CHAPTER 6

Merchandising Activities

After studying this chapter, you should be able to:

Learning Objectives

LO6-1 Describe the operating cycle of a merchandising company.

LO6-2 Understand the components of a merchandising company's income statement.

LO6-3 Account for purchases and sales of merchandise in a perpetual inventory system.

LO6-4 Explain how a periodic inventory system operates.

LO6-5 Discuss the factors to be considered in selecting an inventory system.

LO6-6 Account for additional merchandising transactions related to purchases and sales.

LO6-7 Define *special journals* and explain their usefulness.

LO6-8 Measure the performance of a merchandising business.

Completing the Closing Process Wagner may now complete its closing process in the same manner as a company using a perpetual inventory system. The company will make the usual four closing entries, closing the (1) revenue accounts, (2) expense accounts (including Cost of Goods Sold), (3) Income Summary account, and (4) Dividends account.

COMPARISON OF PERPETUAL AND PERIODIC INVENTORY SYSTEMS

Exhibit 6–6 provides a comparison of the way in which various events are recorded in perpetual and periodic systems. Perpetual systems are used when management needs information throughout the year about inventory levels and gross profit. Periodic systems are used when the primary goals are to develop annual data and to minimize recordkeeping requirements. A single business may use different inventory systems to account for different types of merchandise.

Who Uses Perpetual Systems? When management or employees need up-to-date information about inventory levels, there is no substitute for a perpetual inventory system. Almost all manufacturing companies use perpetual systems. These businesses need current

EXHIBIT 6–6 Summary of the Journal Entries Made in Perpetual and Periodic Inventory Systems

Event	Perpetual System	Periodic System
Acquiring merchandise inventory	Inventory ..... xxx Accounts Payable (or Cash)..... xxx To record the purchase of merchandise inventory.	Purchases ..... xxx Accounts Payable (or Cash)..... xxx To record the purchase of merchandise inventory.
Sale of merchandise inventory	Accounts Receivable (or Cash)..... xxx Sales ..... xxx To record the sale of merchandise inventory. Cost of Goods Sold..... xxx Inventory..... xxx To update the Cost of Goods Sold and Inventory accounts.	Accounts Receivable (or Cash)..... xxx Sales ..... xxx To record the sale of merchandise inventory. In a periodic system, no entry at the time of sale is made to update the Cost of Goods Sold and Inventory accounts.
Settlement of Accounts Payable to suppliers	Accounts Payable ..... xxx Cash ..... xxx To record payment for merchandise inventory purchased on account.	Accounts Payable ..... xxx Cash ..... xxx To record payment for merchandise inventory purchased on account.
Collections from credit customers	Cash..... xxx Accounts Receivable ..... xxx To record cash collections from credit customers.	Cash..... xxx Accounts Receivable ..... xxx To record cash collections from credit customers.
Creating year-end balances for Cost of Goods Sold and Inventory accounts	No entry necessary. Cost of Goods Sold and Inventory accounts should both reflect year-end balances in a perpetual system. If a year-end physical count reveals less inventory on hand than reported in the Inventory account, the following entry is needed to record inventory shrinkage: Cost of Goods Sold..... xxx Inventory (shrinkage amount)..... xxx To reduce year-end inventory balance for shrinkage.	Cost of Goods Sold..... xxx Inventory (beginning bal.) ..... xxx Purchases..... xxx To close the Purchases and Inventory balances to the Cost of Goods Sold account. Inventory (ending balance) ..... xxx Cost of Goods Sold ..... xxx To create the year-end balance in the Inventory account.

Note: In a periodic inventory system, the Cost of Goods Sold account is both debited and credited to create its year-end balance.

information to coordinate their inventories of raw materials with their production schedules. Most large merchandising companies—and many small ones—also use perpetual systems.

In the days when all accounting records were maintained by hand, businesses that sold many types of low-cost products had no choice but to use periodic inventory systems. A Walmart store, for example, may sell several thousand items per hour. Imagine the difficulty of keeping a perpetual inventory system up-to-date if the records were maintained by hand. But with today's computerized terminals and bar-coded merchandise, many high-volume retailers now use perpetual inventory systems. In fact, Walmart has been a leader among retailers in developing perpetual inventory systems.

INTERNATIONAL CASE IN POINT

Walmart, referred to as the company Sam Walton built, is the world's largest retailer. By diversifying from its original discount stores to include Sam's Club and its super stores, Walmart has fueled its retail engine. International expansion includes 394 stores in Canada, 2,290 in Mexico, 592 in the United Kingdom, 690 stores in Central America, 557 stores in Brazil, 411 Chinese stores, 105 stores in Argentina, 431 Japanese stores, and 404 stores in Chile. According to a recent annual report, 28 percent of total sales came from international locations. Walmart employs approximately 1,400,000 associates in the United States and approximately 800,000 internationally.

Source: Wal-Mart Stores, Inc., 10-K, January 31, 2015.

Perpetual inventory systems are not limited to businesses with computerized inventory systems. Many small businesses with manual systems also use perpetual inventory systems. However, these businesses may update their inventory records on a weekly or a monthly basis, rather than at the time of each sales transaction.

