

Costs Terms, Concepts and Classifications

Part One



Cost Terms, Concepts and Classifications

- Managerial Cost Concepts
- Definition of Cost
- Classifications of Costs
 1. Costs in manufacturing companies
 2. Cost behaviour
 3. Assigning Costs to Cost Objects
 4. Cost Classifications for Decision Making



Managerial Cost Concepts

To perform the three management functions effectively, management needs information.

One very important type of information is related to costs.

For example, questions such as the following need answering:

- What costs are involved in making the product?
- If production volume is decreased, will costs decrease?
- How can costs best be controlled in the organization?

Cost Definition

Cost is an amount that has to be paid or given up in order to achieve an object (assets).



Cost is usually a monetary valuation of money, effort, material, resources, time and utilities consumed, risks incurred and delivery of a good or service.

What is Cost?

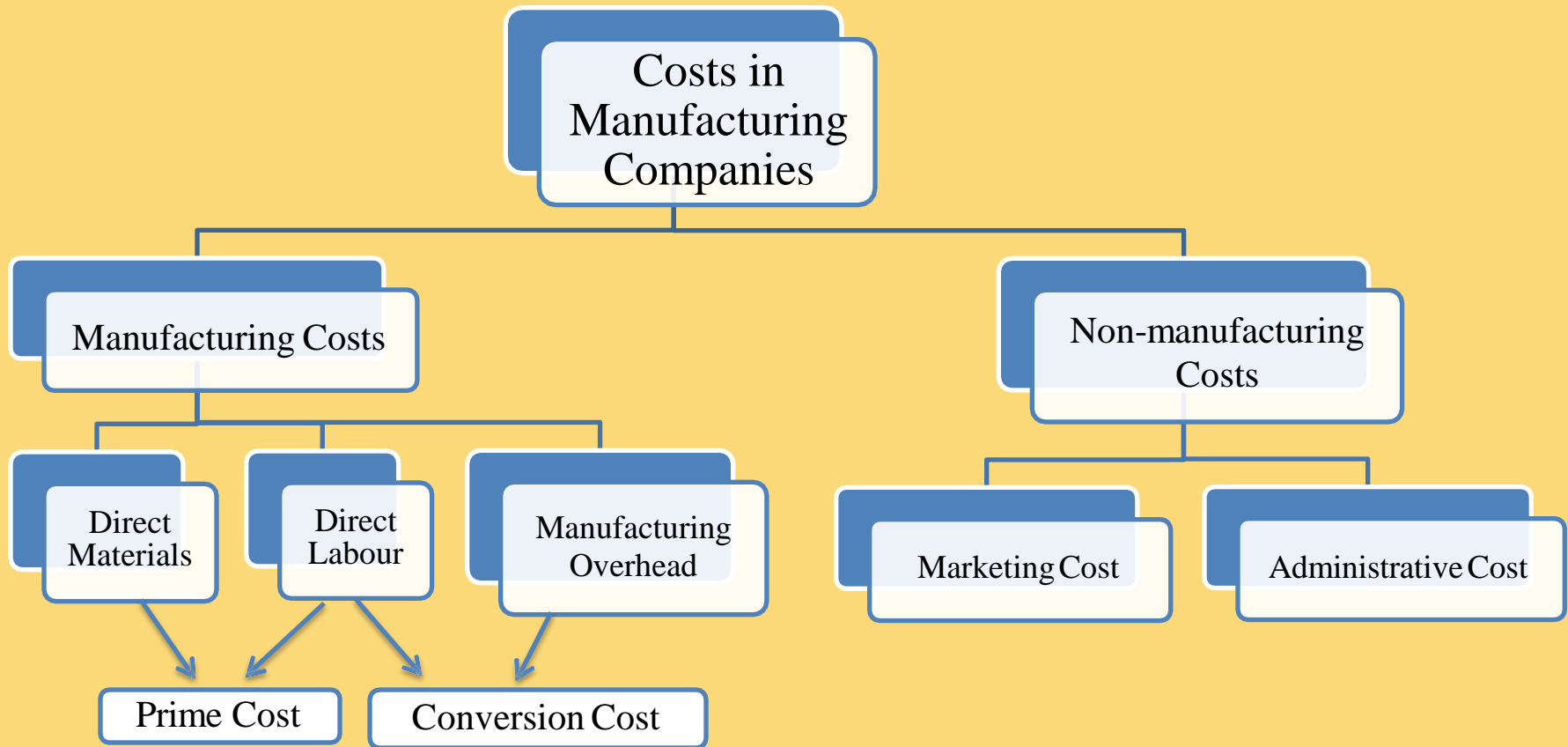


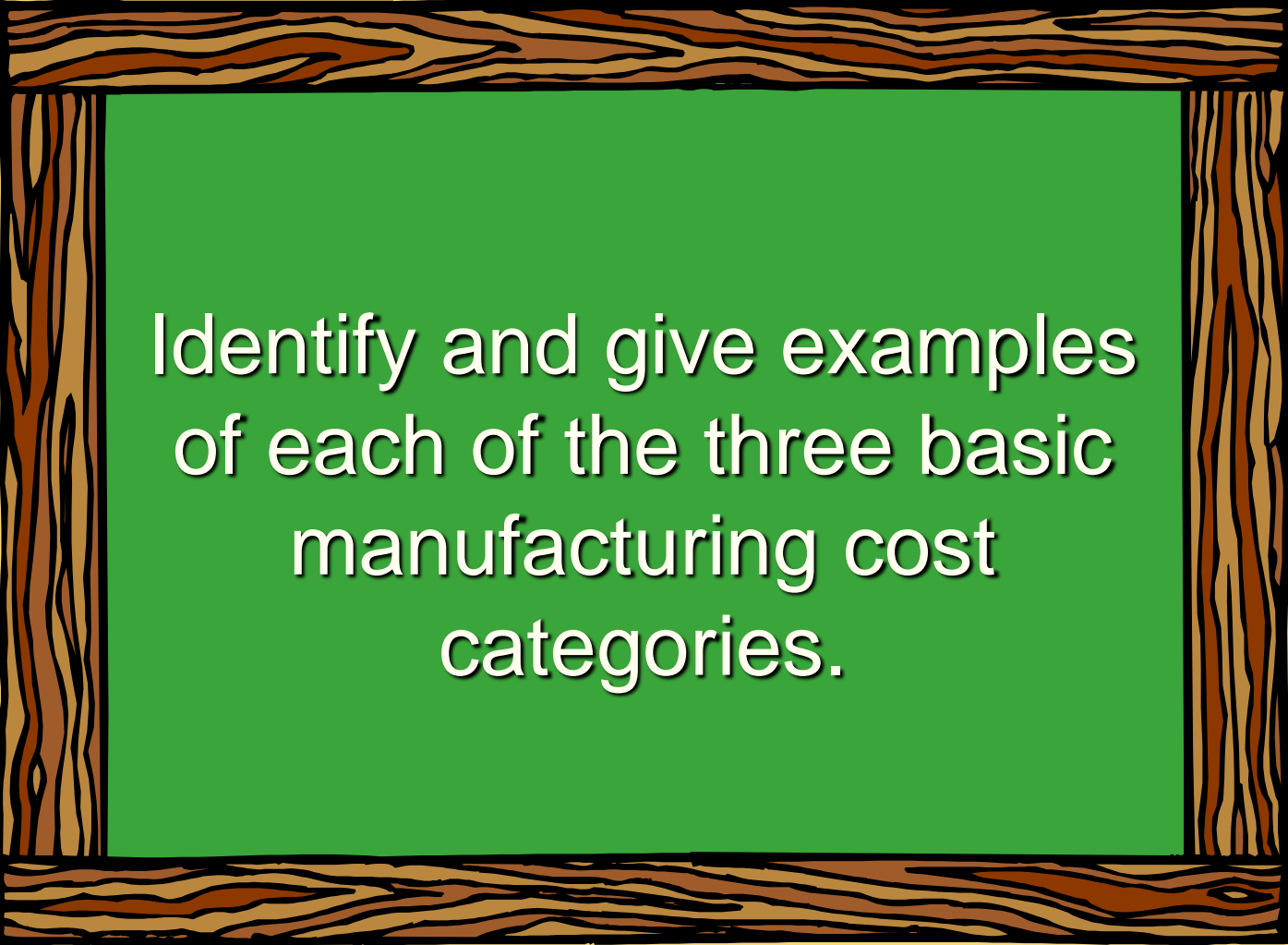
Cost refers to the resources used to make a product, expressed in monetary terms



