Chapter Objectives

After reading this chapter, you should be able to:

• Describe the receiving process
• Explain stock handling techniques used in receiving deliveries
• Describe the process for providing effective inventory management
• Explain the types of inventory control systems
• Relate customer service to distribution
• Analyze sales information to determine inventory turnover
• Discuss technology and inventory management

Market Talk  The receiving process is an important part of inventory control. Proper procedures for handling of incoming stock allow businesses to move products to market in a smooth and timely manner.

Quick Think  How does technology help control inventory?
Chapter 24 — Stock Handling and Inventory Control

DECA Events These acronyms represent DECA competitive events that involve concepts in this chapter:

- AAM*
- EMDM
- FMML*
- QSRM
- BMDM*
- FMAL*
- RFSM
- RMS

Performance Indicators The performance indicators represent key skills and knowledge. Relating them to the concepts explained in this chapter is your key to success in DECA competitive events. Keep this in mind as you read, and write notes when you find material that helps you master a key skill. In these DECA competitive events, you should follow these performance indicators:

- Explain the receiving process
- Describe the use of technology in the distribution function

The events with an asterisk also include:

- Maintain inventory levels
- Complete inventory counts
- Describe inventory control systems
- Determine inventory shrinkage

Some events include these performance indicators:

**AAM**
- Explain stock-handling techniques used in receiving deliveries
- Process incoming merchandise
- Resolve problems with incoming shipments
- Process returned/damaged product

**EMDM**
- Explain types of unit inventory control systems

**FMML**
- Resolve problems with incoming shipments

**HLM**
- Calculate inventory shrinkage
- Explain the nature of inventory control systems

**QSRM/RFSM**
- Check incoming stock
- Reconcile shipping/receiving discrepancies

DECA PREP

ROLE PLAY Check your understanding of DECA performance indicators with the DECA activity in this chapter’s review. For more information and DECA Prep practice, go to the Marketing Essentials OLC through glencoe.com.
Stock Handling

Manufacturing companies depend on suppliers to deliver parts or raw materials used in making finished products accurately and on time. When these parts or materials are delivered to the warehouse, plant, or store, they must be received into stock and information about them must be recorded and tracked. For example, suppose a door handle manufacturer has a contract with an automobile assembly plant to supply door handles...
for pickup trucks. They deliver door handles almost every day to keep pace with production at the assembly plant.

Whether a business receives raw materials, parts, or merchandise for resale, it needs a process to handle the items. The steps in the stock handling process include receiving goods, checking them, marking the goods with information, if necessary, and delivering them to a place where they will be used, stored, or displayed for sale. The receiving clerk at the truck assembly plant who checks in the door handles must make sure that the correct part has been delivered, that the right number are there, and that they get to the assembly line in time to be installed on the pickup truck doors. The receiving clerk must also make sure that information about the parts is recorded in the system so that inventory levels are correct and the accounts payable department knows to pay the invoice from the door handle manufacturer.

**Receiving Stock**

Stock ordered by a business is received, checked, and, in retail settings, often marked with a selling price before it is transferred to the sales area.

**Facilities**

Where stock is placed when it is received depends on the type and size of the business. Smaller businesses may use a backroom or may even place items in store aisles when they are received. Many businesses, however, have enough space to devote an area of a loading dock, or first floor to receiving.

Large businesses and chain stores sometimes have separate warehouses or distribution centers where merchandise is received and stored before it is taken to the department or branch store that needs it. Facilities such as these have large bays with loading docks that open at the height of the bed of a truck for easy unloading.

**Receiving Records**

Every business records information about the goods it receives either manually or electronically in a receiving record. The items on a receiving record depend on the needs of the business. They can include the following:

- A receiving number
- Person who received the shipment
- Shipper of the merchandise
- Place from which the goods were shipped
- Name of the carrier
- Number of the carrier
- Number of items delivered
- Weight of items delivered
- Condition of the goods received
- Shipping charges
- Department or store that ordered the merchandise
- Date the shipment was received

Each set of goods received is assigned a receiving number. Some businesses include this number on a record called an apron. An apron is a form that is attached to the invoice that accompanies the goods received before they move through checking and marking. The apron system helps prevent the payment of duplicate invoices because the invoice is only paid when the proper information is recorded on the apron.

The receiving number may be called an apron number for businesses using this system. In retail businesses, the apron is often prepared by a store’s buyers. For example, Lydia buys accessories for a women’s clothing shop. She prepares apron forms for a shipment of scarves she ordered when they arrive. These forms will travel through the system with the scarves as they are inspected, priced, prepared for display, and finally placed on the sales floor. The apron lists steps the scarves take to reach the selling floor, and it includes the receiving number, the department number, the purchase order number, terms on the purchase order and on the invoice, routing information, and the date the shipment was checked.

**Checking Merchandise**

Merchandise is checked to verify quantity and condition; cartons are checked for damage, and the goods are sorted and counted.
Carlo had recently returned to work after raising a family. He got a job at a furniture manufacturer as a receiving clerk and was soon promoted to department manager. Upon receiving and inspecting a shipment of padding from a supplier, Carlo noticed that the quality of the padding was not according to the buyer’s specifications that were listed on the purchase order.