Whether accounting records are maintained manually or by computer, most businesses use perpetual inventory systems in accounting for products with a high per-unit cost. Examples include automobiles, heavy machinery, electronic equipment, home appliances, and jewelry. Management has a greater interest in keeping track of inventory when the merchandise is expensive. Also, sales volume usually is low enough that a perpetual system can be used, even if accounting records are maintained by hand.

Who Uses Periodic Systems? Periodic systems are used when the need for current information about inventories and sales does not justify the cost of maintaining a perpetual system. In a small retail store, for example, the owner may be so familiar with the inventory that formal perpetual inventory records are unnecessary. Most businesses—large and small—use periodic systems for inventories that are immaterial in dollar amount, or when management has little interest in the quantities on hand. As stated previously, businesses that sell many low-cost items and have manual accounting systems sometimes have no choice but to use the periodic method.

SELECTING AN INVENTORY SYSTEM

Accountants—and business managers—often must select an inventory system appropriate for a particular situation. Some of the factors usually considered in these decisions are listed in Exhibit 6–7.

LO6-5

LEARNING OBJECTIVE
Discuss the factors to be considered in selecting an inventory system.

The Trend in Today's Business World Advances in technology are quickly extending the use of perpetual inventory systems to more businesses and more types of inventory. This trend is certain to continue. Throughout this textbook, you may assume that a perpetual inventory system is in use unless specifically stated otherwise.

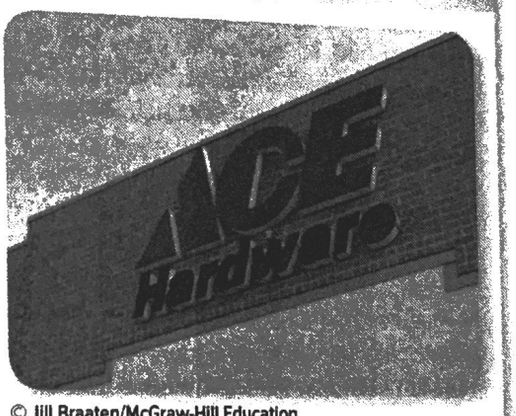
Factors Suggesting a Perpetual Inventory System	Factors Suggesting a Periodic Inventory System
Large company with professional management.	Small company, run by owner.
Management and employees wanting information about items in inventory and the quantities of specific products that are selling.	Accounting records of inventories and specific product sales not needed in daily operations; such information developed primarily for use in annual income tax returns.
Items in inventory with a high per-unit cost.	Inventory with many different kinds of low-cost items.
Low volume of sales transactions or a computerized accounting system.	High volume of sales transactions and a manual accounting system.
Merchandise stored at multiple locations or in warehouses separate from the sales sites.	All merchandise stored at the sales site (for example, in the store).

EXHIBIT 6–7
Factors Influencing Choice of Inventory System

YOUR TURN **You as a Buyer for a Retail Business**

Assume you are in charge of purchasing merchandise for Ace Hardware Stores. You are currently making a decision about the purchase of barbecue grills for sale during the upcoming summer season. You must decide how many of each brand and type of grill to order. Describe the types of accounting information that would be useful in making this decision and where this information might be found.

(See our comments in Connect.)



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Transactions Relating to Purchases

LO6-6

LEARNING OBJECTIVE
Account for additional merchandising transactions related to purchases and sales.

In addition to the basic transactions illustrated and explained in this chapter, merchandising companies must account for a variety of additional transactions relating to purchases of merchandise. Examples include discounts offered for prompt payment, merchandise returns, and transportation costs. In our discussion of these transactions, we continue to assume the use of a perpetual inventory system.

CREDIT TERMS AND CASH DISCOUNTS

Manufacturers and wholesalers normally sell their products to merchandisers on account. The credit terms are stated in the seller's bill, or invoice. One common example of credit terms is "net 30 days," or "n/30," meaning full payment is due in 30 days. Another common form of credit terms is "10 eom," meaning payment is due 10 days after the end of the month in which the purchase occurred.

Manufacturers and wholesalers usually allow their customers 30 or 60 days in which to pay for credit purchases. Frequently, however, sellers offer their customers a small discount to encourage earlier payment.

Perhaps the most common credit terms offered by manufacturers and wholesalers are 2/10, n/30. This expression is read "2, 10, net 30," and means that full payment is due in 30 days, but that the buyer may take a 2 percent discount if payment is made within 10 days. The period during which the discount is available is termed the *discount period*. Because the discount provides an incentive for the customer to make an early cash payment, it is called a *cash*

LOWE'S

Lowe's is the second largest home improvement retailer in the world. The company operates 1,840 home improvement and hardware stores. The large majority of Lowe's stores are in the United States, although there are 37 stores in Canada and 10 in Mexico. Lowe's also operates 74 Orchard Supply Hardware stores in California and Oregon.

Lowe's offers a complete line of products for maintenance, repair, remodeling, and decorating, with a typical store stocking approximately 36,000 items. Lowe's carries a wide selection of national name-brand merchandise including products from Whirlpool, GE, LG, Samsung, Stainmaster, Sylvania, and Owens Corning, among many others. Lowe's also carries a wide variety of private brand merchandise. By offering both name brand and private brand product, Lowe's has the ability to offer various quality-price combinations.

