenses, leaving only $10,000 cash in the bank.

When investors and creditors review the income statement, they will see $1 million in revenue with gross profits of one-half million or 50%, and a respectable net income of $300,000 or 30% of revenue. They could conclude that this looks pretty good for the first year of operations and incorrectly assume that the company now has $300,000 available to spend.

However, lurking deeper in the financial statements is the cash position of the company–the amount of cash left over from this operating cycle. Sadly, there is only $10,000 cash in the bank, so the company cannot even pay its remaining accounts payable in the short term. So, how can management keep track of its cash?

The statement of cash flows is the definitive financial statement to bridge the gaps between revenues and profits, and cash. Therefore, it is vital to understand the statement of cash flows.

As cash is generally viewed by many as the most critical asset to success, this appendix will focus on how to correctly prepare and interpret the statement of cash flows using the direct method.

For example, below is the statement of cash flows using the direct method for the year ended December 31, 2015 for Wellbourn Services Ltd. at December 31, 2015.

Wellbourn Services Ltd.
Statement of Financial Position
December 31, 2015

Assets		Liabilities	
Current assets		Current liabilities	
Cash	$135,500	Accounts payable	$ 77,500
Accounts receivable (net)	225,000	Accrued liabilities	225,000
Inventory	130,000	Total current liabilities	302,500
Total current assets	490,500	Bonds payable	160,000
Investments	100,000	Total liabilities	462,500
Property, plant, and equipment (net)	246,000	Equity	
Intangible assets	15,000	Share capital	210,000
Total assets	$851,500	Contributed surplus	25,000
		Retained earnings	105,500
		Accum. Other Comp. Income(AOCI)	48,500
		Total equity	389,000
		Liabilities and equity	$851,500

Wellbourn Services Ltd.
Statement of Cash Flows
For the year ended December 31, 2015

Cash flows from operating activities		
Cash received from sales	$ 50,000	
Cash paid for goods and services	(25,000)	
Cash paid to or on behalf of employees	(51,200)	
Net cash flows from operating activities		(26,200)
Cash flows from investing activities		
Purchase of equipment	(25,000)	
Net cash flows from investing activities		(25,000)
Cash flows from financing activities		
Dividends paid	(50,000)	
Issued bonds	160,000	
Net cash flows from financing activities		110,000
Net increase in cash		58,800
Cash balance, January 1		76,700
Cash balance, December 31		$135,500

Note how Wellbourn's ending cash balance of $135,500, from the statement of cash flows for the year ended December 31, matches the ending cash balance in the balance sheet on that date. This is a critical relationship between these two financial statements. The balance sheet provides information about a company's resources (assets) *at a specific point in time*, and whether these resources are financed mainly by debt (current and long-term liabilities) or equity (shareholders' equity). The statement of cash flows identifies how the company utilized its cash inflows and outflows *over the reporting period* and, ultimately, ends with its current cash and cash equivalents balance at the balance sheet date. As well, since the statement of cash flows is prepared on a cash basis, it excludes non-cash accruals like depreciation and interest, making the statement of cash flows harder to manipulate than the other financial statements.

Two methods are used to prepare a statement of cash flows, namely the indirect method and the direct method. The indirect method was discussed earlier in this chapter. Both methods organize the reported cash flows into three activities: operating, investing, and financing. The only difference when applying the direct method is in the operating activities section; the investing and financing sections are prepared exactly the same way for both methods.

For the direct method categories are based on the ***nature*** of the cash flows. With the indirect method the cash flows are based on the income statement and changes in each current asset and liability account, except cash. Below is a comparison of the two methods:

Indirect Method			**Direct Method**		
Cash flows from operating activities:			Cash flows from operating activities:		
Net income	$$		Cash received from sales	$$	
Adjust for non-cash items:			Cash paid for goods and services	($$)	
Depreciation	$$		Cash paid to or on behalf of employees	($$)	
Gain on sale of asset	($$)		Cash received for interest income	$$	
Increase in accounts receivable	($$)		Cash paid for interest	($$)	
Decrease in inventory	$$		Cash paid for income taxes	($$)	
Increase in accounts payable	$$		Cash received for dividends	$$	
Net cash flows from operating activities		$$	Net cash flows from operating activities		$$

The direct method is straightforward due to the grouping of information by nature. This also makes interpretation of the statement easier for stakeholders. However, companies record thousands of transactions every year and many of them do not involve cash. Since the accounting records are kept on an accrual basis, it can be a time-consuming and expensive task to separate and collect the cash-only data required for the direct method categories by nature. Also, reporting on sensitive information, such as cash receipts from customers and cash payments to suppliers, may not be in the best interest of the company in light of competitor companies using the information to their advantage. For these reasons, many companies prefer not to use the direct method, even though IFRS standards prefer its use over the indirect method. Also, the indirect method may be easier to prepare because it collects much of its data directly from the existing income statement and balance sheet. However, it is more difficult to understand because it uses the accounts-based categories as shown above.

11.5.1. Preparing a Statement of Cash Flows: Direct Method

As with the indirect method, preparing a statement of cash flows using the direct method is made much easier if specific steps are followed in sequence. Below is a summary of those steps to complete the operating section of the statement of cash flows using the

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direct method for Watson Ltd:

Watson Ltd.				
Partial Balance Sheet				
As at December 31, 2015				
	2015		2014	
Current assets				
Cash	$	307,500	$	250,000
Investments – trading		12,000		10,000
Accounts receivable (net)		249,510		165,000
Notes receivable		18,450		22,000
Inventory (LCNRV)		708,970		650,000
Prepaid insurance expenses		18,450		15,000
Total current assets		1,314,880		1,112,000
Current liabilities				
Accounts payable	$	221,000	$	78,000
Accrued interest payable		24,600		33,000
Income taxes payable		54,120		60,000
Unearned revenue		25,000		225,000
Current portion of long-term notes payable		60,000		45,000
Total current liabilities		384,720		441,000

Watson Ltd.		
Income Statement		
For the Year Ended December 31, 2015		
Sales	$	3,500,000
Cost of goods sold		2,100,000
Gross profit		1,400,000
Operating expenses		
Salaries and benefits expense		800,000
Depreciation expense		43,000
Travel and entertainment expense		134,000
Advertising expense		35,000
Freight-out expense		50,000

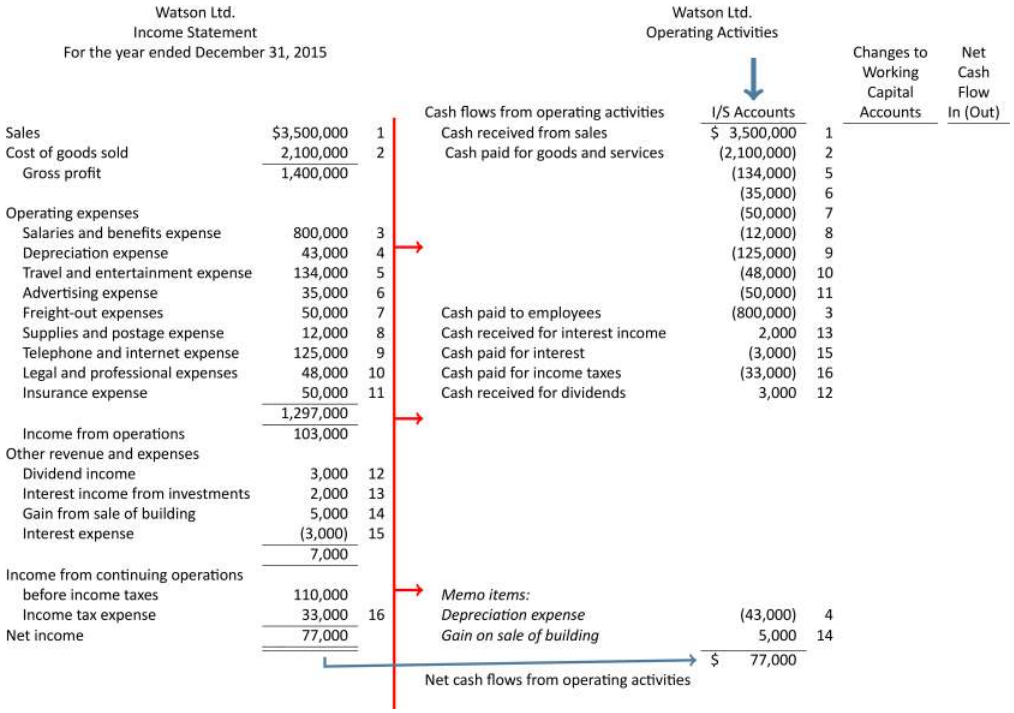
Supplies and postage expense		12,000
Telephone and internet expense		125,000
Legal and professional expenses		48,000
Insurance expense		50,000
		1,297,000
Income from operations		103,000
Other revenue and expenses		
Dividend income		3,000
Interest income		2,000
Gain from sale of building		5,000
Interest expense		(3,000)
		7,000
Income from continuing operations before income tax		110,000
Income tax expense		33,000
Net income	$	77,000

Direct Method Steps:

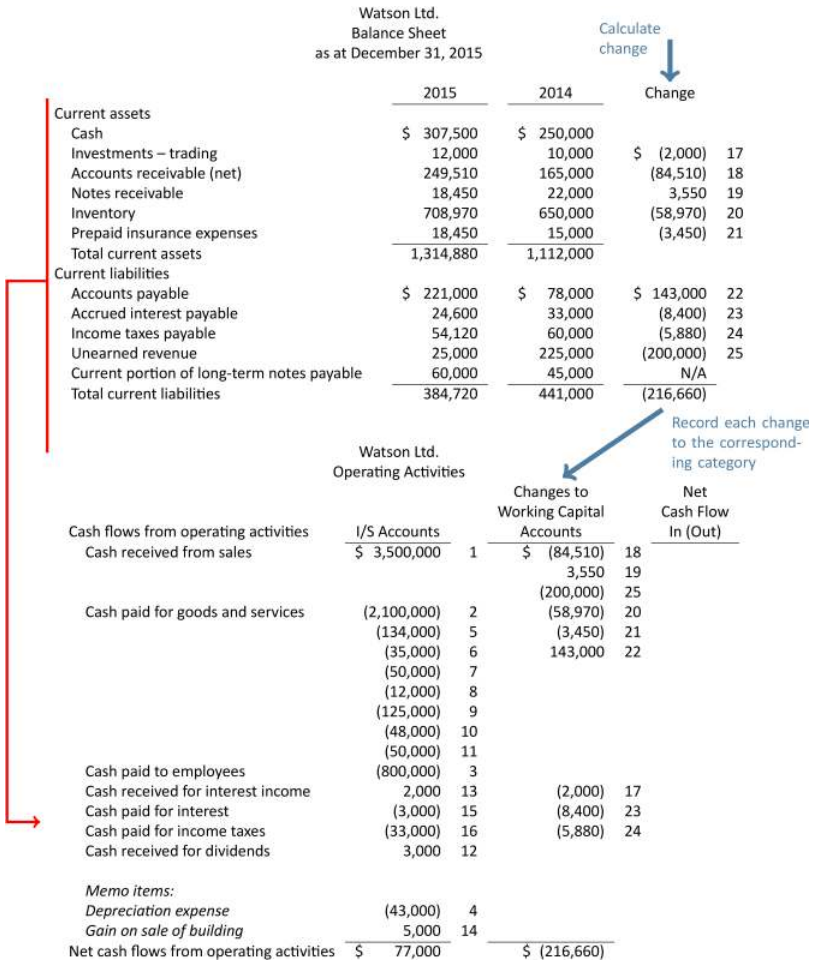
Step 1. Record headings, categories, and three additional columns into an Operating Activities worksheet as shown below:

Watson Ltd.			
Operating Activities			
Cash flows from operating activities	I/S Accounts	Changes to Working Capital Accounts	Net Cash Flow In (Out)
Cash received from sales			
Cash paid for goods and services			
Cash paid to employees			
Cash received for interest income			
Cash paid for interest			
Cash paid for income taxes			
Cash received for dividends			
Net cash flows from operating activities			

Step 2. Record each income statement amount into the corresponding direct method category of the Operating Activities worksheet shown below (recall that non-cash items such as depreciation and gains or losses are excluded from a statement of cash flows so they are will be recorded as memo items only):



Step 3. Calculate the net change amount for each current asset (except cash), and each current liability from the balance sheet below. Record each change amount in the second column of the Operating Activities worksheet:



Note how items 13 and 17 on the operating activities statement cancel each other out. This is because the interest income was accrued and not actually received in cash. Also note that the current portion of long-term notes was excluded from the operating activities section. Recall from the earlier chapter material on the indirect method that this account is combined with its corresponding long-term note payable account in the financing section of the statement of cash flows.

Step 4. Calculate the net cash flow total for each category and the net cashflow total for the operating activities section. Transfer the amounts to the statement of cash flows, operating activities section:

	Watson Ltd. Operating Activities		Changes to Working Capital Accounts		Net Cash Flow In (Out)
Cash flows from operating activities	I/S Accounts				
Cash received from sales	$ 3,500,000	1	$ (84,510)	18	
			3,550	19	
			(200,000)	25	$ 3,219,040
Cash paid for goods and services	(2,100,000)	2	(58,970)	20	
	(134,000)	5	(3,450)	21	
	(35,000)	6	143,000	22	
	(50,000)	7			
	(12,000)	8			
	(125,000)	9			
	(48,000)	10			
	(50,000)	11			(2,473,420)
Cash paid to employees	(800,000)	3			(800,000)
Cash received for interest income	2,000	13	(2,000)	17	0
Cash paid for interest	(3,000)	15	(8,400)	23	(11,400)
Cash paid for income taxes	(33,000)	16	(5,880)	24	(38,880)
Cash received for dividends	3,000	12			3,000
Memo items:					
Depreciation expense	(43,000)	4			
Gain on sale of building	5,000	14			
Net cash flows from operating activities	$ 77,000		$ (216,660)		$ (101,660)

The completed portion of the statement of cash flows, operating section is shown below:

Watson Ltd.				
Statement of Cash Flows – Operating Activities				
For the Year Ended December 31, 2015				
Cash flows from operating activities:				
Cash received from sales	$	3,219,040		
Cash paid for goods and services		(2,473,420)		
Cash paid to or on behalf of employees		(800,000)		
Cash paid for interest		(11,400)		
Cash paid for income taxes		(38,880)		
Cash received for dividends		3,000		
Net cash flows from operating activities			$	(101,660)

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11.6: Summary of Chapter 11 Learning Objectives

Summary of Chapter 11 Learning Objectives

LO1 – Explain the purpose of the statement of cash flows.

The statement of cash flows is one of the four financial statements. It highlights the net increase or decrease in the cash and cash equivalents balance during the accounting period, and details the sources and uses of cash that caused that change.

LO2 – Prepare a statement of cash flows.

The operating activities section of the statement of cash flows can be prepared using the direct or indirect method. This textbook focuses only on the indirect method. The result of both methods is identical; it is only how the calculations are performed that differs. The operating activities section begins with accrual net income and, by adjusting for changes in current assets, current liabilities, adding back depreciation expense, and adding back/subtracting losses/gains on disposal of non-current assets, arrives at net income on a cash basis. The investing activities section analyzes cash inflows and outflows from the sale and purchase of non-current assets. The finance activities section details the cash inflows and outflows resulting from the issue and payment of loans, issue and repurchase of shares, and payment of dividends.

LO3 – Interpret a statement of cash flows.

A statement of cash flows contributes to the decision-making process by explaining the sources and uses of cash. The operating activities section can signal potential areas of concern by focusing on differences between accrual net income and cash basis net income. The investing activities section can highlight if cash is being used to acquire assets for generating revenue, while the financing activities section can identify where the cash to purchase those assets might be coming from. Those who use financial statements can focus on the effectiveness of management's investing and financing decisions and how these may affect future financial performance.