**Risk a Large Order or Not?**
Carlo suspected that either a mistake had been made or the supplier had shipped the wrong merchandise. But when he reported his findings to the buyer, he was told to ignore the situation. The buyer said that the company needed the padding immediately to complete a large order. He said if the order was not completed by the end of the week, the company would lose the business altogether and that could jeopardize everyone’s job.

**Methods of Checking**
There are four methods that are frequently used to check merchandise: the blind check, the direct check, the spot check, and the quality check. **Figure 24.1** illustrates the methods of checking merchandise.

The **blind check method** requires the receiver to write the description of the merchandise, count the quantities received, and list them on a blank form or dummy invoice. The list or dummy invoice is then compared to the actual invoice after the blind check is made. The blind check method is considered the most accurate checking method, but it can be time consuming. The blind check method is used when the merchandise needs to be moved quickly to the sales floor and the actual invoice has not yet been received from the seller. Invoices often follow the shipment of goods by two or more days.

With the **direct check method**, the merchandise is checked directly against the actual invoice or purchase order. This procedure is faster than the blind check method, but **errors** may not be found if the invoice itself is incorrect. Some receivers do not completely check the total number of items once they see the amount listed on the invoice: if the amount looks correct, they may not bother to take an actual count.

The **spot check method** is a random check of one carton in a shipment (such as one out of every twenty). The carton is checked for quantity, and then one product in the carton is inspected for quality. When the contents are as stated on the invoice, the remaining cartons minimize the time required for this process. For example, the door handle manufacturer’s distribution center can notify the truck assembly plant in advance with information about which cartons of door handles to expect each day and the contents of each carton. Upon receipt at the assembly plant, coded shipping box labels are electronically scanned, the carton’s contents are identified, and the information is automatically transferred to an inventory management computer system.

**A MATTER OF ETHICS**

Carlo had recently returned to work after raising a family. He got a job at a furniture manufacturer as a receiving clerk and was soon promoted to department manager. Upon receiving and inspecting a shipment of padding from a supplier, Carlo noticed that the quality of the padding was not according to the buyer’s specifications that were listed on the purchase order.

**Do you think that Carlo should report his findings or follow the buyer’s request to ignore the situation? Explain your answer.**
When using the direct check method, the receiver checks merchandise against the original invoice. This procedure is faster than the blind check. Errors may be introduced, however, if the receiver relies on the amount on the invoice rather than actually counting the merchandise delivered.

A quality check is done whenever the workmanship and general characteristics of the merchandise received must be examined. This type of check is usually done for products such as furniture and products with artistic value, such as vases and paintings. Often this check is performed by the buyer, not a receiver.

Go to the Marketing Essentials OLC through glencoe.com to find a project on checking merchandise.
are assumed to be the same. Spot checking is often used for products such as canned goods, paper products, and pharmaceuticals.

The **quality check method** is done to inspect the workmanship and general characteristics of the received merchandise. Although a receiver can do a quality check, a buyer often performs this check. The merchandise is checked to determine whether the quality of the goods received matches the quality of the products, which were ordered. If the goods are damaged, a damage report is prepared. Damaged goods should not be discarded without the authorization of the supplier.

**Returning Merchandise**

Careful checking practices can save a business large amounts of money. All incorrect items, damaged merchandise, and items ordered but not received are identified and reported according to the policies of the business. When this is done, the business can get proper credit or adjustments from the carrier or the seller.

Upon return of the merchandise, the seller issues a credit memorandum. A credit memorandum is notification that the buyer’s account has been credited for the value of the returned merchandise.

**Marking Merchandise**

After it has been received and checked, merchandise must be marked with the selling price and other information. Different methods may be used for various kinds of merchandise. The most common method of marking price is with a UPC, however a hand-operated pricing machine or pricing tickets can be used as well.

Universal Product Codes (UPCs) are widely used in business today for tracking merchandise (see Chapter 16). UPCs originate with the Uniform Code Council (UCC). A manufacturer pays an annual fee to the UCC for permission to use the UPC system. Many businesses receive goods that are preticketed with prices and UPCs.

UPCs are often used for **source marking**. With this method, the seller or manufacturer marks the price before delivering the merchandise to the retailer. Merchandise can be moved directly from the receiving area to the sales floor. The UPCs are scanned at the checkout area, and the price stored in the computer for that code is entered for the sale.

Some businesses may use a **preretailing marking method** of marking merchandise. With the preretailing marking method, the pricing information is marked in advance on the purchase order. This information is entered in the buyer’s computer system, and prices are available for marking the merchandise as soon as it is received. Preretailing marking is normally used for staple items that are unlikely to have price changes between the time of the order and receipt of the merchandise. This saves time because merchandise can be price marked immediately.

Finally, merchandise can be marked with the familiar price tickets. In large stores, price tickets are prepared by hand or by machine in a marking room or in a stock room. Gum labels are used on merchandise with a flat, hard surface such as books. Pin tickets are used on merchandise that will not be damaged by the pinholes, such as socks or scarves. String or plastic tags are used for larger articles, such as dresses, shirts, and suits. The pricing ticket also helps when a customer needs to return an item to a store as it is difficult to return an item that has no tags.