Resources used to Make the Product

Financial Reporting Purpose





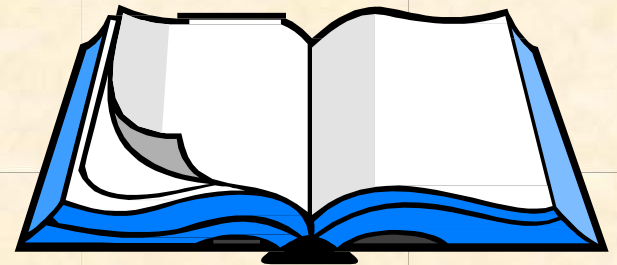
Identify and give examples
of each of the three basic
manufacturing cost
categories.

Manufacturing costs

Manufacturing consists of activities and processes that convert raw materials into finished goods.

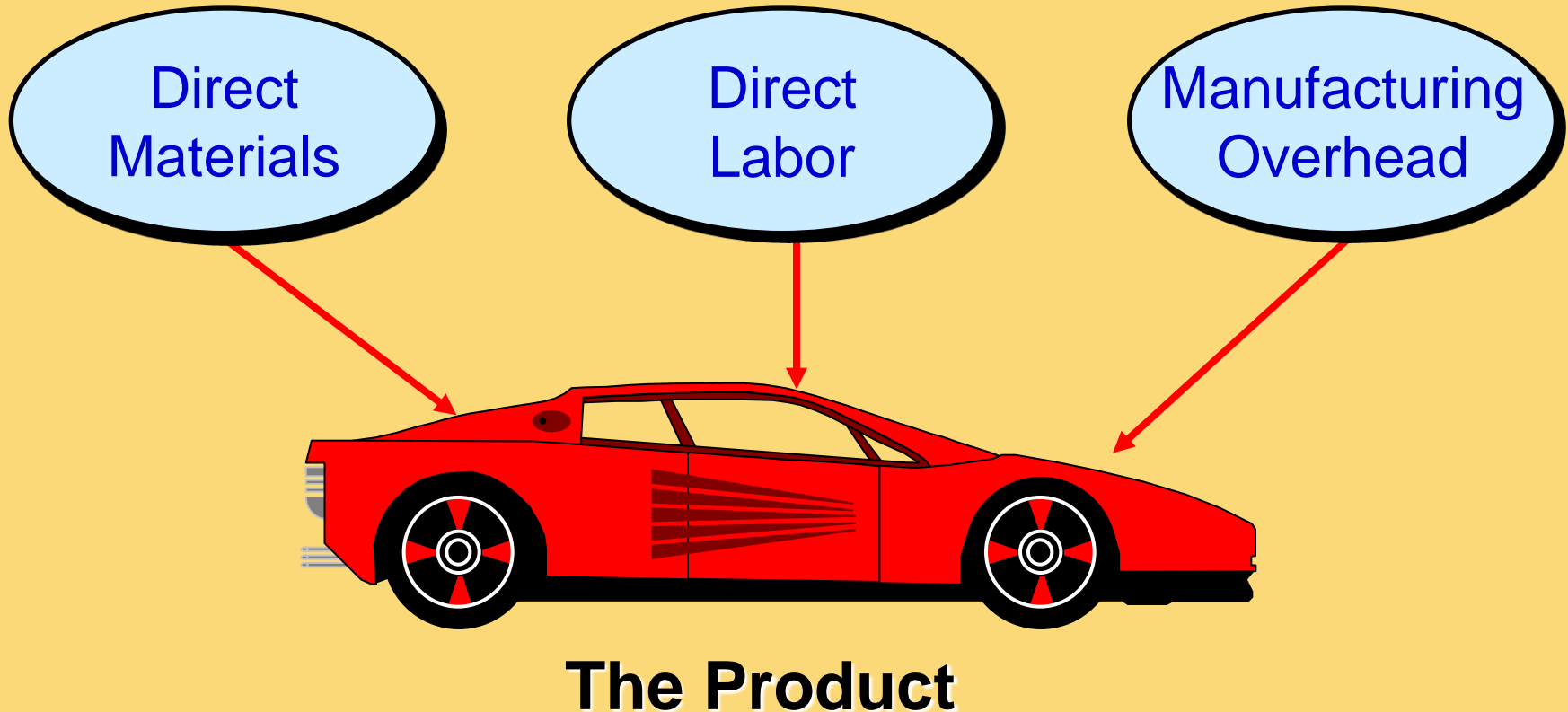
Manufacturing costs are usually classified as follows:

- Direct Materials**
- Direct Labor**
- Manufacturing Overhead**



Manufacturing Costs

These costs are incurred to make a product. They are related to factory operations.

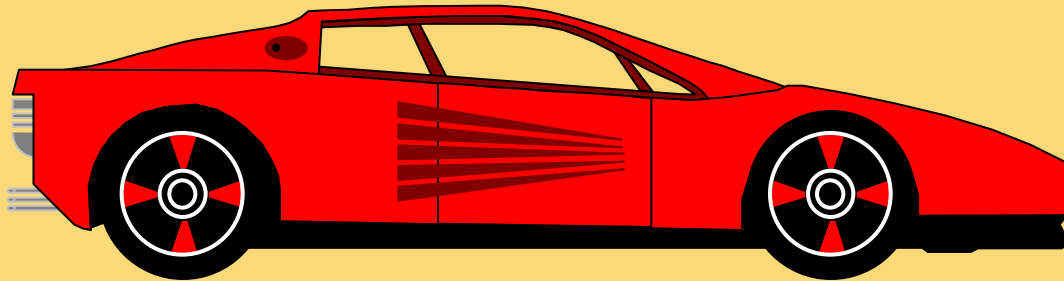


Manufacturing Costs: Direct Materials

- Raw materials represent the basic materials and parts that are to be used in the manufacturing process.
- Raw materials that can be physically associated with the finished product during the manufacturing process are termed **direct materials**.

Direct Materials

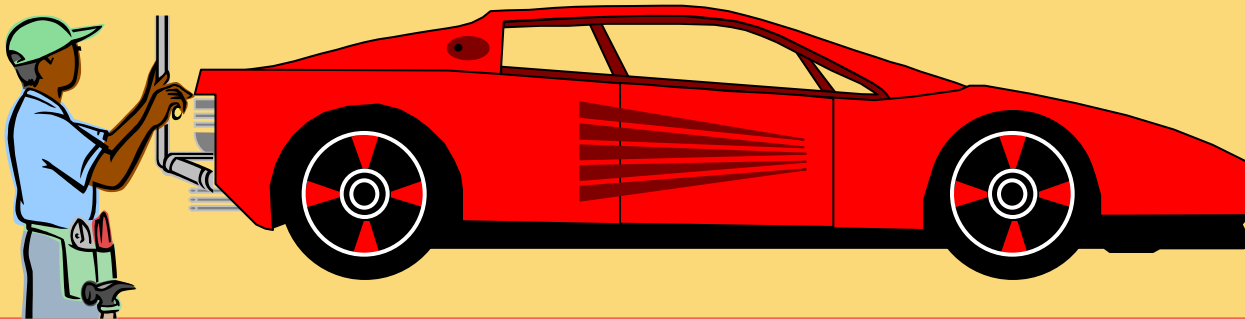
Raw materials that become an integral part of the product and that can be conveniently traced directly to it.



