

BEFORE
You

READ

What You'll Learn

1. Explain the importance of maintaining accurate inventory records.
2. Explain the difference between a periodic and a perpetual inventory system.
3. Take a physical inventory count and record inventories.
4. Determine the cost of merchandise inventory using the specific identification; first-in, first-out; last-in, first-out; and weighted average cost methods.
5. Assign a value to merchandise inventory using the lower-of-cost-or-market rule.
6. Explain the accounting principles of consistency and conservatism.
7. Define the accounting terms introduced in this chapter.

Why It's Important

► Merchandise inventory is typically the largest current asset of a business.



Predict

1. What does the chapter title tell you?
2. What do you already know about this subject from personal experience?
3. What have you learned about this in the earlier chapters?
4. What gaps exist in your knowledge of this subject?

Exploring the *Real World* of Business

TRACKING INVENTORIES

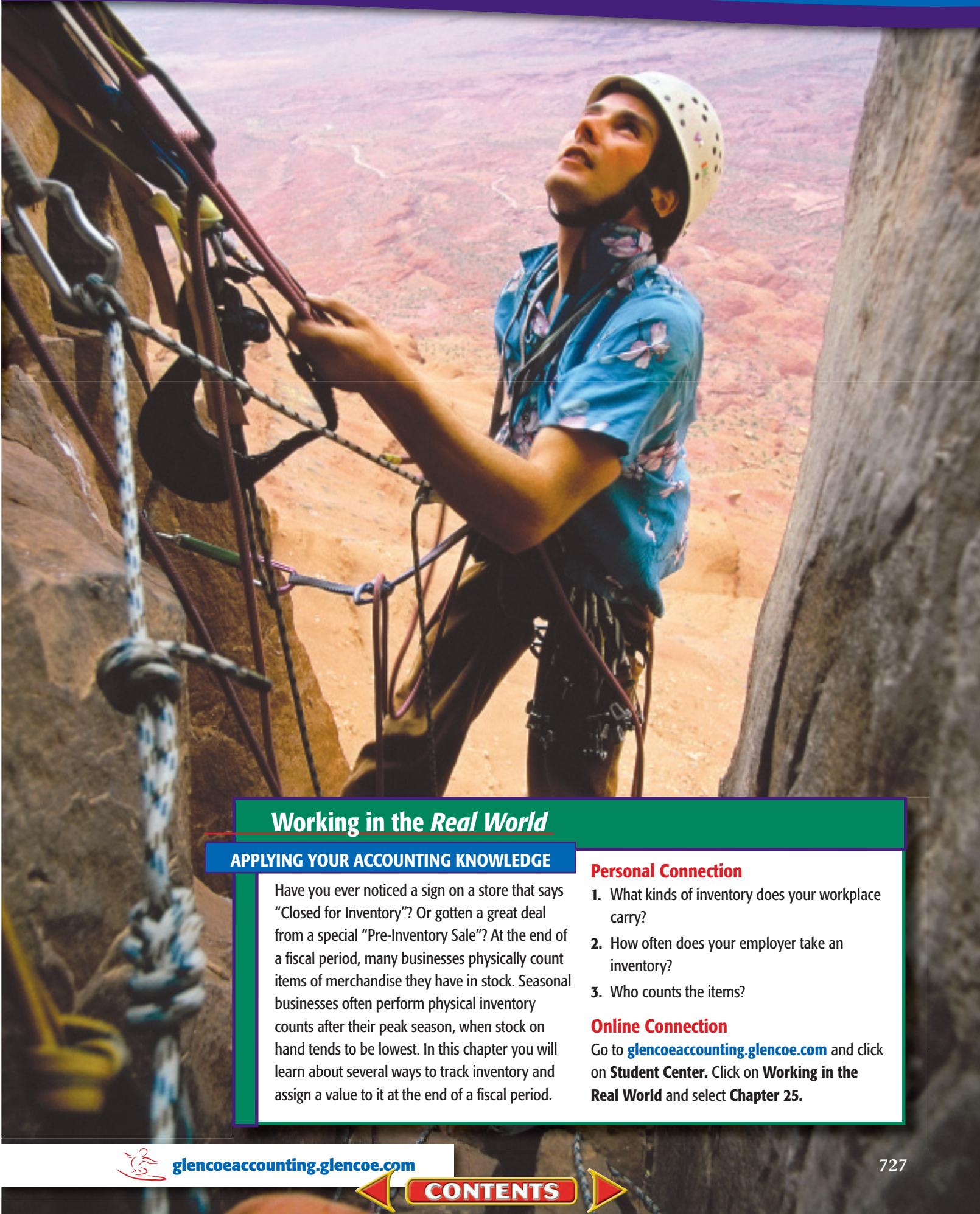
REI, Inc.

Grill some French toast on a camp stove, practice your climbing skills on a 30-foot wall, and then take a spin on a mountain bike. Does this sound like the great outdoors? You can do all this at your local REI retail store. From cycling shoes to skis, sleeping bags to windbreakers, REI stocks everything you will need for outdoor adventures.

How does a retail store like REI keep track of the inventory at its stores? REI's computerized software program analyzes which products are selling at specific stores on a day-to-day basis. The system also tracks what is on order and what is in stock at the distribution center. With this data on hand, REI employees ensure that the right products are purchased and available to customers at the right stores at the right time.

What Do You Think?

What might happen if a company like REI could not effectively evaluate which products it should carry in inventory?



Working in the *Real World*

APPLYING YOUR ACCOUNTING KNOWLEDGE

Have you ever noticed a sign on a store that says "Closed for Inventory"? Or gotten a great deal from a special "Pre-Inventory Sale"? At the end of a fiscal period, many businesses physically count items of merchandise they have in stock. Seasonal businesses often perform physical inventory counts after their peak season, when stock on hand tends to be lowest. In this chapter you will learn about several ways to track inventory and assign a value to it at the end of a fiscal period.

Personal Connection

1. What kinds of inventory does your workplace carry?
2. How often does your employer take an inventory?
3. Who counts the items?

Online Connection

Go to glencoeaccounting.glencoe.com and click on **Student Center**. Click on **Working in the Real World** and select **Chapter 25**.





SECTION 1

BEFORE
You

READ

Main Idea

Two methods of tracking merchandise are the perpetual inventory system and the periodic inventory system.

Read to Learn...

