

Chapter 20: Accounting for Inventory

Learning Objectives

After studying Chapter 20, in addition to defining key terms, you will be able to:

- LO1 Prepare a stock record.
- LO2 Calculate the cost of merchandise inventory using the first-in, first-out (FIFO) inventory costing method.
- LO3 Calculate the cost of merchandise inventory using the last-in, first-out (LIFO) inventory costing method.
- LO4 Calculate the cost of merchandise inventory using the weighted-average inventory costing method.
- LO5 Estimate the cost of merchandise inventory using the gross profit method of estimating inventory.

Accounting for Inventory: Accounting in the Real World

For any retail company, inventory makes up a large percentage of its current assets. The larger the store, the more inventory it has on hand. Think of a typical OfficeMax store. It offers hundreds of different products. Each product must be sufficiently stocked so that it is available when the customer wants it. The OfficeMax mission is: We help our customers do their best work. In order to fulfill this mission, OfficeMax must maintain up-to-date inventory that is wanted by its customers.

However, too much inventory is not desirable. Excess inventory takes space, either on the shelves or in a warehouse. Excess inventory uses capital that could be used for other revenue-generating projects. Inventory that takes a long time to sell could become obsolete.

OfficeMax recently won an award for its inventory management. Its website states that “OfficeMax has used greater forecast accuracy to reduce inventory while improving customer service levels.” The annual reports for OfficeMax support the claim of reduction in inventory level. In 2005, inventory was over \$1.1 billion. In 2010, inventory had dropped to \$846 million. Not only did actual levels of inventory decrease, but inventory as a percentage of total current assets also decreased. In 2005, inventory was 57% of total current assets. By 2010, inventory was only 42% of total current assets.

Critical Thinking

1. The companies from which OfficeMax purchases its inventory are called vendors. These vendors may offer OfficeMax a high volume purchase rebate program. This means that the more OfficeMax buys of that product, the lower the cost will be per unit. What action would this encourage on the part of OfficeMax?
2. If OfficeMax takes advantage of these high volume purchase rebate programs and purchases some items in high volume, what is the risk for OfficeMax?

Accounting for Inventory: Key Terms

- inventory record
- stock record
- stock ledger
- first-in, first-out inventory costing method (FIFO)
- last-in, first-out inventory costing method (LIFO)
- weighted-average inventory costing method
- market value
- lower of cost or market inventory costing method (LCM)
- gross profit method of estimating inventory

Chapter 20: Accounting for Inventory: Lesson 20-1: Determining the Quantity of Merchandise Inventory

Lesson 20-1: Determining the Quantity of Merchandise Inventory

- LO1 Prepare a stock record.

Why Merchandise Inventory is Important

Merchandise inventory on hand is typically the largest asset of a merchandising business. Successful businesses must have merchandise available for sale that customers want. A business therefore needs controls that help managers to maintain a merchandise inventory of sufficient quantity, variety, and price.

The cost of merchandise inventory is reported on both the balance sheet and the income statement. An accurate cost of merchandise inventory is required to correctly report current assets and retained earnings on the balance sheet. The accuracy of the inventory cost will also ensure that gross profit and net income are reported correctly on the income statement. [CONCEPT: Adequate Disclosure]

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The Most Efficient Quantity of Inventory

To determine the most efficient quantity of inventory, a business makes frequent analysis of purchases, sales, and inventory records. Many businesses fail because too much or too little merchandise inventory is kept on hand. A business that stocks merchandise that does not satisfy the demand of its customers is also likely to fail.

A merchandise inventory that is larger than needed may decrease the net income of a business for several reasons.

1. Excess inventory requires a business to spend money for expensive store and warehouse space.
2. Excess inventory uses capital that could be invested in other assets to earn a profit for the business.
3. Excess inventory requires a business to spend money for expenses, such as taxes and insurance premiums, which increase with the cost of the merchandise inventory.
4. Excess inventory may become obsolete and unsalable.

Merchandise inventory that is smaller than needed may also decrease the net income of a business for several reasons.

1. Sales may be lost to competitors if items wanted by customers are not on hand.
2. Sales may be lost to competitors if there is an insufficient variety of merchandise to satisfy customers.
3. When a business frequently orders small quantities of an item, the price paid is often more per unit than when merchandise is ordered in large quantities.

Methods Used to Determine the Quantity of Merchandise Inventory

To control their inventory, businesses may take a physical count monthly, quarterly, semiannually, or annually. Usually, the volume of items on hand and the volume of sales determines how frequently a physical inventory is taken. However, the quantity of items in inventory at the end of a fiscal year must be determined in order to calculate the cost of merchandise sold.

As described in Chapter 9, two principal methods are used to determine the quantity of each item of merchandise on hand.

1. A merchandise inventory evaluated at the end of a fiscal period is known as a periodic inventory.
2. A merchandise inventory determined by keeping a continuous record of increases, decreases, and the balance on hand of each item of merchandise is known as a perpetual inventory. A perpetual inventory is also referred to as a book inventory.

Because controlling the quantity of merchandise inventory is so important to a business's success, many methods of keeping inventory records are used. Today, most companies use computers to keep track of the inventory on hand.

Keeping track of merchandise inventory also involves knowing the ideal quantity for each kind of merchandise in inventory. To ensure having the appropriate quantity, companies frequently establish an ideal minimum quantity and an ideal reorder quantity. When the minimum quantity is reached, new merchandise is ordered.

Minimum quantity levels must be established with consideration for how long it may take to receive new inventory. Otherwise, merchandise may not be available when a customer wants to buy it. Those who order new merchandise must also be aware of the ideal quantities to order to get the best prices and trade discounts.

A business usually determines the order in which products are sold, based on the type of inventory. A grocery store, for example, must sell its earliest purchases first. A hardware store, on the other hand, could sell its most recent purchases first. The inventory costing method used to calculate the cost of merchandise sold should not be determined by the order in which items are sold. A business should choose the inventory costing method that provides its managers with the best accounting information.

Inventory Record

Stock Number and Description (1) **Unit Price and Total Cost** (3)

INVENTORY RECORD				
DATE <i>December 31, 20--</i>		ITEM <i>Beach Totes</i>		
1	2	3	4	5
STOCK NUMBER	DESCRIPTIONS	NO. OF UNITS ON HAND	UNIT PRICE	TOTAL COST
<i>BB715-S</i>	<i>Beach Tote—Small</i>	<i>22</i>	<i>15.95</i>	<i>350.90</i>
<i>BB715-M</i>	<i>Beach Tote—Medium</i>	<i>14</i>	<i>4 @ 16.95</i>	<i>257.30</i>
			<i>10 @ 18.95</i>	
<i>BB715-L</i>	<i>Beach Tote—Large</i>	<i>10</i>	<i>19.50</i>	<i>195.00</i>
	<i>Total</i>			<i>2,941.25</i>

Actual Units on Hand (2)

As described in Chapter 9, a periodic inventory conducted by counting, weighing, or measuring items of merchandise on hand is known as a physical inventory. Employees count each item of inventory and record the quantities on special forms. To ensure an accurate and complete count, a business will typically be closed during the physical inventory.

A business frequently establishes its fiscal year to end when inventory is at a minimum because it takes less time to count a smaller inventory. For example, a department store may take an inventory at the end of December. The amount of merchandise on hand is smaller because of holiday sales. Few purchases of additional merchandise are made in December after the holiday sales. All of these activities make the merchandise inventory smaller at the end of December.

A form used during a physical inventory to record information about each item of merchandise on hand is called an **inventory record**. The inventory record has space to record the stock number, description, number of units on hand, unit price, and total cost of each item. Columns 1–3 are completed when the business is taking a physical inventory. Columns 4–5 are completed after the physical inventory. The methods used to determine the unit prices are discussed later in this chapter.


Preparing an Inventory Record

- 1 Write the stock number and description before the physical inventory begins.
- 2 Write the actual count in the No. of Units on Hand column.
- 3 Write the unit price and calculate the total cost after the physical inventory is completed. These columns are usually completed by the accounting department.