Example: A radio installed in an automobile

Direct Labor

Those labor costs that can be easily traced to individual units of product.



Example: Wages paid to automobile assembly workers

Direct Labor

OR it is the work of factory employees that can be physically associated with converting raw materials into finished goods.

▪



Manufacturing Overhead

Manufacturing costs that **cannot** be traced directly to specific units produced.

Examples: Indirect labor and indirect materials

Wages paid to employees who are not directly involved in production work.

Examples: maintenance workers, janitors and security guards.

Materials used to support the production process.

Examples: lubricants and cleaning supplies used in the automobile assembly plant.

Manufacturing Overhead(MOH)

MOH (also referred to as **factory overhead**) refers to indirect factory-related costs that are incurred when a product is manufactured.

These costs may also be defined as manufacturing costs that cannot be classified as either direct materials or direct labor.

Manufacturing overhead includes

- indirect materials;
- indirect labor;
- depreciation on **factory buildings** and machinery; and
- insurance, taxes, and maintenance on **factory facilities**.

MOH (Indirect Materials)

Some raw materials cannot be easily associated with the finished product.

These are considered **indirect materials**.

(Exp. Cleaning supplies, Disposable safety equipment
Disposable tools, bolts, grease for the machinery, light bulbs)



Indirect materials

- do not physically become part of the finished product, or
- cannot be traced because their physical association with the finished product is too small in terms of cost.

Indirect materials are accounted for as part of **manufacturing overhead**.

MOH (Indirect Labour)

The wages of maintenance people, timekeepers, and supervisors are normally categorized as **indirect labor** because their efforts have no physical association with the finished product or it is impractical to trace the costs to the goods provided..

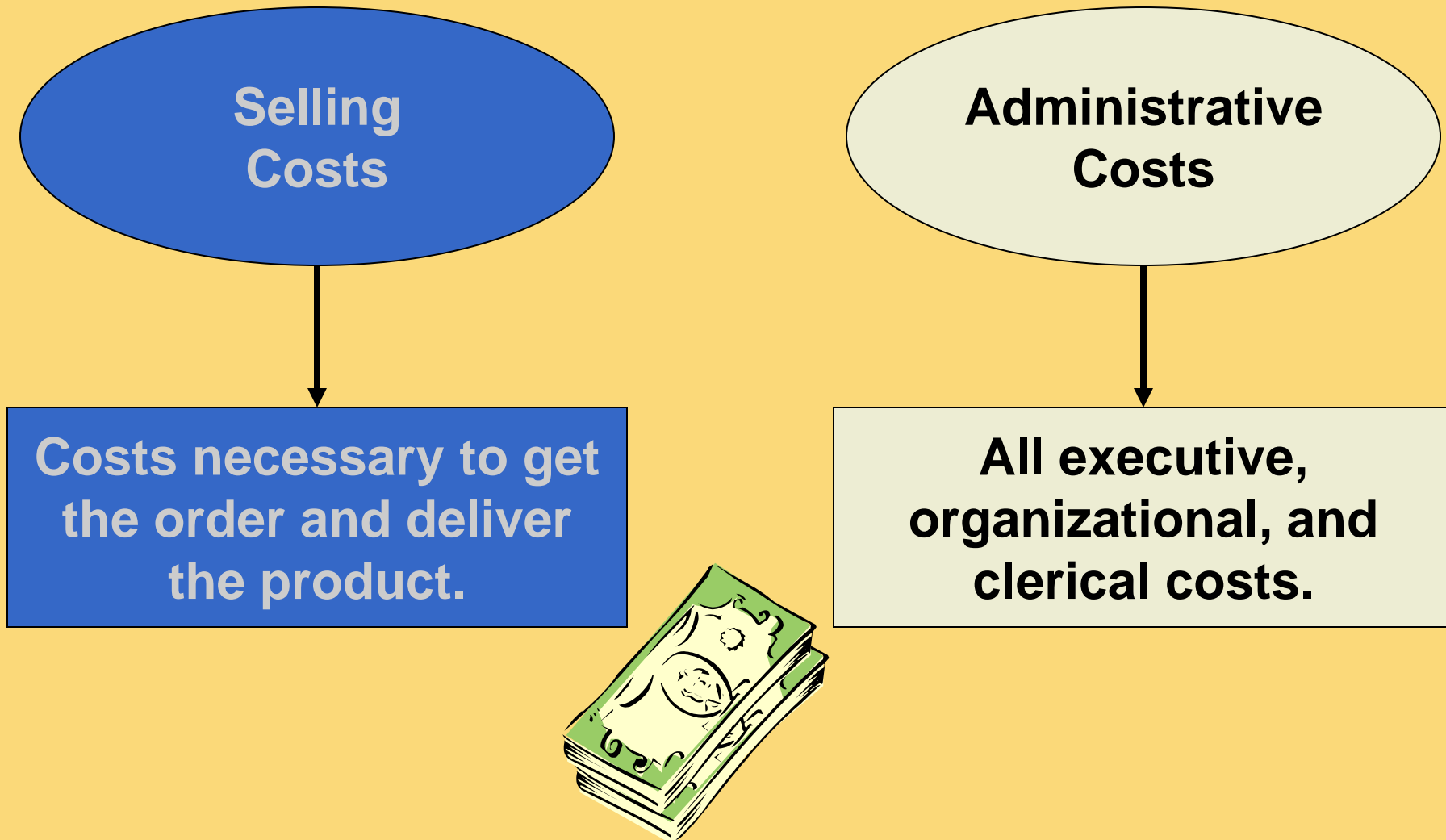
Like indirect materials, indirect labor is part of ***manufacturing overhead.***