- ▶ how businesses use inventory control information. (p. 728)
- ▶ how businesses keep track of inventory. (p. 728)

Key Terms

perpetual inventory system
point-of-sale terminal (POS)
online
periodic inventory system

Figure 25-1 Computer Printout from a Perpetual Inventory System

Wilton Outdoor Center DAILY INVENTORY REPORT					
Stock No.	Item	Unit	Quantity	Unit Cost	Total Value
7651	Kilmer Rods	Each	8	\$ 31.80	\$ 254.40
7560	Tyon Rods	Each	12	36.40	436.80
7762	Peterson Rods	Each	11	29.75	327.25
7785	K & R Rods	Each	6	26.30	157.80
7208	Weber Reels	Each	5	35.20	176.00
7338	Pro Reels	Each	8	41.40	331.20
7193	Artcraft Reels	Each	4	47.10	188.40
7525	#7 Fishing Hook	Box	26	4.86	126.36
7937	#9 Fishing Hook	Box	31	5.24	162.44
Total					\$ 2,160.65

Determining the Quantity of Inventories

Maintaining control over inventory is essential. To maintain this control, a business establishes a system of inventory-tracking procedures. A manufacturer controls inventories of raw materials, work in process, and finished goods. Wholesalers and retailers maintain control over merchandise inventory. Can you imagine the problems that a store like Wal-Mart would encounter if it did not have an inventory control system?

Merchandise Inventory

How Is Tracking Merchandise Helpful?

Earlier you learned that *merchandise* refers to goods a business purchases for resale to customers. The **Merchandise Inventory** account shows the cost of goods purchased for resale. By tracking merchandise, a business knows how much merchandise is sold and which items are selling well. **Merchandise Inventory** is the only account reported on both the balance sheet (as a current asset) and the income statement (to calculate the cost of merchandise sold).

Methods of Tracking Inventory

How Do You Keep Track of Inventory?

Businesses can choose between two methods to track merchandise: the *perpetual inventory system* and the *periodic inventory system*.

Perpetual Inventory System

Most large businesses and smaller ones with automated accounting systems use the **perpetual inventory system**, which keeps a constant,

up-to-date record of merchandise on hand at any point in time. When a business uses a perpetual inventory system, management can obtain the quantity on hand and cost of any item at any point in time. The business can use the information to determine when to reorder items. This avoids loss of sales due to inadequate inventory. **Figure 25-1** shows an example of a computer printout for a perpetual inventory system.

The perpetual inventory system records an entry in the **Merchandise Inventory** account every time a

purchase or sale occurs. After each sale the system also enters the cost of merchandise sold in the accounting records. The perpetual inventory system uses a **Cost of Merchandise Sold** account.

Computers update a perpetual inventory system through electronic cash registers, or **point-of-sale terminals (POS)**, that are **online** (linked to a central computer system). Such machines read bar codes that identify the item being sold. The computer records the sale and automatically updates the inventory information. Merchandise purchases are also entered into the computer to update the inventory records.

Businesses that have not yet automated their operations can also use a perpetual inventory system. They use stock cards or sheets like the one in **Figure 25–2** to record the amount of increase or decrease for every purchase and sale. For example, a business records the quantity of merchandise purchased in the stock card's *In* column and the quantity of sold items in the *Out* column.

Periodic Inventory System

In the **periodic inventory system**, inventory records are updated only after a physical count of merchandise on hand is made. This system does not adjust inventory records for every purchase and sale. Instead, an adjusting entry is made at the end of the accounting period. See Chapter 18, pages 521–522 for a review of how to calculate the inventory adjustment. Small businesses that maintain manual accounting records generally use this system.

Physical Inventory Count

In either inventory tracking system, a business takes a physical count of its merchandise at least once a year. This is called *taking inventory* and is part of the system of internal controls. Businesses using the periodic inventory system must use the physical count to update their accounting records.

The process of identifying and counting all items of merchandise for businesses with many items in inventory is very time consuming. Therefore, inventory is usually counted when it is at its lowest level. Seasonal businesses take physical counts and record inventories at the end of the peak selling period after they have sold most of the merchandise. A ski shop, for instance, probably takes inventory in May or June.

The total number of a particular item on hand is recorded on an inventory card or an inventory sheet. **Figure 25–3** shows a typical inventory sheet. It lists each item's stock number, description, quantity on hand, unit cost, and the total cost of its inventory on hand.

STOCK CARD				
STOCK NO.	ITEM			
C 1297	Altmore Disc Player			
SUPPLIER	SUPPLIER'S CATALOGUE NO.			
Star Electric	91246		MINIMUM	MAXIMUM
UNIT	Each	15	60	
DATE	EXPLANATION	IN	OUT	BALANCE
7/1/20--	Balance on Hand			48
7/8/20--	Shipping Order 21928		6	42
7/12/20--	Shipping Order 22201		10	32
7/20/20--	Shipping Order 22456		8	24
7/24/20--	Shipping Order 22719		12	12
7/24/20--	Purchase Req. 19426			
7/31/20--	Receiving Report 21563	48		60

Figure 25–2 Stock Card Used in a Perpetual Inventory System

As You READ

In Your Experience

Give an example of a store that gave you information regarding an inventory item. Did it use a manual or computer system to obtain the information?

Figure 25–3 Inventory Sheet

INVENTORY SHEET						
DATE		Jan. 5, 20--	CLERK	Arlene Stone	PAGE	
STOCK NO.	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL VALUE	
1901	Needles	Pkg	24	1 14	27	36
2132	Thread	Spool	12	65	7	80
2136	Thread	Spool	18	55	9	90
3245	Zipper	Each	18	1 50	27	00
1917	Pins	Box	24	79	18	96
4971	Buttons	Pkg	12	89	10	68
4993	Tape Measure	Each	15	1 49	22	35
					TOTAL FOR THIS SHEET	789 14

Reinforce the Main Idea

Identify three facts about each inventory tracking system covered in this section. Create a chart similar to this one.

Tracking System	Fact #1	Fact #2	Fact #3

**Do the Math**

Katie's Ceramic Emporium received 9 dozen ceramic elephants for a total cost of \$306.72. The invoice also includes 17 dozen songbird figurines in various colors, with a cost of \$822.12. Based on the information on the invoice, calculate the unit cost of the elephants and the songbirds.

**Problem 25-1 Preparing Inventory Reports**

In your working papers, complete the manual inventory sheet for Carole's Gift Shop. Use today's date and your name as the clerk.