Discussion Questions

1. Using an example, explain in your own words the function of a statement of cash flows. Why is it prepared? What does it communicate to the reader of financial statements? What is its advantage over a balance sheet? over an income statement?
2. Why are financing and investing activities of a corporation important to financial statement readers?
3. How does an increase in accounts receivable during the year affect the cash flow from operating activities?
4. What effect does the declaration of a cash dividend have on cash flow? the payment of a dividend declared and paid during the current year? the payment of a dividend declared in the preceding year?
5. Why may a change in the Short-term investments account not affect the amount of cash provided by operations?
6. Why is it possible that cash may have decreased during the year, even though there has been a substantial net income during the same period?
7. Describe common transactions affecting balance sheet accounts that use cash. Explain how these items are analysed to identify cash flows that have occurred during the year.

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11.7: Exercises

EXERCISE 11–1 (LO1,2)

The following transactions were carried out by Crozier Manufacturing Limited.

Required: Indicate into which category each transaction or adjustment is placed in the statement of cash flows: operating (O), financing (F), or investing (I) activities. For non-cash investing/financing activities that are disclosed in a note to the financial statements, indicate (NC).

_____	A payment of $5,000 was made on a bank loan.
_____	Depreciation expense for equipment was $1,000.
_____	$10,000 of share capital was issued for cash.
_____	Cash dividends of $2,500 were declared and paid to shareholders.
_____	Bonds were issued in exchange for equipment costing $7,000.
_____	Land was purchased for $25,000 cash.
_____	$750 of accrued salaries was paid.
_____	$10,000 of accounts receivable was collected.
_____	A building was purchased for $80,000: $30,000 was paid in cash and the rest was borrowed.
_____	A long-term investment in shares of another company was sold for $50,000 cash.
_____	Equipment was sold for $6,000. The related accumulation depreciation was $3,000 with an original cost of $10,000.
_____	$1,200 was paid for a 12-month insurance policy in effect next year.
_____	A patent was amortized for $500.
_____	Bonds were issued for $50,000 cash.

EXERCISE 11–2 (LO2)

Assume the following selected income statement and balance sheet information for Larriet Inc.:

			Larriet Inc.		
Larriet Inc.			Income Statement		
Balance Sheet Information			Year Ended December 31, Year 5		
(000's)			(000's)		
	December 31,				
	2023	2022	Sales revenue		$385
Cash	$40	$22	Cost of goods sold	$224	
Accounts receivable	34	39	Other operating expenses	135	
Merchandise inventory	150	146	Depreciation expense	25	
Prepaid expenses	3	2	Loss on sale of machinery	3	(387)
Machinery	125	138	Net loss		$2
Accumulated depreciation	55	42			
Accounts payable	29	31			
Dividends payable	1	5			
Bonds payable	15	38			
Common shares	208	150			
Retained earnings	44	81			

Additional information:

i. Machinery costing $20 thousand was sold for cash.
ii. Machinery was purchased for cash.
iii. The change in retained earnings was caused by the net loss and the declaration of dividends.

Required:

a. Reconstruct the journal entry regarding the sale of the machinery.
b. Reconstruct the entry regarding the purchase of machinery.
c. Reconstruct the entry regarding the declaration of dividends.
d. Reconstruct the entry regarding the payment of dividends.
e. Prepare the statement of cash flows for the year ended December 31, Year 5.

EXERCISE 11–3 (LO2,3)

The comparative statement of financial positions of Glacier Corporation showed the following at December 31.

	2019		*2018*	
Debits				
Cash	$	10	$	8
Accounts receivable		18		10
Merchandise inventory		24		20
Land		10		24
Plant and equipment		94		60
	$	156	$	122
Credits				
Accumulated depreciation	$	14	$	10
Accounts payable		16		12
Non-current borrowings		40		32
Common shares		60		50
Retained earnings		26		18
	$	156	$	122

The statement of profit and loss for 2019 was as follows:

Glacier Corporation			
Statement of Profit and Loss			
For the Year Ended December 31, 2019			
Sales		$	300
Cost of sales			200
Gross profit			100
Operating expenses			
Rent	$ 77		
Depreciation	6		83
Income from operations			17
Other gains (losses)			
Gain on sale of equipment	1		
Loss on sale of land	(4)		(3)
Net income			$ 14

Additional information:

i. Cash dividends paid during the year amounted to $6.
ii. Land was sold during the year for $10. It was originally purchased for $14.
iii. Equipment was sold during the year that originally cost $7. Carrying amount was $5.
iv. Equipment was purchased for $41.

Required:

a. Prepare a statement of cash flows for the year ended December 31, 2019.
b. Comment on the operating, financing, and investing activities of Glacier Corporation for the year ended December 31, 2019.

EXERCISE 11–4 (LO2,3)

The following trial balance has been prepared from the ledger of Lelie Ltd. at December 31, 2019, following its first year of operations.

	(in $000's)			
	Debits		*Credits*	
Cash	$	40		
Accounts receivable		100		
Merchandise inventory		60		
Prepaid rent		10		
Equipment		160		
Accumulated depreciation – equipment			$	44
Patent		-0-		
Accounts payable				50
Dividends payable				10
Income taxes payable				8
Note payable – due 2023				80
Common shares				140
Retained earnings				-0-
Cash dividends		20		
Sales				225
Depreciation		44		
Cost of goods sold		100		
Selling and administrative expenses		28		
Income taxes expense		10		
Gain on sale of land				15
	$	572	$	572

Additional information:

i. A patent costing $30,000 was purchased, and then sold during the year for $45,000.
ii. Lelie assumed $100,000 of long-term debt during the year.
iii. Some of the principal of the long-term debt was repaid during the year.
iv. Lelie issued $40,000 of common shares for equipment. Other equipment was purchased for $120,000 cash. No equipment was sold during the year.

Required:

a. Prepare a statement of cash flows for the year ended December 31, 2019.
b. Explain what the statement of cash flows tells you about Lelei Ltd. at the end of December 31, 2019.

EXERCISE 11–5 (LO2,3)

The accounts balances of ZZ Corp. at December 31 appear below:

	2019		*2018*	
Debits				
Cash	$	40,000	$	30,000
Accounts receivable		40,000		30,000
Merchandise inventory		122,000		126,000
Prepaid expenses		6,000		4,000
Land		8,000		30,000
Buildings		220,000		160,000
Equipment		123,000		80,000
	$	559,000	$	460,000
Credits				
Accounts payable	$	48,000	$	50,000
Accumulated depreciation		86,000		70,000
Note payable, due 2023		70,000		55,000
Common shares		300,000		250,000
Retained earnings		55,000		35,000
	$	559,000	$	460,000

The following additional information is available:

i. Net income for the year was $40,000; income taxes expense was $4,000 and depreciation recorded on building and equipment was $27,000.
ii. Equipment costing $30,000 was purchased; one-half was paid in cash and a 4-year promissory note signed for the balance.
iii. Equipment costing $50,000 was purchased in exchange for 6,000 common shares.
iv. Equipment was sold for $15,000 that originally cost $37,000. The gain/loss was reported in net income.
v. An addition to the building was built during the year.
vi. Land costing $22,000 was sold for $26,000 cash during the year. The related gain was reported in the income statement.
vii. Cash dividends were paid.

Required:

a. Prepare a statement of cash flows for the year ended December 31, 2019.
b. What observations about ZZ Corp. can be made from this statement?

EXERCISE 11–6 (LO2,3)

Below is a comparative statement of financial position for Egglestone Vibe Inc. as at December 31, 2016:

Egglestone Vibe Inc.				
Statement of Financial Position				
	December 31			
	2016		*2015*	
Assets:				
Cash	$	166,400	$	146,900
Accounts receivable		113,100		76,700
Inventory		302,900		235,300
Land		84,500		133,900
Plant assets		507,000		560,000
Accumulated depreciation – plant assets		(152,100)		(111,800)
Goodwill		161,200		224,900
Total assets	$	1,183,000	$	1,265,900
Liabilities and Equity:				
Accounts payable		38,100		66,300
Dividend payable		19,500		41,600
Notes payable		416,000		565,500
Common shares		322,500		162,500
Retained earnings		386,900		430,000
Total liabilities and equity	$	1,183,000	$	1,265,900

Additional information:

i. Net income for the 2016 fiscal year was $24,700. Depreciation expense was $55,900.
ii. During 2016, land was purchased for cash of $62,400 for expansion purposes. Six months later, another section of land with a carrying value of $111,800 was sold for $150,000 cash.
iii. On June 15, 2016, notes payable of $160,000 was retired in exchange for the issuance of common shares. On December 31, 2016, notes payable for $10,500 were issued for additional cash flow.
iv. At year-end, plant assets originally costing $53,000 were sold for $27,300, since they were no longer contributing to profits. At the date of the sale, the accumulated depreciation for the asset sold was $15,600.
v. Cash dividends were declared and a portion of those were paid in 2016.
vi. Goodwill impairment loss was recorded in 2016 to reflect a decrease in the recoverable amount of goodwill. (Hint: Review impairment of long-lived assets in Chapter 8 of the text.)

Required:

a. Prepare a statement of cash flows for the year ended December 31, 2016.

b. Analyse and comment on the results reported in the statement.

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EXERCISE 11–7 (LO2)

Below is a comparative statement of financial position for Nueton Ltd. as at June 30, 2016:

Nueton Ltd.		
Balance Sheet		
	June 30	
	2016	*2015*
Cash	$ 55,800	$ 35,000
Accounts receivable (net)	80,000	62,000
Inventory	66,800	96,800
Prepaid expenses	5,400	5,200
Equipment	130,000	120,000
Accumulated depreciation	28,000	10,000
Accounts payable	6,000	32,000
Wages payable	7,000	16,000
Income taxes payable	2,400	3,600
Notes payable (long-term)	40,000	70,000
Common shares	230,000	180,000
Retained earnings	24,600	7,400

Nueton Ltd.	
Income Statement	
For Year Ended June 30, 2016	
Sales	$ 500,000
Cost of goods sold	300,000
Gross profit	200,000
Operating expenses:	
Depreciation expense	58,600
Other expenses	80,000
Total operating expenses	138,600
Income from operations	61,400
Gain on sale of equipment	2,000
Income before taxes	63,400
Income taxes	19,020

Net income	$	44,380

Additional Information:

i. A note is retired at its carrying value.
ii. New equipment is acquired during 2016 for $58,600.
iii. The gain on sale of equipment costing $48,600 during 2016 is $2,000.

Required: Use the Neuton Ltd. information given above to prepare a statement of cash flows for the year ended June 30, 2016.

EXERCISE 11–8 (LO2)

The trial balance for Yucotin Corp. is shown below. All accounts have normal balances.

Yucotin Corp.				
Trial Balance				
	December 31			
	2016		*2015*	
Cash	$	248,000	$	268,000
Accounts receivable		62,000		54,000
Inventory		406,000		261,000
Equipment		222,000		198,000
Accumulated depreciation, equipment		(104,000)		(68,000)
Accounts payable		46,000		64,000
Income taxes payable		18,000		16,000
Common shares		520,000		480,000
Retained earnings		116,000		58,000
Sales		1,328,000		1,200,000
Cost of goods sold		796,000		720,000
Depreciation expense		36,000		30,000
Operating expenses		334,000		330,000
Income taxes expense		28,000		25,000

Additional information:

i. Equipment is purchased for $24,000 cash.
ii. 16,000 common shares are issued for cash at $2.50 per share.
iii. Declared and paid $74,000 of cash dividends during the year.

Required: Prepare a statement of cash flows for 2016.

EXERCISE 11–9 (LO2)

Below is an unclassified balance sheet and income statement for Tubric Corp. for the year ended December 31, 2016:

Tubric Corp.				
Balance Sheet				
	December 31			
	2016		*2015*	
Cash	$	40,000	$	20,800
Petty cash		14,400		8,000
Accounts receivable		73,600		31,200
Inventory		95,200		69,600
Long-term investment		0		14,400
Land		64,000		64,000
Building and equipment		370,400		380,000
Accumulated depreciation		98,400		80,800
Total assets	$	559,200	$	507,200
Accounts payable		16,600		31,500
Dividends payable		1,000		500
Bonds payable		20,000		0
Preferred shares		68,000		68,000
Common shares		338,400		338,400
Retained earnings		115,200		68,800
Total liabilities and equity	$	559,200	$	507,200

Tubric Corp.				
Income Statement				
For the year ended December 31, 2016				
Sales			$	720,000
Cost of goods sold				480,000
Gross profit				240,000
Operating expenses	$	110,600		
Depreciation expense		34,400		
Loss on sale of equipment		3,200		
Income tax expense		15,000		

Gain on sale of long-term investment		(9,600)		153,600
Net income			$	86,400

During 2016, the following transactions occurred:

i. Purchased equipment for $16,000 cash.
ii. Sold the long-term investment on January 2, 2016, for $24,000.
iii. Sold equipment originally costing $25,600 for $5,600 cash. Equipment had $16,800 of accumulated depreciation at the time of the sale.
iv. Issued $20,000 of bonds payable at par.

Required:

a. Calculate the cash paid dividends for 2016.
b. Prepare a statement of cash flows for Tubric Corp. for the year ended December 31, 2016.

EXERCISE 11–10

This exercise uses the direct method for creating Statements of Cash Flows as explained in Section 11.5.

Below are the unclassified financial statements for Rorrow Ltd. for the year ended December 31, 2015:

Rorrow Ltd.				
Balance Sheet				
As at December 31, 2015				
	2015		2014	
Cash	$	152,975	$	86,000
Accounts receivable (net)		321,640		239,080
Inventory		801,410		855,700
Prepaid insurance expenses		37,840		30,100
Equipment		2,564,950		2,156,450
Accumulated depreciation, equipment		(625,220)		(524,600)
Total assets	$	3,253,595	$	2,842,730
Accounts payable	$	478,900	$	494,500
Salaries and wages payable		312,300		309,600
Accrued interest payable		106,210		97,180
Bonds payable, due July 31, 2023		322,500		430,000
Common shares		1,509,300		1,204,000
Retained earnings		524,385		307,450
Total liabilities and shareholders' equity	$	3,253,595	$	2,842,730

Rorrow Ltd.		
Income Statement		
For the Year Ended December 31, 2015		
Sales	$	5,258,246
Expenses		
Cost of goods sold		3,150,180
Salaries and benefits expense		754,186
Depreciation expense		100,620
Interest expense		258,129
Insurance expense		95,976
Income tax expense		253,098

		4,612,189
Net income	$	646,057

Required:

a. Complete the direct method worksheet for the operating activities section for the year ended December 31, 2015.
b. Prepare the operating activities section for Rorrow Ltd. for the year ended December 31, 2015.

EXERCISE 11–11

This exercise is similar to Exercise 11–4 except that it uses the direct method for creating Statements of Cash Flows as explained in Section 11.5.

The following trial balance has been prepared from the ledger of Lelie Ltd. at December 31, 2019, following its first year of operations.

	(in $000's)			
	Debits		*Credits*	
Cash	$	40		
Accounts receivable		100		
Merchandise inventory		60		
Prepaid rent		10		
Equipment		160		
Accumulated depreciation – equipment			$	44
Patent		-0-		
Accounts payable				50
Dividends payable				10
Income taxes payable				8
Note payable – due 2023				80
Common shares				140
Retained earnings				-0-
Cash dividends		20		
Sales				225
Depreciation		44		
Cost of goods sold		100		
Selling and administrative expenses		28		
Income taxes expense		10		
Gain on sale of land				15
	$	572	$	572

Additional information:

i. A patent costing $30,000 was purchased, and then sold during the year for $45,000.
ii. Lelie assumed $100,000 of long-term debt during the year.
iii. Some of the principal of the long-term debt was repaid during the year.
iv. Lelie issued $40,000 of common shares for equipment. Other equipment was purchased for $120,000 cash. No equipment was sold during the year.

Required:

a. Prepare a statement of cash flows for the year ended December 31, 2019 using the direct method.
b. Explain what the statement of cash flows tells you about Lelei Ltd. at the end of December 31, 2019.

EXERCISE 11–12

This exercise is similar to Exercise 11–7 except that it uses the direct method for creating Statements of Cash Flows as explained in Section 11.5.