**Price Ticket Information**

The price ticket identifies the price of the merchandise. Other important information may also be included on the price ticket. Many businesses include information such as store numbers, model or style numbers, color, sizes, fabrics, manufacturer’s number, and lot numbers. This information is useful for tracking merchandise. It helps a business determine which items, sizes, and colors are popular with customers.
Problem Solving: Amount Saved

When the amount saved is given as a percent, the first step is to convert the percent to a decimal number. Multiplying this decimal number by the total cost will give the amount saved.

1. To solve this problem, convert the percent to a decimal number by moving the decimal point two places to the left.
2. Multiply the decimal equivalent of the percent by the total cost of price marking in employee time to determine the amount that can be saved.

For help, go to the Math Handbook located at the back of this book.

For help, go to the Math Handbook located at the back of this book.

Stock transfers between departments can occur when merchandise is carried by more than one department or when the demand for merchandise in one department creates a need for additional merchandise. Stock transfers can also occur when the merchandise is used for sales promotions, such as displays, advertising illustrations, or fashion shows, and also when the merchandise is used for installation or repairs in various departments.

Stock transfers between stores can occur to meet unexpected demand or to fill requests by customers. A customer may find the perfect pair of pants, but find that the branch of the store is sold out. Some stores will call another local store to have it send over the right size. Finally, stock transfers from store to distribution outlet can occur when off-season and nonsalable merchandise is moved to surplus or discount stores. A store may choose to transfer all of its winter clothing to an outlet store if the stock doesn’t clear out during after-season sales.

Key Terms and Concepts

1. List the four main steps in the stock handling process.
2. What are the four methods used for checking merchandise?
3. How do UPC codes assist with the stock handling process?

Academic Skills

Math

4. A stationery store calculated the cost of price marking its merchandise to be $54,000 a year in employee time. The store estimates that it can save 33 percent of this cost by switching to source marking for most of its merchandise. What is the amount of the savings?

Social Studies/History

5. Research the history and development of the Universal Product Code (UPC). Use a word processing program to write a one-page paper on the beginning of UPC in the supermarket industry and its use on most manufactured products today.

For help, go to the Math Handbook located at the back of this book.

Check your answers at the Marketing Essentials OLC through glencoe.com.
OBJECTIVES

• Describe the process for providing effective inventory management
• Explain the types of inventory control systems
• Relate customer service to distribution
• Analyze sales information to determine inventory turnover
• Discuss technology and inventory management

ACADEMIC VOCABULARY

• complex
• authorize

THE MAIN IDEA

Business-owned inventory represents money tied up in products until it is sold. A well-managed and controlled inventory increases profit.

GRAPHIC ORGANIZER

Draw this chart to write in three types of purchase situations and four criteria for selecting suppliers.

ACADEMIC STANDARDS

English Language Arts

NCTE 1  Read texts to acquire new information.

Math

NCTM Algebra  Use mathematical models to represent and understand quantitative relationships.

Inventory Management

Inventory refers to all the goods stored by a business before they are sold. Inventory includes raw materials, components purchased from suppliers, manufactured sub-assemblies, work in process, packaging materials, and finished goods. In a retail store, inventory includes all goods available for resale.
Inventory management is the process of buying and storing these materials and products while controlling costs for ordering, shipping, handling, and storage. This is usually the responsibility of the supply chain manager whose job it is to maintain just the right level of inventory to meet the supply and demand needs of a business. Having the wrong merchandise in stock, holding too many slow-selling items, or storing too few fast-selling ones are problems the supply chain manager faces every day.

Unnecessarily high inventories can create many problems for a business. In addition to using up storage space, personnel costs increase for security and warehouse staff, as do inventory insurance premiums, which may lead to increased interest expenses. Businesses lose money, and profits decrease.

Distribution, Inventory Management, and Customer Service

The most important goal of any department within a business is to meet the needs of its customers. Every department in today’s business environment must be customer oriented if the overall business is to be successful.

Just-in-Time Inventory

A just-in-time (JIT) inventory system controls the flow of parts and material into assembly and manufacturing plants. A JIT inventory system coordinates demand and supply such that suppliers deliver parts and raw materials just before they are needed for use. Plants keep only small stocks on hand to avoid tying up money and inventory space.

Computer link-ups tell suppliers and transportation companies which items are needed and when to deliver them to meet production needs. Parts are delivered on a schedule—just in time for use in the production process. A late shipment can bring an entire manufacturing operation to a standstill.

Inventory management is complex because a business has to correctly anticipate demand for its products while trying to keep overall inventory investment as low as possible. Retail businesses are expected to:

- Maintain the right quantities of merchandise without running out of stock
- Keep a wide product assortment (with low investment) without compromising customer needs and wants
- Purchase merchandise at large volumes to gain the lowest prices while not buying more than it will sell
- Keep a current inventory on hand

Good inventory management balances the costs of inventory with the benefits of
maintaining a large inventory. The costs of inventory include not only the cost of the items in stock, but also storage, insurance, and taxes. Inventory ties up a business’s working capital—money that could be used for other purposes. It is not effective for a company to maintain large inventory holdings if that money could be spent more effectively somewhere else or invested. Effective inventory management helps increase working capital and allows a business to pay for other business expenses.