Taking an inventory is an involved and expensive task. An efficient inventory count requires extensive management planning and employee training. Some businesses hire independent companies that specialize in taking inventories to assist in planning for and counting the inventory.

Stock Record LO1


STOCK RECORD						
Description <u>Beach Tote—Small</u>			Stock No. <u>BB715-S</u>			
Reorder <u>20</u>		Minimum <u>10</u>		Location <u>Rack 45</u>		
1	2	3	4	5	6	7
INCREASES			DECREASES			BALANCE
DATE	PURCHASE INVOICE NO.	QUANTITY	DATE	SALES INVOICE NO.	QUANTITY	QUANTITY
			<i>Oct. 10</i>		2	9
<i>Nov. 2</i>	<i>410</i>	<i>20</i>				<i>29</i>
			<i>Nov. 12</i>	<i>1531</i>	2	<i>27</i>
			<i>Nov. 29</i>	<i>1601</i>	4	<i>23</i>
			<i>Dec. 6</i>	<i>1647</i>	1	<i>22</i>



Purchase Information



Sales Information



New Balance on Hand

Some businesses keep inventory records that show continuously the quantity on hand for each kind of merchandise. A form used to show the kind of merchandise, quantity received, quantity sold, and balance on hand is called a stock

record . A separate stock record is prepared for each kind of merchandise on hand. A file of stock records for all merchandise on hand is called a stock ledger .

A perpetual inventory system provides day-to-day information about the quantity of merchandise on hand. The minimum balance allowed before a reorder must be placed is also shown on each stock record. The minimum balance is the quantity that will typically last until the ordered merchandise can be received from the vendors. When the quantity falls below the minimum, additional merchandise is ordered in the quantity shown on the reorder line of the stock record. A stock record shows the quantity but usually not the cost of the merchandise.

Purchase information is recorded in the Increases columns when additional merchandise is received. Sales information is recorded in the Decreases columns when merchandise is sold. The new balance on hand is recorded after each purchase and sale.

When a perpetual inventory is kept, errors may be made in recording or calculating amounts. Also, some stock records may be incorrect because merchandise is taken from stock and not recorded on stock records. A business should at least take a physical inventory at the end of its fiscal year. The perpetual records are then corrected to reflect the actual quantity on hand as determined by the physical inventory.

Perpetual Inventory Using a Computer

UPC (Universal Product Code) symbol on merchandise is scanned to enter data into a point-of-sale (POS) terminal



Many merchandising businesses use a computer to keep perpetual inventory records. The point-of-sale terminals at the customer check-out counters are connected to the computer. The terminals read the Universal Product Codes (UPC) marked on products.

The stock ledger is stored in the computer. When a UPC is read at the terminal, the product description and the sales price are retrieved from the stock ledger and displayed on the terminal. The computer reduces the units on hand to reflect the item sold. The computer may also periodically check the quantities in the stock ledger and print a list of items that need to be reordered. Even with a computerized system, errors may occur. Therefore, companies that use a product's UPC code and a point-of-sale terminal should at least take a physical inventory at the end of the fiscal year.

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End of Lesson Review

- LO1 Prepare a stock record.

Terms Review

- inventory record
- stock record
- stock ledger

Audit Your Understanding

1. Identify four reasons why a merchandise inventory that is larger than needed may decrease the net income of a business.
2. When are physical inventories normally taken?
3. How do inventory levels affect the period a business selects for its fiscal year? Why?
4. How is the accuracy of a perpetual inventory checked?

Work Together 20-1

Preparing a stock record

A stock record for Green Gardens is given in the Working Papers. Your instructor will guide you through the following example.

Enter the following transactions on the stock record of Stock No. GL764-3, soaker hose. Source documents are abbreviated as follows: purchase invoice, P; sales invoice, S.

Transactions:

- Oct. 3. Sold 3 of GL764-3 soaker hose. S835.
- 27. Purchased 40 of GL764-3 soaker hose. P1121.
- 29. Sold 5 of GL764-3, soaker hose. S886.
- Dec. 4. Sold 3 of GL764-3, soaker hose. S912.

On Your Own 20-1

Preparing a stock record

A stock record for Plumbing World is given in the Working Papers. Work this problem independently.

Enter the following transactions on the stock record of Stock No. 7461XG, O-rings. Source documents are abbreviated as follows: purchase invoice, P; sales invoice, S.

Transactions:

- Nov. 4. Sold 10 7461XG, O-rings. S237.
- 16. Sold 20 7461XG, O-rings. S286.
- 17. Sold 18 7461XG, O-rings. S312.
- Dec. 9. Purchased 150 7461XG, O-rings. P323.

Chapter 20: Accounting for Inventory: Ethics in Action: Hotlines

Ethics in Action: Hotlines Page

Instructions

Ethics in Action: Hotlines

The accounting scandals of the early 21st century led the U.S. Congress to pass legislation designed to protect investors by improving the accuracy and reliability of financial reporting. The bill, known as the Sarbanes-Oxley Act of 2002 (SOX), contains a section that requires management to make a written statement about the effectiveness of its internal control system.

In an effective internal control system, employees and other stakeholders must be able to communicate possible ethics violations. A phone number called a hotline may be provided to allow an individual to provide confidential information about possible ethics violations. An effective ethics hotline must ensure an individual that:

1. Management takes hotline calls seriously.
2. The information provided will be maintained on an anonymous or confidential basis.
3. No retaliation or harassment will be tolerated

Instructions

HealthSouth's compliance hotline is available to HealthSouth employees to report possible violations of its Standards of Business Conduct. Describe how the compliance hotline is designed to meet the three criteria presented above. You may also do a Google search for HealthSouth's Standards of Business Conduct.

Chapter 20:Accounting for Inventory: Think Like an Accountant: Periodic Physical Inventory Counts

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Think Like an Accountant: Periodic Physical Inventory Counts

Classic Furniture counts its inventory at the end of each fiscal year. The physical inventory is an expensive and time-consuming undertaking. A special team of 40 temporary workers is employed. The physical inventory is actually performed on New Year's Day before any sales occur in the new year.

The company's inventory manager, Renee Schaeffer, is not satisfied with having only one physical count per year. She would like to have a monthly count to ensure she is making accurate buying decisions. But closing the store for a day, once a month, is not an option.

Instead, the inventory manager would like to perform daily counts of a few inventory items. Differences between the actual quantity on hand and the quantity stored in the accounting system could be investigated. Any loss of inventory could be entered in the accounting system to revise the recorded quantity of inventory.

The inventory manager has e-mailed the accounting manager asking for assistance in creating these daily lists. The worksheet contains a list of nearly 500 inventory items downloaded from the accounting system. Use the list to create two random lists of the inventory items.

1. Create a list of 5 inventory items.
2. Create a list consisting of 2% of the inventory items.

Chapter 20: Accounting for Inventory: Lesson 20-2: Determining the Cost of Merchandise Inventory

Lesson 20-2: Determining the Cost of Merchandise Inventory

First-In, First-Out Inventory Costing Method LO2

Last-In, First-Out Inventory Costing Method LO3
 Weighted-Average Inventory Costing Method LO4
 Inventory Costing Method and Actual Flow of Inventory
 Calculating the Cost of Merchandise Sold
 Comparison of Inventory Methods
 Lower of Cost or Market Inventory Costing Method
 End of Lesson Review

Lesson 20-2: Determining the Cost of Merchandise Inventory

- LO2 Calculate the cost of merchandise inventory using the first-in, first-out (FIFO) inventory costing method.
- LO3 Calculate the cost of merchandise inventory using the last-in, first-out (LIFO) inventory costing method.
- LO4 Calculate the cost of merchandise inventory using the weighted-average inventory costing method.