Below is a comparative statement of financial position for Nueton Ltd. as at June 30, 2016:

Nueton Ltd.				
Balance Sheet				
	June 30			
	2016		*2015*	
Cash	$	55,800	$	35,000
Accounts receivable (net)		80,000		62,000
Inventory		66,800		96,800
Prepaid expenses		5,400		5,200
Equipment		130,000		120,000
Accumulated depreciation		28,000		10,000
Accounts payable		6,000		32,000
Wages payable		7,000		16,000
Income taxes payable		2,400		3,600
Notes payable (long-term)		40,000		70,000
Common shares		230,000		180,000
Retained earnings		24,600		7,400

Nueton Ltd.		
Income Statement		
For Year Ended June 30, 2016		
Sales	$	500,000
Cost of goods sold		300,000
Gross profit		200,000
Operating expenses:		
Depreciation expense		58,600
Other expenses		80,000
Total operating expenses		138,600
Income from operations		61,400
Gain on sale of equipment		2,000
Income before taxes		63,400
Income taxes		19,020

Net income	$	44,380

Additional Information:

i. A note is retired at its carrying value.
ii. New equipment is acquired during 2016 for $58,600.
iii. The gain on sale of equipment costing $48,600 during 2016 is $2,000.
iv. Assume that Other expenses includes salaries expense of $30,000, interest expense of $5,000 and the remaining for various purchases of goods and services.

Required: Use the Neuton Ltd. information given above to prepare a statement of cash flows for the year ended June 30, 2016 using the direct method.

Problems

PROBLEM 11–1 (LO2)

Assume the following income statement information:

Sales (all cash)	$35
Operating Expenses	
Depreciation	10
Income before Other Item	25
Other Item	
Gain on Sale of Equipment	8
Net Income	$33

Required:

1. Assume the equipment that was sold for a gain of $8 originally cost $20, had a book value of $4 at the date of disposal, and was sold for $12. Prepare the journal entry to record the disposal. What is the cash effect of this entry?
2. Calculate cash flow from operating activities.

PROBLEM 11–2 (LO2)

Assume the following selected income statement and balance sheet information for the year ended December 31, 2019:

Sales	$200
Cost of Goods Sold	120
Gross Profit	80
Operating Expenses	
Rent	30
Net Income	$50

	2023 Dr. (Cr.)	*2022 Dr. (Cr.)*
Cash	$100	$86
Accounts Receivable	60	40
Inventory	36	30
Prepaid Rent	10	-0-
Retained Earnings	(206)	(156)

Required:

1. Reconcile the change in retained earnings from December 31, 2018 to December 31, 2019.
2. Calculate cash flow from operating activities.

PROBLEM 11–3 (LO2)

Assume the following income statement and balance sheet information:

Revenue	$-0-
Depreciation Expense	(100)
Net Loss	$(100)

	2023 Dr. (Cr.)	*2022 Dr. (Cr.)*
Cash	$350	$650
Machinery	500	200
Accumulated Depreciation – Machinery	(250)	(150)
Retained Earnings	(600)	(700)

No machinery was disposed during the year. All machinery purchases were paid in cash.

Required:

1. Prepare a journal entry to record the depreciation expense for the year. Determine the cash effect.
2. Prepare a journal entry to account for the change in the Machinery balance sheet account. What is the cash effect of this entry?
3. Prepare a statement of cash flows for the year ended December 31, 2019.

PROBLEM 11–4 (LO2)

Assume the following income statement and balance sheet information:

Service Revenue (all cash)	$175	
Operating Expenses		
Salaries (all cash)	85	
Net Income	$90	
	2023 Dr. (Cr.)	*2022 Dr. (Cr.)*
Cash	$1,350	$1,800
Borrowings	(800)	(1,300)
Retained Earnings	(550)	(500)

Other information: All dividends were paid in cash.

Required:

1. Calculate cash flow from operating activities.
2. Calculate the amount of dividends paid during the year.
3. Calculate cash flow used by financing activities.

PROBLEM 11–5 (LO2)

The following transactions occurred in the Hubris Corporation during the year ended December 31, 2019.

(a) Net income for the year (accrual basis)	$800
(b) Depreciation expense	120
(c) Increase in wages payable	20
(d) Increase in accounts receivable	40
(e) Decrease in merchandise inventory	50
(f) Amortization of patents	5
(g) Payment of non-current borrowings	250
(h) Issuance of common shares for cash	500
(i) Payment of cash dividends	30

Other information: Cash at December 31, 2019 was $1,200.

Required: Prepare a statement of cash flows.

PROBLEM 11–6 (LO2,3)

During the year ended December 31, 2019, the Wheaton Co. Ltd. reported $95,000 of revenues, $70,000 of operating expenses, and $5,000 of income taxes expense. Following is a list of transactions that occurred during the year:

a. Depreciation expense, $3,000 (included with operating expenses)
b. Increase in wages payable, $500
c. Increase in accounts receivable, $900
d. Decrease in merchandise inventory, $1,200
e. Amortisation of patent, $100

f. Non-current borrowings paid in cash, $5,000
g. Issuance of common shares for cash, $12,500
h. Equipment, cost $10,000, acquired by issuing common shares
i. At the end of the fiscal year, a $5,000 cash dividend was declared but not paid.
j. Old machinery sold for $6,000 cash; it originally cost $15,000 (one-half depreciated). Loss reported on income statement as ordinary item and included in the $70,000 of operating expenses.
k. Decrease in accounts payable, $1,000.
l. Cash at January 1, 2019 was $1,000; increase in cash during the year, $37,900
m. There was no change in income taxes owing.

Required:

1. Prepare a statement of cash flows.
2. Explain what this statement tells you about Wheaton Co. Ltd.

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CHAPTER OVERVIEW

Chapter 12: Financial Statement Analysis

Learning Objectives

- LO1 – Describe ratio analysis, and explain how the liquidity, profitability, leverage, and market ratios are used to analyze and compare financial statements.
- LO2 – Describe horizontal and vertical trend analysis, and explain how they are used to analyze financial statements.

Financial statements can be used by shareholders, creditors, and other interested parties to analyze a corporation's liquidity, profitability, and financial structure compared to prior years and other similar companies. As part of this analysis, financial evaluation tools are used. Some of these tools are discussed in this chapter.

12.1: Introduction to Ratio Analysis
12.2: Liquidity Ratios- Analyzing Short-term Cash Needs
12.3: Profitability Ratios- Analyzing Operating Activities
12.4: Leverage Ratios - Analyzing Financial Structure
12.5: Market Ratios- Analysis of Financial Returns to Investors
12.6: Overall Analysis of Big Dog's Financial Statements
12.7: Horizontal and Vertical Trend Analysis
12.8: Summary of Chapter 12 Learning Objectives
12.9: Exercises

Concept Self-Check

Use the following as a self-check while working through Chapter 12.

1. What is working capital?
2. What is meant by *liquidity?*
3. What are some ratios commonly used to evaluate liquidity?
4. What is a company's revenue operating cycle and how is it measured?
5. What profitability ratios can be used to evaluate a corporation?
6. How is the amount of shareholder claims against a corporation's assets compared to the amount of creditor claims?
7. What are the relative advantages of short-term and long-term debt?
8. What are some measures used to evaluate the future financial prospects of a company for investors?
9. What is a *horizontal analysis?* How does it differ from a *vertical analysis?*
10. What is a common-size analysis?

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.

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12.1: Introduction to Ratio Analysis

Learning Objectives

- **LO1 – Describe ratio analysis, and explain how the liquidity, profitability, leverage, and market ratios are used to analyze and compare financial statements.**

A common way to evaluate financial statements is through **ratio analysis**. A *ratio* is a relationship between two numbers of the same kind. For example, if there are two apples and three oranges, the ratio of the number of apples to the number of oranges is 2:3 (read as "two to three"). A *financial ratio* is a measure of the relative magnitude of two selected numerical values taken from a company's financial statements. For instance, the gross profit percentage studied in Chapter 6, also known as the gross profit ratio, expresses the numerical relationship between gross profit and sales. If a company has a gross profit ratio of 0.25:1, this means that for every $1 of sales, the company earns, on average, $0.25 to cover expenses other than cost of goods sold. Another way of stating this is to say that the gross profit ratio is 25%.1

Financial ratios are effective tools for measuring the financial performance of a company because they provide a common basis for evaluation — for instance, the amount of gross profit generated by each dollar of sales for different companies. Numbers that appear on financial statements need to be evaluated in context. It is their relationship to other numbers and the relative changes of these numbers that provide some insight into the financial health of a business. One of the main purposes of ratio analysis is to highlight areas that require further analysis and investigation. Ratio analysis alone will not provide a definitive financial evaluation. It is used as one analytic tool, which, when combined with informed judgment, offers insight into the financial performance of a business.

For example, one business may have a completely different product mix than another company even though both operate in the same broad industry. To determine how well one company is doing relative to others, or to identify whether key indicators are changing, ratios are often compared to *industry averages*. To determine trends in one company's performance, ratios are often compared to past years' ratios of the same company.

To perform a comprehensive analysis, qualitative information about the company as well as ratios should be considered. For example, although a business may have sold hundreds of refrigerators last year and all of the key financial indicators suggest growth, qualitative information from trade publications and consumer reports may indicate that the trend will be towards refrigerators using significantly different technologies in the next few years. If the company does not have the capacity or necessary equipment to produce these new appliances, the present positive financial indicators may not accurately reflect the likely future financial performance of the company.

An examination of qualitative factors provides valuable insights and contributes to the comprehensive analysis of a company. An important source of qualitative information is also found in the notes to the financial statements, which are an integral part of the company's financial statements.

In this chapter, financial ratios will be used to provide insights into the financial performance of Big Dog Carworks Corp. (BDCC). The ratios will focus on financial information contained within the income statement, statement of changes in equity, and balance

sheet of BDCC for the three years 2019, 2020, and 2021. This information is shown below. Note that figures in these statements are reported in thousands of dollars (000s). ***For consistency, all final calculations in this chapter are rounded to two decimal places.***

Big Dog Carworks Corp.						
Balance Sheet						
At December 31						
($000s)						
Assets						
	2021		*2020*		*2019*	
Current						
Cash	$	20	$	30	$	50
Short-term Investments		36		31		37
Accounts Receivable		544		420		257
Inventories		833		503		361
		1,433		984		705
Property, Plant, and Equipment, net		1,053		1,128		712
Total Assets	$	2,486	$	2,112	$	1,417
Liabilities						
Current						
Borrowings	$	825	$	570	$	100
Accounts Payable		382		295	$	219
Income Taxes Payable		48		52	$	50
		1,255		917		369
Equity						
Share Capital		1,063		1,063		963
Retained Earnings		168		132		85
		1,231		1,195		1,048
Total Liabilities and Equity	$	2,486	$	2,112	$	1,417

Big Dog Carworks Corp.						
Income Statement						
For the Year Ended December 31						
($000s)						
	2021		*2020*		*2019*	
Sales (net)	$	3,200	$	2,800	$	2,340
Cost of Goods Sold		2,500		2,150		1,800
Gross Profit		700		650		540
Operating Expenses						

Selling, General, and Administration		212		183		154
Employee Benefits		113		109		119
Depreciation		75		84		63
		400		376		336
Income from Operations		300		274		204
Financing Costs						
Interest		89		61		-0-
Income Before Income Taxes		211		213		204
Income Taxes		95		96		92
Net Income	$	116	$	117	$	112

Big Dog Carworks Corp.

Statement of Changes in Equity

For the Year Ended December 31

($000s)

	2021			*2020*	*2019*
	Share Capital	*Retained Earnings*	*Total Equity*	*Total Equity*	*Total Equity*
Opening Balance	$1,063	$132	$1,195	$1,048	$ 43
Common Shares Issued				100	953
Net Income		116	116	117	112
Dividends Declared		(80)	(80)	(70)	(60)
Ending Balance	$1,063	$168	$1,231	$1,195	$1,048

Assume that 100,000 common shares are outstanding at the end of 2019, 2020, and 2021. Shares were issued in 2020, but at the end of year the number of outstanding shares was still 100,000.

There are four major types of financial ratios: a) *liquidity ratios* that measure the ability of a corporation to satisfy demands for cash as they arise in the near-term (such as payment of current liabilities); b) *profitability ratios* that measure various levels of return on sales, total assets employed, and shareholder investment; c) *leverage ratios* that measure the financial structure of a corporation, its amount of relative debt, and its ability to cover interest expense; and d) *market ratios* that measure financial returns to shareholders, and perceptions of the stock market about the corporation's value.

Initial insights into the financial performance of BDCC can be derived from an analysis of relative amounts of current and non-current debt. This analysis is addressed in the following sections.

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12.2: Liquidity Ratios- Analyzing Short-term Cash Needs

Current (Short-term) versus Non-current (Long-term) Debt

Short-term and long-term financing strategies both have their advantages. The advantage of some short-term debt (repayable within one year of the balance sheet date) is that it often does not require interest payments to creditors. For example, accounts payable may not require payment of interest if they are paid within the first 30 days they are outstanding. Short-term debt also has its disadvantages; payment is required within at least one year, and often sooner. Interest rates on short-term debt are often higher than on long-term debt. An increase in the proportion of short-term debt is more risky because it must be renewed and therefore renegotiated more frequently.

The advantages of long-term debt are that payment may be made over an extended period of time. Risk may be somewhat reduced through the use of a formal contractual agreement that is often lacking with short-term debt. The disadvantages of long-term debt are that interest payments must be made at specified times and the amounts owing may be secured by assets of the company.

Analyzing Financial Structure

As a general rule, long-term financing should be used to finance long-term assets. Note that in BDCC's case, property, plant, and equipment assets amount to $1,053,000 at December 31, 2021 yet the firm has no long-term liabilities. This is unusual. An analysis of the company's balance sheet reveals the following:

	(000s)		
	2021	*2020*	*2019*
Current Liabilities	$1,255	$917	$369
Non-current Liabilities	-0-	-0-	-0-

2021 information indicates that BDCC's management relies solely on short-term creditor financing, part of which is $382,000 of accounts payable that may bear no interest and $825,000 of borrowings that also need to be repaid within one year. The risk is that management will likely need to replace current liabilities with new liabilities. If creditors become unwilling to do this, the ability of BDCC to pay its short-term creditors may be compromised. As a result, the company may experience a liquidity crisis — the inability to pay its current liabilities as they come due. The ratios used to evaluate liquidity of a corporation are discussed below.

Even though a company may be earning net income each year (as in BDCC's case), it may still be unable to pay its current liabilities as needed because of a shortage of cash. This can trigger various problems related to current and non-current liabilities and equity.

Current Liabilities

- Creditors can refuse to provide any further goods or services on account.
- Creditors can sue for payment.
- Creditors can put the company into receivership or bankruptcy.

Non-current Liabilities

- Long-term creditors can refuse to lend additional cash.
- Creditors can demand repayment of their long-term debts, under some circumstances.

Equity

- Shareholders may be unwilling to invest in additional share capital of the company.
- Shareholders risk the loss of their investments if the company declares bankruptcy.

There are several ratios that can be used to analyze the liquidity of a company.

Working Capital

Working capital is the difference between a company's current assets and current liabilities at a point in time. BDCC's working capital calculation is as follows:

	(000s)					
	2021		*2020*		*2019*	
Current Assets						
Cash	$	20	$	30	$	50
Short-term Investments		36		31		37
Accounts Receivable		544		420		257
Inventories		833		503		361
Total Current Assets (a)		1,433		984		705
Current Liabilities						
Borrowings		825		570		100
Accounts Payable		382		295		219
Income Taxes Payable		48		52		50
Total Current Liabilities (b)		1,255		917		369
Net Working Capital (a-b)	$	178	$	67	$	336

In the schedule above, working capital amounts to $178,000 at December 31, 2021. Between 2019 and 2021, working capital decreased by $158,000 ($336,000 – 178,000). BDCC is less liquid in 2021 than in 2019, though its liquidity position has improved since 2020 when it was only $67,000.

In addition to calculating an absolute amount of working capital, ratio analysis can also be used. The advantage of a ratio is that it is usually easier to interpret.