Lowe's financial statements are similar to those of the service organizations illustrated in previous chapters. They differ, however, because Lowe's sells merchandise to its customers. Companies that sell merchandise must report information about inventory costs in their financial statements. ■

In this chapter we examine accounting issues related to merchandising businesses, such as clothing retailers and grocery stores. In addition to discussing the unique features of a merchandising company's financial statements, we illustrate ways to use financial information to evaluate the performance of these companies.

Lowe's retail stores are good examples of merchandising outlets. Managing **inventory** (goods that are purchased for the purpose of resale to customers) is of utmost importance to merchandising businesses. For a retail chain like Lowe's to be successful, its stores must acquire hundreds of inventory items and sell them quickly at competitive prices.

In most merchandising companies, inventory is a relatively liquid asset—that is, it usually is sold within a few days or weeks. For this reason, inventory appears near the top of the balance sheet, immediately below accounts receivable.

Merchandising Companies

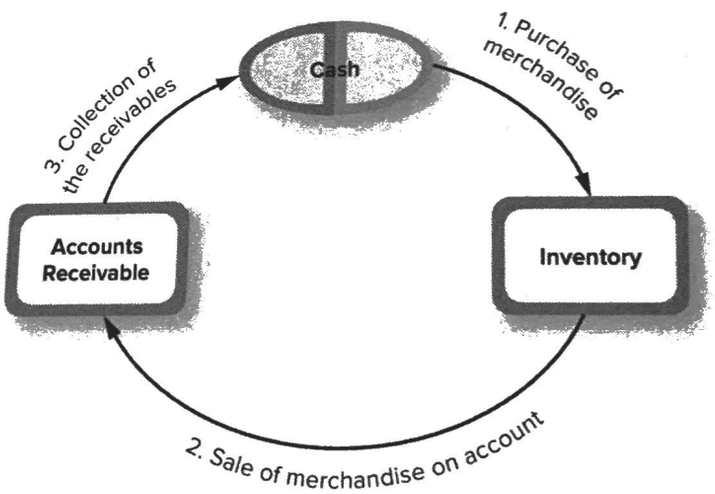
THE OPERATING CYCLE OF A MERCHANDISING COMPANY

LO6-1

LEARNING OBJECTIVE
Describe the operating cycle of a merchandising company.

The series of transactions through which a business generates its revenue and its cash receipts from customers is called the **operating cycle.** The operating cycle of a merchandising company consists of the following basic transactions: (1) purchases of merchandise; (2) sales of the merchandise, often on account; and (3) collection of the accounts receivable from customers. As the word *cycle* suggests, this sequence of transactions repeats continuously. Some of the cash collected from the customers is used to purchase more merchandise, and the cycle begins anew. This continuous sequence of merchandising transactions is illustrated in Exhibit 6–1.

EXHIBIT 6–1
The Operating Cycle



Comparing Merchandising Activities with Manufacturing Activities Most merchandising companies purchase their inventories from other business organizations in a ready-to-sell condition. Companies that manufacture their inventories, such as **General Motors, IBM,** and **Boeing Aircraft,** are called manufacturers, rather than merchandisers. The operating cycle of a manufacturing company is longer and more complex than that of a merchandising company, because the first transaction—purchasing merchandise—is replaced by the many activities involved in manufacturing the merchandise.

Our examples and illustrations in this chapter are limited to companies that purchase their inventory in a ready-to-sell condition. The basic concepts, however, also apply to manufacturers.

Retailers and Wholesalers Merchandising companies include both retailers and wholesalers. A *retailer* is a business that sells merchandise directly to the public. Retailers may be large or small; they vary in size from national store chains, such as **Lowe's, The Gap,** and

Walmart, to small neighborhood businesses, such as gas stations and convenience stores. In fact, more businesses engage in retail sales than in any other type of business activity.

The other major type of merchandising company is the *wholesaler.* Wholesalers buy large quantities of merchandise from several different manufacturers and then resell this merchandise to many different retailers. Because wholesalers do not sell directly to the public, even the largest wholesalers are not well known to most consumers. Nonetheless, wholesaling is a major type of merchandising activity.

The concepts discussed in the remainder of this chapter apply equally to retailers and to wholesalers.

INCOME STATEMENT OF A MERCHANDISING COMPANY

LO6-2

LEARNING OBJECTIVE
Understand the components of a merchandising company's income statement.

The income statement of a merchandising company differs somewhat from that of a service organization illustrated in previous chapters. Exhibit 6–2 compares the income statement structure of a service company to that of a merchandising company.