First-In, First-Out Inventory Costing Method LO2

Purchase Dates	Units Purchased	Unit Price	Total Cost	FIFO Units on Hand	FIFO Cost
January 1, beginning inventory	10	\$20.80	\$ 208.00		
February 16, purchases	6	21.60	129.60		
April 17, purchases	14	22.40	313.60		
September 5, purchases	12	23.40	280.80	10	\$234.00
November 22, purchases	8	23.50	188.00	8	188.00
	50		\$1,120.00	18	\$422.00

1 Total Units on Hand
 2 Units from the Most Recent Purchase
 3 Units Needed to Equal the Total Units on Hand
 4 Unit Price Times FIFO Units
 5 Total FIFO Cost

After the quantities of merchandise on hand are counted, purchase invoices are used to find merchandise unit prices. The total costs are then calculated using the quantities and unit prices recorded on the inventory records. Most businesses use one of three inventory costing methods: (1) first-in, first-out, (2) last-in, first-out, or (3) weighted-average.

Sun Treasures, Inc., uses the most recent invoices for purchases to determine the unit price of an item in inventory. The earliest invoices for purchases, therefore, are used to determine the cost of merchandise sold. Using the price of merchandise purchased first to calculate the cost of merchandise sold first is called the first-in, first-out inventory costing method (FIFO). The first-in, first-out method is frequently abbreviated as FIFO.

On December 31, a physical inventory of Extra Large Beach Totes, Model No. BB715-XL, showed 18 units on hand. Using the FIFO method, the 18 units would show a total cost of \$422.00.

Costing Inventory Using the FIFO Method

1 Enter the total number of units on hand, 18.

2 From the most recent purchase, November 22, enter the number of units purchased, 8. In some cases, the number of units of the most recent purchase will be greater than or equal to the total number of units on hand. In such a case, enter the total number of units on hand and do not complete Step 3 below.

3 From the next most recent purchase, September 5, enter the number of units, 10, needed for the FIFO units to equal the total number on hand, 18. Continue with the next invoices as needed.

4 Multiply the unit price of each appropriate purchase by the FIFO units on hand to determine the FIFO cost.

5 Add the individual FIFO costs to determine the FIFO cost of the total number of units in ending inventory.

Last-In, First-Out Inventory Costing Method LO3

Purchase Dates	Units Purchased	Unit Price	Total Cost	LIFO Units on Hand	LIFO Cost
January 1, beginning inventory	10	\$20.80	\$ 208.00	10	\$208.00
February 16, purchases	6	21.60	129.60	6	129.60
April 17, purchases	14	22.40	313.60	2	44.80
September 5, purchases	12	23.40	280.80		
November 22, purchases	8	23.50	188.00		
	50		\$1,120.00	18	\$382.40

Diagram annotations:

- 1: Total Units on Hand (18)
- 2: Beginning Inventory Units (10)
- 3: Units from the Earliest Purchase (10)
- 4: Units Needed to Equal the Total Units on Hand (2)
- 5: Unit Price Times LIFO Units (e.g., 20.80 x 10 = 208.00)
- 6: Total LIFO Cost (\$382.40)

Using the price of merchandise purchased last to calculate the cost of merchandise sold first is called the last-in, first-out inventory costing method (LIFO). The last-in, first-out method is frequently abbreviated as LIFO. This method is based on the idea that the most recent costs of merchandise should be charged against current revenue. [CONCEPT: Matching Expenses with Revenue]

Using the LIFO method, each item on the inventory records is recorded at the earliest prices paid for the merchandise.

The earliest prices for the 18 beach totes would consist of the 10 units in the January 1 beginning inventory. The next earliest purchase, February 16, of 6 units is then used to cost 6 units in ending inventory. The remaining 2 units in ending inventory are costed using the next earliest purchase, April 17. On the inventory record, the 18 units would show a total cost of \$382.40.

Costing Inventory Using the LIFO Method

1 Enter the total number of units on hand, 18.

2 Enter the number of units in beginning inventory, 10. In some cases, the number of units of beginning inventory will be greater than or equal to the total number of units on hand. In such a case, enter the total number of units on hand and do not complete Steps 3 and 4 below.

3 From the earliest purchase, February 16, enter the number of units purchased, 6.

4 From the next earliest purchase, April 17, enter the number of units, 2, needed for the LIFO units to equal the total number of units on hand, 18.

5 Multiply the unit price of the beginning inventory by the LIFO units on hand to determine the LIFO cost for beginning inventory. Repeat this process for each appropriate purchase.

6 Add the LIFO cost for the beginning inventory and each appropriate purchase to determine the LIFO cost of the total number of units in ending inventory.

In the LIFO method, the latest purchases are assumed to be sold first (first-out). Therefore, ending inventory consists of the units purchased the earliest, and the earliest purchase invoice costs are used to value the ending inventory.

Weighted-Average Inventory Costing Method LO4

Purchases			Total Cost
Date	Units	Unit Price	
January 1, beginning inventory	10	\$20.80	\$ 208.00
February 16, purchases	6	21.60	129.60
April 17, purchases	14	22.40	313.60
September 5, purchases	12	23.40	280.80
November 22, purchases	8	23.50	188.00
	50		\$1,120.00

Total of Beginning Inventory and Purchases	÷	Total Units	=	Weighted-Average Price per Unit
\$1,120.00	÷	50	=	\$22.40

Units in Ending Inventory	×	Weighted-Average Price per Unit	=	Cost of Ending Inventory
18	×	\$22.40	=	\$403.20

Using the average cost of beginning inventory plus merchandise purchased during a fiscal period to calculate the cost of merchandise sold is called the weighted-average inventory costing method . The average unit price of the total inventory available is calculated. This average unit price is used to calculate both ending inventory and cost of merchandise sold. The average cost of merchandise is then charged against current revenue. [CONCEPT: Matching Expenses with Revenue]

Using the weighted-average method, the inventory is costed at the average price per unit of the beginning inventory plus the cost of all purchases during the fiscal year. On the inventory record, the 18 units would show a total cost of \$403.20.

Costing Inventory Using the Weighted-Average Method

1 Calculate the total cost of beginning inventory and each purchase, \$1,120.00, by multiplying the units by each unit price.

2 Calculate the weighted-average price per unit, \$22.40, by dividing the total cost, \$1,120.00, by the total number of units available, 50.

3 Calculate the cost of ending inventory, \$403.20, by multiplying the weighted-average price per unit, \$22.40, by the units in ending inventory, 18.

Inventory Costing Method and Actual Flow of Inventory

Inventory Costing Method and Actual Flow of Inventory

The actual flow of inventory in a company does not have to match the inventory costing method a company chooses. For example, a grocery store will usually stock to the back so that the first goods purchased are the first goods sold. Therefore, the actual flow of the groceries is on a FIFO basis. A hardware store may decide to stock its new inventory in front of its older inventory. Therefore, the actual flow of the hardware is on a LIFO basis. A gas station, where all the gas is put into a large underground tank, sells its gas on a weighted-average basis. However, each of these three kinds of businesses can decide which inventory method (FIFO, LIFO, or weighted-average) it uses. The inventory method chosen by a company to determine the cost of merchandise sold does not have to match the actual flow of inventory for that company.

Calculating the Cost of Merchandise Sold

The cost of ending inventory determined using any of the three inventory costing methods can be used to calculate the cost of merchandise sold. The cost of ending inventory is subtracted from the total cost of units available for sale. Although the formula is the same, under each inventory costing method the amount determined will be different. Sun Treasures uses the FIFO method. Therefore, the FIFO cost of \$422.00 is subtracted from the total cost of merchandise available for sale, \$1,120.00, to calculate the cost of merchandise sold of \$698.00.

$$\begin{array}{rclcl}
 \text{Cost of Merchandise} & & \text{FIFO Cost of} & & \text{Cost of} \\
 \text{Available for Sale} & - & \text{Ending Inventory} & = & \text{Merchandise Sold} \\
 \$1,120.00 & - & \$422.00 & = & \$698.00
 \end{array}$$

Comparison of Inventory Methods

	FIFO	LIFO	Weighted-Average
Cost of merchandise sold:			
Merchandise inventory, Jan. 1	\$ 208.00	\$ 208.00	\$ 208.00
Net purchases	<u>912.00</u>	<u>912.00</u>	<u>912.00</u>
Merchandise available for sale	\$1,120.00	\$1,120.00	\$1,120.00
Less ending inventory, Dec. 31	<u>422.00</u>	<u>382.40</u>	<u>403.20</u>
Cost of merchandise sold.	\$ 698.00	\$ 737.60	\$ 716.80
<i>In a period of rising prices:</i>			
Relative cost of ending inventory	highest	lowest	intermediate
Relative cost of merchandise sold	lowest	highest	intermediate

In a period of rising prices, the FIFO method gives the highest possible ending inventory cost and the lowest cost of merchandise sold. The LIFO method gives the lowest possible ending inventory cost and the highest cost of merchandise sold. The weighted-average method gives ending inventory cost and cost of merchandise sold between FIFO and LIFO. As the cost of merchandise sold increases, gross profit and net income decrease. Thus, net income is highest under the FIFO method, lowest under the LIFO method, and intermediate under the weighted-average method.