Current Ratio

Is BDCC able to repay short-term creditors? The current ratio can help answer this question. It expresses working capital as a proportion of current assets to current liabilities and is calculated as:

$$\frac{\text{Current assets}}{\text{Current liabilities}}$$

The relevant BDCC financial data required to calculate this ratio is taken from the balance sheet, as follows:

		(000s)		
		2021	*2020*	*2019*
Current Assets	(a)	$1,433	$984	$705
Current Liabilities	(b)	1,255	917	369
Current Ratio	(a/b)	1.14:1	1.07:1	1.91:1

This ratio indicates how many current asset dollars are available to pay current liabilities at a point in time. The expression "1.14:1" is read, "1.14 to 1." In this case it means that at December 31, 2021, $1.14 of current assets exist to pay each $1 of current

liabilities. This ratio is difficult to interpret in isolation. There are two types of additional information that could help. First, what is the trend within BDCC over the last three years? The ratio declined between 2019 and 2020 (from 1.91 to 1.07), then recovered slightly between the end of 2020 and 2021 (from 1.07 to 1.14). The overall decline may be a cause for concern, as it indicates that in 2021 BDCC had fewer current assets to satisfy current liabilities as they became due.

A second interpretation aid would be to compare BDCC's current ratio to a similar company or that of BDCC's industry as a whole. Information is available from various trade publications and business analysts' websites that assemble financial ratio information for a wide range of industries.

Some analysts consider that a corporation should maintain a 2:1 current ratio, depending on the industry in which the firm operates. The reasoning is that, if there were $2 of current assets to pay each $1 of current liabilities, the company should still be able to pay its current liabilities as they become due, even in the event of a business downturn. However, it is recognized that no one current ratio is applicable to all entities; other factors — such as the composition of current assets — must also be considered to arrive at an acceptable ratio. This is illustrated below.

Composition of Specific Items in Current Assets

In the following example, both Corporation A and Corporation B have a 2:1 current ratio. Are the companies equally able to repay their short-term creditors?

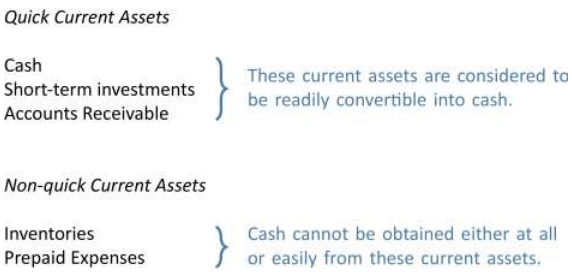
	Corp. A		*Corp. B*	
Current Assets				
Cash	$	1,000	$	10,000
Accounts Receivable		2,000		20,000
Inventories		37,000		10,000
Total Current Assets	$	40,000	$	40,000
Current Liabilities	$	20,000	$	20,000
Current Ratio	2:1		2:1	

The companies have the same dollar amounts of current assets and current liabilities. However, they have different short-term debt paying abilities because Corporation B has more liquid current assets than does Corporation A. Corporation B has less inventory ($10,000 vs. $37,000) and more in cash and accounts receivable. If Corporation A needed more cash to pay short-term creditors quickly, it would have to sell inventory, likely at a lower-than-normal gross profit. So, Corporation B is in a better position to repay short-term creditors.

Since the current ratio doesn't consider the components of current assets, it is only a rough indicator of a company's ability to pay its debts as they become due. This weakness of the current ratio is partly remedied by the acid-test ratio discussed below.

Acid-Test Ratio

A more rigid test of liquidity is provided by the **acid-test ratio**; also called the **quick ratio**. To calculate this ratio, current assets are separated into *quick* current assets and *non-quick* current assets.



Inventory and prepaid expenses cannot be converted into cash in a short period of time, if at all. Therefore, they are excluded in the calculation of this ratio. The acid-test ratio is calculated as:

The BDCC information required to calculate this ratio is:

		(000s)		
		2021	*2020*	*2019*
Cash		$ 20	$ 30	$ 50
Short-term investments		36	31	37
Accounts receivable		544	420	257
Quick current assets	(a)	$ 600	$ 481	$ 344
Current liabilities	(b)	$ 1,255	$ 917	$ 369
Acid-test ratio	(a/b)	0.48:1	0.52:1	0.93:1

This ratio indicates how many quick asset dollars exist to pay each dollar of current liabilities. What is an adequate acid-test ratio? It is generally considered that a 1:1 acid test ratio is adequate to ensure that a firm will be able to pay its current obligations. However, this is a fairly arbitrary guideline and is not appropriate in all situations. A lower ratio than 1:1 can often be found in successful companies. However, BDCC's acid-test ratio trend is worrisome.

There were $0.48 of quick assets available to pay each $1 of current liabilities in 2021. This amount appears inadequate. In 2020, the acid-test ratio of $0.52 also seems to be too low. The 2019 ratio of $0.93 is less than 1:1 but may be reasonable. Of particular concern to financial analysts would be BDCC's declining trend of the acid-test ratio over the three years.

Additional analysis can also be performed to determine the source of liquidity issues. These are discussed next.

Accounts Receivable Collection Period

Liquidity is affected by management decisions related to trade accounts receivable. Slow collection of receivables can result in a shortage of cash to pay current obligations. The effectiveness of management decisions relating to receivables can be analyzed by calculating the *accounts receivable collection period*.

The calculation of the **accounts receivable collection period** establishes the average number of days needed to collect an amount due to the company. It indicates the efficiency of collection procedures when the collection period is compared with the firm's sales terms (in BDCC's case, the sales terms are *net 30* meaning that amounts are due within 30 days of the invoice date).

The accounts receivable collection period is calculated as:

$$\frac{\text{Average net accounts receivable}^{2}}{\text{Net credit sales (or revenues)}} \times 365$$

The BDCC financial information required to make the calculation is shown below (the 2019 calculation cannot be made because 2018 Accounts Receivable amount is not available). Assume all of BDCC's sales are on credit.

		(000s)	
		2021	*2020*
Net credit sales	(a)	$3,200	$2,800
Average accounts receivable			
[(Opening balance + closing balance)/2]	(b)	$ 4823	$ 338.54
Average collection period			
[(b/a) × 365 days]		54.98 days	44.13 days

When Big Dog's 30-day sales terms are compared to the 54.98-day collection period, it can be seen that an average 24.98 days of sales (54.98 days – 30 days) have gone uncollected beyond the regular credit period in 2021. The collection period in 2021 is increasing compared to 2020. Therefore, some over-extension of credit and possibly ineffective collection procedures are indicated by this ratio. Quicker collection would improve BDCC's cash position. It may be that older or uncollectible amounts are buried in the total amount of receivables; this would have to be investigated.

Whether the increase in collection period is good or bad depends on several factors. For instance, more liberal credit terms may generate more sales (and therefore profits). The root causes of the change in the ratio need to be investigated. However, the calculation does provide an indication of the change in effectiveness of credit and collection procedures between 2020 and 2021.

Number of Days of Sales in Inventory

The effectiveness of management decisions relating to inventory can be analyzed by calculating the number of days of sales that can be serviced by existing inventory levels.

The **number of days of sales in inventory** is calculated by dividing average inventory by the cost of goods sold and multiplying the result by 365 days.

$$\frac{\text{Average merchandise inventory}}{\text{Cost of goods sold}} \times 365$$

The BDCC financial data for 2020 and 2021 required to calculate this ratio are shown below.

		(000s)	
		2021	*2020*
Cost of goods sold	(a)	$2,500	$2,150
Average inventory			
[(Opening balance + closing balance)/2]	(b)	$ 6685	$ 4326
Cost of goods sold		365	365
Number of days sales in inventory			
[(b/a) × 365 days]		97.53 days	73.34 days

The calculation indicates that BDCC is investing more in inventory in 2021 than in 2020 because there are 97.53 days of sales in inventory in 2021 versus 73.34 days in 2020. BDCC has approximately 3 months of sales with its existing inventory (98 days represents about 3 months). The increase from 2020 to 2021 may warrant investigation into its causes.

A declining number of days of sales in inventory is usually a sign of good inventory management because it indicates that the average amount of assets tied up in inventory is lessening. With lower inventory levels, inventory-related expenses such as rent and insurance are lower because less storage space is often required. However, lower inventory levels can have negative consequences since items that customers want to purchase may not be in inventory resulting in lost sales.

Increasing days of sales in inventory is usually a sign of poor inventory management because an excessive investment in inventory ties up cash that could be used for other purposes. Increasing levels may indicate that inventory is becoming obsolete (consider clothing) or deteriorating (consider perishable groceries). Obsolete and/or deteriorating inventories may be unsalable. However, the possible positive aspect of more days of sales in inventory is that there can be shorter delivery time to customers if more items are in stock.

Whether Big Dog's increasing days of sales in inventory is positive or negative depends on management's objectives. Is management increasing inventory to provide for increased sales in the next year, or is inventory being poorly managed? Remember that ratio analyses identify areas that require investigation. The resulting investigation will guide any required action.

The Revenue Portion of the Operating Cycle

As discussed in Chapter 4, the sale of inventory and resulting collection of receivables are part of a business's operating cycle as shown in Figure 12.1.

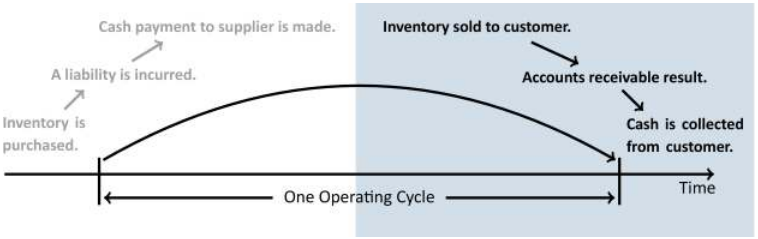


Figure 12.1 Sales and Collection Portion of the Operating Cycle

A business's **revenue operating cycle** is a subset of the operating cycle and includes the purchase of inventory, the sale of inventory and creation of an account receivable, and the generation of cash when the receivable is collected. The length of time it takes BDCC to complete one revenue operating cycle is an important measure of liquidity and can be calculated by adding the number of days of sales in inventory plus the number of days it takes to collect receivables. The BDCC financial data required for this calculation follows.

	2021	***2020***
Average number of days of sales in inventory	97.53 days	73.34 days
Average number of days to collect receivables	54.98 days	44.13 days
Number of days to complete the revenue cycle	152.51 days	117.47 days

In 2021, 152.51 days were required to complete the revenue cycle, compared to 117.47 days in 2020. So, if accounts payable terms require payment within 60 days, BDCC may not be able to pay them because the number of days to complete the revenue cycle for both 2020 (117.47 days) and 2021 (152.51 days) are significantly greater than 60 days.

Analysis of BDCC's Liquidity

Reflecting on the results of all the liquidity ratios, it appears that Big Dog Carworks Corp. is growing less liquid. Current assets, especially quick assets, are declining relative to current liabilities. The revenue operating cycle is increasing.

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12.3: Profitability Ratios- Analyzing Operating Activities

Profitability ratios compare various expenses to revenues, and measure how well the assets of a corporation have been used to generate revenue.

Gross Profit Ratio

The gross profit ratio, as introduced briefly in Chapter 6, indicates the percentage of sales revenue that is left to pay operating expenses, creditor interest, and income taxes after deducting cost of goods sold. The ratio is calculated as:

$$\frac{\text{Gross profit}}{\text{Net sales}} \; OR \; \frac{\text{Gross profit}}{\text{Net sales}} \times 100$$

BDCC's gross profit ratios for the three years are:

		(000s)		
		2021	*2020*	*2019*
Gross profit	(a)	$ 700	$ 650	$ 540
Net sales	(b)	$ 3,200	$ 2,800	$ 2,340
Gross profit ratio	(a/b)	0.2188:1 or 21.88%	0.2321:1 or 23.21%	0.2308:1 or or 23.08%

In other words, for each dollar of sales BDCC has $0.22 of gross profit left to cover operating, interest, and income tax expenses ($0.23 in each of 2020 and 2019). The ratio has not changed significantly from year to year. However, even a small decline in this percentage can affect net income significantly because the gross profit is such a large component of the income statement. Changes in the gross profit ratio should be investigated, as it will impact future financial performance.

Operating Profit Ratio

The operating profit ratio is one measure of relative change in these other expenses. This ratio indicates the percentage of sales revenue left to cover interest and income taxes expenses after deducting cost of goods sold and operating expenses. In other words:

$$\frac{\text{Income from operations}}{\text{Net sales}} \; OR \; \frac{\text{Income from operations}}{\text{Net sales}} \times 100$$

BDCC's operating profit ratio for the 2019, 2020, and 2021 fiscal years is calculated as follows:

		(000s)		
		2021	*2020*	*2019*
Income from operations	(a)	$ 300	$ 274	$ 204
Net sales	(b)	$ 3,200	$ 2,800	$ 2,340
Operating profit ratio	(a/b)	0.0938:1 or 9.38%	0.0979:1 or 9.79%	0.0872:1 or or 8.72%

For each dollar of sales revenue in 2021, the company had $0.09 left to cover interest and income tax expenses after deducting cost of goods sold and operating expenses. A review of the company's operating expenses (selling, general, and administrative expenses; employee benefits, and depreciation) show that they have all increased. As a result, and despite increasing sales revenue and gross profit, operating income has remained relatively flat. Although it seems reasonable that an increase in operating expenses would follow an increase in sales, the reasons for the operating expense increases should be investigated.

Net Profit Ratio

The net profit ratio is the percentage of sales revenue retained by the company after payment of operating expenses, interest expenses, and income taxes. It is an index of performance that can be used to compare the company to others in the same industry. This ratio is calculated by the following formula:

$$\frac{\text{Net income}}{\text{Net sales (or revenues)}} \; OR \; \frac{\text{Net income}}{\text{Net sales (or revenues)}} \times 100$$

BDCC's net profit ratios for the three years are calculated as follows:

		(000s)		
		2021	*2020*	*2019*
Net income	(a)	$ 116	$ 117	$ 112
Net sales	(b)	$ 3,200	$ 2,800	$ 2,340
Net profit ratio	(a/b)	0.0363:1 or 3.63%	0.418:1 or 4.18%	0.0479:1 or or 4.79%

For each $1 of sales in 2021, BDCC earned $0.04 of net income. The net profit ratio has been relatively stable but needs to be compared with industry or competitors' averages for a better perspective.

Recall that revenues are generated from a business's asset holdings. The financial strength and success of a corporation depends on the efficient use of these assets. An analysis of asset investment decisions can be made by calculating several ratios, and is discussed next.

Sales to Total Assets Ratio

Are BDCC's sales adequate in relation to its assets? The calculation of the sales to total assets ratio helps to answer this question by establishing the number of sales dollars earned for each dollar invested in assets. The ratio is calculated as:

$$\frac{\text{Net sales}}{\text{Average total assets}} \; OR \; \frac{\text{Net sales}}{\text{Average total assets}} \times 100$$

BDCC's ratios are calculated as follows:

		(000s)	
		2021	*2020*
Net sales	(a)	$ 3,200	$ 2,800
Average total assets	(b)	$ 2,2997	$ 1,764.508
Sales to total assets ratio	(a/b)	1.3919:1 or 139.19%	1.5869:1 or 158.69%

The ratio has decreased from 2020 to 2021. Each $1 of investment in assets in 2020 generated sales of $1.59. In 2021, each $1 of investment in assets generated only $1.39 in sales. Over the same period, BDCC's investment in assets increased. The ratios indicate that the additional assets are not producing revenue as effectively as in the past. It may be too soon to tell whether the increase in assets in 2020 will eventually create greater sales but an investigation is required.

As noted earlier, comparison with industry averages would be useful. A low ratio in relation to other companies in the same industry may indicate an over-investment in or inefficient use of assets by BDCC. On the other hand, a higher ratio in comparison to other companies would be a positive indicator.

Return on Total Assets Ratio (ROA)

The return on total assets ratio or ROA is designed to measure the efficiency with which all of a company's assets are used to produce income from operations. The ratio is calculated as:

$$\frac{\text{Income from operations}}{\text{Average total assets}} \; OR \; \frac{\text{Income from operations}}{\text{Average total assets}} \times 100$$

Note that expenses needed to finance the company operations are excluded from the calculation, specifically interest and income taxes. This is because all the assets of the company are considered in the ratio's denominator, whether financed by investors or creditors. Average Total Assets are used in the calculation because the amount of assets used likely varies during the year. The use of averages tends to smooth out such fluctuations.