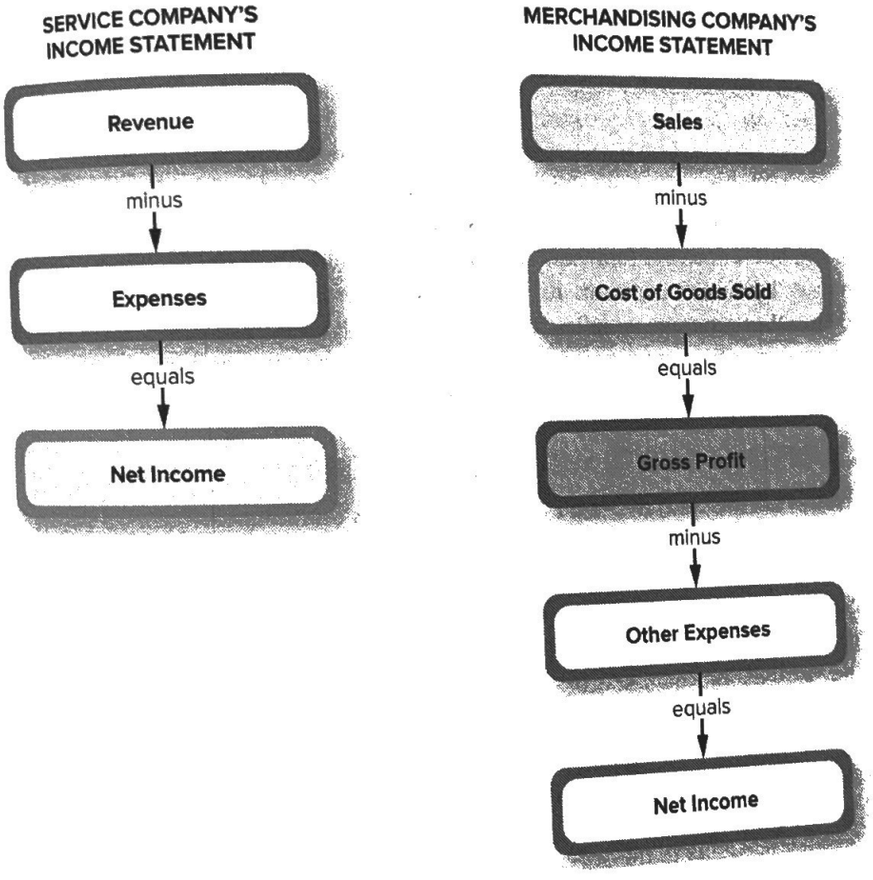


EXHIBIT 6–2
A Comparison of Income Statements used by a Service Company and a Merchandising Company

The income statement of Computer City is shown in Exhibit 6–3. The following discussion of its structure and components will illustrate the unique characteristics of income statements prepared by merchandising companies.

Computer City's $900,000 in sales represents the selling price of merchandise it sold to customers during the period. Selling merchandise introduces a new and major cost of doing business: the cost incurred by Computer City to acquire the inventory it sold to customers. As items are sold from inventory, their costs must be removed from the balance sheet and transferred to the income statement to offset sales revenue. This $540,000 cost subtracted from sales revenue in Computer City's income statement is referred to as the **cost of goods sold.** In essence, the cost of goods sold is an expense; however, this item is of such importance to a merchandising company that it is shown separately from other expenses in the company's income statement.

EXHIBIT 6–3
A Merchandising Company's Income Statement

COMPUTER CITY INCOME STATEMENT FOR THE YEAR ENDED DECEMBER 31, 2018		
Sales		$900,000
Less: Cost of goods sold		540,000
Gross profit		$360,000
Operating expenses:		
Wages expense	$150,900	
Advertising expense	6,800	
Insurance expense	9,600	
Utilities expense	6,400	
Office supplies expense	1,700	
Depreciation expense	58,600	234,000
Income before taxes		$126,000
Income taxes expense		36,000
Net income		$ 90,000

The $360,000 difference between sales and the cost of goods sold is Computer City's **gross profit** (or gross margin). Gross profit is a useful means of measuring the profitability of sales transactions, but it does *not* represent the overall profitability of the business. A merchandising company has many expenses in addition to the cost of goods sold. Computer City's $270,000 in other expenses includes wages expense, advertising expense, insurance expense, utilities expense, office supplies expense, depreciation expense, and income taxes expense.[1] A company earns net income only if its gross profit exceeds the sum of its other expenses.

ACCOUNTING SYSTEM REQUIREMENTS FOR MERCHANDISING COMPANIES

In previous chapters, we recorded economic events using only general ledger accounts. These accounts, often referred to as **control accounts,** are used to prepare financial statements that summarize the financial position of a business and the results of its operations. Although general ledger accounts provide a useful overview of a company's financial activities, they do not provide the detailed information needed to effectively manage most business enterprises. This detailed information is found in accounting records called subsidiary ledgers.

Subsidiary ledgers contain information about specific control accounts in the company's general ledger. Merchandising companies always maintain accounts receivable and accounts payable subsidiary ledgers. Thus, if a company has 500 credit customers, there are 500 individual customer accounts in the *accounts receivable subsidiary ledger* that, in total, add up to the Accounts Receivable general ledger balance reported in the balance sheet. Likewise, if a company has 20 creditors, there are 20 individual records in the *accounts payable subsidiary ledger* that contain detailed information about the amount owed to each creditor. The individual balances of these accounts add up to the Accounts Payable control balance in the general ledger.

Many merchandising companies also maintain an *inventory subsidiary ledger* by creating a separate inventory account for each item that they sell. The inventory subsidiary ledger for a large department store contains thousands of accounts. Each of these accounts tracks information for one type of product, showing the quantities and costs of all units purchased, sold, and currently in stock.

[1] The income statement presented in Exhibit 6–3 is somewhat condensed. For instance, it is a common practice for companies to subdivide operating expenses into *selling expenses* and *general and administrative expenses.* A more detailed income statement presentation is developed in Chapter 12.