In a period of declining prices, the results for the FIFO and LIFO methods are reversed.

All three inventory costing methods are acceptable accounting practices. A business should select one method and use that same method continuously for each fiscal period. If a business changed inventory costing methods, part of the difference in gross profit and net income would be caused by the change in methods. To provide financial statements that can be analyzed and compared with statements of other fiscal periods, the same inventory costing method must be used for each fiscal period. [CONCEPT: Consistent Reporting]

Lower of Cost or Market Inventory Costing Method

The price that must be paid to replace an asset is called the market value . Using the lower of cost or market price to calculate the cost of ending merchandise inventory is called the lower of cost or market inventory costing method (LCM) . In this context, cost refers to the actual amount paid for the unit of inventory on hand. Market refers to the amount that must be paid to replace the unit of inventory. For example, assume that a permanent change in market conditions means that Sun Treasures may currently have to pay a vendor \$22.50 to purchase the extra large beach tote.

Two amounts are needed to apply the lower of cost or market method:

1. The cost of the inventory using the FIFO, LIFO, or weighted-average method.
2. The current market value of the inventory.

These two amounts are then compared and the lower of the two is used to cost the inventory. For example, Sun Treasures uses the FIFO method of costing inventory. The FIFO cost and the current market value for 18 beach totes are shown below. The FIFO cost is \$422.00, and the current market value is \$405.00. Using the lower of cost or market method, the market value of the beach totes is lower than the FIFO cost. Therefore, the market value of \$405.00 is used as the cost of the totes.

If Sun Treasures used the LIFO method, the LIFO cost would be \$382.40. The LIFO cost of \$382.40 is lower than the market value, so the LIFO cost would be used instead of the market value. If Sun Treasures used the weighted-average method, the weighted-average cost would be \$403.20. The weighted-average cost of \$403.20 is lower than the market value, so the weighted-average cost would be used instead of the market value.

The LCM method is designed to prevent inventory values from being overstated. This is especially important in industries where the cost of component parts tends to decrease rather than increase. Without the LCM method, these inventories would be stated at older, higher prices. The use of the LCM method ensures that the inventory value will not be reported at a value higher than current market value.

Lower of Cost or Market Inventory Costing Method			
Costing Method	Cost	Market Value (18 units × \$22.50 current market price)	Lower of Cost or Market
FIFO	\$422.00	\$405.00	\$405.00
LIFO	382.40	405.00	382.40
Weighted-average	403.20	405.00	403.20

Calculate the cost
 Calculate the market price
 Determine the smaller number to use as the lower of cost or market

End of Lesson Review

- LO2 Calculate the cost of merchandise inventory using the first-in, first-out (FIFO) inventory costing method.
- LO3 Calculate the cost of merchandise inventory using the last-in, first-out (LIFO) inventory costing method.
- LO4 Calculate the cost of merchandise inventory using the weighted-average inventory costing method.

Terms Review

- first-in, first-out inventory costing method (FIFO)
- last-in, first-out inventory costing method (LIFO)
- weighted-average inventory costing method
- market value
- lower of cost or market inventory costing method (LCM)

Audit Your Understanding

1. On what idea is the FIFO method based?
2. When the LIFO method is used, at what price is each item in ending merchandise inventory recorded?
3. In a period of rising prices, which inventory costing method gives the lowest cost of merchandise sold?
4. Why should a business select one inventory costing method and use that same method continuously for each fiscal period?

Work Together 20-2

Determining the cost of inventory using the FIFO, LIFO, and weighted-average inventory costing methods

Inventory costing information for Sunshine Spas is given in the Working Papers. Your instructor will guide you through the following example.

Calculate the cost of ending inventory using the FIFO, LIFO, and weighted-average methods. There are 15 units in ending inventory.

On Your Own 20-2

Determining the cost of inventory using the FIFO, LIFO, and weighted-average inventory costing methods

Inventory costing information for Electronics Plus is given in the Working Papers. Work this problem independently.

Calculate the cost of ending inventory using the FIFO, LIFO, and weighted-average methods. There are 26 units in ending inventory.

Chapter 20: Accounting for Inventory: Forensic Accounting: The Rise and Fall of WorldCom

Forensic Accounting: The Rise and Fall of WorldCom

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Telecommunications giant WorldCom collapsed in 2003. What could have caused the failure of the nation's second largest long-distance service provider, boasting over \$100 billion in assets?

The roots of WorldCom were planted during the historic breakup of AT&T in 1984. AT&T dominated the long-distance and local phone service market. To increase competition, the Federal Trade Commission (FTC) forced AT&T to divest itself of its local phone service companies. The seven new independent local phone companies were dubbed the “Baby Bells.”

Long-distance phone service instantly became a commodity that could be bought and sold. WorldCom was one of several corporations created to take advantage of this new business opportunity. WorldCom bought a huge volume of long-distance service from AT&T and resold the minutes to small businesses.

From its humble beginnings, WorldCom embarked on a path of growth through acquisitions. WorldCom bought a variety of telecom businesses, most often paying for the acquisitions with WorldCom stock. Its most notable acquisition was its 1997 merger with MCI Communications. The \$37 billion price tag was triple the size of WorldCom. The new MCI WorldCom then set its sights on Sprint Corporation, announcing in 1999 a staggering \$129 billion merger. Fearing that a combined Sprint and MCI WorldCom would decrease competition, the government did not approve the merger.

But hidden behind by the smoke screen of its merger activity, WorldCom was experiencing decreasing sales and incurring losses. To hide the losses, WorldCom began recording fraudulent journal entries. The fraud involved the accounting for line costs, the fees paid to other telecom companies. The journal entries reduced line cost expenses and recorded the expenses as plant assets.

WorldCom's internal auditors were suspicious that a fraud was occurring. During their investigation, one auditor noted an unusual transaction to a plant asset account. It wasn't so much that the amount was large. After all, WorldCom was often involved in acquisitions in the billions of dollars. But it was the amount, exactly \$500,000,000.00, that caught the internal auditor's attention. Why would the amount of an addition to plant assets be a rounded number? When all the investigations were complete, it was revealed that WorldCom had reported \$3.8 billion of line costs as plant assets.

Activity

The board of directors of Royal Imports has launched an internal investigation. The board suspects an accounting fraud at its foreign operations. Begin the investigation by analyzing the corporation's journal entries for any signs of a fraud. At the direction of the manager of internal audit, complete the following steps.

Instructions

1. Prepare a list of transactions greater than \$25,000.00 that end in 000.00.
2. Identify any transaction that appears unusual. Support your conclusion.
3. What would you suggest as the next step in your investigation?

Critical Thinking

Why Accounting?: Inventory Management

The cost of inventory is usually a large portion of a retail, manufacturing, or wholesale company's current assets. The efficient management of inventory, therefore, can lead to major cost savings for many companies. Inventory management deals with the fine line between having too much inventory and running out of inventory. It is broad in nature, starting with identifying inventory requirements and covering each step until the inventory is received at the correct location. It requires trying to forecast demand, price levels, defective goods, available space, and handling costs.

Many of the decisions made by an inventory manager will have an effect on the financial statements of a company. Too much inventory will tie up capital that could be used for other projects. Inventory requires storage space and handlers,

which decrease profit. Excess inventory may have to be sold at below cost prices, which further decreases profits. Too little inventory also has an effect on financial statements. Lost sales will decrease net income.