BDCC's returns on total assets for 2020 and 2021 are calculated as follows:

		(000s)	
		2021	*2020*
Income from operations	(a)	$ 300	$ 274
Average total assets	(b)	$ 2,2999	$ 1,764.5010
Return on total assets ratio	(a/b)	0.1305:1 or 13.05%	0.1553:1 or 15.53%

The ratios indicate that Big Dog earned $0.13 of income from operations for every $1 of average total assets in 2021, a decrease from $0.16 per $1 in 2020. This downward trend indicates that assets are being used less efficiently. However, it may be that the increased investment in assets has not yet begun to pay off. On the other hand, although sales are increasing, it is possible that future sales volume will not be sufficient to justify the increase in assets. More information about the company's plans and projections would be useful. Recall that ratio analysis promotes the asking of directed questions for the purpose of more informed decision making.

Return on Equity Ratio (ROE)

The return on equity ratio measures the return to shareholders — how much net income was earned for the owners of a business. It is calculated as:

$$\frac{\text{Net income}}{\text{Average equity}} \; OR \; \frac{\text{Net income}}{\text{Average equity}} \times 100$$

The 2020 and 2021 returns on equity ratios for BDCC are calculated as follows (note that the 2019 ratio is excluded because average equity cannot be calculated since 2018 ending balances are not provided):

		(000s)	
		2021	*2020*
Net income	(a)	$ 116	$ 117
Average equity	(b)	$ 1,21311	$ 1,121.5012
Return on equity ratio	(a/b)	0.0956:1 or 9.56%	0.1043:1 or 10.43%

In both years, shareholders earned, on average, $0.10 for every $1 invested in BDCC, or 10%. Industry averages could help with this analysis. For instance, if the industry as a whole earned only a 5% return on equity in 2021, it could be concluded that BDCC performed better than the industry average in terms of return on equity.

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12.4: Leverage Ratios - Analyzing Financial Structure

The accounting equation expresses a relationship between assets owned by an entity and the claims against those assets. Although shareholders own a corporation, they alone do not finance the corporation; creditors also finance some of its activities. Together, creditor and shareholder capital are said to form the financial structureFinancial structure of a corporation. At December 31, 2021, the balance sheet of BDCC shows the following financial structure:

ASSETS	=	LIABILITIES	+	EQUITY
$2,486	=	$1,255	+	$1,231

Debt Ratio

The proportion of total assets financed by debt is called the debt ratio, and is calculated by dividing total liabilities by total assets.

$$\frac{\text{Total liabilities}}{\text{Total assets}} \; OR \; \frac{\text{Total liabilities}}{\text{Total assets}} \times 100$$

In BDCC's case, these amounts are:

		(000s)	
		2021	*2020*
Total liabilities	(a)	$ 1,255	$ 917
Total assets	(b)	$ 2,486	$ 2,112
Debt ratio	(a/b)	0.5048:1 or 50.48%	0.4342:1 or 43.42%

In other words, 50.48% of BDCC's assets are financed by debt. Therefore, because assets are financed by debt (aka liabilities) and equity, we intuitively know that 49.52% of BDCC's assets must be financed by equity which is the topic of the next section.

Equity Ratio

The proportion of total assets financed by equity is called the equity ratio, and is calculated by dividing total equity by total assets. In BDCC's case, these amounts are:

		(000s)	
		2021	*2020*
Total equity	(a)	$ 1,231	$ 1,195
Total assets	(b)	$ 2,486	$ 2,112
Equity ratio	(a/b)	0.4952:1 or 49.52%	0.5658:1 or 56.58%

In 2021, 49.52% of the assets were financed by equity while in 2020 56.58% of the assets were financed by equity. Generally, this is considered an unfavourable trend because as equity financing decreases, we know that debt financing must be increasing as evidenced by the debt ratio above. The greater the debt financing, the greater the risk because principal and interest payments are part of debt financing.

Notice that the sum of the debt and equity ratios will always equal 100% because of the accounting equation relationship: A = L + E where A = 100% and, in the case of BDCC, L = 43.42% in 2020 and E = 56.58% in 2020.

Debt to Equity Ratio

The proportion of creditor to shareholders' claims is called the debt to equity ratio, and is calculated by dividing total liabilities by equity. In BDCC's case, these amounts are:

		(000s)		
		2021	*2020*	*2019*
Total liabilities	(a)	$ 1,255	$ 917	$ 369
Equity	(b)	$ 1,231	$ 1,195	$ 1,048
Debt to equity ratio	(a/b)	1.02:1	0.77:1	0.35:1

In other words, BDCC has $1.02 of liabilities for each dollar of equity at the end of its current fiscal year, 2021. The proportion of debt financing has been increasing since 2019. In 2019 there was only $0.35 of debt for each $1 of equity. In 2021, creditors are financing a greater proportion of BDCC than are shareholders. This may be a cause for concern.

On the one hand, management's reliance on creditor financing is good. Issuing additional shares might require existing shareholders to give up some of their control of BDCC. Creditor financing may also be more financially attractive to existing shareholders if it enables BDCC to earn more with the borrowed funds than the interest paid on the debt.

On the other hand, management's increasing reliance on creditor financing increases risk because interest and principal have to be paid on this debt. Before deciding to extend credit, creditors often look at the total debt load of a company, and therefore the company's ability to meet interest and principal payments in the future. Total earnings of BDCC could be reduced if high interest payments have to be made, especially if interest rates rise. Creditors are interested in a secure investment and may evaluate shareholder commitment by measuring relative amounts of capital invested. From the creditors' perspective, the more capital invested by owners of the company, the greater the relative risk assumed by shareholders thus decreasing risk to creditors.

Although there is no single most appropriate debt to equity ratio, there are techniques for estimating the optimum balance. These are beyond the scope of introductory financial accounting. For now, it is sufficient to note that for BDCC the debt to equity ratio has increased considerably over the three-year period which is generally unfavourable because of the risk associated with debt financing.

Times Interest Earned Ratio

Creditors are interested in evaluating a company's financial performance, in order to project whether the firm will be able to pay interest on borrowed funds and repay the debt when it comes due. Creditors are therefore interested in measures such as the times interest earned ratio. This ratio indicates the amount by which income from operations could decline before a default on interest may result. The ratio is calculated by the following formula:

$$\frac{\text{Income from operations}}{\text{Interest expense}}$$

Note that income from operations is used, so that income before deduction of creditor payments in the form of income taxes and interest is incorporated into the calculation. BDCC's 2020 and 2021 ratios are calculated as follows:

		(000s)		
		2021	*2020*	*2019*
Income from operations	(a)	$ 300	$ 274	$ 204
Interest expense	(b)	$ 89	$ 61	-0-
Times interest earned ratio	(a/b)	3.37:1	4.49:1	n/a

The larger the ratio, the better creditors are protected. BDCC's interest coverage has decreased from 2020 to 2021 (3.37 times vs. 4.49 times), but income would still need to decrease significantly for the company to be unable to pay its obligations to creditors. The analysis does indicate, though, that over the past two years interest charges have increased compared to income from operations. Creditors need to assess company plans and projections, particularly those affecting income from operations, to determine whether their loans to the company are at risk. As discussed above, it may be that significant investments in assets have not yet generated related increases in sales and income from operations.

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12.5: Market Ratios- Analysis of Financial Returns to Investors

Investors frequently consider whether to invest or divest in shares of a corporation. There are various ratios that help them make this decision. These are called market ratios, because the stock market plays an important role in allocating financial resources to corporations that offer their shares to the public.

Earnings-per-Share (EPS)

Measures of efficiency can focus on shareholder returns on a per-share basis. That is, the amount of net income earned in a year can be divided by the number of common shares outstanding to establish how much return has been earned for each outstanding share. This earnings-per-share (EPS) value is calculated as:

$$\frac{\text{Net income}}{\text{Number of common shares outstanding}}$$

EPS is quoted in financial markets and is disclosed on the income statement of publicly-traded companies. If there are preferred shareholders, they have first rights to distribution of dividends. Therefore, when calculating EPS, preferred shareholders' claims on net income are deducted from net income to calculate the amount available for common shareholders:

$$\frac{\text{Net income} - \text{preferred share dividends}}{\text{Number of common shares outstanding}}$$

BDCC has no preferred shares and thus no preferred share dividends. Recall that 100,000 common shares are outstanding at the end of 2019, 2020, and 2021. For BDCC, EPS calculations for the three years are:

		(000s)					
		2021		*2020*		*2019*	
Net income	(a)	$	116	$	117	$	112
Number of common shares outstanding	(b)		100		100		100
Earnings per share	(a/b)	$	1.16	$	1.17	$	1.12

Big Dog's EPS has remained relatively constant over the three-year period because both net income and number of outstanding shares have remained fairly stable. Increasing sales levels and the resulting positive effects on net income, combined with unchanged common shares issued, has generally accounted for the slight increase from 2019 to 2020.

Price-earnings (P/E) Ratio

A price at which a common share trades on a stock market is perhaps the most important measure of a company's financial performance. The market price of one share reflects the opinions of investors about a company's future value compared to alternative investments.

The earnings performance of common shares is often expressed as a price-earnings (P/E) ratio. Price-earnings (P/E) ratio It is calculated as:

$$\frac{\text{Market price per share}}{\text{Earnings per share}}$$

This ratio is used as an indicator of the market's expectation of a company's future performance. Assume Company A has a current market value of $15 per share and an EPS of $1 per share. It will have a P/E ratio of 15. If Company B has a market value of $4 per share and an EPS of $0.50 per share, it will have a P/E ratio of 8. This means that the stock market expects Company A to earn relatively more in the future than Company B. For every $1 of net income generated by Company A, investors are willing to invest $15. In comparison, for every $1 of net income generated by Company B, investors are willing to pay only $8. Investors perceive shares of Company A as more valuable because the company is expected to earn greater returns in the future than is Company B.

Assume that BDCC's average market price per common share was $4 in 2019, $5 in 2020, and $6 in 2021. Its P/E ratio would be calculated as:

		(000s)		
		2021	*2020*	*2019*
Market price per common share	(a)	$ 6.00	$ 5.00	$ 4.00
Earnings per share (see above)	(b)	$ 1.16	$ 1.17	$ 1.12
Price-earnings ratio	(a/b)	5.17	4.27	3.57

BDCC's P/E ratio has increased each year. Although industry and competitor's P/E ratio comparisons would be important to compare, BDCC's increasingly positive ratio also indicates that investors are "bullish" on BDCC. That is, the stock market indicates that it expects BDCC to be increasingly profitable in the coming years. Despite a relatively constant EPS ratio from 2019 to 2021, investors are willing to pay more and more for the company's common shares. This must be because future financial prospects are anticipated to be better than in the past three years.

Dividend Yield

Some investors' primary objective is to maximize dividend revenue from share investments, rather than realize an increasing market price of the shares. This type of investor is interested in information about the earnings available for distribution to shareholders and the actual amount of cash paid out as dividends rather than the market price of the shares.

The dividend yield ratio is a means to determine this. It is calculated as:

$$\frac{\text{Dividends per share}}{\text{Market price per share}}$$

This ratio indicates how large a return in the form of dividends can be expected from an investment in a company's shares. The relevant information for BDCC over the last three years is shown in the financial statements, as follows:

		(000s – except per share values)		
		2021	*2020*	*2019*
Dividends declared	(a)	$ 80	$ 70	$ 60
Outstanding common shares	(b)	100	100	100
Dividends per share	(a/b)	$ 0.80	$ 0.70	$ 0.60

The dividend yield ratio is therefore:

		2021	*2020*	*2019*
Dividends per share	(a)	$ 0.80	$ 0.70	$ 0.60
Market price per share (given)	(b)	$ 6.00	$ 5.00	$ 4.00
Dividend yield ratio	(a/b)	0.13:1	0.14:1	0.15:1

The company's dividend yield ratio decreased from 2019 to 2021. In 2019, investors received $0.15 for every $1 invested in shares. By 2021, this had decreased to $0.13 for every $1 invested. Though the decline is slight, the trend may concern investors who seek

steady cash returns. Also notice that total dividends declared increased from 2019 to 2021 even though net income did not substantially increase, and despite the company's poor liquidity position noted in an earlier analysis. Investors might ask why such high levels of dividends are being paid given this situation.

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12.6: Overall Analysis of Big Dog's Financial Statements

Results of ratio analysis are always more useful if accompanied by other information such as overall industry performance, the general economy, financial ratios of prior years, and qualitative factors such as analysts' opinions and management's plans.

However, there are some interpretations that can be made about BDCC from the foregoing ratio analyses even without other information. Although BDCC is experiencing growth in sales, net income has not substantially increased over the three-year period 2019 to 2021. The gross profit ratio is relatively constant. Their increasing operating expenses appear to be an issue. The sales to total assets and return on assets ratios have decreased due to a recent investment in property, plant and equipment assets and growth in current assets. Income from operations has not increased with the growth in the asset base. However, it may be premature to make conclusions regarding the timing of outlays for property, plant, and equipment.

The most immediate problem facing BDCC is the shortage of working capital and its poor liquidity. BDCC expanded its property, plant, and equipment in 2020 and experienced increases in revenue that did not correspond to increases in accounts receivable and inventories. The company should therefore review its credit policies and monitor its investment in inventory to ensure that these expand in proportion to sales.

The plant expansion produced an increase in current liabilities (mainly borrowings). The company's ability to meet its debt obligations appears to be deteriorating. The ability of income from operations to cover interest expense has declined. The company's liquidity position is deteriorating, even though it continues to produce net income each year. BDCC should investigate alternatives to short-term borrowings, such as converting some of this to long-term debt and/or issuing additional share capital to retire some of its short-term debt obligations.

Despite these challenges, the stock market indicates that it expects BDCC to be increasingly profitable in the future. Perhaps it views the negative indicators noted above as only temporary or easily rectified by management.

The next section provides further insights into BDCC's operations through trend analysis of the company's financial statements.

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12.7: Horizontal and Vertical Trend Analysis

Learning Objectives

- **LO2 – Describe horizontal and vertical trend analysis, and explain how they are used to analyze financial statements.**

Trend analysis is the evaluation of financial performance based on a restatement of financial statement dollar amounts to percentages. Horizontal analysis and vertical analysis are two types of trend analyses.

Horizontal analysis involves the calculation of percentage changes from one or more years over the base year dollar amount. The base year is typically the oldest year and is always 100%. The following two examples of horizontal analysis use an abbreviated income statement and balance sheet information where 2019 represents the base year. ***For demonstration purposes, the percentages have been rounded to the nearest whole number.***

	2021		2020		2019	
Sales[1]	$100	200%	$70	140%	$50	100%
Gross profit	$ 48	160%	$45	150%	$30	100%
Net income	$ 14	140%	$12	120%	$10	100%

1. Sales in 2020 were 140% of 2019 sales calculated as ($70/$50)x100. Sales in 2021 were 200% of 2019 sales calculated as ($100/$50)x100.

	2021		2020		2019	
Current assets[2]	$ 18	90%	$ 22	110%	$ 20	100%
Long-term investments	$ -0-	N/A	$ 48	60%	$ 80	100%
Total assets	$252	105%	$228	95%	$240	100%

2. Current assets in 2020 were 110% of 2019 current assets calculated as ($22/$20)x100. Current assets in 2021 were 90% of 2019 current assets calculated as ($18/$20)x100.

An alternate method of performing horizontal analysis calculations is to simply calculate the percentage change between two years as shown in the following example.

	2021	% Change	2020
Sales[3]	$100	43%	$70
Gross profit	$ 48	7%	$45
Net income	$ 14	17%	$12

3. Sales in 2021 increased 43% over 2020 calculated as ($100–$70)=$30; ($30/$70)x100=43%.

Vertical analysis requires numbers in a financial statement to be restated as percentages of a base dollar amount. For income statement analysis, the base amount used is sales. For balance sheet analysis, total assets, or total liabilities and equity, are used as the base amounts. When financial statements are converted to percentages, they are called common-size financial statements. The following two examples of vertical analysis use information from an abbreviated income statement and balance sheet.