It may seem that maintaining records for thousands of separate accounts would involve an incredible amount of work. And it would, in a manual accounting system. However, in a computerized accounting system, subsidiary ledger accounts and general ledger control accounts are posted automatically as transactions are recorded. Thus, no significant amount of effort is required.

Throughout the remainder of this chapter we will record various merchandise transactions directly in the general ledger control accounts. To avoid excessive detail, we will assume that the specific account information underlying these transactions has been posted to the necessary subsidiary accounts.

TWO APPROACHES USED IN ACCOUNTING FOR MERCHANDISE INVENTORIES

Either of two approaches may be used in accounting for merchandise inventories: (1) a perpetual inventory system, or (2) a periodic inventory system. In the past, both systems were in widespread use. Today, however, the growing use of computerized accounting systems has made the perpetual approach easy and cost-effective to implement. Thus, the periodic approach is used primarily by very small businesses with manual accounting systems.

Before we examine perpetual and periodic inventory systems, it is important to realize that accounting for inventory is similar to accounting for the prepaid expenses we discussed in Chapter 4 (for example, office supplies, unexpired insurance policies, prepaid rent, etc.). As inventory is purchased, it is initially reported as an asset in the balance sheet. As it is sold to customers, this asset is converted to an expense, specifically, the cost of goods sold.

Both perpetual and periodic inventory systems account for the flow of inventory costs from the balance sheet to the income statement as illustrated in Exhibit 6–4.

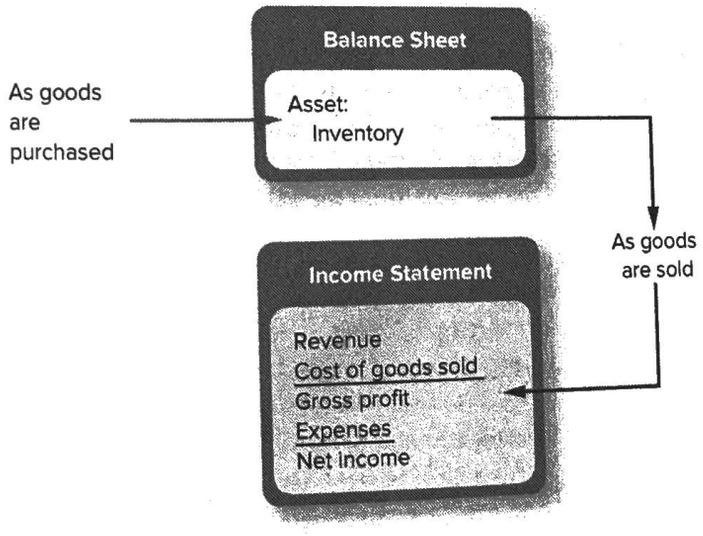


EXHIBIT 6–4
The Flow of Inventory Costs

Perpetual Inventory Systems

LO6-3

LEARNING OBJECTIVE
Account for purchases and sales of merchandise in a perpetual inventory system.

In a **perpetual inventory system,** all transactions involving costs of merchandise are recorded immediately as they occur. The system draws its name from the fact that the accounting records are kept perpetually up-to-date. Purchases of merchandise are recorded by debiting an asset account entitled Inventory. When merchandise is sold, two entries are necessary: one to recognize the *revenue earned* and the second to recognize the related *cost of goods sold.* This second entry also reduces the balance of the Inventory account to reflect the sale of some of the company's inventory.

A perpetual inventory system uses an inventory subsidiary ledger. This ledger provides company personnel with up-to-date information about each type of product that the company buys and sells, including the per-unit cost and the number of units purchased, sold, and currently on hand.

To illustrate the perpetual inventory system, we follow specific items of merchandise through the operating cycle of Computer City, a retail store. The transactions comprising this illustration are as follows.

Sept. 1 Purchased 10 Regent 21-inch computer monitors on account from Okawa Wholesale Co. The monitors cost $600 each, for a total of $6,000; payment is due in 30 days.

Sept. 7 Sold two monitors on account to RJ Travel Agency at a retail sales price of $1,000 each, for a total of $2,000. Payment is due in 30 days.

Oct. 1 Paid the $6,000 account payable to Okawa Wholesale Co.

Oct. 7 Collected the $2,000 account receivable from RJ Travel Agency.

Purchases of Merchandise Purchases of inventory are recorded at cost. Thus Computer City records its purchase of the 10 computer monitors on September 1 as follows.

A=L+OE **Purchase of merchandise: the start of the cycle**

Inventory	6,000	
Accounts Payable (Okawa Wholesale Co.)		6,000
Purchased 10 Regent 21-inch computer monitors for $600 each; payment due in 30 days.		

This entry is posted both to the general ledger control accounts and to the subsidiary ledgers. Thus, the debit to Inventory is also posted to the Regent 21-Inch Monitors account in the inventory subsidiary ledger. Information regarding the quantity of monitors purchased and their unit cost is also recorded in this subsidiary ledger. Likewise, the credit to Accounts Payable is posted to the account for Okawa Wholesale Co. in Computer City's accounts payable subsidiary ledger.