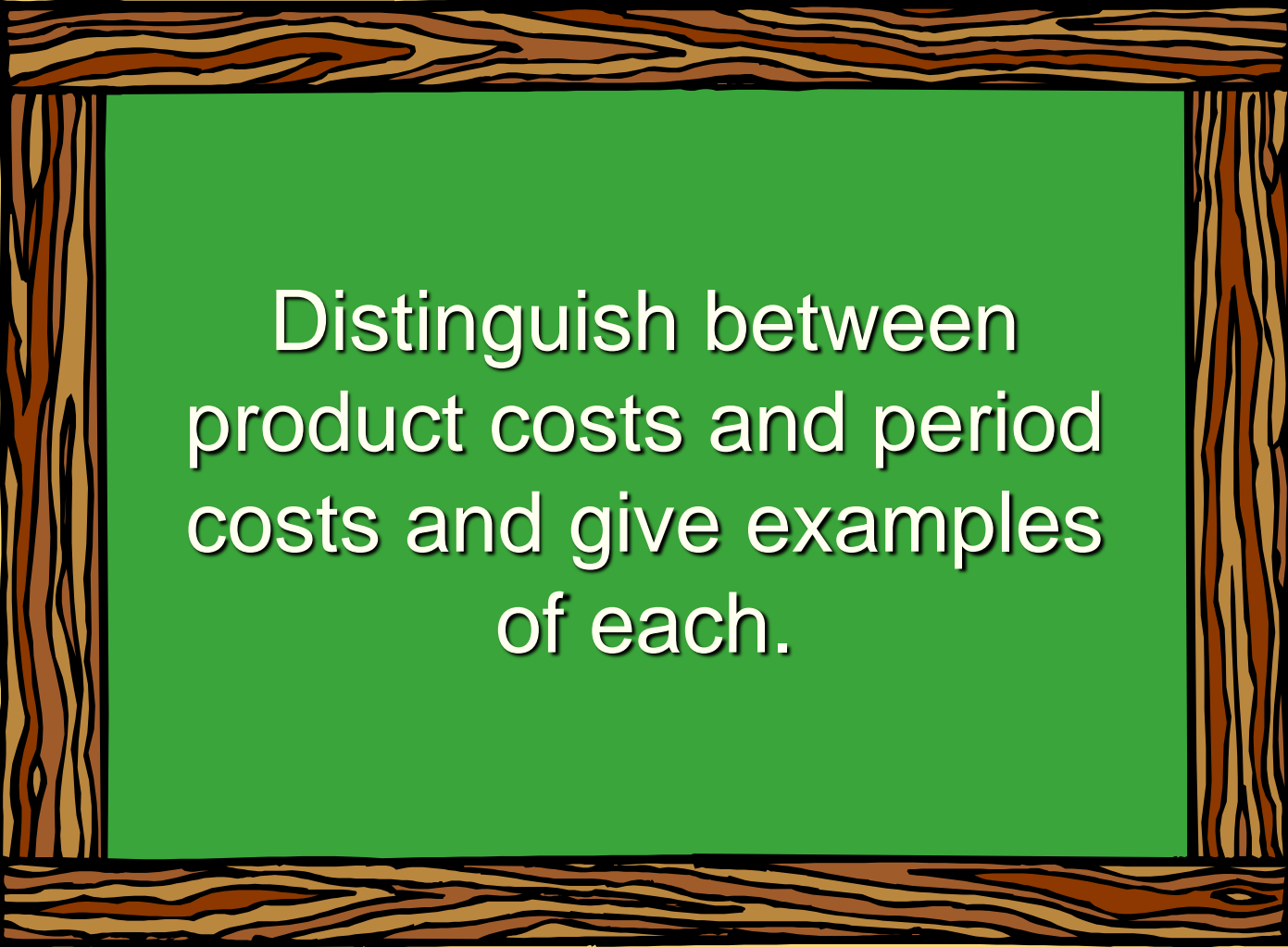
Examples of costs that are included in the manufacturing overhead category are:

1. Depreciation on equipment used in the production process.
2. Property taxes on the production facility
3. Rent on the factory building
4. Salaries of maintenance personnel
5. Salaries of manufacturing managers
6. Salaries of the materials management staff
7. Salaries of the quality control staff
8. Utilities for the factory
9. Wages of building security staff

Non-manufacturing Costs



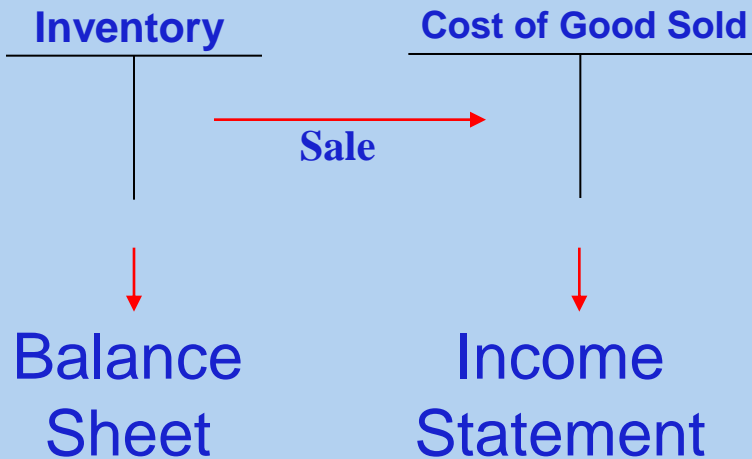
Learning Objective



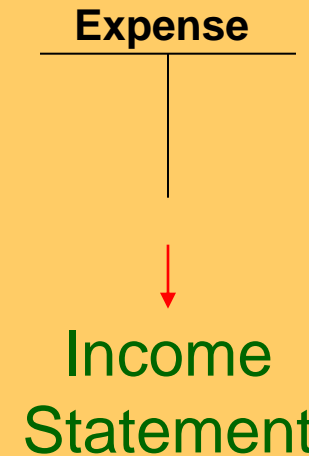
Distinguish between product costs and period costs and give examples of each.

Product Costs Versus Period Costs

Product costs include direct materials, direct labor, and manufacturing overhead.



Period costs include all selling costs and administrative costs.



Examples of manufacturing and non-manufacturing costs

Manufacturing costs are categorized as product costs, whereas non-manufacturing operating costs are categorized as period costs.

Manufacturing cost	Non- manufacturing cost (period cost)
Wages paid to production line workers	Salaries paid to salespeople are a marketing cost and are not part of product cost
Depreciation on production equipment	depreciation on the warehouse in which products are stored after being manufactured
Moving the raw materials and partially-completed products through the production process	transporting the finished products from the warehouse to customers

Depreciation

In the production department of a manufacturing company, **depreciation expense** is considered an **indirect cost**, since it is included in factory overhead and then allocated to the units manufactured during a reporting **period**.

The treatment of **depreciation** as an **indirect cost** is the most common treatment within a business.

Summary

The accumulation of direct and indirect production costs starts at the beginning of the manufacturing process and stops at the end of the production line.

In other words, product cost stops at the end of the production line — every cost up to that point should be included as a manufacturing cost.

Quick Check 1

Which of the following costs would be considered a period rather than a product cost in a manufacturing company?

- A. Manufacturing equipment depreciation.
- B. Property taxes on corporate headquarters.
- C. Direct materials costs.
- D. Electrical costs to light the production facility.
- E. Sales commissions.

Quick Check 1

Which of the following costs would be considered a period rather than a product cost in a manufacturing company?