**Inventory Systems**

Two methods of tracking inventory are the perpetual inventory system and the physical inventory system.

**Perpetual Inventory System**

A **perpetual inventory system** tracks the number of items in inventory on a constant basis. The system tracks all new items purchased and returned, as well as sales of current stock. An up-to-date count of inventory is maintained for purchases and returns of merchandise, sales and sales returns, sales allowances, and transfers to other stores and departments. With a perpetual inventory system, a business keeps track of sales as they occur.

**Manual Systems**

In a manual system, employees gather paper records of sales and enter that information into the inventory system. These records can include receiving department records, sales checks, price tickets, cash register receipts, stock transfer requests, and other documents used for coding and tabulation.

Merchandise tags are used to record information about the vendor, date of receipt, department, product classification, color, size, and style. The merchandise tags from items sold are sent in batches to a company-owned tabulating facility or to an independent computer service organization where the coded information is analyzed through the use of computer software.

**Computer-Based Systems**

Computer-based systems to control inventory are increasingly popular, even among smaller businesses. They are also faster and more accurate than manual systems. A point-of-sale terminal uses hand-held laser guns, stationary lasers, light pens, or slot scanners to feed sales transaction data directly from Universal Product Codes (UPCs), sales checks, or merchandise tags into a computer. Businesses then use computer-generated information printouts at different times for review and action.

Electronic Data Interchange (EDI) involves computer-to-computer information exchanges and relays of sales information directly to a supplier. The supplier uses the sales transaction data to ship additional items automatically.

**Physical Inventory System**

Under a **physical inventory system**, information about stock levels is not maintained on an ongoing basis. Rather, every so often, stock is visually inspected or actually counted to determine the quantity on hand. Inventory data can be captured in many ways, from high-tech methods to manual counts. Some of the most popular methods for larger retailers are scanned bar codes and keypad entry onto handheld devices.

Even if a perpetual inventory system is used, physical inventories are still conducted periodically or on a regular annual basis. A physical inventory allows a business to calculate its income tax, determine the correct value of its ending inventory, identify any stock shortages, and plan future purchases. There are several methods used.

Analyze How do the perpetual and the physical inventory systems differ?

**Inventory Counting Methods**

To count inventory, businesses often use a combination of methods. Regular employees or outside inventory service companies can be used to count inventories. Larger national retailers tend to use outside companies such as Washington Inventory Services, RGIS, or smaller regional or local companies. After the counting is finished, the total value of the inventory is determined. This value is reported on the business’s financial statements.
Physical Inventory Method

The most popular method of inventory management is the physical inventory. Most businesses physically count inventory at least once a year, some conduct them on a semi-annual basis, and fewer on a quarterly or even more frequent basis. Inventory clerks usually work in pairs: one counts merchandise while the other records the count. Physical inventories are usually wall-to-wall store inventories which often require that the business close temporarily to conduct the inventory.

Cycle Count Method

Many businesses use cycle counts either in combination with an annual physical inventory or alone to track inventory. In this method, the entire inventory is never counted at one time. A small portion of the inventory is physically counted each day by stockkeeping units so that the entire inventory is accounted for on a regular basis. A stockkeeping unit (SKU) is a unit or a group of related items. Manufacturers’ representatives do a variation of the cycle count method. The representative

Case Study

Bar Codes Meet New Standards

The Uniform Code Council, an industry group for retailers in the United States and Canada, ruled that all bar code scanners read a new global Universal Product Code. Beginning in January of 2005, all point-of-sale scanners were required to read an extra number (up from 12 to 13 digits). Rather than the existing 12-digit bar code used in North America, the 13-digit bar code is widely used in Europe.

Global Codes

The new 13-digit code gives retailers information about the country of origin, the manufacturer, individual product information, and a single check digit to verify accuracy and to control inventory. The first two digits give country information. For example, numbers from 00–13 represent companies in the U.S. and Canada, while higher numbers represent other countries. The next five digits identify manufacturers from throughout the world who have registered their own unique code with regional authorities like the Uniform Code Council.

The next five numbers are assigned to individual products by each manufacturer. The previous 12 numbers are used mathematically to come up with a final number or check digit. The last number verifies that a product has been scanned correctly. Scanning and technical problems will occur for most retailers because the software written for tracking sales, orders, and inventory control will need to be re-designed for the new bar code.

THINK STRATEGICALLY

While many consumer and retailers may experience initial technical difficulties with scanners and software, why are U.S. and Canadian retailers moving to the new 13-digit bar code standard?

Go to the Marketing Essentials OLC through glencoe.com to find a research project on UPCs and inventory.
visits a business on a regular basis, takes the stock count, and writes the order. Unwanted merchandise is removed from stock and returned to the manufacturer through a pre-determined, **authorized** procedure.