Stock No.	Item	Unit	Quantity	Unit Cost
1790	Greeting Cards	Doz.	32	6.00
2217	Plush Toys	Each	20	2.50
1900	Balloons	Doz.	12	.50
1201	Wrapping Paper	Each	30	1.12
1205	Ribbon	Spool	25	.75
3495	Novelty Buttons	Doz.	12	2.50
2722	Music Boxes	Doz.	6	60.00
4200	Party Supplies	Doz.	10	6.50
1907	Gift Boxes	Doz.	5	2.75
1742	Vases	Doz.	2	12.50

Determining the Cost of Inventories

Once a business determines the quantity of merchandise it has on hand, it calculates the cost of that merchandise. There are four inventory costing methods used to assign costs to merchandise.

Inventory Costs

Why Is It Difficult to Determine Inventory Costs?

When merchandise is purchased, it is recorded in the accounting records at cost. However, assigning a cost to each item in inventory can be complicated. A business may purchase the same item many times within a single inventory period, and the cost may change from one purchase to the next. The challenge is to decide which cost applies to each item.

Methods of Assigning Costs to Inventories

How Do You Set the Cost of Inventory?

Businesses use one of four methods to determine inventory cost:

- specific identification
- first-in, first-out (FIFO)
- last-in, first-out (LIFO)
- weighted average cost

The Specific Identification Costing Method

Under the **specific identification method**, the exact cost of each item is determined and assigned to that item. The actual cost of each item is obtained from the invoice.

Businesses that sell a small number of items with high unit prices most often use the specific identification method. Appliance stores, automobile dealerships, and furniture stores often use this method.

The Entertainment Store uses the periodic inventory system. It started the year with a beginning inventory of 15 DVD players. During the period the store purchased an additional 50 players. When a physical inventory count was taken on May 31, there were 12 players still on hand. The cost of the players was calculated as shown on page 732.

BEFORE
YOU

READ

Main Idea

Businesses can choose one of four methods to assign cost values to inventories.

Read to Learn...

- why determining inventory costs can be difficult. (p. 731)
- the methods for assigning costs to inventory. (p. 731)

Key Terms

specific identification method

first-in, first-out method

(FIFO)

last-in, first-out method

(LIFO)

weighted average cost

method



Date	Description	Units	Cost	Total
June 1	Beginning inventory	15	\$250	\$ 3,750
Aug. 4	Purchase	20	250	5,000
Dec. 8	Purchase	10	253	2,530
Feb. 27	Purchase	10	258	2,580
May 1	Purchase	10	260	2,600
	Total	65		\$16,460

As You READ
In Your Own Words

Specific Identification

Costing Explain why all businesses do not use the specific identification costing method.

Using the specific identification method, the accountant checks the invoices to find the actual cost of each of the 12 players still on hand at the end of May. The accountant found the following:

4 purchased @ \$253 each	=	\$1,012
5 purchased @ \$258 each	=	1,290
3 purchased @ \$260 each	=	780
12 players (ending inventory)		\$3,082

The cost of ending inventory is \$3,082. Once the cost of ending inventory has been calculated, the cost of merchandise sold can be computed:

$$\begin{array}{r} \text{Purchases available for sale} \\ - \text{Cost of ending inventory} \\ \hline \text{Cost of merchandise sold} \end{array}$$

In this example the cost of merchandise sold using the specific identification method is \$13,378:

	Units	Cost
Cost of players available for sale	65	\$16,460
Less ending inventory	12	3,082
Cost of merchandise sold	53	\$13,378

The First-In, First-Out Costing Method

The **first-in, first-out method (FIFO)** of assigning cost assumes that the first items purchased (first in) are the first items sold (first out). The FIFO method assumes that the items purchased most recently are the ones on hand at the end of the period. The physical flow of most merchandise is first-in, first-out. For example, think about milk that is stocked by a supermarket. Since milk is perishable, the supermarket stocks the shelves with the milk it purchased first. As that milk is sold, later purchases of milk are added at the back of the shelves.

Let's apply the FIFO costing method to our DVD player example.

Date	Description	Units	Cost	Total
June 1	Beginning inventory	15	\$250	\$ 3,750
Aug. 4	Purchase	20	250	5,000
Dec. 8	Purchase	10	253	2,530
Feb. 27	Purchase	10	258	2,580
May 1	Purchase	10	260	2,600
	Total	65		\$16,460

Under the FIFO method, the items purchased first are assumed to be the items sold first. In other words the 53 players sold are assumed to be as follows:

	Units
Beginning inventory	15
Aug. 4	20
Dec. 8	10
Feb. 27	8
Total sold	<u>53</u>

The items remaining in inventory are:

	Units
Feb. 27 (10 bought – 8 sold)	2
May 1	<u>10</u>
Total	<u>12</u>

The cost of the ending inventory using the FIFO method is:

$$\begin{array}{rcl}
 10 \text{ units @ \$260 each} & = & \$2,600 \\
 2 \text{ units @ \$258 each} & = & \underline{\quad 516} \\
 \hline
 12 \text{ units} & & \$3,116
 \end{array}$$

The cost of merchandise sold using the FIFO method is \$13,344:

	Units	
Cost of players available for sale	65	\$16,460
Less ending inventory	<u>12</u>	<u>3,116</u>
Cost of merchandise sold	<u>53</u>	<u>\\$13,344</u>

The Last-In, First-Out Costing Method

The **last-in, first-out method (LIFO)** of assigning inventory cost assumes that the last items purchased (last in) are the first items sold (first out). The LIFO method assumes that the items purchased first are still on hand at the end of the period. The earliest costs, therefore, are the ones used to assign a cost to the inventory. The physical flow of a stone and gravel company is last-in, first-out. When new gravel is purchased and delivered, it is deposited on top of the existing gravel. As gravel is taken from the top of the pile, the first gravel used is the last gravel delivered.

Let's return to the DVD player example and apply the LIFO costing method.

Date	Description	Units	Cost	Total
June 1	Beginning inventory	15	\$250	= \$ 3,750
Aug. 4	Purchase	20	250	= 5,000
Dec. 8	Purchase	10	253	= 2,530
Feb. 27	Purchase	10	258	= 2,580
May 1	Purchase	10	260	= 2,600
	Total	<u>65</u>		<u>\\$16,460</u>

Using the LIFO method, the 12 players remaining in stock are from the beginning inventory of 15 units. The cost of the ending inventory is \$3,000 (12 units @ \$250 each).

As You READ

Compare and Contrast

Cost Flow Assumptions

How are FIFO and LIFO similar? How are they different?

Connect to...
SCIENCE

How much the human body is worth depends on the method used to value it. Broken down into its basic elements and minerals, it is worth only a few dollars. But when broken down to its valuable fluids, tissues, and germ-fighting antibodies, it is worth \$45 million according to a recent *Wired* article.