A. Manufacturing equipment depreciation.

B. Property taxes on corporate headquarters.

C. Direct materials costs.

D. Electrical costs to light the production facility.

E. Sales commissions.

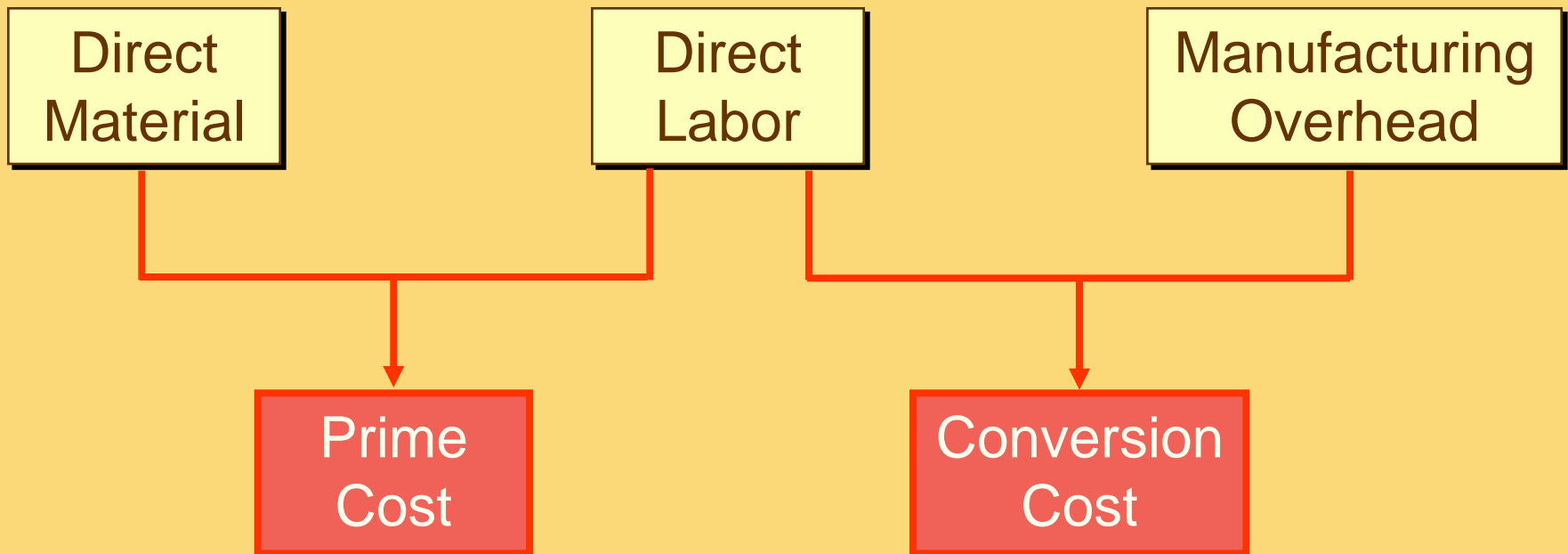
Quick Check 2

Which of the following costs would be considered manufacturing overhead at Boeing? (More than one answer may be correct.)

- A. Depreciation on factory forklift trucks.
- B. Sales commissions.
- C. The cost of a flight recorder in a Boeing 767.
- D. The wages of a production shift supervisor.

Classifications of Costs

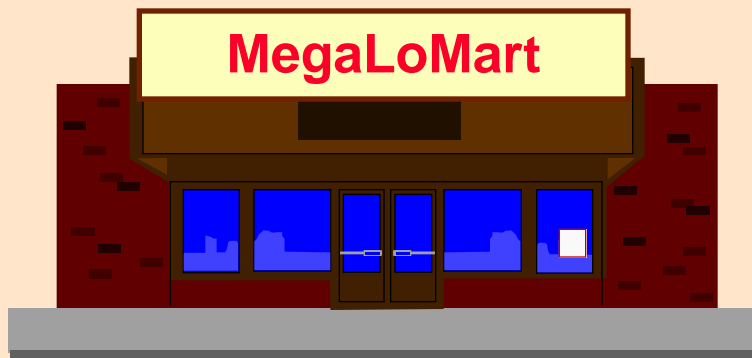
Manufacturing costs are often classified as follows:



Comparing Merchandising and Manufacturing Activities

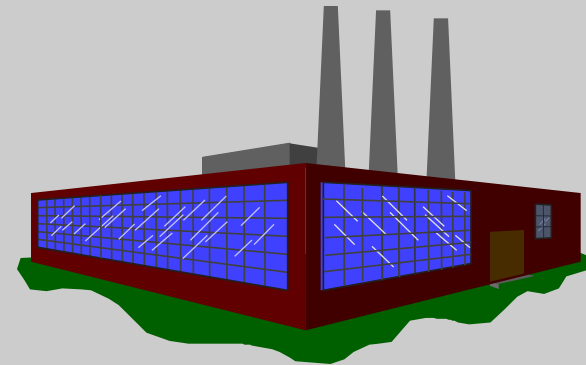
Merchandisers . . .

- ◆ Buy finished goods.
- ◆ Sell finished goods.



Manufacturers . . .

- ◆ Buy raw materials.
- ◆ Produce and sell finished goods.



Balance Sheet

Merchandiser

Current assets

- ◆ Cash
- ◆ Receivables
- ◆ Prepaid Expenses
- ◆ **Merchandise Inventory**

Manufacturer

Current Assets

- ◆ Cash
- ◆ Receivables
- ◆ Prepaid Expenses
- ◆ Inventories
 - Raw Materials
 - Work in Process
 - Finished Goods

Balance Sheet

Merchandiser

Current assets

- ◆ Cash
- ◆ Receivables
- ◆ Prepaid Expenses

◆ Partially complete products – some material, labor, or overhead has been added.

Manufacturer

Current Assets

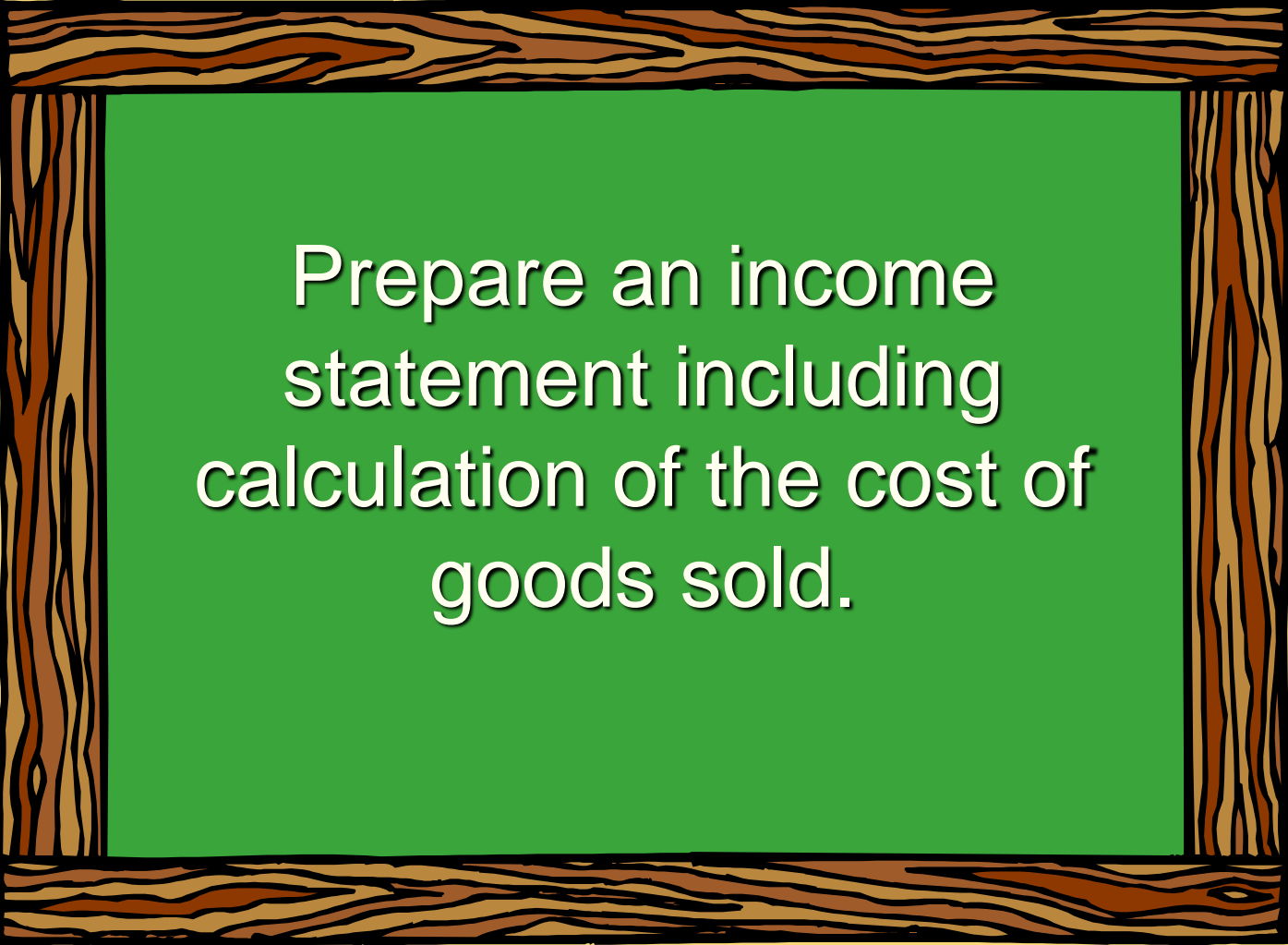
- ◆ Cash

Materials waiting to be processed.

