

## Determining the QUANTITY of Merchandise Inventory

The quantity of items in inventory at the end of a fiscal period must be determined in order to calculate the cost of merchandise sold. Two principal methods are used to determine the quantity of each item of merchandise on hand.

1. **Periodic Inventory.** A merchandise inventory determined by counting, weighing, or measuring items of merchandise on hand is called a periodic inventory. A periodic inventory is also referred to as a *physical inventory*.
2. **Perpetual Inventory.** A merchandise inventory determined by keeping a continuous record of increases, decreases, and balance on hand is called 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. The Universal Product Code (UPC) is a barcode symbology that is widely used for tracking trade items in stores.



Keeping track of merchandise inventory also involves knowing the ideal quantity for each kind of merchandise in inventory. To ensure 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.

## Determining the COST of Merchandise Inventory

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.

### **FIFO: First In, First Out**

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. Because FIFO assumes the older merchandise is sold first, the cost of merchandise on hand is calculated by looking at the most recent invoices.

Purchase Dates	Units Purchased	Unit Price	Total Cost	FIFO Units on Hand	FIFO Cost
January 1, beginning inventory	10	\$18.80	\$188.00		
February 16, purchases	6	19.60	117.60		
April 17, purchases	14	20.40	285.60		
September 5, purchases	12	21.40	256.80	10	\$214.00
November 22, purchases	8	21.50	172.00	8	172.00
Totals	50		\$1,020.00	18	\$386.00

### **LIFO: Last In, First Out**

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. This method is based on the idea that the most recent costs of merchandise should be charged against current revenue.

Purchase Dates	Units Purchased	Unit Price	Total Cost	LIFO Units on Hand	LIFO Cost
January 1, beginning inventory	10	\$18.80	\$188.00	10	\$188.00
February 16, purchases	6	19.60	117.60	6	117.60
April 17, purchases	14	20.40	285.60	2	40.80
September 5, purchases	12	21.40	256.80		
November 22, purchases	8	21.50	172.00		
Totals	50		\$1,020.00	18	\$346.40

### Weighted Average

Using the average cost of inventory during a fiscal period to calculate the cost of merchandise is called the weighted average inventory costing method. The average unit price of the total inventory is calculated. This average unit price is used to calculate both ending inventory and cost of merchandise sold.

<b>Purchase Dates</b>	<b>Units Purchased</b>	<b>Unit Price</b>	<b>Total Cost</b>
January 1, beginning inventory	10	\$18.80	\$188.00
February 16, purchases	6	19.60	117.60
April 17, purchases	14	20.40	285.60
September 5, purchases	12	21.40	256.80
November 22, purchases	8	21.50	172.00
Totals	50		\$1,020.00
Total of Beg. Inventory and Purchases ÷ Total Units = Weighted Average Price Per Unit $\$1,020 \div 50 = \$20.40$			
Units in Ending Inventory x Weighted Avg. Price Per Unit = Cost of Ending Inventory $18 \times \$20.40 = \$367.20$			

## **Calculating the Cost of Merchandise Sold**

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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.

### FIFO

Cost of Merchandise Available for Sale – FIFO Cost of Ending Inventory = Cost of Merchandise Sold  
 $\$1,020.00 - \$386.00 = \$634.00$

### LIFO

Cost of Merchandise Available for Sale – LIFO Cost of Ending Inventory = Cost of Merchandise Sold  
 $\$1,020.00 - \$346.40 = \$673.60$

### Weighted Average

Cost of Merchandise Available for Sale – Weighted Average Cost of Ending Inventory = Cost of Merchandise Sold  
 $\$1,020.00 - \$367.20 = \$652.80$

**PRACTICE PROBLEM 1: Orlando Supply**

Calculate the cost of ending inventory using the FIFO, LIFO, and weighted average inventory costing methods. There are 172 units in the ending inventory.

<u>Purchase Date</u>	<u>Quantity</u>	<u>Unit Price</u>
January 1, beginning inventory	90	\$2.00
March 13, purchases	78	\$2.10
June 8, purchases	80	\$2.25
September 16, purchases	84	\$2.30
December 22, purchases	88	\$2.40

**FIFO: First In, First Out**

Purchase Dates	Units Purchased	Unit Price	Total Cost	FIFO Units on Hand	FIFO Cost
Totals					

**LIFO: Last In, First Out**

Purchase Dates	Units Purchased	Unit Price	Total Cost	LIFO Units on Hand	LIFO Cost
Totals					

**Weighted Average**

Purchase Dates	Units Purchased	Unit Price	Total Cost
Totals			
Total of Beg. Inventory and Purchases ÷ Total Units = Weighted Average Price Per Unit			
Units in Ending Inventory x Weighted Avg. Price Per Unit = Cost of Ending Inventory			

**PRACTICE PROBLEM 2: Fultz Industries**

Calculate the cost of ending inventory using the FIFO, LIFO, and weighted average inventory costing methods. There are 205 units in the ending inventory.

<u>Purchase Date</u>	<u>Quantity</u>	<u>Unit Price</u>
January 1, beginning inventory	120	\$1.78
February 8, purchases	56	\$1.85
April 13, purchases	35	\$1.91
October 9, purchases	73	\$1.98
November 20, purchases	42	\$2.01

**FIFO: First In, First Out**

Purchase Dates	Units Purchased	Unit Price	Total Cost	FIFO Units on Hand	FIFO Cost
Totals					

**LIFO: Last In, First Out**

Purchase Dates	Units Purchased	Unit Price	Total Cost	LIFO Units on Hand	LIFO Cost
Totals					

**Weighted Average**

Purchase Dates	Units Purchased	Unit Price	Total Cost
Totals			
Total of Beg. Inventory and Purchases ÷ Total Units = Weighted Average Price Per Unit			
Units in Ending Inventory x Weighted Avg. Price Per Unit = Cost of Ending Inventory			