The cost of merchandise sold using the LIFO method is \$13,460:

	Units	
Cost of players available for sale	65	\$16,460
Less ending inventory	12	3,000
Cost of merchandise sold	53	<u>\$13,460</u>

The Weighted Average Cost Method

A fourth method of assigning inventory costs is the weighted average cost method. The **weighted average cost method** assigns the average cost to each unit in inventory. The average cost is calculated by:

- adding the number of units on hand at the beginning of the period and the number of units purchased
- adding the cost of the units on hand at the beginning of the period and the cost of the units purchased
- dividing the total cost by the total number of units

The average cost per unit is used to determine the cost of the ending inventory. Again, we will use the The Entertainment Store example to apply the weighted average cost method.

Date	Description	Units	Cost	Total
June 1	Beginning inventory	15	\$250	= \$ 3,750
Aug. 4	Purchase	20	250	= 5,000
Dec. 8	Purchase	10	253	= 2,530
Feb. 27	Purchase	10	258	= 2,580
May 1	Purchase	10	260	= 2,600
	Total	65		<u>\$16,460</u>

The average cost per player is \$253.23 ($\$16,460 \div 65$ units).

The cost of the ending merchandise inventory using the weighted average cost method is \$3,038.76 (12 units \times \$253.23).

The cost of merchandise sold using the weighted average cost method is \$13,421.24:

	Units	
Cost of players available for sale	65	\$16,460.00
Less ending inventory	12	3,038.76
Cost of merchandise sold	53	<u>\$13,421.24</u>

The following table illustrates the different inventory costing methods for The Entertainment Store's inventory of DVD players. After the company selects an inventory costing method, it is applied consistently as you will see in the next section.

Method	Cost of Players Sold	Ending Inventory
Specific identification	\$13,378.00	\$3,082.00
FIFO	13,344.00	3,116.00
LIFO	13,460.00	3,000.00
Weighted average	13,421.24	3,038.76

Reinforce the Main Idea

Identify two facts about each inventory costing method covered in this section. Create a chart similar to this one.

Costing Method	Fact #1	Fact #2

**Do the Math**

Foxfire Golf Club Pro Shop uses the first-in, first-out method for inventory costing. At the beginning of the year, Foxfire had 30 golf club sets on hand. The golf club sets were purchased for \$800 each. An additional 12 golf club sets were purchased during the year at \$875 each. When inventory was taken at the end of the season, 5 golf sets were still on hand. Using the FIFO method of inventory valuation, what was the total cost of merchandise sold?

**Problem 25–2 Determining Inventory Costs**

The following items were purchased by Kudos Leather Goods during the month of April:

- April 2 34 wallets @ \$12.95 each
- April 8 24 wallets @ \$13.10 each
- April 18 15 wallets @ \$13.25 each
- April 26 20 wallets @ \$13.27 each

On April 1 the business had in inventory 19 wallets valued at \$12.90 each. On April 30 the business had 36 wallets in inventory; of these wallets, 8 were purchased on April 2, 15 were purchased on April 8, 3 were purchased on April 18, and 10 were purchased on April 26.

Instructions In your working papers, calculate the cost of the ending inventory using:

- a. the specific identification method
- b. the FIFO method
- c. the LIFO method
- d. the weighted average method

Accounting Careers in Focus

CHIEF FINANCIAL OFFICER

Water Replenishment District of Southern California, Cerritos, California
Scott M. Ota

Q: Why is accounting appealing to you?

A: Accounting is like learning a different language. Some people think because you are an accountant, you must be good at math. That is true, but the key is actually knowing how to balance accounts and understanding their relationships.

Q: What key factors are necessary for success?

A: As you move up the corporate ladder, your success will depend a great deal on how effectively you communicate and relate to others. When working with nonaccountants, know your audience and bring the conversation to their level of understanding.

Q: Do you have any advice for accounting students?

A: Don't get discouraged. If accounting were easy, everyone would do it. Stay on target and make definite, attainable goals and stick to them. There are so many different careers in accounting—the options are limitless.

Q: What advice would you offer those interested in a career track leading to a chief financial officer position?

A: Talk to people in the industry. Investigate the requirements for becoming a CFO to determine whether you are willing to put in the time and effort. The background and experience that you develop over the early part of your career is very important. It will lay the foundation for things to come.

Tips from . . .



RH Robert Half International Inc.

When looking for a job, consider your ideal work environment. Do you want to work for a large or small company? Which is more important, pay or advancement opportunity? You can learn more about prospective employers through research conducted on the Internet or at your library or career center.

CAREER FACTS

- ▶ **Nature of the Work:** Direct the company's accounting policies, procedures, and finance functions; ensure the integrity of the company's financial information; identify and manage business risks and insurance requirements.
- ▶ **Training or Education Needed:** At least 10 years of experience, including public accounting experience and a minimum of five years in a management role; a master's degree in business administration. Many companies require a CPA license.
- ▶ **Aptitudes, Abilities, and Skills:** This is an executive-level position. Strong analytical skills, long-term planning skills, and communication skills are required. CFOs work directly with a company's chief executive officer, board members, and other senior executives.
- ▶ **Salary Range:** \$85,000 to \$350,000 depending on experience, location, and company revenue.
- ▶ **Career Path:** Gain experience in a public accounting firm and then accept positions of increasing responsibility in a corporate environment, such as director of finance, director of accounting, or controller.

Thinking Critically

What qualities do you think are important to be a good manager?



SECTION 3

Choosing an Inventory Costing Method

A business may use any one of the four inventory costing methods. Careful consideration is given to this choice because it affects the gross profit reported by the business.

Consistency and Inventory Costing

How Do You Apply the Consistency Principle?

When a business applies the same accounting methods in the same way from one period to the next, the business is applying the GAAP **consistency principle**. Once a business chooses an inventory costing method, the business must use it consistently. This helps owners and creditors compare financial reports from one period to another.

Businesses are permitted to change costing methods but must declare the reasons for changing and how the change will affect the financial statements. In addition the business must get permission for the change from the Internal Revenue Service.

Comparison of the Four Inventory Costing Methods

How Does the Inventory Costing Method Affect the Reported Gross Profit?

When deciding which inventory costing method to use, the owner or manager compares the four methods and selects the one that is likely to be the most beneficial to the company. The owner or manager considers the present economic conditions and the future economic outlook. He or she will also consider whether prices and demand for the product will remain stable, increase, or decrease.