- ◆ Inventories

- Raw Materials
- Work in Process
- Finished Goods

Completed products awaiting sale.



Prepare an income statement including calculation of the cost of goods sold.

The Income Statement

Cost of goods sold for manufacturers differs only slightly from cost of goods sold for merchandisers.

Merchandising Company

Cost of goods sold:	
Beg. merchandise inventory	\$ 14,200
+ Purchases	<u>234,150</u>
Goods available for sale	\$ 248,350
- Ending merchandise inventory	<u>(12,100)</u>
= Cost of goods sold	<u><u>\$ 236,250</u></u>

Manufacturing Company

Cost of goods sold:	
Beg. finished goods inv.	\$ 14,200
+ Cost of goods manufactured	<u>234,150</u>
Goods available for sale	\$248,350
- Ending finished goods inventory	<u>(12,100)</u>
= Cost of goods sold	<u><u>\$236,250</u></u>

Basic Equation for Inventory Accounts

**Beginning
balance**

+

**Additions
to inventory**

=

**Ending
balance**

+

**Withdrawals
from
inventory**



Quick Check ✓

If your inventory balance at the beginning of the month was \$1,000, you bought \$100 during the month, and sold \$300 during the month, what would be the balance at the end of the month?

- A. \$1,000.
- B. \$ 800.
- C. \$1,200.
- D. \$ 200.

Quick Check ✓

If your inventory balance at the beginning of the month was \$1,000, you bought \$100 during the month, and sold \$300 during the month, what would be the balance at the end of the month?

A. \$1,000.

B. \$ 800.

C. \$1,200.

D. \$ 200.

$$\$1,000 + \$100 = \$1,100$$

$$\$1,100 - \$300 = \$800$$

Product Costs

Product costs (also called *inventorial costs*) include each of the manufacturing cost elements (direct materials, direct labor, and manufacturing overhead).

They are the costs that are necessary and integral parts of producing the finished product.

Product Costs = Direct Materials + Direct Labour + MOH

(Prime Cost)

Direct materials and direct labor are often referred to as **prime costs** (main) due to their *direct* association with the manufacturing of the finished product.

Prime Cost = Direct Materials + Direct Labour

(Conversion Cost)

Direct labor and manufacturing overhead are often referred to as **conversion costs** since they are incurred in *converting* raw materials into finished goods.

$$\text{Conversion Cost} = \text{Direct Labour} + \text{MOH}$$

Period Costs

Period costs are identifiable with a *specific time period*

rather than a salable (suitable for sale) product.

Examples are: Depreciation, interest, rent, and other costs associated with the passage of time (not with the unit of output) and are counted as fixed cost.

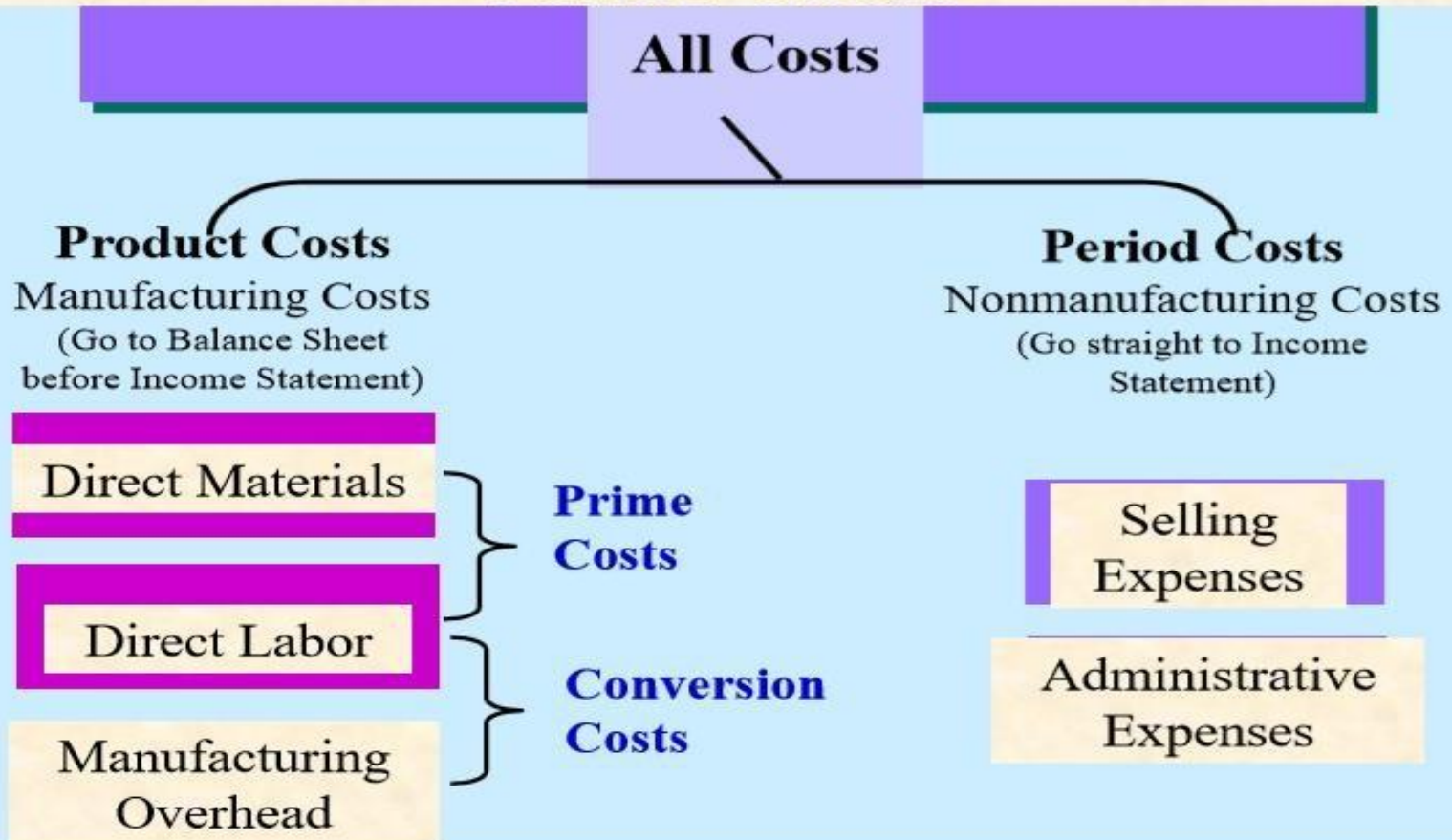
Period Costs

Period costs (period expenses)are deducted from revenues in the period in which they are incurred.