**Visual Control Method**

Visual control is sometimes used to monitor physical inventory levels. Smaller businesses often place stock cards on pegboards with stock numbers and descriptions for each item displayed. The stock cards specify the number of each item to be kept in stock. It can be somewhat inaccurate because it does not account for misplaced merchandise. The amount to reorder is the difference between the number on hand and the specified number to be stocked. The number to stock may be an estimate of sales for a typical period of time.

**Trends in Inventory Methods**

As business becomes increasingly more competitive, efficient and effective inventory management methods will be implemented. Some predicted future trends related to inventory methods will be the almost universal recording of inventories using SKU and/or UPC codes, greater use of technology in taking inventories, increased use and frequency of cycle counts by SKU, increased use of Internet technologies to link with vendors, and increased vendor participation.

**Using Both Systems**

A business does not have to choose between a physical inventory system and a perpetual inventory system. Most businesses find it most effective to use both systems. The perpetual system gives an up-to-date inventory record throughout the year. The physical system gives an accurate count that can be compared to the perpetual records to identify any errors or problems. The two systems actually complement each other.

The perpetual inventory records are used to help the business track sales and manage its merchandise. After a physical inventory is taken, the ending inventory amount becomes the beginning inventory for the year that follows. Purchases by the business during the year are added to this amount, while sales are subtracted. Ending inventory is calculated in the example that follows.

<table>
<thead>
<tr>
<th>Number of Items for 1/1/05 to 6/30/05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning inventory, 1/1/2005</td>
</tr>
<tr>
<td>Net purchases (purchases less purchases and allowances returned)</td>
</tr>
<tr>
<td>Merchandise available for sale</td>
</tr>
<tr>
<td>Less net sales (sales less returns and allowances)</td>
</tr>
<tr>
<td>Ending inventory, 6/30/2005</td>
</tr>
</tbody>
</table>

Sometimes, the ending inventory shown in the perpetual inventory system does not match the physical count of inventory. When the physical count shows less merchandise than is supposed to be in inventory, a stock shortage or shrinkage has occurred. Employee and customer theft, receiving errors, incorrect counting, and selling errors can cause shortages for a business.

In the previous example, all records for purchases and sales are ongoing in a business; therefore the data represents a perpetual inventory system. The ending inventory figure of 250 items is the perpetual inventory. However, as you know, it is possible that this is not the most accurate count. If the physical inventory system showed ending inventory of 225, a stock shortage of 25 would have occurred (250 − 225 = 25). It is not until the physical inventory is taken that the company really knows if its ending inventory records are correct. It is still helpful, however, to use the perpetual inventory as a good estimation.

**Stock Control**

Stock control involves monitoring stock levels and investments in stock so that a business is run efficiently. Planning those stock levels and monitoring them requires the use of several different systems. They include dollar versus unit control methods, inventory turnover calculations, and three stock lists (model, basic, and never-out).
Dollar Versus Unit Control

Inventory management involves both dollar control and unit control of merchandise held in inventory. **Dollar control** represents the planning and monitoring of the total inventory investment that a business makes during a stated period of time. A business’s dollar control of inventory involves information about the amount of purchases, sales, dollar value of beginning and ending inventory, and stock shortages. This information helps a business determine the cost of goods sold and the amount of gross profit or loss during a given period of time. By subtracting operating expenses from the gross profit, the business can determine its net profit or loss.

**Unit control** refers to the quantities of merchandise that a business handles during a stated period of time. Unit control allows the business to keep inventory adjusted to sales and lets the business determine how to spend money available under a planned budget. In a unit control inventory system, merchandise is tracked by stockkeeping unit. Tracking the SKUs gives valuable sales information on those items that are successful and those that are not selling. A business can use this information to make better merchandising decisions. Sales promotions can be run to sell slow-moving items or to spotlight popular ones.

Unit control records also allow purchasing personnel to see what brands, sizes, colors, and price ranges are popular. By keeping track of this information, buyers can understand customer preferences and order accordingly. Finally, unit control records specify when items need to be ordered. When a minimum stock amount is reached, an order is placed for more stock. This system ensures that adequate assortments are available and helps avoid out-of-stock situations.

Inventory Turnover

The most effective way to measure how well inventory is being managed is to look at inventory turnover. **Inventory turnover** is the number of times the average inventory has been sold and replaced in a given period of time. The higher the inventory turnover rate, the more times the goods were sold and replaced. In retailing and wholesaling operations, the key is moving inventory so there is cash available to buy more fast-selling merchandise. High turnover rates mean that merchandise is selling quickly. That means higher profit for the business because its money is not tied up in inventory. Inventory turnover is also a good measure of success for businesses to use in evaluating vendors and products from year to year. Businesses use inventory turnover rates to compare a particular store’s entire operation with the operations of similar stores.

Inventory turnover rates for selected retailers are available from trade associations and commercial publishers. One such publisher is Dun & Bradstreet, which publishes *Industry Norms and Key Business Ratios*. Inventory turnover rates can be calculated in dollars (retail or cost) or in units.