The cost of ending inventory affects the cost of merchandise sold, which in turn affects the income or loss reported on the income statement. The following table compares The Entertainment Store's gross profit on sales using the four inventory costing methods. The company sold all of the DVD players for \$320 each. Total sales are \$16,960 ($53 \text{ units} \times \320).

	Specific Identification	First-In, First-Out	Last-In, First-Out	Weighted Average
Sales	\$16,960.00	\$16,960.00	\$16,960.00	\$16,960.00
Less: Cost of merchandise sold	13,378.00	13,344.00	13,460.00	13,421.24
Gross profit on sales	\$ 3,582.00	\$ 3,616.00	\$ 3,500.00	\$ 3,538.76

BEFORE
YOU

READ

Main Idea

Apply consistency and conservatism when reporting merchandise inventory on the financial statements.

Read to Learn...

- about the consistency principle and inventory costing methods. (p. 737)
- how the inventory costing method affects the reported gross profit. (p. 737)
- about the conservatism principle and the lower-of-cost-or-market rule. (p. 738)

Key Terms

consistency principle
lower-of-cost-or-market rule
market value
conservatism principle

AS
YOU

READ

Instant Recall

Income Statement

- Sales
- Cost of merchandise sold
- Gross profit on sales
- Operating expenses
- Net income (loss)

Key Point**The Effect of Inventory Costing on Net Income**

A company's gross profit on sales and net income are affected by the inventory costing method used.

Over the year, the price that The Entertainment Store paid to purchase each player increased from \$250 to \$260. As the table on page 737 shows, in a period of rising prices, the LIFO method results in the lowest gross profit on sales. The FIFO method results in the highest gross profit on sales.

Businesses pay income taxes on income earned. As this example indicates, the inventory costing method used by a business can increase or decrease its taxes.

Conservatism and the Lower-of-Cost-or-Market Rule

How Do You Apply the Conservatism Principle?

Merchandise inventory appears on the income statement and the balance sheet. Cost is the most common basis for reporting inventory. However, inventory might be worth less than its cost. For example, some merchandise items may deteriorate or become obsolete. If their value becomes less than the recorded cost, the difference is a loss to the business.

The **lower-of-cost-or-market rule** requires that the cost of the ending inventory that appears on the financial statements is the lower of its cost (calculated using one of the four inventory methods) or its *market value*.

Market value of an item is the current price that is charged for a similar item of merchandise in the market. That is, it is the price that a retailer like The Entertainment Store would pay a wholesaler or manufacturer for a specific item. Market value is the cost at which the inventory item could be replaced at the date of the financial statements.

Let's look at an example. Assume that The Entertainment Store determines that the current market value of the DVD players is \$248 each. At market the players are worth \$2,976 ($\248×12 units). Assume also that The Entertainment Store uses the FIFO inventory costing method. Under this method the cost of the ending inventory was \$3,116.

Following the lower-of-cost-or-market rule, The Entertainment Store will report inventory at \$2,976.

Lower of	
Cost (FIFO)	\$3,116
or	
Market	2,976

The GAAP **conservatism principle** of accounting states that it is best to present amounts that are least likely to result in an overstatement of income or assets. To be conservative is to take the safe route. The lower-of-cost-or-market rule is conservative for two reasons:

1. Decreases in inventory value (losses) are recognized when they occur, but increases in inventory value are not recorded.
2. Inventory as reported on the balance sheet is never more, but may be less, than the actual cost of the inventory.

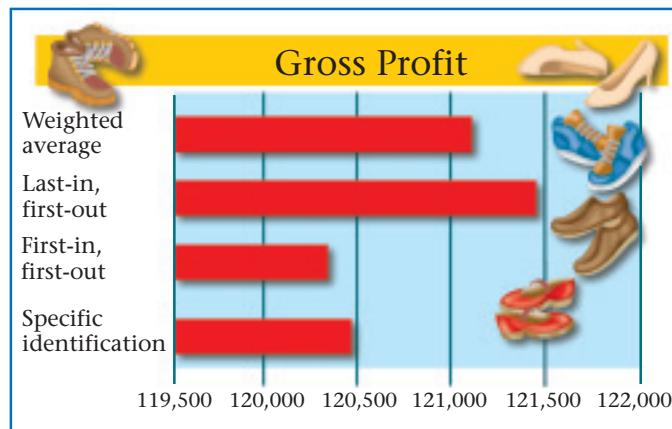
Reinforce the Main Idea

Create a chart like this one to describe the two accounting principles covered in this section. Also describe how each principle applies to merchandise inventory.

Accounting Principle	Description	Application to Inventory

**Do the Math**

The management of Baby Steps Children's Store wants to report the largest gross profit on sales. Using the graph, compare the gross profit on sales for the four inventory costing methods. Which method results in the largest gross profit on sales?

**Problem 25–3 Analyzing a Source Document**

Read the following memorandum and complete the assigned task.

Toys & Things

MEMORANDUM

TO: Accounting Clerk
 FROM: Accounting Manager
 DATE: June 30, 20--
 SUBJECT: Change in Inventory Method

We have received approval to change from the LIFO to the FIFO method of determining our inventory costs. Please calculate the cost of the Walk-A-Long Dolls using the FIFO method. There are 36 dolls in inventory.

Walk-A-Long Dolls	Beginning inventory	8 @ \$15.45
	Purchases 6/11	12 @ \$15.95
	6/17	10 @ \$16.25
	6/22	6 @ \$16.40

Instructions

1. What is the new value of the ending inventory?
2. Assume that all 36 dolls were sold for \$21.95. What is the gross profit for this item?

Key Concepts

1. Merchandise inventory is often the largest current asset of a business. **Merchandise Inventory** is the only account that appears on both the balance sheet and the income statement:

- as a current asset on the balance sheet
- as part of the calculation for cost of merchandise sold on the income statement

To control its merchandise, a merchandising business establishes a system of inventory procedures that identifies:

- how much of its merchandise has been sold
- which items are selling well
- which items should not be replaced after they are sold

2. Differences between a periodic and perpetual inventory system:

Periodic Inventory System	Perpetual Inventory System
Used by small businesses with manual accounting records.	Used by most large businesses and smaller ones with automated accounting systems.
Requires a physical count of the merchandise on hand to update inventory records.	Provides current inventory records at any point in time.
How inventory accounting records are updated: <ul style="list-style-type: none">• An adjusting entry is made to the Merchandise Inventory account at the end of the accounting period. (To review this, see Chapter 18, pages 521–522.)• The cost of merchandise sold is calculated at the end of the accounting period (To review this, see Chapter 19, page 559.)	How inventory accounting records are updated: <ul style="list-style-type: none">• When a sale is made, the decrease to inventory is handled electronically using point of sale terminals that scan in the product's bar code.• When merchandise is purchased, the increase to inventory is entered directly into the inventory system.