	2021		2020		2019[1]	
Sales	$100	100%	$70	100%	$50	100%
Gross profit	$ 48	48%	$45	64%	$30	60%
Net income	$ 14	14%	$12	17%	$10	20%

1. 2019 Gross profit was 60% of Sales calculated as ($30/$50)x100; 2019 Net income was 20% of Sales calculated as ($10/$50)x100.

	2021		2020		2019[2]	
Current assets	$ 18	7%	$ 22	10%	$ 20	8%
Long-term investments	$ -0-	N/A	$ 48	21%	$ 80	33%
Total assets	$252	100%	$228	100%	$240	100%

2. 2019 Current assets were 8% of Total assets calculated as ($20/$240)x100. 2019 Long-term investments were 33% of Total assets calculated as ($80/$240)x100.

Notice that the same information was used for both the horizontal and vertical analyses examples but that the results are different because of how the dollar amounts are being compared.

Horizontal and vertical analyses of the balance sheets of Big Dog Carworks Corp. are as follows:

Horizontal Analysis: Balance Sheet

	2021		2020		Change: Difference		Change: Per Cent	
Current assets	$1,433	(a)	$ 984	(b)	+$449	(a-b)	+45.6	[(a-b)/b]
PPE assets	1,053		1,128		-75		-6.6	
Total	$2,486		$2,112	(c)	+$374		+17.7	
Current liabilities	$1,255		$917		+$338		+36.9	
Equity	1,231		1,195		+36		+3.0	
Total	$2,486		$2,112		+$374		+17.7	

Notice the two columns introduced here. Analysis of the changes indicates a large increase in current assets (45.6%) together with a large increase in current liabilities (36.9%). There was a small decline in PPE assets (6.6%) and a small increase in equity (3%). The percentage change must always be interpreted together with the absolute dollar amount of change to avoid incorrect conclusions; percentage can sometimes be misleading.

Vertical Analysis (Common-size): Balance

	2021 %	2020 %	
Current assets	57.6	46.6	(b/c)
PPE assets	42.4	53.4	
Total	100.0	100.0	
Current liabilities	50.5	43.4	
Equity	49.5	56.6	
Total	100.0	100.0	

In the common-size balance sheet, the composition of the assets has changed with an overall shift to current assets in 2019 (57.6% vs. 46.6%). Also, an increase in the percentage of current liabilities has occurred, resulting in an overall shift from equity financing to debt financing from 2020 to 2021.

The same analysis of BDCC's income statement is as follows:

Horizontal Analysis: Income Statements

	2021		2020		Change: Amount		Change: Per Cent	
Sales	$3,200	(a)	$2,800	(b)	+$400	(a-b)	+14	[(a-b)/b]
Cost of Goods Sold	2,500		2,150		+$350		+16	
Gross Profit	700		650	(c)	+$ 50		+8	
Expenses	584		533		+$ 51		+10	
Net Income	$ 116		$ 117		-$ 1		-1	

Although sales and gross profit increased in dollar amounts, net income decreased slightly from 2020 to 2021 (1%). This net decrease resulted because cost of goods sold increased at a faster rate than sales (16% vs. 14%).

Vertical Analysis (Common-size): Income Statements

	2021 %	2020 %	
Sales	100	100	(b/c)
Cost of Goods Sold	78	77	
Gross Profit	22	23	
Expenses	18	19	
Net Income	4	4	

Notice the relative change in the components. For example, cost of goods sold increased in 2021 relative to sales (78% vs. 77%), while expenses in 2021 relative to sales decreased (18% vs. 19%). The overall changes were almost offsetting, as net income remained fairly stable.

The percentages calculated become more informative when compared to earlier years. Further analysis is usually undertaken in order to establish answers to the following questions:

What caused this change?	How do the percentages of this
Is this change favourable or	company compare with other
unfavourable?	companies in the same industry?
	In other industries?

These and similar questions call attention to areas that require further study. One item of note becomes more apparent as a result of the trend analysis above. Initially, it was stated that operating expenses were increasing between 2019 and 2021. Based on trend analysis, however, these expenses are actually declining as a percentage of sales. As a result, their fluctuations may not be as significant as first inferred. Conversely, the increases each year in cost of goods sold may be worrisome. Initial gross profit ratio calculations seemed to indicate little variation, and thus little effect on income from operations. The increase in cost of goods sold (78% vs. 77% of sales) may warrant further investigation.

The ratios covered in this chapter are summarized in Figure 12.2.

Analysis of liquidity:	Calculation of ratio:	Indicates:
1. Working Capital	Current assets – Current liabilities	The excess of current assets available after covering current liabilities (expressed as a dollar amount).
2. Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	The amount of current assets available to pay current liabilities.
3. Acid-test ratio		Whether the company is able to meet the immediate demands of creditors. (This is a more severe measure of liquidity.)
4. Accounts receivable collection period		The average time needed to collect receivables.
5. Number of days of sales in inventory		How many days of sales can be made with existing inventory
6. Revenue operating cycle	Average number of days to collect receivables + Average number of days of sales inventory	Length of time between the purchase of inventory and the subsequent collection of cash.

Analysis of profitability:	Calculation of ratio:	Indicates:
1. Gross profit ratio	$\frac{\text{Gross profit}}{\text{Net sales}}$	The percentage of sales revenue that is left to pay operating expenses, interest, and income taxes after deducting cost of goods sold.
2. Operating profit ratio	$\frac{\text{Income from operations}}{\text{Net sales}}$	The percentage of sales revenue that is left to pay interest and income taxes expenses after deducting cost of goods sold and operating expenses.
3. Net profit ratio	$\frac{\text{Net income}}{\text{Net sales (or revenues)}} \times 100$	The percentage of sales left after payment of all expenses.
4. Sales to total assets ratio		The adequacy of sales in relation to the investment in assets.
5. Return on total assets	$\frac{\text{Income from operations}}{\text{Average total assets}}$	How efficiently a company uses its assets as resources to earn net income.
6. Return on equity	$\frac{\text{Net income}}{\text{Average equity}}$	The adequacy of net income as a return on equity.

Leverage ratios:	Calculation of ratio:	Indicates:
1. Debt ratio	$\frac{\text{Total liabilities}}{\text{Total assets}}$	The proportion of total assets financed by debt.
2. Equity ratio	$\frac{\text{Total equity}}{\text{Total assets}}$	The proportion of total assets financed by equity.
3. Debt to equity ratio	$\frac{\text{Total liabilities}}{\text{Equity}}$	The proportion of creditor financing to shareholder financing.
4. Times interest earned ratio	$\frac{\text{Income from operations}}{\text{Interest expense}}$	The ability of a company to pay interest to long-term creditors.

Figure 12.2 Summary of Financial Statement Analysis Ratios

Market ratios:	Calculation of ratio:	Indicates:
1. Earnings per share	$\frac{\text{Net income} - \text{Preferred share dividends}}{\text{Average number of common shares outstanding}}$	The amount of net income that has been earned on each common share after deducting dividends to preferred shareholders.
2. Price-earnings ratio	$\frac{\text{Market price per share}}{\text{Earnings per share}}$	Market expectations of future profitability.
3. Dividend yield ratio	$\frac{\text{Dividends per share}}{\text{Market price per share}}$	The short-term cash return that can be expected from an investment in a company's shares.

Schematically, the various analytical tools can be illustrated as shown in Figure 12.3.



Figure 12.3 Categorization of Financial Statement Analytical Tools

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12.8: Summary of Chapter 12 Learning Objectives

LO1 – Describe ratio analysis, and explain how the liquidity, profitability, leverage, and market ratios are used to analyze and compare financial statements.

Ratio analysis measures the relative magnitude of two selected numerical values taken from a company's financial statements and compares the result to prior years and other similar companies. Financial ratios are an effective tool for measuring: (a) liquidity (current ratio, acid-test ratio, accounts receivable collection period, and number of days of sales in inventory); (b) profitability (gross profit ratio, operating profit ratio, net profit ratio, sales to total assets ratio, return on total assets, and return on equity); (c) leverage (debt ratio, equity ratio, debt to equity ratio, and times interest earned ratio); and (d) market ratios (earnings per share, price-earnings ratio, and dividend yield ratio). Ratios help identify the areas that require further investigation.

LO2 – Describe horizontal and vertical trend analysis, and explain how they are used to analyze financial statements.

Horizontal analysis involves the calculation of percentage changes from one or more years over the base year dollar amount. The base year is typically the oldest year and is always 100%. Vertical analysis requires that numbers in a financial statement be restated as percentages of a base dollar amount. For income statement analysis, the base amount used is sales. For balance sheet analysis, total assets, or total liabilities and equity, are used as the base amounts. When financial statements are converted to percentages, they are called common-size financial statements.

Discussion Questions

1. Ratios need to be evaluated against some base. What types of information can be used to compare ratios against?
2. Explain what *liquidity* means. When a corporation is illiquid, what are the implications for shareholders? ...for creditors?
3. How is it possible that a corporation producing net income each year can be illiquid?
4. What ratios can be calculated to evaluate liquidity? Explain what each one indicates.
5. a. Define working capital. Distinguish between the current ratio and the acid-test ratio.
   b. "The current ratio is, by itself, inadequate to measure liquidity." Discuss this statement.
6. Two firms have the same amount of working capital. Explain how it is possible that one is able to pay off short-term creditors, while the other firm cannot.
7. Management decisions relating to accounts receivable and inventory can affect liquidity. Explain.
8. What is one means to evaluate the management of accounts receivable? ...inventory?
9. Discuss the advantages and disadvantages of decreasing number of days of sales in inventory.
10. What is the revenue operating cycle? How is its calculation useful in evaluating liquidity?
11. a. Identify and explain six ratios (and any associated calculations) that evaluate a corporation's profitability.
    b. What does each ratio indicate?
12. Why are analysts and investors concerned with the financial structure of a corporation?
13. Is the reliance on creditor financing good or bad? Explain its impact on net income.
14. Discuss the advantages and disadvantages of short-term debt financing compared to long-term debt financing.
15. Identify and explain ratios that evaluate financial returns for investors.
16. Distinguish between horizontal and vertical analyses of financial statements.

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12.9: Exercises

Exercises

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EXERCISE 12–1 (LO1)

The following are condensed comparative financial statements of Stockwell Inc. for the three years ended December 31, 2015.

Balance Sheet			
At December 31			
Assets			
	2024	*2023*	*2022*
Current			
Cash	$ 21	$ 8	$ 17
Accounts Receivable	38	30	20
Merchandise Inventory	60	40	30
Prepaid Expenses	1	2	3
Total Current Assets	120	80	70
Property, plant and equipment assets, at carrying amount	260	150	76
Total Assets	$380	$230	$146
Liabilities			
Current			
Accounts Payable	$100	$ 80	$ 50
Non-current			
Bonds Payable, 4%	50	50	-0-
	150	130	50
Equity			
Common Shares	200	80	80
Retained Earnings	30	20	16
	230	100	96
Total Liabilities and Equity	$380	$230	$146

Income Statement			
For the Years Ended December 31			
	2024	*2023*	*2022*
Sales	$210	$120	$100
Cost of Goods Sold	158	80	55
Gross Profit	52	40	45
Operating Expenses	35	32	33
Income from Operations	17	8	12

Interest Expense	2	2	-0-
Income before Income Taxes	15	6	12
Income Taxes	5	2	4
Net Income	$ 10	$ 4	$ 8

Additional information:

i. The company's accounts receivable at December 31, 2012 totalled $20.
ii. The company's merchandise inventory at December 31, 2012 totalled $20.
iii. The company's property, plant and equipment assets at December 31, 2012 totalled $70.
iv. Credit terms are net 60 days from date of invoice.
v. Number of common shares outstanding: 2013–80, 2014–80, 2015–400.

Required:

a. Calculate liquidity ratios and discuss.
b. What is your evaluation of
   i. The financial structure of the corporation?
   ii. The proportion of shareholder and creditor claims to its assets?
   iii. The structure of its short-term and long-term credit financing?
c. What are some other observations you can make about the financial performance of Stockwell?

EXERCISE 12–2 (LO1)

The following information relates to three companies in the same industry:

Company	*Latest market price*	*Earnings per share*	*Dividends per share*
A	$ 35	$ 11	$ -0-
B	40	5	4
C	90	10	6

Required: Explain and calculate the price-earnings and dividend yield ratios. On the basis of only the foregoing information, which company represents the most attractive investment opportunity to you? Explain.

EXERCISE 12–3 (LO1)

Consider the following information:

Salinas Limited			
Balance Sheet			
At December 31, 2012			
Assets		*Liabilities and Equity*	
Cash	$ 72	Accounts Payable	$ 60
Accounts Receivable	88	Bank Loan, non-current	150
Merchandise Inventory	100	Preferred Shares	60
Prepaid Expenses	40	Common Shares	250
Property, Plant, and Equipment, at carrying amount	320	Retained Earnings	100
Total Assets	$620	Total Liabilities and Equity	$620

Salinas Limited		
Income Statement		
For the Year Ended December 31, 2012		
Sales		$240
Cost of Goods Sold		144
Gross Profit		96
Operating Expenses		
Salaries	$ 44	
Depreciation	6	50
Income from Operations		46
Less: Interest		8
Income before Income Taxes		38
Less: Income Taxes		18
Net Income		$ 20

Assume that 80% of sales are on credit, that the average of all balance sheet items is equal to the year-end figure, that all preferred share dividends have been paid and the total annual preferred dividend entitlement is $6, and that the number of common shares outstanding is 10.

Required: Calculate the following ratios and percentages

a. Current ratio
b. Return on total assets
c. Sales to total assets
d. Acid-test ratio
e. Times interest earned

f. Earnings per common share
g. Accounts receivable collection period
h. Return on equity

EXERCISE 12–4 (LO2)

The following data are taken from the records of Cronkite Corp.:

	2024	*2023*
Sales	$2,520	$1,440
Cost of Goods Sold	1,890	960
Gross Profit	630	480
Other Expenses	510	430
Net Income	$ 120	$ 50

Required: Perform horizontal analysis on the above date and interpret your results.

EXERCISE 12–5 (LO2)

Assume you are an accountant analysing Escalade Corporation. Escalade has expanded its production facilities by 200% since 2010. Its income statements for the last three years are as follows:

Escalade Corporation			
Comparative Income Statements			
For the Years Ending December 31			
	2024	*2023*	*2022*
Sales	$250	$150	$120
Cost of Goods Sold	190	100	60
Gross Profit	60	50	60
Other Expenses	35	34	35
Net Income	$ 25	$ 16	$ 25

Required:

a. Prepare a vertical analysis of Escalade Corporation's income statement for the three years.
b. What inferences can be drawn from this analysis?

EXERCISE 12–6 (LO1)

The following information is taken from the partial balance sheet of Quail Productions Corp.

	2023		2022	
Current assets				
Cash	$	10	$	15
Marketable investments		35		35
Accounts receivable		200		150
Inventory		600		400
Current liabilities				
Accounts payable		500		400
Borrowings		245		180

Required:

a. Describe the purpose of and calculate the current ratio for each year.
b. Describe the purpose of and calculate the acid-test ratio for both years.
c. What observations can you make from a comparison of the two types of ratios?

EXERCISE 12–7 (LO1)

The following information is taken from the records of Black Spruce Co. Ltd.:

	2024		*2023*		*2022*	
Sales	$	252	$	141	$	120
Gross profit		63		48		54
Net income		12		5		15

Required: Analyse the gross profit and net profit ratios using the above data. Comment on any trends that you observe.

EXERCISE 12–8 (LO1)

In the left-hand column, a series of independent transactions is listed. In the right-hand column, a series of ratios is listed.

Transaction	*Ratio*	*Effect on ratio*
Declared a cash dividend	Current ratio	
Wrote-off an uncollectible account receivable	Accounts receivable collection period	
Purchased inventory on account	Acid-test ratio	
Issued 10-year bonds to acquire property, plant, and equipment	Return on total assets	
Issued additional shares for cash	Debt to shareholders' equity ratio	
Declared a share dividend on common shares	Earnings per share	
Purchased supplies on account	Current ratio	
Paid a current creditor in full	Acid-test ratio	
Paid an account payable	Number of days of sales in inventory	

Required: For each transaction indicate whether the ratio will increase (I), decrease (D), or remain unchanged (No Change). Assume all ratios are greater than 1:1 before each transaction where applicable.