Stores that keep records of the retail value of stock compute their inventory turnover rates as follows:

\[
\text{Inventory turnover rate} = \frac{\text{Net sales}}{\text{Average inventory on hand}}
\]

When net sales during a period are $49,500 and average inventory is $8,250, the inventory turnover is 6:

\[
\frac{49,500}{8,250} = 6
\]

To determine the average inventory, use inventory amounts for each of the months included in the time period being considered. Total these, as shown in the second column below, and then calculate the average.

<table>
<thead>
<tr>
<th>Month</th>
<th>Inventory</th>
<th>Net Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>$50,000</td>
<td>$10,000</td>
</tr>
<tr>
<td>February</td>
<td>55,000</td>
<td>15,000</td>
</tr>
<tr>
<td>March</td>
<td>68,000</td>
<td>20,000</td>
</tr>
<tr>
<td>April</td>
<td>64,000</td>
<td>19,000</td>
</tr>
<tr>
<td>May</td>
<td>63,000</td>
<td>21,000</td>
</tr>
<tr>
<td>June</td>
<td>60,000</td>
<td>20,000</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>$360,000</strong></td>
<td><strong>$105,000</strong></td>
</tr>
</tbody>
</table>
Picking Up the Speed

Picking orders in distribution centers can represent 30 to 40 percent of the total labor cost. So, increasing the speed it takes for order picking and selection can save time and money. Radio frequency (RF) terminals can speed up order selection by showing a worker the best sequence to pick up requested orders. Speed is increased, because the order selector does not have to read the entire pick ticket to look for the items, arrange the pick sequence, and find the item location.

Initial Costs

However, warehouse management system (WMS) software must be purchased to use radio frequency picking. The computer program is needed to arrange the orders in the best possible picking sequence. The order selector, using a RF handheld terminal, sees only one item at a time shown on the terminal. Besides the software, handheld RF terminals costing about $4,000 each need to be purchased, and an RF network including installation, antennas, and access points needs to be erected. Extra RF terminals also need to be purchased for spares and for use by storage and distribution supervisors.

Think Like a Marketer

How would you justify to upper management making a capital investment in distribution technology such as radio frequency terminals?

To get the average inventory for the six-month period, divide by the number of months.

\[
\frac{360,000}{6} = 60,000
\]

Finally, to calculate inventory turnover, divide total net sales (see the third column above) by average inventory.

\[
\frac{105,000}{60,000} = 1.75
\]

This figure means that the average inventory was sold and replaced 1.75 times during the six-month period.

When only cost information about inventory is available, inventory turnover can be calculated with this formula:

\[
\text{Cost of goods sold} \div \text{Average inventory on hand (at cost)}
\]

When a store wants to look at the number of items carried in relation to the number of items sold, it calculates its stock turnover rates in units with this formula:

\[
\frac{\text{Number of SKUs sold}}{\text{Average SKUs on hand}}
\]

Stock Lists

There are three plans used to monitor different types of goods—staple items, fashionable items, and very popular items. They are the basic stock list, model stock list, and never-out list.

A basic stock list is used for those staple items that should always be in stock. This list specifies products that a store should always carry based upon the type of business. A basic stock list in a men’s clothing store would include items such as T-shirts, underwear, and dress socks. The basic stock list at a card store would include birthday cards, blank cards, thank you cards, and cards for special occasions, such as weddings and anniversaries.

Based on expected sales for a given period, a basic stock list specifies the minimum amount
of merchandise that should be on hand for particular products. It shows the quantity of items that should be reordered, as well as the colors, styles, and sizes that should be carried. Retailers assign each product a code for ease in recording when the products are purchased and sold.

A **model stock list** is used for fashionable merchandise. Fashion items change relatively rapidly; therefore, these lists are less specific than basic stock lists. The information contained in model stock lists identifies goods by general classes (blouses, skirts, dresses, slacks) and style categories (short sleeve, long sleeve), sizes, materials, colors, and price lines. Style numbers are not included because each manufacturer’s style numbers change each year. Although model stock lists identify how many of each type of item should be purchased, the buyer must actually select specific models at the market. A **never-out list** is used for best-selling products that make up a large percentage of sales volume. Items are added to or taken off the list as their popularity increases or declines.

### The Future of Inventory Management

Because most customers who buy online expect their orders to be filled immediately, the ability to process and ship orders without delay has become essential to the success of e-businesses. This has brought about **real-time inventory systems**. Real-time inventory management is an Internet technology that connects applications, data, and users in real time. This technology lets a company constantly track every product it sells from when it is manufactured, or when it arrives in the warehouse, to when the customer orders it online, and to when it arrives at the buyer’s door.

---

### Key Terms and Concepts

1. Explain the difference between a perpetual and a physical inventory system.
2. Name the three different inventory counting methods.
3. What is the difference between dollar control and unit control as they relate to inventory management?

### Academic Skills

#### Math

4. What is the inventory turnover rate (at cost) for a school store if the cost of goods sold equals $15,000 and the average inventory on hand (at cost) equals $3,000? What does your answer represent?