3. At least once a year, a business *takes inventory* by physically counting its merchandise. This is a good practice for all merchandisers, regardless of the inventory tracking system used. The count is usually made when inventory is at its lowest level, generally after a company's peak selling period.

An inventory card or inventory sheet is used to record the following information about each item at a particular date:

- stock number
- item name
- unit description
- quantity on hand
- unit cost

4. Businesses choose one of four methods to assign costs to the merchandise that it has on hand. A company's gross profit on sales and net income are affected by the inventory costing method it uses.

Inventory Costing Methods:

Specific identification method	Tracks the exact cost of each item.
First-in, first-out method (FIFO)	Assumes that the first items purchased are the first items sold.
Last-in, first-out method (LIFO)	Assumes that the last items purchased are the first items sold.
Weighted average cost method	Uses an average cost for each inventory item.

5. The lower-of-cost-or-market rule applies the conservatism principle to reporting inventory on financial statements. It requires a business to report its ending inventory using whichever of these two is *lower*:

- the inventory's cost as calculated using the costing method selected by the company (specific identification method, FIFO, LIFO, or weighted average method)
- the inventory's *market value*, which is the wholesale cost to replace the inventory at the date of the financial statements

6. In reporting its inventory, a business must follow two accounting principles:

- Consistency** This principle requires that once a business chooses an inventory costing method, it must use that method consistently. If it changes methods, it must obtain permission from the Internal Revenue Service and then report the reasons for the change and how it affects the financial statements.
- Conservatism** This accounting principle requires that when they can choose among procedures, accountants must choose the safer, or more conservative, route by presenting amounts that are least likely to result in an overstatement of income or assets.

Key Terms

conservatism principle	(p. 738)	online	(p. 729)
consistency principle	(p. 737)	periodic inventory system	(p. 729)
first-in, first-out method (FIFO)	(p. 732)	perpetual inventory system	(p. 728)
last-in, first-out method (LIFO)	(p. 733)	point-of-sale terminal (POS)	(p. 729)
lower-of-cost-or-market rule	(p. 738)	specific identification method	(p. 731)
market value	(p. 738)	weighted average cost method	(p. 734)

AFTER
YOU

READ

Check Your Understanding

- Inventory Records**
 - Why does a company need a control system for its merchandise inventory?
 - What information does tracking inventory provide to a business?
- Inventory Tracking Systems**
 - What is the difference between a periodic and a perpetual inventory system?
 - What is the advantage to using a perpetual inventory system? Why is it difficult for some businesses to use it?
- Physical Inventory Count**
 - When is the best time for a business to take a physical inventory?
 - Which tracking system requires a physical inventory count for financial reporting purposes?
- Inventory Costing Methods**
 - What is meant by the phrase “with the FIFO method, the inventory cost is based on the most recent costs”?
 - Why does the inventory costing method used affect gross profit on sales and net income?
- Lower-of-Cost-or-Market Rule**
 - In this rule, what is meant by the term *cost*? By the term *market*?
 - State the lower-of-cost-or-market rule using your definitions of *cost* and *market*.
- Consistency and Conservatism**
 - How does the consistency principle help the owners, creditors, and the general public?
 - What approach to presenting income does the conservatism principle require?

Apply Key Terms

Grandma's Toy Attic is changing from a manual to an automated inventory control system. As the owner, you plan to hire an inventory supervisor who understands accounting principles, inventory control, and business economics as well as computer applications. Use the following terms to write a job description for this position. Then write a newspaper advertisement to attract the most qualified individual. Suggest some layout ideas for the advertisement.

conservatism principle
consistency principle
first-in, first-out method (FIFO)
last-in, first-out method (LIFO)
lower-of-cost-or-market rule

market value
online
periodic inventory system
perpetual inventory system
point-of-sale terminal (POS)
specific identification method
weighted average cost method



Inventory Costing

Making the Transition from a Manual to a Computerized System

Task	Manual Methods	Computerized Methods
Determining the cost of inventories in a perpetual inventory system	<ul style="list-style-type: none"> Enter purchases of merchandise onto stock cards. Enter sales of items onto stock cards. At period end, calculate the number and value of remaining inventory items. 	<ul style="list-style-type: none"> When the accounting system is set up, the costing method must be determined. Purchases of merchandise update not only the general ledger but also update the inventory records. As sales are made, the system updates the inventory records. Inventory quantities and values are available when needed.



Peachtree® Q & A

Peachtree Question	Answer
How is inventory set up and tracked in Peachtree?	<ol style="list-style-type: none"> From the Maintain menu, select Default Information. Select Inventory Items. Click the GL Accts/Costing tab and enter the GL account numbers for sales and purchases. Click the Taxes/Shipping tab and enter a (✓) if sales taxes are to be collected on items sold. Click OK. From the Maintain menu, select Inventory Items. Enter Item ID codes, descriptions, price, and cost method (FIFO, LIFO, or Average) for all inventory items. When recording sales or purchases of inventory items, use the established item codes. With each transaction, the system will update the inventory records.



QuickBooks Q & A

QuickBooks Question	Answer
How is inventory set up and tracked in QuickBooks?	<ol style="list-style-type: none"> From the Lists menu, select Item List. Click the Item drop-down menu, and choose New. From the Type field, choose Inventory Part. Complete the Purchase, Sales, and Inventory Information sections. Click OK. When recording sales, purchases, or returns of inventory, use the established item codes. QuickBooks will automatically update the inventory records.

For detailed instructions, see your Glencoe Accounting Chapter Study Guides and Working Papers.

Complete problems using:

Manual Glencoe
Working Papers OR Peachtree Complete
Accounting Software OR QuickBooks
Templates OR Spreadsheet
Templates**Peachtree®****SMART GUIDE****Step-by-Step Instructions:**
Problem 25-4

1. Select the problem set for Sunset Surfwear.
2. Rename the company and set the system date.
3. Print an Inventory Valuation Report, Cost of Goods Sold Journal, and Item Costing Report.
4. Complete the Analyze activity.
5. End the session.

QuickBooks**PROBLEM GUIDE****Step-by-Step Instructions:**
Problem 25-4

1. Restore the Problem 25-4.QBB file.
2. Print an Inventory Valuation Detail report.
3. Complete the Analyze activity.
4. Back up your work.