EXERCISE 12–9 (LO1)

Consider the following financial statement data:

Balance Sheet	
Cash	$20
Accounts receivable	20
Merchandise inventory	40
Plant, at carrying amount	140
	$220
Accounts payable	$20
Non-current borrowings	60
Common shares (8 shares issued)	80
Retained earnings	60
	$220

Income Statement	
Sales	$100
Cost of goods sold	50
Gross profit	50
Operating expenses	14
Income from operations	36
Less: Interest	6
Income before income taxes	30
Less: Income taxes	10
Net income	$20

Assume that the average of all balance sheet items is equal to the year-end figure and that all sales are on credit.

Required:

a. Calculate the following ratios:
   i. Return on total assets (assume interest has been paid)
   ii. Return on shareholders' equity
   iii. Times interest earned ratio
   iv. Earnings per share
   v. Number of days of sales in inventory
   vi. Accounts receivable collection period
   vii. Sales to total assets ratio
   viii. Current ratio
   ix. Acid-test ratio
   x. Debt to shareholders' equity ratio.

b. Which of these ratios are measures of liquidity?

EXERCISE 12–10 (LO1)

Assume a company has the following financial information:

Cash and short-term investments	$6
Prepaid expenses	-0-
Capital assets	90
Total liabilities	40
Shareholders' equity	140
Sales	420
Credit sales	300
Current ratio	2.5:1
Acid-test ratio	1:1
Gross profit ratio	30%

Assume current assets consist of cash, short-term investments, accounts receivable, inventory, and prepaid expenses, and that ending balances are the same as average balances for the year.

Required: Calculate

a. Current liabilities
b. Inventory
c. Accounts receivable collection period
d. Number of days of sales in inventory
e. Revenue operating cycle

EXERCISE 12–11 (LO1)

A company began the month of May with $200,000 of current assets, a 2.5 to 1 current ratio, and a 1.25 to 1 acid-test ratio. During the month, it completed the following transactions:

Transaction	*Effect on current ratio*
i. Bought $20,000 of merchandize on account (the company uses a perpetual inventory system)	
ii. Sold for $10,000 cash, merchandize that cost $5,000	
iii. Collected a $2,500 account receivable	
iv. Paid a $10,000 account payable	
v. Wrote off a $1,500 bad debt against the allowance for doubtful accounts	
vi. Declared a $1 per-share cash dividend on the 10,000 outstanding common shares	
vii. Paid the dividend declared above	
viii. Borrowed $10,000 from a bank by assuming a 60-day, 10-per cent loan	
ix. Borrowed $25,000 from a bank by placing a 10-year mortgage on the plant	
x. Used the $25,000 proceeds of the mortgage to buy additional machinery	

Required:

a. Indicate the effect on current ratio assuming each transaction is independent of the others: Increase, Decrease, or No Change.
b. At the end of May, and taking all the above transactions into account, what was the current ratio and acid-test ratio?

Use the following format. The opening current ratio calculation and effects of the first transaction are provided:

Current ratio:

In thousands of dollars		*Bal May 1*	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*vii*	*ix*	*x*	*Bal May 31*
Current assets	x	200	+20										
Current liabilities	y	80	+20										
Current ratio	x/y	2.5											

Acid-test ratio:

In thousands of dollars		*Bal May 1*	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	*x*	*Bal May 31*
Quick assets	x												
Current liabilities	y												
Acid-test ratio	x/y												

Problems

PROBLEM 12–1 (LO1)

Belafonte Corporation's books were destroyed in a fire on April 20, 2011. The comptroller of the corporation can only remember a few odd pieces of information:

a. The current ratio was 3.75 to 1.
b. Sales for the year were $73,000.
c. Inventories were $20,000 and were equal to property, plant and equipment at carrying amount, and also equal to bonds payable.
d. The accounts receivable collection period was 40 days.
e. The bonds payable amount was 10 times cash.
f. Total current assets were twice as much as common shares.

Required: Using this information, prepare Belafonte Corporation's balance sheet at April 30, 2011. Assume balances at April 30, 2011 are the same as average balances for the year then ended, and besides retained earnings, there are no accounts other than those mentioned above.

PROBLEM 12–2 (LO1)

The incomplete balance sheet of Hook Limited is given below.

Hook Limited			
Balance Sheet			
At December 31, 2011			
Assets			
Current			
Cash	$30,000		
Accounts Receivable	?		
Merchandise Inventory	?		
			$?
Property, plant and equipment assets	?		
Less: Accumulated Depreciation	100,000		?
Total Assets			$?
Liabilities			
Current			
Accounts Payable	$50,000		
Accrued Liabilities	?		
			$120,000
Non-current			
8% Bonds Payable			?
Equity			
Common Shares			?
Retained Earnings			?
Total Liabilities and Equity			$?

Additional information for 2011 year-end:

a. The amount of working capital is $150,000.
b. The issued value of the shares is $10 per share.
c. Market price per share is $15.
d. Price-earnings ratio is 3.
e. Income before payment of interest and income tax is $80,000.
f. The ratio of shareholder's equity to total assets is 0.60 to 1.
g. Income tax expense equals $30,000.
h. The acid-test ratio is 1.5 to 1.
i. The times interest earned ratio is 8 to1.

Required: Complete Hook Limited's balance sheet.

1. Any ratio in the form X:1 can be expressed as a percentage by multiplying both the numerator and denominator by 100. For example, a 0.25:1 ratio would equal 25% [$(0.25 \times 100)/(1 \times 100) = 25/100 = 25\%$]

2. Average balance sheet amounts are used when income statement amounts are compared to balance sheet amounts in a ratio. This is because the income statement item is realized over a fiscal year, while balance sheet amounts are recorded at points in time at the end of each fiscal year. Averaging opening and ending balance sheet amounts is an attempt to match numerators and denominators to an approximate midpoint in the fiscal year.

3. ($420 + 544)/2 = $482

4. ($257 + 420)/2 = $338.5

5. ($503 + 833)/2 = $668

6. ($361 + 503)/2 = $432

7. ($2,112 + 2,486)/2 = $2,299

8. ($1,417 + 2,112)/2 = $1,764.50

9. ($2,112 + 2,486)/2 = $2,299

10. ($1,417 + 2,112)/2 = $1,764.50

11. ($1,195 + 1,231)/2 = $1,213

12. ($1,048 + 1,195)/2 = $1,121.50

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CHAPTER OVERVIEW

Chapter 13: Proprietorships and Partnerships

Learning Objectives

- LO1 – Describe the characteristics of a proprietorship, including how its financial statements are different from those of a corporation.
- LO2 – Describe the characteristics of a partnership including how its financial statements are different from those of a corporation.

Chapter 1 introduced the three forms of business organizations — corporations, proprietorships, and partnerships. The corporation has been the focus in Chapters 1 through 12. This chapter will expand on some of the basic accounting concepts as they apply to proprietorships and partnerships.

13.1: Proprietorships

13.2: Partnerships

13.3: Summary of Chapter 13 Learning Objectives

13.4: Exercises

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13.1: Proprietorships

Concept Self-Check

Use the following questions as a self-check while working through Chapter 13.

1. What are some of the characteristics of a proprietorship, that are different from those of a corporation?
2. What is the journal entry to record the investment of cash by the owner into a proprietorship?
3. How are the closing entries for a proprietorship different than those recorded for a corporation?
4. Why is there only one equity account on a sole proprietorship's balance sheet and multiple accounts in the equity section of a corporate balance sheet?
5. What is mutual agency as it relates to a partnership?
6. How is a partnership different than a corporation?

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

13.1 Proprietorships

LO1 – Describe the characteristics of a proprietorship including, how its financial statements are different from those of a corporation.

As discussed in Chapter 1, a proprietorship is a business owned by one person. It is not a separate legal entity, which means that the business and the owner are considered to be the same entity. As a result, for example, from an income tax perspective, the profits of a proprietorship are taxed as part of the owner's personal income tax return. Unlimited liability is another characteristic of a 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.

Investing in a Proprietorship

When the owners of a corporation, known as shareholders, invest in the corporation, shares are issued. The shares represent how much of the corporation is owned by each shareholder. In a proprietorship, there is only one owner. When that owner invests in their business, the journal entry is:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Cash		XXX	
	Owner's Capital			XXX
	To record the owner's investment into their business.			

Distribution of Income in a Proprietorship — Withdrawals

A corporation distributes a portion of income earned to its owners, the shareholders, in the form of dividends. In a proprietorship, the owner distributes a portion of the business's income to her/himself in the form of **withdrawals**. Typically, the owner will withdraw cash but they can withdraw other assets as well. The journal entry to record a cash withdrawal is:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Withdrawals		XXX	
	Cash			XXX
	To record the owner's withdrawal of cash.			

Closing Entries for a Proprietorship

The closing entries for a corporation involved four steps:

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

This would be identical for a proprietorship.

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

This would also be identical for a proprietorship.

Entry 3: Close the income summary to retained earnings

Instead of closing the balance in the income summary to retained earnings, a proprietorship would close the income summary to the Owner's Capital account.

Entry 4: Close dividends to retained earnings

The equivalent to dividends for a proprietorship is withdrawals. There is no Retained Earnings account in a proprietorship. A corporation separates investments made by the owners (shareholders) into a Share Capital account while dividends and accumulated net incomes/losses are recorded in retained earnings. In a proprietorship, all owner investments, withdrawals, and net incomes/losses are maintained in the Owner's Capital account. Therefore, the fourth closing entry for a proprietorship closes withdrawals to this Owner's Capital account.

Figure 13.1 compares the closing entries for a proprietorship and a corporation.

Proprietorship			Corporation		
Entry 1: Close the revenue accounts to the Income Summary account.					
Revenues	XXX		Revenues	XXX	
Income Summary		XXX	Income Summary		XXX
Entry 2: Close the expense accounts to the Income Summary account.					
Income Summary	XXX		Income Summary	XXX	
Expenses		XXX	Expenses		XXX
Entry 3: Close the Income Summary account					
...to the Owner's Capital account.			**...to the Retained Earnings account.**		
Income Summary	XXX		Income Summary	XXX	
Owner's Capital		XXX	Retained Earnings		XXX
When there is a net income.			*When there is a net income.*		
OR			***OR***		
Owner's Capital	XXX		Retained Earnings	XXX	
Income Summary		XXX	Income Summary		XXX
When there is a net loss.			*When there is a net loss.*		
Entry 4: Close					
...withdrawals to the Owner's Capital account.			**...dividends to the Retained Earnings account.**		
Owner's Capital	XXX		Retained Earnings	XXX	
Withdrawals		XXX	Dividends		XXX

Figure 13.1 Comparing Closing Entries for a Proprietorship and Corporation

Financial Statements

The financial statements for a proprietorship are much the same as for a corporation with some minor differences. As shown in Figure 13.2, the income statements only differ in that the proprietorship does not include income tax expense since its profits are taxed as part of the owner's personal income tax return.

Proprietorship			Corporation		
ABC Consulting			ABC Inc.		
Income Statement			Income Statement		
Year ended December 31, 2015			Year ended December 31, 2015		
Revenues		$400	Revenues		$400
Operating expenses		180	Operating expenses		180
Income from operations		$220	Income from operations		$220
Other revenues and expenses			Interest revenue	$20	
Interest revenue	$20		Loss on sale of equipment	(5)	
Loss on sale of equipment	(5)	15			15
Net income		$235	Income before tax		$235
			Income tax expense		50
			Net income		$185

Figure 13.2 Comparing the Income Statement for a Proprietorship and for a Corporation

The statement of changes in equity for each of a proprietorship and corporation includes the same elements: beginning equity, additional investments by the owner(s), net income/loss, distribution of income to the owner(s), and the ending balance in equity. However, the statements are structured differently because in a proprietorship, all the equity items are combined in one account, the

Owner's Capital account. In a corporation, equity is divided between share capital and retained earnings. These differences are illustrated in Figure 13.3.

Proprietorship

ABC Consulting
Statement of Changes in Equity
Year ended December 31, 2015

Owner's capital, January 1, 2015		$12,000
Add: Owner investment	$1,000	
Net income	235	1,235
Total		$13,235
Less: Withdrawals		150
Owner's capital, December 31, 2015		$13,085

Corporation

ABC Inc.
Statement of Changes in Equity
Year ended December 31, 2015

	Share Capital	Retained Earnings	Total Equity
Balance, January 1, 2015	$9,000	$3,000	$12,000
Issuance of share capital	1,000		1,000
Net income/loss		185	185
Dividends		(150)	(150)
Balance, December 31, 2015	$10,000	$3,035	$13,035

Figure 13.3 Comparing the Statement of Changes in Equity for a Proprietorship and for a Corporation

Although both statements are based on identical dollar amounts, notice that the total equity at December 31, 2015 for the proprietorship is $13,085 which is $50 more than the $13,035 shown for the corporation. The $50 difference is the income tax expense deducted on the corporation's income tax.

The balance sheet for each of a proprietorship and corporation includes the same elements: assets, liabilities, and equity. However, the equity section of the statement differs because in a proprietorship, all the equity items are combined in one account, the owner's capital account. In a corporation, equity is divided between share capital and retained earnings. These differences are illustrated in Figure 13.4.

Proprietorship

ABC Consulting
Balance Sheet
December 31, 2015

Assets		
Cash	$ 4,000	
Other assets	86,000	
Total assets	$90,000	
Liabilities		$76,915
Equity		
Owner's capital	13,085	
Total liabilities and equity	$90,000	

Corporation

ABC Inc.
Balance Sheet
December 31, 2015

Assets		
Cash		$ 3,950
Other assets		86,000
Total assets		$89,950
Liabilities		$76,915
Equity		
Share capital	$10,000	
Retained earnings	3,035	
Total equity		13,035
Total liabilities and equity		$89,950

Figure 13.4 Comparing the Balance Sheet for a Proprietorship and for a Corporation

The $50 difference between the proprietorship's and corporation's balances in each of cash and total equity is because the corporation paid $50 income tax which the proprietorship is not subject to. The equity sections of the two balance sheets are different only in terms of the types of accounts used.

13.2 Partnerships

LO2 – Describe the characteristics of a partnership, including how its financial statements are different from those of a corporation.

As discussed in Chapter 1, a partnership is a business owned by more than one person. Partners should have a partnership contract that details their agreement on things such as each partner's rights and duties, the sharing of incomes/losses and withdrawals, as well as dispute and termination procedures. A partnership is not a separate legal entity, which means that the business and the partners are considered to be the same entity. As a result, for example, from an income tax perspective, each partner's share of the profits is taxed as part of that partner's personal income tax return. Unlimited liability is another characteristic of a partnership, meaning that if the business could not pay its debts, the partners would be responsible even if the business's debts were greater than their personal resources.

The exception to this would be the formation of a **limited liability partnership (LLP)** that that is permitted for professionals such as lawyers and accountants. In an LLP, the **general partner(s)** is/are responsible for the management of the partnership and assume(s) unlimited liability, while the **limited partners** have limited liability but also limited roles in the partnership as specified in the partnership agreement. Partnerships also have a limited life and are subject to *mutual agency*. **Mutual agency** means that a

partner can commit the partnership to any contract because each partner is an authorized agent of the partnership. For example, one partner could sign a contract to purchase merchandise that falls within the scope of the business's operations.

Investing in a Partnership

Recall that when the owners of a corporation, known as shareholders, invest in the corporation, shares are issued. Recall as well that in a proprietorship there is only one owner whose investments into the business are credited to their capital account. A partnership is similar to a proprietorship in that each partner's investment into the business is credited to an owner's capital account. The difference is that in a partnership there will be more than one owner's capital account. For example, assume Doug Wharton, Lisa Bartwiz, and Tahanni Butti started a partnership called WBB Consulting and invested cash of $20,000, $15,000, and $40,000, respectively. The journal entry to record the investment is:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Cash		75,000	
	Wharton, Capital			20,000
	Bartwiz, Capital			15,000
	Butti, Capital			40,000
	To record each partner's investment into the business.			