#### Science

5. Investigate smart cards or radio frequency identification (RFID) tags and develop a one-page report on the scientific principles involved with this technology.

---

@ Online Action! Check your answers at the Marketing Essentials OLC through glencoe.com.
What do you do at work?
My role is similar to the role of a traditional MarCom director. I oversee all communications issued from the resort. This includes handling public relations, snow reporting, advertising, video production and distribution, and a creative services team comprised of two graphic designers, a copywriter, and one production coordinator. New to my team is a special events manager. Working in Mammoth is special. I am proud to see the look of joy on our guests’ faces as they experience things out of the ordinary—an amazing powder run, a child’s first wedge turn, a teenager’s first run through the halfpipe.

What skills are most important to you?
I put a heavy emphasis on verbal and written communication skills. It seems so simple, but you have to be able to get your point across quickly and powerfully. Secondly, in the resort business, building a network is critical. It is easier to deliver your message through trusted sources, and it takes work to establish credible relationships with media, vendors, and peers.

What is your key to success?
Stay focused on what matters. Be honest and respectful to your customers and coworkers. I also think it is imperative to find a field you are passionate about. Marketing communications was my chosen career path from college. I received a bachelor’s degree in communications with an emphasis in public relations.

What might attract someone to pursue a marketing or communications career at a vacation resort? List the pros and cons.

Be open-minded and prepare for the unexpected. People skills are very important.

Communications, marketing, public relations
BA, MA

Start your career in an entry-level position in marketing or communications. You will learn a lot as you work hard and prove yourself to supervisors. This may lead to positions with more responsibility and opportunity.

Growth to increase faster than average for the next ten years
Source: Occupational Outlook Handbook

Be open-minded and prepare for the unexpected. People skills are very important.

Go to the Marketing Essentials OLC through glencoe.com to find a career-related activity.
SECTION 24.1
- The steps in the stock handling process include receiving goods, checking them, marking the goods with information if necessary, and delivering them to their selling or storing location. Methods of checking merchandise include the blind-check method, the direct-check method, the spot-check method, and the quality-check method.

SECTION 24.2
- Inventory management is the process of buying and storing products for sale while controlling costs for ordering, shipping, handling, and storage. Inventory systems include perpetual inventory systems and physical inventory systems. Technology is changing the way inventory is controlled. Retailers use standards like UPCs, EDI, and SCM. Real-time inventory systems track all stages from manufacture to delivery.

FOCUS on KEY POINTS

REVIEW VOCABULARY
1. On a sheet of paper, use each of these key terms and academic vocabulary words in a written sentence.

   **Key Terms**
   - receiving record (p. 503)
   - blind check method (p. 504)
   - direct check method (p. 504)
   - spot check method (p. 504)
   - quality check method (p. 506)
   - source marketing (p. 506)
   - preretailing marking method (p. 506)
   - inventory (p. 508)
   - inventory management (p. 508)
   - just-in-time (JIT) inventory system (p. 509)
   - perpetual inventory system (p. 510)
   - physical inventory system (p. 510)
   - cycle counts (p. 511)
   - stockkeeping unit (SKU) (p. 511)
   - dollar control (p. 513)
   - unit control (p. 513)
   - inventory turnover (p. 513)
   - basic stock list (p. 514)
   - model stock list (p. 515)
   - never-out list (p. 515)
   - real-time inventory systems (p. 515)

   **Academic Vocabulary**
   - route (p. 503)
   - error (p. 504)
   - complex (p. 509)
   - authorize (p. 512)

REVIEW FACTS and IDEAS
2. Why is a receiving record important? (24.1)
3. What are stock handling techniques? (24.1)
4. What is inventory management? (24.2)
5. Explain a physical inventory system? (24.2)
6. How do you calculate stock turnover rates? (24.2)
7. Give three examples of technology used in inventory management. (24.2)
8. What is inventory in a retail store? (24.2)
9. Name two things expected of a retail store with regard to inventory. (24.2)
10. How does the perpetual inventory system work? (24.2)
11. What is stock control? (24.2)
14. **Math Practice**  
**Calculating Inventory Turnover**  
Calculate the inventory turnover rate (at retail) for the six-month period, given the following information.

<table>
<thead>
<tr>
<th>Month</th>
<th>Average Inventory</th>
<th>Net Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>$45,000</td>
<td>$15,000</td>
</tr>
<tr>
<td>August</td>
<td>$53,000</td>
<td>$20,000</td>
</tr>
<tr>
<td>September</td>
<td>$48,000</td>
<td>$21,000</td>
</tr>
<tr>
<td>October</td>
<td>$42,000</td>
<td>$32,000</td>
</tr>
<tr>
<td>November</td>
<td>$44,000</td>
<td>$35,000</td>
</tr>
<tr>
<td>December</td>
<td>$44,000</td>
<td>$38,000</td>
</tr>
</tbody>
</table>

**Problem Solving: Inventory Turnover Rate**  
The inventory turnover rate is a measure of how often the average inventory is sold and replaced during a given time period. Dividing the net sales by the cost of the average inventory on hand yields the inventory turnover rate.