Critical Thinking

1. Inventory management companies help their clients manage inventory. Search the Internet for an inventory management company and write a one-sentence summary of the services it provides.
2. Search the Internet for an inventory management software program. List the name of the software and write a one-sentence summary of its features.

Chapter 20: Accounting for Inventory: Lesson 20-3: Estimating Inventory

Lesson 20-3: Estimating Inventory

Gross Profit Method of Estimating Inventory LO5

Estimating Inventory for Other Months

End of Lesson Review

- LO5 Estimate the cost of merchandise inventory using the gross profit method of estimating inventory.

Gross Profit Method of Estimating Inventory LO5

STEP 1: Beginning inventory, January 1	\$ 331,235.20
Plus net purchases for January 1 to January 31	+64,516.21
Equals cost of merchandise available for sale	<u>\$ 395,751.41</u>
STEP 2: Net sales for January 1 to January 31	\$ 122,367.00
Times previous year's gross profit percentage	× 40.00%
Equals estimated gross profit on operations	<u>\$ 48,946.80</u>
STEP 3: Net sales for January 1 to January 31	\$ 122,367.00
Less estimated gross profit on operations	−48,946.80
Equals estimated cost of merchandise sold	<u>\$ 73,420.20</u>
STEP 4: Cost of merchandise available for sale	\$ 395,751.41
Less estimated cost of merchandise sold	−73,420.20
Equals estimated ending merchandise inventory	<u>\$ 322,331.21</u>

Restaurant Supply Co. Income Statement For Month Ended January 31, 20--		
		% of Net Sales
Operating Revenue:		
Net Sales	\$122,367.00	100.0
Cost of Merchandise Sold:		
Beginning Inventory, January 1	\$331,235.20	
Net Purchases	<u>64,516.21</u>	
Merchandise Available for Sale	\$395,751.41	
Less Est. Ending Inv., January 31	<u>322,331.21</u>	
Cost of Merchandise Sold	73,420.20	60.0
Gross Profit on Operations	\$ 48,946.80	40.0
Operating Expenses	43,807.39	35.8
Net Income	<u>\$ 5,139.41</u>	4.2

Estimating inventory by using the previous year's percentage of gross profit on operations is called the gross profit method of estimating inventory. The gross profit method is often used to estimate the cost of the ending inventory reported on monthly financial statements. The gross profit method is a less expensive method of calculating inventory costs than taking a physical inventory or maintaining a perpetual inventory system.

Four values are needed to perform this four-step process. Actual net sales and net purchases amounts are obtained from the general ledger. The beginning inventory amount is obtained from the prior period's financial statements. The gross profit percentage is estimated by management based on the previous year's actual percentage, adjusted for any significant changes in economic conditions.

Estimating Inventory for Other Months

When the gross profit method of estimating inventory is used for months other than the first month of the fiscal year, the process is the same as that just illustrated. Net sales and purchases amounts are obtained from the general ledger. For the sales account, the previous month's ending balance is subtracted from the current month's ending balance to calculate the amount of sales for just the current month. The same process is used for the purchases account. The beginning inventory for the month is the same as the ending inventory from the previous month. Note that both the beginning and ending inventory amounts will be based on estimated amounts.

End of Lesson Review

- LO5 Estimate the cost of merchandise inventory using the gross profit method of estimating inventory.

Term Review

- gross profit method of estimating inventory

Audit Your Understanding

1. When neither a perpetual system is maintained nor a physical inventory is taken, how can an ending merchandise inventory be determined that is accurate enough for a monthly income statement?
2. What amounts are needed to estimate ending merchandise inventory?
3. What amount is used for beginning inventory for a month that is not the first month of a fiscal year?

Work Together 20-3

Estimating ending inventory using the gross profit method

A form for making estimated inventory calculations and a form for completing an income statement are given in the Working Papers. Your instructor will guide you through the following examples.

1. Use the following information obtained from the records and management of Goldsmith Company to estimate the cost of the ending inventory on June 30.

Estimated beginning inventory, June 1	\$77,400.00
Actual net purchases for June	\$23,900.00
Actual net sales for June	\$122,500.00
Estimated gross profit percentage	45.0%
Actual operating expenses for June	\$38,465.00

2. Prepare an income statement for the month ended June 30 of the current year.

On Your Own 20-3

Estimating ending inventory using the gross profit method

A form for making estimated inventory calculations and a form for completing an income statement are given in the Working Papers. Work this problem independently.

1. Use the following information obtained from the records and management of Leah Enterprises to estimate the cost of the ending inventory on April 30.

estimated beginning inventory, April 1	\$49,000.00
Actual net purchases for April	\$24,200.00
Actual net sales for April	\$112,000.00
Estimated gross profit percentage	55.0%
Actual operating expenses for April	\$35,840.00

2. Prepare an income statement for the month ended April 30 of the current year.

Chapter 20: Accounting for Inventory: Global Awareness: Accounting in Ancient Civilizations

Global Awareness: Accounting in Ancient Civilization

Critical Thinking

Global Awareness: Accounting in Ancient Civilizations

Five thousand years before the appearance of double-entry accounting, Mesopotamian scribes were among the few people who could read and write. These scribes became the equivalent of today's accountants.

Public scribes would meet business partners at the gates of the city. The scribe would listen as the partners described their agreement. The scribe would then record the contract on moist clay tablets. The business partners would sign their names by pressing their seals into the clay. The tablets were then dried in the sun or a kiln. The development of accounting in Egypt was similar, except that the Egyptians used papyrus rather than clay tablets, allowing for more details to be recorded.

The major problem with these systems was the lack of a single unit of valuation to use in measuring the value of each transaction. This issue was solved when the Greeks introduced coined money about 600 BC. Although it took many years for the usage of coins to spread, this is often identified as a major event in the development of accounting records.

The Babylonians in Asia Minor used an early form of banking. They transferred funds with a system resembling our checking accounts, one of the first uses of business documents.

These early practices provided the foundation for today's financial system and recordkeeping methods.

Critical Thinking

1. Estimate how many transactions might occur in a single day in a mid-sized bank.
2. List the number of different methods of payment that are accepted by a local department store.

Chapter 20: Accounting for Inventory: End of Chapter Review

End of Chapter Review

Accounting for Inventory: A Look at Accounting Software

Accounting for Inventory: Chapter Summary

Accounting for Inventory: Explore Accounting

Accounting for Inventory: Apply Your Understanding: Application Problem

Accounting for Inventory: Apply Your Understanding: Mastery Problem
 Accounting for Inventory: Apply Your Understanding: Challenge Problem
 Accounting for Inventory: 21st Century Skills
 Accounting for Inventory: Analyzing Nike's Financial Statements
 Accounting for Inventory: Reinforcement Activity 3—Part A
 Accounting for Inventory: A Look at Accounting Software

Managing Inventory

The inventory management module of a computerized accounting system is very complex. It has links to accounts payable, accounts receivable, and the general ledger. It must receive data from, and pass data to, each of those modules. Computerized inventory systems today are so powerful they can track the sales of specific items to specific customers. That data can be used to send targeted sales offers to those customers. Inventory systems are also capable of issuing automatic reorders when stock levels drop to designated reorder quantities.

The illustration shows a new inventory stock item being entered. This window would also be used to edit information for an existing stock item. In that case, the user would double-click one of the stock items in the report to open the window. Then the user could, for example, change the preferred vendor, the location of the item, or the reorder quantity. By clicking the Inactive button, the user would prevent the item from being reordered.

Accounting for Inventory: A Look at Accounting Software



1 To view an inventory report, the user opens the Reports window and selects Inventory on Hand from the drop list.

2 The user has chosen to have this report sorted by stock number.

3 The user has clicked on the Add New Item button to open the Add/Edit Stock Item pop-up window.

4 The user enters the new stock number and description. The Active button is on by default. States determine which types of products are exempt from sales tax. When Nontax is selected, point-of-sale (POS) terminals will print the item on the customer receipt with an NT, and no sales tax will be charged for it.