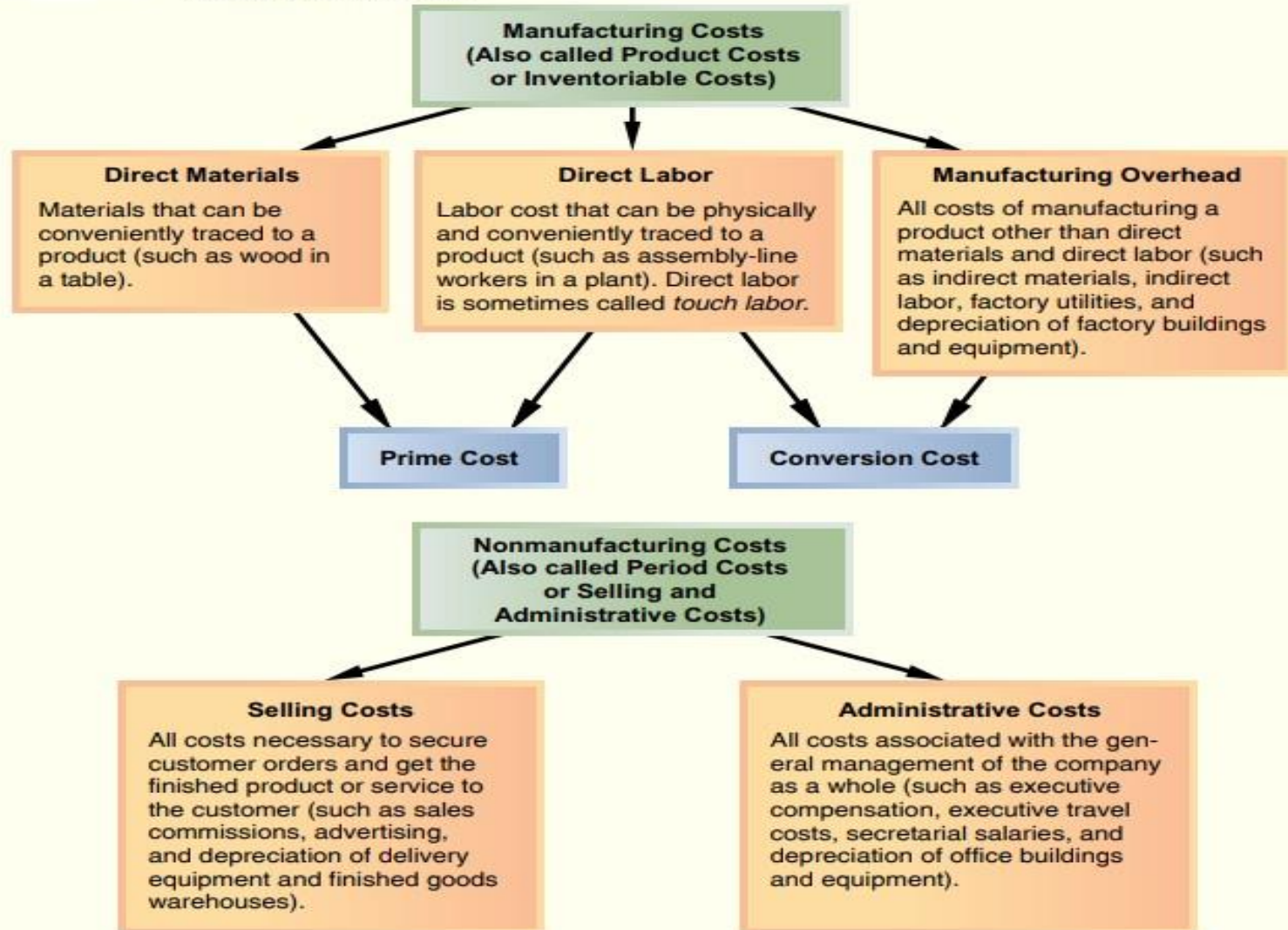
These costs relate to non-manufacturing (thus, non- inventoriable) costs, and include selling and administrative expenses.

Period Costs = Marketing Costs +Administrative Costs

Product Versus Period Costs



Summary of Cost Terms



Quick Check 3

Which of the following costs would be considered a period rather than a product cost in a manufacturing company?

- A. Manufacturing equipment depreciation.
- B. Property taxes on corporate headquarters.**
- C. Direct materials costs.
- D. Electrical costs to light the production facility.

Exercise Question 1

RedCow Sleeping Drinks has the following costs:

- Direct materials: \$3,500,000
- Direct labour: \$1,250,000
- Factory overhead: \$950,000
- Selling expenses: \$890,000
- Administrative expenses: \$500,000

Required: Calculate:

1. Total manufacturing costs
2. Prime Cost
3. Conversion Cost
4. Period Cost

Exercise 1-Solution

- 1. Total manufacturing costs = D. Material + D. Labour + MOH**
 $3,500,000 + 1,250,000 + 950,000 = \mathbf{5,700,000}$
- 2. Prime Cost = Direct Materials + Direct Labour**
 $3,500,000 + 1,250,000 = \mathbf{4,750,000}$
- 3. Conversion Cost = Direct Labour + MOH**
 $1,250,000 + 950,000 = \mathbf{2,200,000}$
- 4. Period Costs = Marketing Costs + Administrative Costs**
 $890,000 + 500,000 = \mathbf{1,390,000}$

Exercise Question 2

The following cost information has provided regarding producing tables;

Wood (Direct Materials) \$5,600,
Nail and Screw (Indirect Materials) \$320, Carpenter wages (Direct labour) \$4,500,
Factory maintenance wages (Indirect Labour) \$1,350,
Machinery Depreciation (Fixed overhead) \$2,100, Sales commission (Variable marketing) \$2,700, Advertising cost (Fixed marketing) \$3,000,
Office personnel salary (Administrative costs) \$5,250, Office stationary (Administrative cost) \$450.

Required: Calculate the following costs:

1. Production cost
2. Prime Cost
3. Conversion Cost
4. Period Cost

Exercise 2-Solution

1. Production cost = D. Material + D. Labour + MOH
 $5,600 + 4,500 + 2,100 + 320 + 1,350 = \mathbf{13,870}$

2. Prime Cost = Direct Materials + Direct Labour
 $5,600 + 4,500 = \mathbf{10,100}$

3. Conversion Cost = Direct Labour + MOH
 $4,500 + 1,350 + 320 + 2,100 = \mathbf{8,270}$

4. Period Costs = Marketing Costs + Administrative Costs
 $2,700 + 3,000 + 5,250 + 450 = \mathbf{11,400}$

Learning Objective



Prepare a schedule of cost of goods manufactured.

Schedule of Cost of Goods Manufactured

Calculates the cost of raw material, direct labor and manufacturing overhead used in production.

Calculates the manufacturing costs associated with goods that were finished during the period.



Product Cost Flows

<u>Raw Materials</u>	<u>Manufacturing Costs</u>	<u>Work In Process</u>
Beginning raw materials inventory		
+ Raw materials purchased		
= Raw materials available for use in production		
- Ending raw materials inventory		
= Raw materials used in production	Direct materials	

As items are removed from raw materials inventory and placed into the production process, they are called direct materials.

Product Cost Flows

Raw Materials	Manufacturing Costs	Work In Process
<p>Beginning raw materials inventory</p> <p>+ Raw materials purchased</p> <hr/> <p>= Raw materials available for use in production</p> <p>– Ending raw materials inventory</p> <hr/> <p>= Raw materials used in production</p> <hr/>	<p>Direct materials</p> <p>+ Direct labor</p> <p>+ Mfg. overhead</p> <hr/> <p>= Total manufacturing costs</p> <hr/>	<p>Conversion costs are costs incurred to convert the direct material into a finished product.</p>

Product Cost Flows

<u>Raw Materials</u>	<u>Manufacturing Costs</u>	<u>Work In Process</u>
Beginning raw materials inventory	Direct materials	Beginning work in process inventory
+ Raw materials purchased	+ Direct labor	+ Total manufacturing costs
<u>Raw materials available for use in production</u>	+ <u>Mfg. overhead</u>	<u>Total work in process for the period</u>
= Raw materials used in production	= <u>Total manufacturing costs</u>	

All manufacturing costs incurred during the period are added to the beginning balance of work in process.