**Concept**  
For help, go to the Math Appendix located at the back of this book.

15. **Science**  
**Inventory Technologies**  
In the past taking inventory was a long and arduous process. Information technology systems have made taking inventory much easier. Research a few technologies that have made the inventory process simpler. Produce a short presentation and present it to your class.

16. **Real-Time Service**  
Review the definition of a real-time inventory system and research it on the Internet. Answer the following questions: How can a real-time inventory system improve customer service? Why would a global business want real-time inventory systems?

17. **Researching Storage**  
Perform an Internet search on the potential hazards of storing goods and materials in warehouses, retail stores, or restaurants.  
**Activity**  
Use a word processing program to compose a one-page report detailing the risks and ways to minimize them.
18. **Develop a Prospectus**

Using an Internet search engine, identify a software company that specializes in inventory management systems. Use a word processing program to write a one-page prospectus on the company. Include its Website address and some of the services the company offers.

---

**Role Play**

**Bookstore Employee, Receiving**

**Situation** Assume the role of employee at the receiving and distribution center for a regional bookstore chain. In addition to books, the stores carry all types of accessories related to books and reading. One of your duties is to assure that incoming orders are checked in correctly. You use a combination of the four methods of checking merchandise. You are reviewing the merchandise check-in procedures with a recently hired employee (judge).

**Activity** You are to explain to the new employee (judge) each of the four methods for checking merchandise. Also explain which merchandise is best suited for each method.

**Evaluation** You will be evaluated on how well you meet the following performance indicators:

- Explain the receiving process.
- Explain stock-handling techniques used in receiving deliveries.
- Resolve problems with incoming shipments.
- Follow up orders.
- Demonstrate orderly and systematic behavior.

---

**Test-Taking Tip**

At the beginning of the test, review it quickly to see what kinds of questions are on the test. You may find multiple choice, matching, true or false, short answer, extended response, and essay questions.

---

**Online Action!**

For more information and DECA Prep practice, go to the *Marketing Essentials* OLC through glencoe.com.
BASIC BACKGROUND
Your firm’s newest client, Street-Smarts, specializes in Global Positioning System (GPS) products. GPS uses satellites to provide navigational information. The police, the military, and aviation used the technology for years before it was available to consumers. Other companies marketing GPS products include Timex, Garmin Inc., and Thales Navigation.

Pinpointing Locations
Some automobiles are equipped with GPS to help direct drivers to their destinations. Handheld GPS devices are currently on the market for runners, hikers, cyclists, and outdoor sports enthusiasts. Geocaching and games that make use of GPS are on the rise. Tourist attractions and museums use the devices as tour guides.

Street-Smarts has asked for your firm’s help in defining consumer markets, choosing products, and suggesting channels of distribution.

YOUR OBJECTIVE
Your objective is to suggest the products Street-Smarts should market to consumers for personal use, who should be the target market(s), and the channel(s) of distribution that should be used to get the products into their hands.

SKILLS NEEDED
Preview the project and brainstorm a list of skills you will need to complete it. Describe how you might apply them. Some skills might include:

Academic Skills reading, writing, social studies, and researching
Basic Skills speaking, listening, thinking, and interpersonal skills
Technology Skills word processing, presentation, telecommunications, and Internet skills

ASSIGNMENT AND STRATEGY
• Conduct research To get started, analyze Street-Smarts’ competitors and the market for GPS products. Learn about GPS technology, especially devices that are currently marketed to consumers for personal use. Research emerging trends and markets for GPS. Examine the marketing of GPS products, their target markets, pricing, and distribution.
• Develop the plan  Begin your proposal with an overview of the current consumer market for GPS technology, including emerging trends. Include a history of the growth of this market.

  Cover the four Ps of the marketing mix (product, place, price, and promotion). Then devise an effective distribution plan. Recommend products to market, identify target markets, and suggest prices.

  Discuss the distribution channels you would include and why, the costs, and the volume of products to distribute.

• What your project should include  Suggest how Street-Smarts should set up its sales and marketing departments for the consumer market. If you suggest working with resellers, include promotional materials to persuade resellers to carry this line of consumer GPS products. For a Web site, provide a sample site map and home-page design.

YOUR REPORT

  Use a word processing program and presentation software to prepare a double-spaced report and an oral presentation for Street-Smarts. See a suggested outline and key evaluation points at the Marketing Essentials OLC through glencoe.com.

Option 1 Internship Report

Once you have completed your Marketing Internship project and presentation, include your written report and a few printouts of key slides from your oral presentation in your Marketing Portfolio.

Option 2 E-Commerce Plan

From books to groceries, electronics to entertainment, more and more e-commerce companies are succeeding. Create your own e-commerce business. Conduct a situation analysis to support the selection of the business. Develop ideas for purchasing, inventory control, warehousing, and shipping, as well as your Web site design. Prepare a written report and an oral presentation using word processing and presentation software. See a suggested outline and key evaluation points at the Marketing Essentials OLC through glencoe.com.

Go to the Marketing Essentials OLC through glencoe.com to review distribution concepts that relate to DECA events.