5 The user may enter a preferred vendor (by vendor number or name). This can speed up order entry when creating a purchase order, although the vendor could be changed in the Write Purchase Orders window.

6 The user must select a unit of measure. Here, the user is selecting Each from the drop list.

7 The system automatically selects the Merchandise Inventory account—number 1150. In the manual system used by Sun Treasures, Inc., inventory is maintained using the periodic system. When a computer system is used, inventory is maintained using a perpetual system, so inventory purchases are debited to Merchandise Inventory rather than to Purchases.

8 The quantity on hand for this new item is zero because no orders have been entered yet. The system will update this number as new orders increase it and sales decrease it. The user would select the storage location for the item. That information helps salespeople know where to look for replacement items when stock is depleted on the sales floor. It also is helpful when counting the inventory.

9 The system computes an average unit cost of all the items currently in inventory. Sun Treasures uses LIFO, so as items are sold, the most recently purchased items will be deducted from inventory first. The system then computes a new average cost of the remaining items in inventory.

10 The user enters the list price. The POS terminals use this price to compute the value of each sale. Finally, the user enters a reorder quantity. If the accounting system is not programmed to do an automatic reorder, the purchasing department would reorder the item when the stock level dropped to this quantity.

Accounting for Inventory: Chapter Summary

The quantity of inventory on hand can be kept on a perpetual or periodic basis. The perpetual basis provides an up-to-date balance in the Merchandise Inventory account throughout the period. The periodic basis does not update inventory throughout the period. Both methods require that a physical inventory be taken at least once a year. Once the quantity of inventory is determined, a cost must be applied to each unit of inventory. This can be done using the FIFO, LIFO, or weighted-average methods. Each method results in different amounts for the cost of ending inventory and the cost of merchandise sold. In times of rising prices, the FIFO method will result in the highest net income amount. When the ending inventory cannot be counted, ending inventory can be estimated using the gross profit method.

Accounting for Inventory: Explore Accounting

Accounting for Inventory: Explore Accounting

Activity-Based Costing

A company must accurately calculate the cost of a product in order to determine the selling price of that product. The materials and labor costs for most products are not difficult to determine. Other costs that must be measured include

custodial services in the factory, machine maintenance costs, supervisory labor costs, and the cost of factory supplies. All expenses other than direct materials and direct labor that apply to making products are called factory overhead.

Several methods can be used to calculate factory overhead costs. A method commonly used is to relate factory overhead costs to the number of hours of labor that each product requires. Using this method, a product using one hour of labor per unit would be allocated four times more factory overhead costs than a product using 15 minutes of labor per unit. This method was more practical when production was labor intensive. Today, many automated manufacturing processes involve little, if any, direct labor. Therefore, a newer method of allocating factory overhead costs is one based on activities. Major activities in the manufacturing process are identified and factory overhead costs are allocated based on these activities. Allocating factory overhead based on the level of major activities is referred to as activity-based costing (ABC).

For example, the production of a pizza at a local pizza parlor involves two significant activities: assembling the ingredients and cooking the pizza. The first activity involves direct labor, but the second activity involves only cooking time in the oven. In contrast, the production of a sub sandwich involves three times as much direct labor as a pizza but no cooking in the oven. If factory overhead were applied based solely on direct labor, the sub sandwich would improperly receive three times as much overhead cost as the pizza.

Using ABC, the accountant recognizes that a significant amount of overhead costs of the pizza parlor results from the ovens: the cost of the ovens, heating the ovens, and cooling the kitchen from the heat that escapes from the ovens. These overhead costs should be allocated to those products that require cooking. Thus, factory overhead costs related to the ovens would be applied to pizza production based on cooking time.

ABC is also used by service businesses to determine the cost of providing various services. ABC results in more accurate estimates on the cost of producing individual products and services. Managers can use this information to assist them in making better decisions, such as the price of products and the profitability of different product lines.

Instructions

The challenge of implementing ABC is to match costs with related activities that are easy to measure. Identify the measurable activities in two different lawn maintenance services: mowing a lawn and cutting down a tree.

Accounting for Inventory: Apply Your Understanding: Application Problem

INSTRUCTIONS: Download problem instructions for Excel, QuickBooks, and Peachtree from the textbook companion website at www.C21accounting.com.

20-1 Application Problem: Preparing a Stock Record LO1

A stock record for Electronics World is given in the Working Papers.

Instructions:

Enter the following transactions on the stock record of a 42-inch flat-screen television, Stock No. 891DC-5. Source documents are abbreviated as follows: purchase invoice, P; sales invoice, S.

Transactions:

Feb. 4. Sold 2 Model No. 891DC-5 televisions to Country Motel, n/30. S910.

28. Sold 1 Model No. 891DC-5 television to Janice Olson, 2/10, n/30. S984.

Mar. 10. Received 10 units of Model No. 891DC-5 televisions from GLC Electronics, 2/10, n/30. P1012.

24. Sold 2 Model No. 891DC-5 televisions to Seaside Restaurant, n/30. S1062.

20-2 Application Problem: Determining the Cost of Inventory Using the FIFO, LIFO, and Weighted-Average Inventory Costing Methods LO2, 3, 4

Forms for costing inventory for Oakland Supply are given in the Working Papers. There are 192 units in ending inventory.

Purchase Date	Quantity	Unit Price
January 1, beginning inventory	100	\$4.00
March 13, purchases	88	4.10
June 8, purchases	90	4.25
September 16, purchases	94	4.30
December 22, purchases	98	4.40

Instructions:

Calculate the cost of ending inventory using the FIFO, LIFO, and weighted-average methods.

Peachtree

1. Journalize and post purchases of inventory on account in the Purchases/Receive Inventory window.
2. Journalize and post sales of inventory on account in the Sales/Invoicing window.
3. Print the purchases journal, sales journal, inventory valuation report, and trial balance.

Quickbooks

1. Journalize and post purchases of inventory on account in the Enter Bills window.
2. Journalize and post sales of inventory on account in the Create Invoices window.
3. Print the vendor balance detail, inventory valuation summary, and trial balance.

Excel

1. Key the inventory-related transactions on the stock record.
2. Use the inventory costing methods to calculate year-end inventory.
3. Print the worksheet.

AAonline

Go to www.cengage.com/login

1. Click on AA Online to access.
2. Go to the online assignment and follow the instructions.

20-3 Application Problem: Estimating Ending Inventory Using the Gross Profit Method LO5

Use the following information obtained from the records and management of Lee Industries. A form for making inventory calculations and a form for completing an income statement are given in the Working Papers.

Instructions:

1. Estimate the cost of the ending inventory on March 31.

Estimated beginning inventory, March 1	\$49,350.00
Actual net purchases for March	\$22,900.00
Actual net sales for March	\$93,000.00
Estimated gross profit percentage	55.0%
Actual operating expenses for March	\$40,176.00

2. Prepare an income statement for the month ended March 31 of the current year.

Accounting for Inventory: Apply Your Understanding: Mastery Problem

20-M Mastery Problem: Determining the Cost of Inventory Using the FIFO, LIFO, and Weighted-Average Inventory Costing Methods LO2, 3, 4

Computer Supply Company began the year with 16 units of its model 120-HP print cartridge in beginning inventory. Each unit sells for \$39.95. The following transactions involving model 120-HP occurred during the year. Forms are given in the Working Papers. Source documents are abbreviated as follows: purchase invoice, P; sales invoice, S.

Transactions:

Jan. 6. Purchased 40 units from Printers Plus for \$10.24 per unit, 2/10, n/30. P361.

Apr. 5. Sold 44 units to Glenville Hospital, n/30. S812.

14. Purchased 40 units from Printers Plus for \$10.36 per unit, 2/10, n/30. P437.

July 5. Sold 50 units to Hills Department Store, n/30. S971.

Aug. 3. Purchased 40 units from Printers Plus for \$10.46 per unit, 2/10, n/30. P512.

Dec. 2. Sold 30 units to ABC Company, n/30. S1186.