Sales of Merchandise The revenue earned in a sales transaction is equal to the sales price of the merchandise times the number of units sold, and is credited to a revenue account entitled Sales. Except in rare circumstances, sales revenue is considered realized when the merchandise is delivered to the customer, even if the sale is made on account. Therefore, Computer City will recognize the revenue from the sale to RJ Travel Agency on September 7, as follows.

A=L+OE **Entries to record a sale . . .**

Accounts Receivable (RJ Travel Agency)	2,000	
Sales		2,000
Sold two Regent 21-inch monitors for $1,000 each; payment due in 30 days.		

The matching principle requires that revenue be matched (offset) with all of the costs and expenses incurred in producing that revenue. Therefore, a second journal entry is required at the date of sale to record the cost of goods sold.

A=L+OE **and the related cost of goods sold**

Cost of Goods Sold	1,200	
Inventory		1,200
To transfer the cost of two Regent 21-inch monitors ($600 each) from Inventory to the Cost of Goods Sold account.		

Notice that this second entry is based on the cost of the merchandise to Computer City, not on its retail sales price.[2]

Both of the journal entries relating to this sales transaction are posted to Computer City's general ledger. In addition, the $2,000 debit to Accounts Receivable (first entry) is posted to the

[2] In our illustration, all of the Regent monitors were purchased on the same date and have the same unit cost. Often a company 's inventory of a given product includes units acquired at several different per-unit costs. This situation is addressed in Chapter 8.

account for RJ Travel Agency in the accounts receivable ledger. The credit to Inventory (second entry) also is posted to the Regent 21-Inch Monitors account in the inventory subsidiary ledger.

Payment of Accounts Payable to Suppliers The payment to Okawa Wholesale Co. on October 1 is recorded as follows.

Accounts Payable (Okawa Wholesale Co.)	6,000	
Cash		6,000
Paid account payable.		

A=L+LOE Payment of an account payable

Both portions of this entry are posted to the general ledger. In addition, payment of the account payable is entered in the Okawa Wholesale Co. account in Computer City's accounts payable subsidiary ledger.

Collection of Accounts Receivable from Customers On October 7, collection of the account receivable from RJ Travel Agency is recorded as follows.

Cash	2,000	
Accounts Receivable (RJ Travel Agency)		2,000
Collected an account receivable from a credit customer.		

A=L+LOE Collection of an account receivable

Both portions of this entry are posted to the general ledger; the credit to Accounts Receivable also is posted to the RJ Travel Agency account in the accounts receivable ledger.

Collection of the cash from RJ Travel Agency completes Computer City's operating cycle with respect to these two units of merchandise.

TAKING A PHYSICAL INVENTORY

The basic characteristic of the perpetual inventory system is that the Inventory account is continuously updated for all purchases and sales of merchandise. When a physical inventory is taken, management uses the inventory ledger to determine on a product-by-product basis whether a physical count of the inventory on hand corresponds to the amount indicated in the inventory subsidiary ledger. Over time normal inventory shrinkage may cause some discrepancies between the quantities of merchandise shown in the inventory records and the quantities actually on hand. **Inventory shrinkage** refers to unrecorded decreases in inventory resulting from such factors as breakage, spoilage, employee theft, and shoplifting.

In order to ensure the accuracy of their perpetual inventory records, most corporations are required to take a complete physical count of the merchandise on hand at least once a year. This procedure is called **taking a physical inventory,** and it usually is performed near year-end.

Once the quantity of merchandise on hand has been determined by a physical count, the per-unit costs in the inventory ledger accounts are used to determine the total cost of the inventory. The Inventory control account and the accounts in the inventory subsidiary ledger then are adjusted to the quantities and dollar amounts indicated by the physical inventory.

To illustrate, assume that at year-end both the Inventory control account and inventory subsidiary ledger of Computer City show an inventory with a cost of $72,200. A physical count, however, reveals that some of the merchandise listed in the accounting records is missing; the items actually on hand have a total cost of $70,000. Computer City would make the following adjusting entry to correct its Inventory control account.

Cost of Goods Sold	2,200	
Inventory		2,200
To adjust the perpetual inventory records to reflect the results of the year-end physical count.		

A=L+LOE Adjusting for inventory shrinkage

Computer City also will adjust the appropriate accounts in its inventory subsidiary ledger to reflect the quantities indicated by the physical count.

Reasonable amounts of inventory shrinkage are viewed as a normal cost of doing business and simply are debited to the Cost of Goods Sold account, as illustrated previously.[3]

INTERNATIONAL CASE IN POINT

International Financial Reporting Standards (IFRSs) for valuing inventory differ in some respects from U.S. GAAP rules. For example, U.S. GAAP does not allow reversals of inventory write-downs, but international standards allow such reversals if certain criteria are met. Thus, the inventory values on the balance sheet and the cost of goods sold on the income statement of a firm could differ depending on whether their financial statements are prepared under GAAP or under IFRSs.

CLOSING ENTRIES IN A PERPETUAL INVENTORY SYSTEM

As explained and illustrated in the previous chapters, revenue and expense accounts are closed at the end of each accounting period. A merchandising business with a perpetual inventory system makes closing entries that parallel those of a service-type business. The Sales account is a revenue account and is closed into the Income Summary account along with other revenue accounts. The Cost of Goods Sold account is closed into the Income Summary account in the same manner as the other expense accounts.