Distribution of Income in a Partnership — Withdrawals

Recall that a corporation distributes a portion of income earned to its owners, the shareholders, in the form of dividends. In a proprietorship and partnership, the owner/partners distribute a portion of the income to themselves in the form of withdrawals. Assume Wharton, Bartwiz, and Butti each withdraw $5,000. The journal entry is:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Wharton, Withdrawals		5,000	
	Bartwiz, Withdrawals		5,000	
	Butti, Withdrawals		5,000	
	Cash			15,000
	To record the partners' withdrawal of cash.			

Closing Entries for a Partnership

The closing entries for a partnership are much the same as those for a proprietorship except that for a partnership there is more than one withdrawals account and more than one capital account. The only complexity with the closing entries for a partnership is with closing the Income Summary account to the capital accounts. The complexity stems from the partnership agreement which details how incomes/losses are to be allocated. Let us review several scenarios.

Example 1: Assume WBB Consulting earned $60,000 during the year and the partnership agreement stipulates that incomes/losses are to be allocated equally. The journal entry to close the income summary to the partners' capital accounts would be:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Income Summary		60,000	
	Wharton, Capital			20,000
	Bartwiz, Capital			20,000
	Butti, Capital			20,000
	To close the income summary based on equal allocation.			

Example 2: Assume WBB Consulting had a net loss of $70,000 during the year and the partnership agreement stipulates that incomes/losses are to be allocated on a fractional basis of 2:1:4, respectively. The journal entry to close the income summary to the partners' capital accounts would be:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Wharton, Capital		20,000	
	Bartwiz, Capital		10,000	
	Butti, Capital		40,000	
	Income Summary			70,000
	To close the income summary based on 2:1:4 fractional allocation; calculations: 2/(2+1+4) x 70,000 = 20,000; 1/(2+1+4) x 70,000 = 10,000; 4/(2+1+4) x 70,000 = 40,000.			

Example 3: Assume WBB Consulting had a net income of $100,000 during the year and the partnership agreement stipulates that incomes/losses are to be allocated on the ratio of capital investments. The journal entry to close the income summary to the partners' capital accounts would be:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Income Summary		100,000	
	Wharton, Capital			26,667
	Bartwiz, Capital			20,000
	Butti, Capital			53,333
	To close the income summary with the allocation based on a ratio of capital investments; calculations: (20,000/75,000) x 100,000 = 26,667 (rounded to the nearest whole dollar); (15,000/75,000) x 100,000 = 20,000; (40,000/75,000 x 100,000 = 53,333 (rounded to the nearest whole dollar).			

Example 4: Assume WBB Consulting had a net income of $60,000 during the year and the partnership agreement stipulates that incomes/losses are to be allocated based on salaries of $70,000 to Wharton; $20,000 to Bartwiz; zero to Butti; and the remainder equally. The journal entry to close the income summary to the partners' capital accounts would be:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Income Summary		60,000	
	Butti, Capital		10,000	
	Wharton, Capital			60,000
	Bartwiz, Capital			10,000
	To close the income summary with the allocation based on salaries and the remainder allocated equally; calculations:			

	Wharton	Bartwiz	Butti	Total
Net income				60,000
Salaries:	70,000	20,000	0	-90,000
Remainder to be allocated:				-30,000
-30,000x1/3	-10,000	-10,000	-10,000	30,000
Balance of net income to be allocated				0
Total to be allocated to each partner	60,000	10,000	-10,000	60,000

The sum of the totals **must** reconcile (be equal to) the net income/loss being allocated.

Notice in Example 4 that Butti is receiving a negative allocation which results in a debit to her Capital account.

Example 5: Assume WBB Consulting had a net income of $90,000 during the year and the partnership agreement stipulates that incomes/losses are to be allocated based on a combination of: (a) 20% interest of each partner's beginning-of-year capital balance; (b) salaries of $70,000 to Wharton, $20,000 to Bartwiz, $15,000 to Butti; and (c) the remainder equally. The journal entry to close the income summary to the partners' capital accounts would be:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Income Summary		90,000	
	Wharton, Capital			64,000
	Bartwiz, Capital			13,000
	Butti, Capital			13,000
	To close the income summary with the allocation based on a combination of interest and salaries with the remainder allocated equally; calculations:			

	Wharton	Bartwiz	Butti	Total
Net income				90,000
Interest:				
20%x20,000; 20%x15,000; 20%x40,000	4,000	3,000	8,000	-15,000
Salaries:	70,000	20,000	15,000	-105,000
Remainder to be allocated:				-30,000
-30,000x1/3	-10,000	-10,000	-10,000	30,000
Balance of net income to be allocated				0
Total to be allocated to each partner	64,000	13,000	13,000	90,000

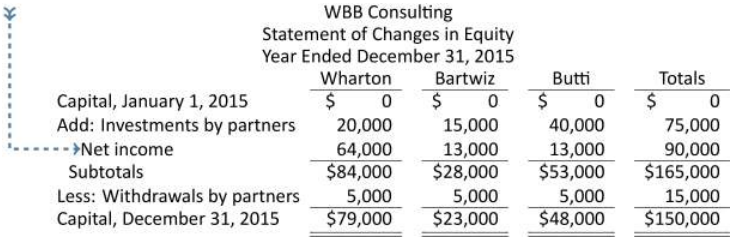
The sum of the totals **must** reconcile (be equal to) the net income/loss being allocated.

The total income allocated to each partner is carried into the net income line of the Statement of Changes in Equity (as shown next).

Financial Statements

The income statement for a partnership is identical to that for a proprietorship. The statement of changes in equity for a partnership is similar to a proprietorship's except that there is a Capital account and Withdrawals account for each of the partners.

Assume that on January 1, 2015, the first year of operations for WBB Consulting, the partners, Wharton, Bartwiz, and Butti, invested $20,000, $15,000, and $40,000, respectively. During 2015 they each withdrew $5,000. The statement of changes in equity would appear as illustrated in Figure 13.5 given a net income for the year of $90,000 allocated as shown in Example 5 previously.



WBB Consulting
Statement of Changes in Equity
Year Ended December 31, 2015

	Wharton	Bartwiz	Butti	Totals
Capital, January 1, 2015	$ 0	$ 0	$ 0	$ 0
Add: Investments by partners	20,000	15,000	40,000	75,000
Net income	64,000	13,000	13,000	90,000
Subtotals	$84,000	$28,000	$53,000	$165,000
Less: Withdrawals by partners	5,000	5,000	5,000	15,000
Capital, December 31, 2015	$79,000	$23,000	$48,000	$150,000

Figure 13.5 Statement of Changes in Equity for a Partnership

In the equity section on the balance sheet there will be more than one owner's capital account as shown in Figure 13.6.

Figure 13.6 Balance Sheet for a Partnership

WBB Consulting		
Balance Sheet		
December 31, 2015		
Assets		
Cash		$35,000
Other assets		143,000
Total assets		$178,000
Liabilities		$28,000
Equity		
Wharton, capital	$79,000	
Bartwiz, capital	23,000	
Butti, capital	48,000	150,000
Total liabilities and equity		$178,000

Summary of Chapter 13 Learning Objectives

LO1 – Describe the characteristics of a proprietorship, including how its financial statements are different from those of a corporation.

A proprietorship is a business owned by one person. It is not a separate legal entity, which means that the business and the owner are considered to be the same entity. The profits of a proprietorship are taxed as part of the owner's personal income tax return. Unlimited liability is another characteristic of a 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. Owner investments, owner withdrawals, and net incomes/losses are closed to one permanent account: the Owner's Capital account.

LO2 – Describe the characteristics of a partnership, including how its financial statements are different from those of a corporation.

A partnership is a business owned by more than one person. Partners should have a partnership contract that details their agreement on things such as each partner's rights and duties, the sharing of incomes/losses and withdrawals, as well as dispute and termination

procedures. A partnership is not a separate legal entity, which means that the business and the partners are considered to be the same entity. Each partner's share of the profits is taxed as part of that partner's personal income tax return. Unlimited liability is another characteristic of a partnership meaning that if the business could not pay its debts, the partners would be responsible even if the business's debts were greater than the partners' personal resources. The exception to this would be the formation of a limited liability partnership (LLP) that is permitted for professionals such as lawyers and accountants. In an LLP, the general partner(s) is/are responsible for the management of the partnership and assume(s) unlimited liability while the limited partners have limited liability but also limited roles in the partnership as specified in the partnership agreement. Partnerships also have a limited life and are subject to *mutual agency*. Mutual agency means that a partner can commit the partnership to any contract because each partner is an authorized agent of the partnership. The closing entries for a partnership are the same as those for a proprietorship except there is more than one capital account and more than one withdrawals account. The closing of the income summary to each partner's capital account is based on the allocation details in the partnership agreement.

Discussion Questions

1. Define a partnership and briefly explain five characteristics.
2. What are the advantages and disadvantages of partnerships?
3. How does accounting for a proprietorship, partnership, and corporation differ?
4. How can partnership profits and losses be divided among partners?
5. Why are salary and interest bases used as a means to allocate profits and losses in a partnership?
6. How are partners' capital balances disclosed in the balance sheet?

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13.2: Partnerships

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13.3: Summary of Chapter 13 Learning Objectives

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13.4: Exercises

Exercises

EXERCISE 13–1 (LO2)

You are given the following data for the partnership of B. White and C. Green.

B. White and C. Green Partnership		
Trial Balance		
December 31, 2015		
Cash	$41,000	
Accounts Receivable	68,400	
Merchandise Inventory	27,000	
Accounts Payable		$45,800
B. White, Capital		30,000
B. White, Withdrawals	7,000	
C. Green, Capital		20,000
C. Green, Withdrawals	5,000	
Sales		322,000
Cost of Goods Sold	160,500	
Rent Expense	36,000	
Advertising Expense	27,200	
Delivery Expense	9,600	
Office Expense	12,800	
Utilities Expense	23,300	
Totals	$417,800	$417,800

Each partner contributed $10,000 cash during 2015. The partners share profits and losses equally.

Required:

a. Prepare an income statement for the year.

b. Prepare a statement of changes in equity for the year in the following format:

Statement of Changes in Equity			
For the Year Ended December 31, 2015			
	White	*Green*	*Total*
Opening Balance	$	$	$
Add: Investments during 2015			
Net Income			
	$	$	$
Deduct: Withdrawals			
Ending Balance	$	$	$

c. Prepare a balance sheet at December 31, 2015.
d. Prepare closing entries at year end.

EXERCISE 13–2 (LO1,2)

Refer to EXERCISE 13–1.

Required: Prepare the equivalent statement of changes in equity at December 31, 2015 assuming that the partnership is instead:

a. A proprietorship owned by B. White called White's (Combine C. Green balances and transactions with those of B. White.)
b. A corporation named BW and CG Ltd. with 100 common shares issued for $1 per share to each of B. White and C. Green. Assume opening retained earnings equal $29,800 and that 20,000 common shares were issued during 2015 for $20,000. Assume the net income of $52,600 is net of income tax.

EXERCISE 13–3 (LO2)

Refer to EXERCISE 13–1.

Required: Prepare the journal entry to allocate net income to each of the partners assuming the following unrelated scenarios:

a. Net income is allocated in a fixed ratio of 5:3 (White: Green).
b. Net income is allocated by first paying each partner 10% interest on opening capital balances, then allocating salaries of $30,000 for White and $10,000 for Green, then splitting the remaining unallocated net income in a fixed ratio of 3:2 (White:Green).

EXERCISE 13–4 (LO2)

Walsh and Abraham began a partnership by investing $320,000 and $400,000, respectively. They agreed to share net incomes/losses by allowing a 10% interest allocation their investments, an annual salary allocation of $75,000 to Walsh and $150,000 to Abraham, and the balance 1:3.

Required: Prepare the journal entry to allocate net income to each of the partners assuming the following unrelated scenarios:

a. Net income for the first year was $210,000.
b. A net loss for the first year was realized in the amount of $95,000.

EXERCISE 13–5 (LO1)

You are given the following data for the proprietorship of R. Black.

R. Black Proprietorship Trial Balance December 31, 2018		
	Debit	*Credit*
Cash	$10,000	
Accounts receivable	20,000	
Merchandise inventory	30,000	
Accounts payable		$25,000
R. Black, capital		5,000
R. Black, withdrawals	7,000	
Sales		166,000
Cost of goods sold	100,000	
Rent expense	24,000	
Income taxes expense	5,000	
Totals	$196,000	$196,000

Black contributed $5,000 capital during the year.

Required:

a. Prepare an income statement for the year.

b. Prepare a statement of proprietor's capital for the year in the following format:

R. Black Proprietorship Statement of Proprietor's Capital For the Year Ended December 31, 2018			
Balance at Jan. 1, 2018		$	
Contributions			
Net income			
Withdrawals			
Balance at Dec 31, 2018		$	

c. Prepare a balance sheet at December 31, 2018.

d. Prepare closing entries at year-end.

EXERCISE 13–6 (LO1)

Refer to EXERCISE 13–5. Assume that the proprietorship is instead a corporation named R. Black Ltd., with 1,000 common shares issued on January 1, 2018 for a stated value of $5 per share. Assume there are no opening retained earnings and consider withdrawals to be dividends. Assume income taxes expense applies to corporate earnings.

Required:

a. Prepare an income statement for the year ended December 31, 2018.
b. Prepare a statement of changes in equity.
c. Prepare a balance sheet at December 31, 2018.
d. Prepare closing entries at year-end.

EXERCISE 13–7 (LO2)

Assume the following information just prior to the admission of new partner *I*:

Assets		*Liabilities*		
Cash	$5,000	Accounts payable		$8,000
Accounts receivable	43,000			
		Partners' Capital		
		G, Capital	$30,000	
		H, Capital	10,000	40,000
	$48,000			$48,000

Required: Prepare journal entries to record the following unrelated scenarios:

a. New partner *I* purchases partners G's partnership interest for $40,000.
b. New partner *I* receives a cash bonus of $2,000 and a one-tenth ownership share, allocated equally from the partnership interests of G and H.
c. New partner *I* contributes land with a fair value of $100,000. Relative ownership interests after this transaction are:

Partner	*Ownership interest*
G	20%
H	5%
I	75%
	100%

EXERCISE 13–8 (LO2)

Assume the following information just prior to the withdrawal of Partner X:

Assets		*Liabilities*		
Cash	$20,000	Accounts payable		$5,000
Inventory	50,000			
		Partners' Capital		
		X, Capital	$10,000	
		Y, Capital	20,000	
		Z, Capital	35,000	65,000
	$70,000			$70,000

Required: Prepare journal entries to record the following unrelated scenarios:

a. Partner X sells his interest to new partner T for $25,000.
b. Partner X sells his interest to partner Y for $30,000.
c. Partner X sells his interest and is paid a share of partnership net assets as follows:

Cash	$5,000
Inventory	5,000
Accounts payable	(2,000)
	$8,000

Partner Y receives a 60% share of the partnership interest of X. Partner Z receives 40%.

EXERCISE 13–9 (LO2)

Smith, Jones, and Black are partners, sharing profits equally. They decide to admit Gray for an equal partnership (25%). The balances of the partners' capital accounts are:

Smith, capital	$50,000
Jones, capital	40,000
Black, capital	10,000
	$100,000

Required: Prepare journal entries to record admission of Gray, using the bonus method:

a. assuming the bonus is paid to the new partner; Gray invests $5,000 cash;
b. assuming the bonus is paid to existing partners; Gray invests $60,000 cash; the remaining partners benefit equally from the bonus.

Problems

PROBLEM 13–1 (LO2)

On January 1, 2015, Bog, Cog, and Fog had capital balances of $60,000, $100,000, and $20,000 respectively in their partnership. In 2015 the partnership reported net income of $40,000. None of the partners withdrew any assets in 2013. The partnership agreed to share profits and losses as follows:

a. A *monthly* salary allowance of $2,000, $2,500, and $4,000 to Bog, Cog and Fog respectively.
b. An annual interest allowance of 10 per cent to each partner based on her capital balance at the beginning of the year.
c. Any remaining balance to be shared in a 5:3:2 ratio (Bog:Cog:Fog).

Required:

1. Prepare a schedule to allocate the 2015 net income to partners.
2. Assume all the income statement accounts for 2015 have been closed to the income summary account. Prepare the entry to record the division of the 2015 net income.

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