**SPREADSHEET
SMART GUIDE****Step-by-Step Instructions:**
Problem 25-6

1. Select the spreadsheet template for Problem 25-6.
2. Enter your name and the date in the spaces provided on the template.
3. Complete the spreadsheet using the instructions in your working papers.
4. Print the spreadsheet and proof your work.
5. Complete the Analyze activity.
6. Save your work and exit the spreadsheet program.

Problem 25-4 Calculating the Cost of Ending Inventory

Sunset Surfwear sells wet suits. On January 2 there were 21 wet suits at a total cost of \$4,809 in inventory.

Date	Description	Wet Suits	Cost	Total
Jan. 2	Beginning inventory	21	\$229	\$ 4,809
Jan. 3	Purchase	10	235	2,350
Mar. 17	Purchase	6	238	1,428
July 27	Purchase	12	240	2,880
Sept. 27	Purchase	10	241	2,410
Nov. 29	Purchase	6	244	1,464
	Total	65		\$15,341

At the end of the year, there were 17 wet suits in ending inventory. Of these, 1 was purchased on July 27, 10 were purchased on September 27, and 6 were purchased on November 29.

Instructions Assign a cost to the ending inventory using the following:

- a. the specific identification method
- b. the FIFO method
- c. the LIFO method
- d. the weighted average cost method

Analyze Determine which inventory method resulted in the lowest cost of ending inventory.

Problem 25-5 Completing an Inventory Sheet

InBeat CD Shop assigns a cost to its inventory using the lower-of-cost-or-market rule. In your working papers, there is a partial inventory record. As an example, the first line of the inventory record has been completed.

INVENTORY RECORD

Item No.	Item	Ending Inventory	Cost per Unit	Current Market Value	Price to be Used	Total Cost
0247	Blank CDs	24	2.67	2.88	2.67	64.08

SMART GUIDE

Step-by-Step Instructions:

Problem 25-7

1. Select the problem set for Cycle Tech Bicycles.
2. Rename the company and set the system date.
3. Print an Inventory Valuation Report, Cost of Goods Sold Journal, and Item Costing Report.
4. Print an Income Statement and a Balance Sheet.
5. Complete the Analyze activity.
6. End the session.

SMART GUIDE

Step-by-Step Instructions:

Problem 25-8

1. Select the problem set for Buzz Newsstand.
2. Rename the company and set the system date.
3. Record all purchases transactions using the **Purchases/Receive Inventory** option.
4. Record the transportation charges using the **Payments** option.
5. Record the camera sales using the **Receipts** option.
6. Print a Purchases Journal, Cash Disbursements Journal, and a Cash Receipts Journal to proof your work.
7. Print an Inventory Valuation Report, Cost of Goods Sold Journal, and Item Costing Report.
8. Print an Income Statement.
9. Complete the Analyze activity.
10. End the session.

Instructions Complete the inventory record. Do the following:

1. Select the lower-of-cost-or-market value. Enter that amount in the Price to be Used column.
2. Calculate the total cost of each item by multiplying the units in ending inventory by the Price to be Used column.
3. Add the amounts in the Total Cost column to determine the total cost of the ending inventory.

Analyze

Identify how many items used market value rather than actual cost.

Problem 25-6 Calculating Gross Profit on Sales

Using the four inventory costing methods, Shutterbug Cameras summarized the cost of its ending inventory as follows:

Specific Identification	First-In, First-Out	Last-In, First-Out	Weighted Average Cost
\$21,476.00	\$21,581.40	\$21,410.93	\$21,447.36

Shutterbug Cameras also reported the following amounts:

Net sales	\$53,874.92
Purchases available for sale	57,621.31

Instructions Using the preceding information, determine the cost of merchandise sold and the gross profit on sales for each of the inventory costing methods.

Analyze

Conclude which method resulted in the largest gross profit on sales.

Problem 25-7 Reporting Ending Inventory on the Income Statement

Cycle Tech Bicycles operates on a fiscal year beginning January 1. At the beginning of the year, the shop had in stock six Model #8274, 10-speed bicycles, valued at \$2,364 (6 bicycles @ \$394 each). During the year the business made the following purchases:

Date	Bicycles	Cost	Total
Jan. 20	4	\$399	= \$ 1,596
Mar. 5	5	415	= 2,075
Apr. 23	7	419	= 2,933
Aug. 14	4	423	= 1,692
Oct. 3	6	430	= 2,580
Nov. 17	3	435	= 1,305
Total Purchases	29		\$12,181

There were seven bicycles in inventory at the end of the period. During the year the bicycles sold for \$675 each.

CONTINUE

Instructions

1. Calculate the cost of the ending inventory using the FIFO, LIFO, and weighted average cost methods.
2. Using the costs calculated in (1), determine the cost of merchandise sold for each inventory costing method.
3. Prepare a partial income statement for each inventory costing method showing sales and the calculation of gross profit on sales. Assume that the sales and purchases are net amounts.

Analyze

Identify the method that resulted in the lowest cost of merchandise sold.

SOURCE DOCUMENT PROBLEM**Problem 25-8**

Use the source documents in your working papers to complete this problem.

QuickBooks**Step-by-Step Instructions:
Problem 25-8**

1. Restore the Problem 25-8.QBB file.
2. Record all purchase transactions using the **Enter Bills** option.
3. Record the transportation charges using the **Write Checks** option.
4. Record the camera sales using the **Enter Sales Receipts** option.
5. Print an Inventory Valuation Detail, a Journal report, and a Profit & Loss report.
6. Complete the Analyze activity.
7. Back up your work.

CHALLENGE PROBLEM**Problem 25-8 Calculating Cost of Merchandise Sold and Gross Profit on Sales**

Buzz Newsstand started the month of May with the following inventory of disposable cameras:

Units on				
Stock No.	Brand	Hand	Unit Cost	Selling Price
3845	Lenox	4	\$9.60	\$17.95
4931	Lancaster	6	8.40	17.29
9265	Paterson	3	8.10	16.88
4850	McMahon	5	7.60	15.95

Buzz Newsstand uses the FIFO method to calculate the cost of its merchandise inventory. The May 31 physical inventory count indicated:

Lenox	4 cameras	Paterson	7 cameras
Lancaster	5 cameras	McMahon	5 cameras

Instructions

1. How many units of each of the four cameras were sold during May?
2. Using the chart provided in your working papers, calculate the gross profit on sales for each type of camera.