YOUR TURN

You as the Inventory Manager for Computer City

Assume you are the inventory manager for the largest store owned by Computer City. You are very busy one day when Fran Mally, an auditor from the accounting firm employed by Computer City, arrives and asks for assistance in determining the store's physical inventory on hand. You are overwhelmed with work and tell Fran that you do not have the time or the personnel needed to assist her in this task. You are also annoyed because you were not told that she was coming today to complete the physical inventory count. What should you do?

(See our comments in Connect.)

Periodic Inventory Systems

A **periodic inventory system** is an alternative to a perpetual inventory system. In a periodic inventory system, no effort is made to keep up-to-date records of either the inventory or the cost of goods sold. Instead, these amounts are determined only periodically—usually at the end of each year.

OPERATION OF A PERIODIC INVENTORY SYSTEM

LO6-4

LEARNING OBJECTIVE
Explain how a periodic inventory system operates.

A traditional periodic inventory system operates as follows. When merchandise is purchased, its cost is debited to an account entitled Purchases, rather than to the Inventory account. When merchandise is sold, an entry is made to recognize the sales revenue, but no entry is made to record the cost of goods sold or to reduce the balance of the Inventory account. As the inventory records are not updated as transactions occur, there is no inventory subsidiary ledger.

The foundation of the periodic inventory system is the taking of a complete physical inventory at year-end. This physical count determines the amount of inventory appearing in the balance sheet. The cost of goods sold for the entire year then is determined by a short computation.

[3] If a large inventory shortage is caused by an event such as a fire or theft, the cost of the missing or damaged merchandise may be debited to a special loss account, such as Fire Loss. In the income statement, a loss is deducted from revenue in the same manner as an expense.

Data for an Illustration To illustrate, assume that one of Computer City's suppliers, Wagner Office Products, has a periodic inventory system. At December 31, 2018, the following information is available.

1. The inventory on hand at the end of 2017 cost $14,000.
2. During 2018 purchases of merchandise for resale to customers totaled $130,000.
3. Inventory on hand at the end of 2018 cost $12,000.

The inventories at the end of 2017 and at the end of 2018 were determined by taking a complete physical inventory at (or very near) each year-end. (Because the Inventory account was not updated as transactions occurred during 2018, it still shows a balance of $14,000—the inventory on hand at the beginning of the year.)

The $130,000 cost of merchandise purchased during 2018 was recorded in the Purchases account.

Recording Purchases of Merchandise Wagner Office Products made many purchases of merchandise totaling $130,000 during 2018. The entry to record the first of these purchases is as follows.

Jan. 6	Purchases	2,000	
	Accounts Payable (Ink Jet Solutions)		2,000
	Purchased inventory on account; payment due in 30 days.		

This entry was posted to the Purchases and Accounts Payable accounts in the general ledger. The credit portion also was posted to the account for Ink Jet Solutions in Wagner's accounts payable subsidiary ledger. The debit to Purchases was not "double-posted," as there is no inventory subsidiary ledger in a periodic system.

Computing the Cost of Goods Sold The year-end inventory is determined by taking a complete physical count of the merchandise on hand. Once the ending inventory is known, the cost of goods sold for the entire year can be determined by a short computation. The following computation uses the three information items for Wagner Office Products just presented.

Inventory (beginning of the year) (1)	$ 14,000
Add: Purchases (2)	130,000
Cost of goods available for sale	$144,000
Less: Inventory (end of the year) (3)	12,000
Cost of goods sold	$132,000

A-1-LO5 Computation of the cost of goods sold

The $132,000 cost of goods sold is made up of two elements: the $130,000 cost of merchandise purchased during the year and the decrease in inventory of $2,000 ($14,000 beginning inventory – $12,000 ending inventory).

Recording Inventory and the Cost of Goods Sold Wagner has now determined its inventory at the end of 2018 and its cost of goods sold for the year. But neither of these amounts has yet been recorded in the company's accounting records.

In a periodic system, the ending inventory and the cost of goods sold are recorded during the company's year-end closing procedures (The term *closing procedures* refers to the end-of-period adjusting and closing entries.)

CLOSING PROCESS IN A PERIODIC INVENTORY SYSTEM

There are several different ways of recording the ending inventory and cost of goods sold in a periodic system, but they all produce the same results. One approach is to create a Cost of Goods Sold account with the proper balance as part of the closing process. Once this account has been created, the company can complete its closing procedures in the same manner as if a perpetual inventory system had been in use.

Creating a Cost of Goods Sold Account A Cost of Goods Sold account is created with two special closing entries. The first entry creates the new account by bringing together the costs contributing toward the cost of goods sold. The second entry adjusts the Cost of Goods Sold account to its proper balance and records the ending inventory in the Inventory account.

The costs contributing to the cost of goods sold include (1) beginning inventory and (2) purchases made during the year. These costs are brought together by closing both the Inventory account (which contains its beginning-of-the-year balance) and the Purchases account into a new account entitled Cost of Goods Sold. This year-end closing entry is as follows.

A-L+LOE **Creating a Cost of Goods Sold account . . .**

Dec. 31	Cost of Goods Sold	144,000	
	Inventory (beginning balance)		14,000
	Purchases		130,000
	To close the accounts contributing to the cost of goods sold for the year.		