12. Purchased 40 units from Printers Plus for \$10.54 per unit, 2/10, n/30. P556.

Instructions:

1. Enter the transactions on the stock record and determine the number of units in ending inventory.
2. Calculate the cost of ending inventory using the FIFO, LIFO, and weighted-average methods.
3. Which of the inventory costing methods resulted in the lowest cost of merchandise sold? Merchandise available for sale is the total cost of beginning inventory plus all purchases during the year.

Peachtree

1. Journalize and post purchases of inventory on account in the Purchases/Receive Inventory window.
2. Journalize and post sales of inventory on account in the Sales/Invoicing window.
3. Print the purchases journal, sales journal, inventory valuation report, and trial balance.

Quickbooks

1. Journalize and post purchases of inventory on account in the Enter Bills window.
2. Journalize and post sales of inventory on account in the Create Invoices window.
3. Print the vendor balance detail, inventory valuation summary, and trial balance.

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1. Key the inventory-related transactions on the stock record.
2. Use the inventory costing methods to calculate year-end inventory.
3. Print the worksheet.

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Accounting for Inventory: Apply Your Understanding: Challenge Problem**20-C Challenge Problem:** Determining the Cost of Merchandise Inventory Destroyed in a Fire LO5

A fire completely destroyed the warehouse of Albertson Painting Company on the night of May 12 of the current year. The accounting records of the company and \$945.00 of merchandise inventory were salvaged. The company does not maintain a perpetual inventory system. The insurance company therefore has requested an estimate of the merchandise inventory destroyed in the fire. Forms are given in the Working Papers. The following income statement is for the previous fiscal year.

Albertson Painting Company		
Income Statement		
For Year Ended April 30, 20--		
Operating Revenue:		
Net Sales		\$316,308.00
Cost of Merchandise Sold:		
Beginning Inventory, May 1 (Prior Year) .	\$ 15,348.27	
Net Purchases	156,282.02	
Merchandise Available for Sale	<u>\$171,630.29</u>	
Less Est. Ending Inv., April 30	<u>17,271.99</u>	
Cost of Merchandise Sold		<u>154,358.30</u>
Gross Profit on Operations		\$161,949.70
Operating Expenses		<u>142,267.61</u>
Net Income		<u><u>\$ 19,682.09</u></u>

The following additional financial information is obtained from the current year's accounting records.

Net purchases, May 1 to May 12	\$ 3,377.02
Net sales, May 1 to May 12	11,216.44
Operating expenses, May 1 to May 12	4,937.70

Instructions:

1. Calculate the prior year's gross profit on operations as a percentage of net sales. Round the percentage calculation to the nearest 0.1%.
2. Use the percentage calculated in part (1) and the current year's financial information to calculate an estimate of the total merchandise inventory as of May 12.
3. To calculate the cost of the inventory destroyed in the fire, subtract the cost of the merchandise inventory that was not destroyed from the estimate of the total merchandise inventory as of May 12.
4. Prepare an income statement for the period May 1 through May 12.

The insurance company maintains that it is liable for paying only the book value of the inventory destroyed by fire. Albertson Painting Company maintains that the insurance company should pay the replacement cost of the destroyed inventory.

5. What is meant by the book value and the replacement value of the inventory?
 6. Albertson Painting Company uses the FIFO inventory costing method. How does using FIFO affect the difference between the book value and the replacement value of the destroyed inventory?
 7. What should determine which value the insurance company uses?
- Accounting for Inventory: 21st Century Skills

Accounting for Inventory: 21st Century Skills

Piggly Wiggly—Just in Time!

Theme: Financial, Economic, Business, and Entrepreneurial Literacy

Skills: Critical Thinking and Problem Solving, Communication and Collaboration

For a small business, inventory is often the most important asset. If not managed properly, inventory costs can also become the greatest expense on the income statement keeping a business from being profitable. The cost of inventory consists of more than just the cost of the actual item and its shipping. One of the greatest costs associated with inventory is the cost of storing, or holding the merchandise, as well as having excessive inventory.

To keep inventory costs down, many companies have implemented an inventory strategy called just-in-time delivery (JIT). Toyota, now a leader in the automotive industry, developed JIT as part of its management strategy after its delegates observed the Piggly Wiggly grocery store while on a visit to the United States to view auto manufacturers. While not all that impressed with the Ford manufacturing processes, the delegates were fascinated with how the supermarket only reordered and restocked goods after customers had made purchases. The JIT strategy maintains that inventory is not reordered until stock is close to depletion. This saves warehouse space and costs.

While JIT may save costs, a business must not underestimate the risks involved. The products must arrive exactly when needed. Uncontrollable circumstances such as natural disasters, untimely weather, supplier misfortunes, and political risks can damage business credibility and reduce revenue. The best intentions to become more profitable can leave a

company vulnerable. Management must carefully develop a risk management plan to implement if using the JIT strategy.

Application

When planning an event to occur on a specific date, one must assess the risks involved so proactive measures can be taken to offset the risks, deliver the product, and make a profit.

Your business has been asked to design and provide t-shirts for a local benefit sponsored by your school. Individuals in your school will be participating in the event as well as some members from the local community. Your supplier needs five days to complete and deliver the order. The organizer of the event estimates that approximately 1,000 t-shirts will be needed. The shirts will cost you \$5.00 each to purchase. The organizer will only pay for the number of shirts for those participating. You must make a profit.

1. Create a table with two columns. Label with the following: (1) Risks, (2) Measures.
2. Create a bulleted list with at least five risks associated with this order.
3. Create a bulleted list next to the risks, under the heading Measures, and explain measures you will take to offset the risks in order to make a profit. Present your risk assessment to the class.

Accounting for Inventory: Analyzing Nike's Financial Statements

The managers at Nike need to constantly monitor the amount of inventory available for sale. Having too little inventory can result in products running out of stock, which can cause the company to lose sales. Holding too much inventory increases the company's operating expenses. A financial ratio that evaluates the amount of inventory available for sale is known as the inventory turnover ratio. The ratio is calculated as follows:

$$\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{(\text{Beginning Inventory} + \text{Ending Inventory}) \div 2}$$

Accounting for Inventory: Analyzing Nikes Financial Statements

Dividing the sum of the beginning and ending inventory by 2 approximates the average inventory for the fiscal year. As one example, the inventory turnover for Domino's Pizza, Inc., based on its 2011 fiscal year financial statements (www.dominos.com), is calculated below.

$$\text{Inventory Turnover} = \frac{\$1,181,677,000}{(\$26,998,000 + \$30,702,000) \div 2} = 41.17$$

Dividing 365 by the turnover ratio yields a financial ratio known as number of days' sales in inventory. Domino's number of days' sales in inventory is 8.87 days. Thus, the average item remains in its inventory for approximately 9 days.

Instructions

1. Using the financial information in Appendix B of this text, calculate Nike's inventory turnover ratio and number of days' sales in inventory for 2011.
2. Why would the inventory turnover ratios for Nike and Domino's differ?

Accounting for Inventory: Reinforcement Activity 3—Part A

Accounting for Inventory: Reinforcement Activity 3Part A

Reinforcement Activity 3 reinforces learning from Parts 2 and 3. Activities cover a complete accounting cycle for a merchandising business organized as a corporation. Reinforcement Activity 3 is a single problem divided into two parts. Part A includes learning from Part 2 and Chapters 18 through 20 of Part 3. Part B includes learning from Chapters 21 and 22.

The accounting work of a single merchandising business for the last month of a fiscal year is used in this reinforcement activity. The records kept and reports prepared, however, illustrate the application of accounting concepts for all merchandising businesses.

Restaurant Warehouse, Inc.

Restaurant Warehouse, Inc., a merchandising business, is organized as a corporation. The business sells a complete line of restaurant supplies, mostly to business customers. Restaurant Warehouse is located within an industrial park and is open for business Monday through Saturday. A monthly rent is paid for the building. Restaurant Warehouse subleases some of its warehouse space. Restaurant Warehouse sells to some businesses on account and accepts cash or credit cards from small business owners.

Chart of Accounts

Restaurant Warehouse uses the chart of accounts shown on the next page.