Date	Transactions
May 2	Purchased 10 Lancaster cameras at \$8.45 each.
4	Purchased 5 McMahon cameras at \$7.80 each.
9	Purchased 6 Lenox cameras at \$9.95 each plus a \$4 transportation charge.
14	Purchased 5 Paterson cameras at \$8.25 each.
17	Purchased 8 Lancaster cameras at \$8.60 each.
19	Purchased 4 Lenox cameras at \$10.10 each plus a \$5 transportation charge.
27	Purchased 8 Paterson cameras at \$8.30 each.
29	Purchased 4 Lancaster cameras at \$8.85 each.

Analyze

Conclude which camera sold the most number of units.

Practice your test-taking skills! The questions on this page are reprinted with permission from national organizations:

- Future Business Leaders of America
- Business Professionals of America

Use a separate sheet of paper to record your answers.



Future Business Leaders of America

MULTIPLE CHOICE

1. The inventory system in which a constant, up-to-date record of merchandise on hand is maintained is called the

- a. first-in, first-out system.
- b. last-in, first-out system.
- c. perpetual inventory system.
- d. periodic inventory system.

Use the following information to answer questions 2–4.

Johnson, Inc. had the following inventory data: Inventory item T25 had 1,600 units at a unit price of \$14 in inventory on January 1. The first purchase during the year was for 1,000 units at \$15. The second purchase was for 1,000 units at \$18. The December 31 inventory consisted of 1,200 units. The market price is \$15.

2. The total cost of the ending inventory using FIFO is

- a. \$16,800.
- b. \$18,000.
- c. \$18,468.
- d. \$21,000.

3. The weighted average unit price is

- a. \$14.50.
- b. \$15.39.
- c. \$15.67.
- d. \$16.00.

4. Assume the weighted average cost method is used. Calculate the ending inventory using the lower-of-cost-or-market rule.

- a. \$16,000
- b. \$18,000
- c. \$18,468
- d. \$21,000



Business Professionals of America

MULTIPLE CHOICE

5. FIFO

- a. Assumes that old goods are sold first and that goods which are on hand are valued at current prices.
- b. Assumes that new goods are sold first and inventory is valued at old prices.
- c. Assumes that the cost of current inventory at the conclusion of a period and the cost of goods sold is the overall representation of all the costs that were incurred during this period.
- d. Assumes that amounts charged as expenses are actual cost of goods sold.

Need More Help?

Go to glencoeaccounting.glencoe.com and click on Student Center. Click on Winning Competitive Events and select Chapter 25.

- Practice Questions and Test-Taking Tips
- Concept Capsules and Terminology



Critical Thinking**CASE STUDY****Matter of ETHICS****COMMUNICATING ACCOUNTING****Inventories**

1. Name and describe the two systems used to determine the quantity of merchandise on hand.
2. Explain what is meant by an inventory system that is *online*.
3. Compute the cost of merchandise sold if the cost of the ending inventory is \$35,280 and the cost of the merchandise available for sale is \$97,200.
4. Explain why the specific identification costing method is the most accurate in determining inventory cost.
5. Explain why an ice cream stand would not use the LIFO method of inventory costing.
6. Defend the practice of most businesses to estimate the cost of their inventory using a method other than specific identification, which is the most accurate.

Merchandising Business: Home Building and Supply

Remodeling a kitchen? Adding a deck to your home? Home Helper is a building supply store that sells everything from lightbulbs to lumber, cabinet fixtures to appliances. Because it stocks many sizes and varieties of building products, the store has a huge inventory.

You work for a local CPA firm hired to evaluate the store's inventory procedures. The store manager wants to make sure the store is using the most appropriate inventory costing method.

INSTRUCTIONS

Think about the types of products stocked by such a store. Of the four inventory costing methods you studied in this chapter, recommend the best method for Home Helper. Assume that costs are expected to remain stable over the next few years. Explain the reasons for your recommendation.

Keeping Promotional Items

Imagine that you work in the cosmetics department of a large department store like Macy's. You have access to free samples—shampoo, moisturizer, lipstick, and nail polish—offered by manufacturers to get customers to try their products. This is great! You will never have to buy these products again. You figure that by using them, you are helping to promote them.

ETHICAL DECISION MAKING

1. What are the ethical issues?
2. What are the alternatives?
3. Who are the affected parties?
4. How do the alternatives affect the parties?
5. What would you do?

Inventory Systems

Natural Wonder offers products organically grown or made from organic materials. Its products include clothing, jewelry, gardening materials, and hair and body care products. The store is interested in a system that will keep an accurate count of inventory. Discuss the different inventory systems and explain how frequently each system is updated.



Selecting Equipment and Tools

Your manager, Richard Smythe, is considering switching from a manual inventory system to an automated perpetual system. Write a proposal to Mr. Smythe that emphasizes the benefits of a perpetual inventory system. Specifically address time savings and revenue possibilities.

Inventory Measurement

Many countries use International Accounting Standards (IAS) as their national GAAP. IAS No. 2 allows inventory valuation using the specific identification, FIFO, and weighted average methods. It does not allow the LIFO method although countries such as the United States, Japan, and Mexico permit its use.

INSTRUCTIONS Explain why you think IAS do not permit the use of LIFO.

Inventory Value

When shopping for a vehicle, you probably want a wide selection from which to choose. For this reason dealers try to have a large inventory, yet not so large it becomes impossible to track and control.

PERSONAL FINANCE ACTIVITY Businesses often cannot estimate the cost of their inventory merely by looking. To understand why, choose a room at your school and estimate the cost of its entire contents. Next, individually list all the large items in the room and estimate the cost of each, then total them. How do the two estimates compare?

PERSONAL FINANCE ONLINE Log on to glencoeaccounting.glencoe.com and click on **Student Center**. Click on **Making It Personal** and select Chapter 25.

Inventory Levels

Knowing how much inventory is on hand helps managers make decisions about how much merchandise to purchase. Too much inventory means the business has not sold what it purchased and its money is tied up in inventory. A business that holds too little inventory may run out often and need to make frequent purchases which increases costs. It also can lose business when customers go to a competitor to purchase an out-of-stock item. Higher costs and out-of-stock situations mean lower profits.

INSTRUCTIONS Use PETsMART's balance sheet and *Dear Fellow Stockholders* letter in Appendix F to answer the following questions.

1. How did PETsMART's merchandise inventory change from 2003 to 2004?
2. What could have caused this change?



Tracking and Costing

Some businesses store inventory in warehouses. Visit glencoeaccounting.glencoe.com and click on **Student Center**. Click on **WebQuest** and select **Unit 5** to continue your Internet project.