Wagner's Cost of Goods Sold account now includes the cost of all goods available for sale during the year. Of course, not all of these goods were sold; the physical inventory taken at the end of 2018 shows that merchandise costing $12,000 is still on hand. Therefore, a second closing entry is made transferring the cost of merchandise still on hand out of the Cost of Goods Sold account and into the Inventory account. For Wagner, this second closing entry is as follows.

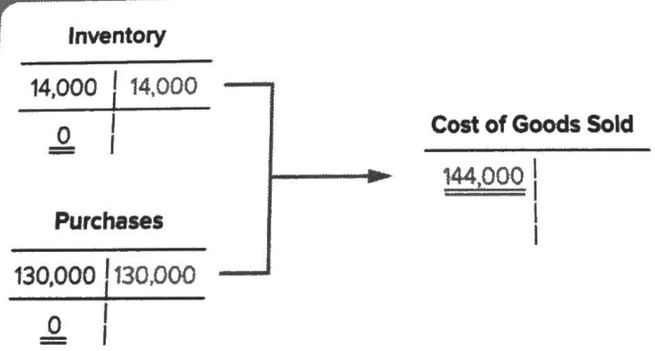
A-L+LOE **and adjusting its balance**

Dec. 31	Inventory (year-end balance)	12,000	
	Cost of Goods Sold		12,000
	To reduce the balance of the Cost of Goods Sold account by the cost of merchandise still on hand at year-end.		

With these two entries, Wagner has created a Cost of Goods Sold account with a balance of $132,000 ($144,000 – $12,000) and has brought its Inventory account up-to-date. Exhibit 6–5 provides a T account presentation of these entries.

EXHIBIT 6–5
Creating the Cost of Goods Sold Account

The first closing entry . . .



- The outdated *beginning* Inventory balance of $14,000 is removed from the Inventory account.
- The ending balance in the Purchases account is closed for the year.
- The $144,000 debit made to the Cost of Goods Sold account equals the cost of goods *available* for sale during the year.

The second closing entry . . .

- The Inventory account is updated to reflect its current *ending* balance of $12,000.
- The $12,000 credit made to the Cost of Goods Sold account reduces its balance to reflect the $132,000 cost of inventory actually *sold* during the year.

Completing the Closing Process Wagner may now complete its closing process in the same manner as a company using a perpetual inventory system. The company will make the usual four closing entries, closing the (1) revenue accounts, (2) expense accounts (including Cost of Goods Sold), (3) Income Summary account, and (4) Dividends account.

COMPARISON OF PERPETUAL AND PERIODIC INVENTORY SYSTEMS

Exhibit 6–6 provides a comparison of the way in which various events are recorded in perpetual and periodic systems. Perpetual systems are used when management needs information throughout the year about inventory levels and gross profit. Periodic systems are used when the primary goals are to develop annual data and to minimize recordkeeping requirements. A single business may use different inventory systems to account for different types of merchandise.

Who Uses Perpetual Systems? When management or employees need up-to-date information about inventory levels, there is no substitute for a perpetual inventory system. Almost all manufacturing companies use perpetual systems. These businesses need current

EXHIBIT 6–6 Summary of the Journal Entries Made in Perpetual and Periodic Inventory Systems

Event	Perpetual System			Periodic System		
Acquiring merchandise inventory	Inventory	xxx		Purchases	xxx	
	Accounts Payable (or Cash)		xxx	Accounts Payable (or Cash)		xxx
	To record the purchase of merchandise inventory.			To record the purchase of merchandise inventory.		
Sale of merchandise inventory	Accounts Receivable (or Cash)	xxx		Accounts Receivable (or Cash)	xxx	
	Sales		xxx	Sales		xxx
	To record the sale of merchandise inventory.			To record the sale of merchandise inventory.		
	Cost of Goods Sold	xxx		In a periodic system, no entry at the time of sale is made to update the Cost of Goods Sold and Inventory accounts.		
	Inventory		xxx			
	To update the Cost of Goods Sold and Inventory accounts.					
Settlement of Accounts Payable to suppliers	Accounts Payable	xxx		Accounts Payable	xxx	
	Cash		xxx	Cash		xxx
	To record payment for merchandise inventory purchased on account.			To record payment for merchandise inventory purchased on account.		
Collections from credit customers	Cash	xxx		Cash	xxx	
	Accounts Receivable		xxx	Accounts Receivable		xxx
	To record cash collections from credit customers.			To record cash collections from credit customers.		
Creating year-end balances for Cost of Goods Sold and Inventory accounts	No entry necessary. Cost of Goods Sold and Inventory accounts should both reflect year-end balances in a perpetual system. If a year-end physical count reveals less inventory on hand than reported in the Inventory account, the following entry is needed to record inventory shrinkage:			Cost of Goods Sold	xxx	
				Inventory (beginning bal.)		xxx
				Purchases		xxx
				To close the Purchases and Inventory balances to the Cost of Goods Sold account.		
	Cost of Goods Sold	xxx		Inventory (ending balance)	xxx	
	Inventory (shrinkage amount)		xxx	Cost of Goods Sold		xxx
	To reduce year-end inventory balance for shrinkage.			To create the year-end balance in the Inventory account.		

Note: In a periodic inventory system, the Cost of Goods Sold account is both debited and credited to create its year-end balance.