Journals and Ledgers

The journals, ledgers, and forms used by Restaurant Warehouse are listed below. Models of these items are shown in the textbook chapters indicated.

Journals and Ledgers	Chapter(s)
Purchases journal	9
Cash payments journal	9
Accounts payable ledger	9 and 11
Sales journal	10
Cash receipts journal	10
Accounts receivable ledger	10 and 11
General journal	11
General ledger	11
Plant asset record	19

Restaurant Warehouse, Inc., Chart of Accounts

General Ledger

Balance Sheet Accounts

(1000) ASSETS

- 1100 Current Assets
- 1105 Cash
- 1110 Petty Cash
- 1115 Accounts Receivable
- 1120 Allowance for Uncollectible Accounts
- 1125 Notes Receivable
- 1130 Interest Receivable

- 1135 Merchandise Inventory
- 1140 Supplies
- 1145 Prepaid Insurance
- 1200 Plant Assets
- 1205 Office Equipment
- 1210 Accumulated Depreciation—Office Equipment

- 1215 Warehouse Equipment
- 1220 Accumulated Depreciation—Warehouse Equipment

(2000) LIABILITIES

- 2100 Current Liabilities
- 2105 Accounts Payable
- 2110 Sales Tax Payable

- 2115 Notes Payable
 - 2120 Interest Payable
 - 2125 Unearned Rent Income
 - 2130 Employee Income Tax Payable
 - 2135 Social Security Tax Payable
 - 2140 Medicare Tax Payable
 - 2145 Medical Insurance Payable
 - 2150 Unemployment Tax Payable—State
 - 2155 Unemployment Tax Payable—Federal
 - 2160 Federal Income Tax Payable
 - 2165 Dividends Payable

 - 2200 Long-Term Liabilities
 - 2205 Bonds Payable
- (3000) STOCKHOLDERS' EQUITY**
- 3105 Capital Stock—Common
 - 3110 Paid-in Capital in Excess of Par—Common
 - 3115 Capital Stock—Preferred
 - 3120 Paid-in Capital in Excess of Par—Preferred
 - 3205 Retained Earnings
- 3210 Dividends
 - 3215 Income Summary
- Income Statement Accounts
- (4000) OPERATING REVENUE**
- 4105 Sales
 - 4110 Sales Discount
 - 4115 Sales Returns and Allowances
- (5000) COST OF GOODS SOLD**
- 5105 Purchases
 - 5110 Purchases Discount
 - 5115 Purchases Returns and Allowances
- (6000) OPERATING EXPENSES**
- 6105 Advertising Expense
 - 6110 Cash Short and Over
 - 6115 Credit Card Fee Expense
 - 6120 Depreciation Expense—Office Equipment
 - 6125 Depreciation Expense—Warehouse Equipment
 - 6130 Insurance Expense
 - 6135 Miscellaneous Expense
 - 6140 Payroll Taxes Expense
 - 6145 Rent Expense
 - 6150 Repairs Expense
- 6155 Salary Expense
 - 6160 Supplies Expense
 - 6165 Uncollectible Accounts Expense
 - 6170 Utilities Expense
 - 6200 Income Tax Expense
 - 6205 Federal Income Tax Expense
- (7000) OTHER REVENUE**
- 7105 Interest Income
 - 7110 Rent Income
 - 7115 Gain on Plant Assets
- (8000) OTHER EXPENSES**
- 8105 Interest Expense
 - 8110 Loss on Plant Assets
- Subsidiary Ledgers**
- Accounts Receivable Ledger**
- 110 Bakery Depot
 - 120 Ferndale Café
 - 130 Hilltop Hospital
 - 140 Huang Restaurant
 - 150 Northside Catering
 - 160 Rao Deli
- Accounts Payable Ledger**
- 210 Bok Supply Company
 - 220 Dreyfus Company
 - 230 Glommen Company
 - 240 Hilton Supply
 - 250 Sarr Corp.
 - 260 Winona Manufacturing

Recording Transactions

The December 1, 20X4, account balances for the general and subsidiary ledgers are given in the Working Papers. Transactions from the period December 1 through December 23 have already been journalized and individual items have been posted.

Instructions

1. Journalize the following transactions completed during the last week in December of the current year. Restaurant Warehouse offers sales terms of 2/10, n/30. The sales tax rate is 6%. Post the following transactions when journalized: (1) transactions affecting the accounts receivable or accounts payable subsidiary ledgers, (2) transactions recorded in the general journal, and (3) amounts entered in a general amount column of the cash payments and cash receipts journals. Source documents are abbreviated as follows: check, C; memorandum, M; purchase invoice, P; receipt, R; sales invoice, S; terminal summary, TS; debit memorandum, DM; credit memorandum, CM; note payable, NP.

Dec. 26. Received cash for the maturity value of NR28, a 90-day, 12% note for \$11,600.00. R454.

27. Recorded cash and credit card sales, \$4,674.00, plus sales tax, \$280.44; total, \$4,954.44. TS40.
28. Sold merchandise on account to Huang Restaurant, \$5,000.00, plus sales tax. S428.
28. Purchased merchandise on account from Dreyfus Company, \$12,296.00. P190.
28. Signed a 90-day, 10% note, for \$12,000.00 with Northstar National Bank. NP22 and R455.
28. Received cash for sale of a computer, plant asset No. 284, \$300.00. M29 and R456. Update the plant asset record and record the sale.
28. Received cash in full payment of Bakery Depot's account, previously written off as uncollectible, \$1,896.00. M30 and R457.
29. Paid \$1,000.00 on the outstanding balance of the Sarr Corp. account. C343.
29. Issued 500 shares of \$10.00 par value common stock at \$50.00 per share. R458.
29. Issued 300 shares of 5%, \$50.00 par value preferred stock at par value, \$15,000.00. R459.
30. Rao Deli dishonored NR29, a 60-day, 12% note, for \$6,000.00. M31.
- Dec. 30. Recorded payment of credit card fee expense, \$836.00. M32.
30. Purchased a work station for use in the office and a forklift for use in the warehouse in a lump-sum transaction, \$30,000.00. The work station has an estimated value of \$11,000, and the forklift has an estimated value of \$22,000.00. C344. Open a plant asset record for each item. Work station: plant asset No. 452; serial number, M251; useful life, 4 years; estimated salvage value, \$1,000.00. Forklift: plant asset No. 453; serial number, 124XYG; useful life, 5 years; estimated salvage value, \$3,000.00.
31. Paid cash to replenish the petty cash fund, \$169.92: supplies, \$25.00; advertising, \$100.00; miscellaneous, \$44.74; cash short, \$0.18. C345.
31. Paid cash for semimonthly payroll, \$4,413.72 (total payroll, \$5,520.00, less deductions: employee income tax, \$304.00; social security tax, \$342.24; Medicare tax, \$80.04; medical insurance, \$380.00). C346.
31. Recorded employer payroll taxes, \$484.28, for the semimonthly pay period ended December 31. Taxes owed are: social security tax, \$342.24; Medicare tax, \$80.04; state unemployment tax, \$54.00; and federal unemployment tax, \$8.00. M33.
31. Recorded cash and credit card sales, \$930.00, plus sales tax, \$55.80; total, \$985.80. TS41.
31. Paid semiannual interest on bonds payable, \$1,200.00. C347.

2. Prove and rule the sales journal. Post the totals of the special columns.

3. Total and rule the purchases journal. Post the total.

4. Prove the equality of debits and credits for the cash receipts and cash payments journals.
5. Prove cash. The balance on the next unused check stub is \$25,001.40.
6. Rule the cash receipts journal. Post the totals of the special columns.
7. Rule the cash payments journal. Post the totals of the special columns.
8. Prepare a schedule of accounts receivable and a schedule of accounts payable. Prove the accuracy of the subsidiary ledgers by comparing the schedule totals with the balances of the controlling accounts in the general ledger. If the totals are not the same, find and correct the errors.

The ledgers and plant asset records used in Reinforcement Activity 3—Part A are needed to complete Reinforcement Activity—3 Part B.