Product Cost Flows

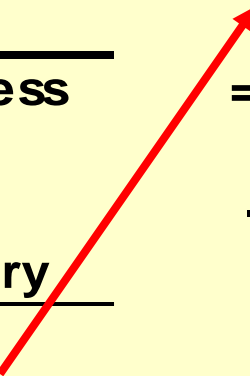
<u>Raw Materials</u>	<u>Manufacturing Costs</u>	<u>Work In Process</u>
Beginning raw materials inventory	Direct materials	Beginning work in process inventory
+ Raw materials purchased	+ Direct labor	+ Total manufacturing costs
<u>= Raw materials available for use in production</u>	+ <u>Mfg. overhead</u>	<u>= Total work in process for the period</u>
- Ending raw materials	<u>= <u>Total manufacturing costs</u></u>	- Ending work in process inventory
		<u>= Cost of goods manufactured</u>

Costs associated with the goods that are completed during the period are transferred to finished goods inventory.

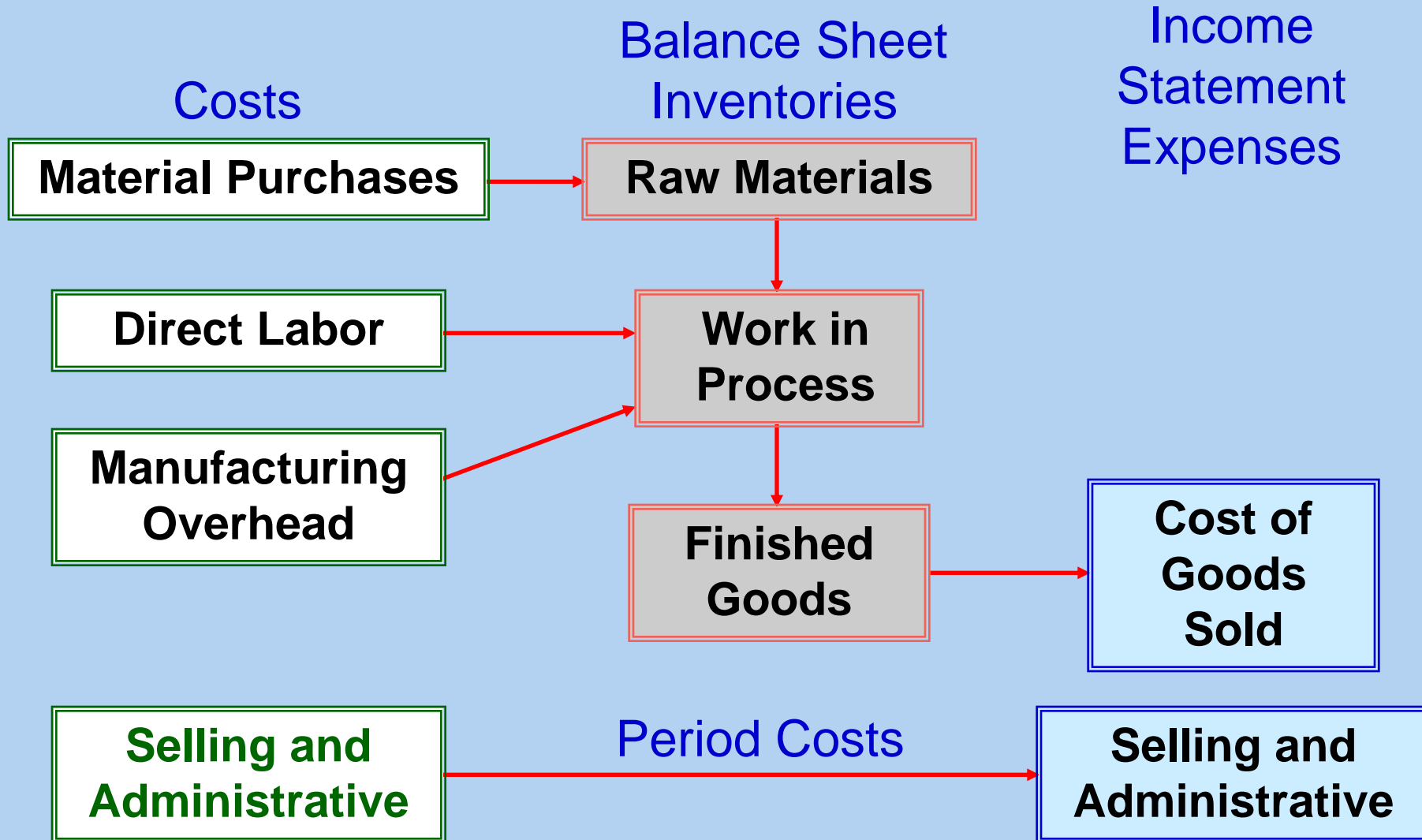


Product Cost Flows

Work In Process	Finished Goods
Beginning work in process inventory	Beginning finished goods inventory
+ Manufacturing costs for the period	+ Cost of goods manufactured
<hr/>	<hr/>
= Total work in process for the period	= Cost of goods available for sale
- Ending work in process inventory	- Ending finished goods inventory
<hr/>	<hr/>
= Cost of goods manufactured	Cost of goods sold
<hr/> <hr/>	<hr/> <hr/>



Manufacturing Cost Flows



Quick Check ✓

Beginning raw materials inventory was \$32,000. During the month, \$276,000 of raw material was purchased. A count at the end of the month revealed that \$28,000 of raw material was still present. What is the cost of direct material used?

- A. \$276,000
- B. \$272,000
- C. \$280,000
- D. \$ 2,000

Quick Check ✓

Beginning raw materials inventory was \$32,000. During the month, \$276,000 of raw material was purchased. A count at the end of the month revealed that \$28,000 of raw material was still present. What is the cost of direct material used?

- A. \$276,000
- B. \$272,000
- C. \$280,000**
- D. \$

Beg. raw materials	\$ 32,000
+ Raw materials purchased	276,000
= Raw materials available for use in production	\$ 308,000
– Ending raw materials	

Quick Check ✓

Direct materials used in production totaled \$280,000. Direct labor was \$375,000 and factory overhead was \$180,000. What were total manufacturing costs incurred for the month?

- A. \$555,000
- B. \$835,000
- C. \$655,000
- D. Cannot be determined.

Quick Check ✓

Direct materials used in production totaled \$280,000. Direct labor was \$375,000 and factory overhead was \$180,000. What is the total manufacturing cost for the month?

- A. \$555,000
- B. \$835,000
- C. \$655,000
- D. Cannot be determined.

Direct Materials	\$280,000
+ Direct Labor	375,000
+ Mfg. Overhead	180,000
<hr/>	
= Mfg. Costs Incurred	
for the Month	\$835,000
<hr/> <hr/>	

Quick Check ✓

Beginning work in process was \$125,000. Manufacturing costs incurred for the month were \$835,000. There were \$200,000 of partially finished goods remaining in work in process inventory at the end of the month. What was the cost of goods manufactured during the month?

- A. \$1,160,000
- B. \$ 910,000
- C. \$ 760,000
- D. Cannot be determined.

Quick Check ✓

Beginning work in process was \$125,000. Manufacturing costs incurred for the month were \$835,000. There were \$200,000 of partially finished goods remaining in work in process inventory at the end of the month. What was the cost of goods manufactured during the month?

- A. \$1,160,000
- B. \$ 910,000
- C. \$ 760,000**
- D. Cannot be determined.

Beginning work in process inventory	\$ 125,000
+ Mfg. costs incurred for the period	835,000
<hr/>	
= Total work in process during the period	\$ 960,000
- Ending work in process inventory	200,000
<hr/>	
= Cost of goods manufactured	<u>\$ 760,000</u>

Quick Check ✓

Beginning finished goods inventory was \$130,000. The cost of goods manufactured for the month was \$760,000. And the ending finished goods inventory was \$150,000. What was the cost of goods sold for the month?

- A. \$ 20,000.
- B. \$740,000.
- C. \$780,000.
- D. \$760,000.

Quick Check ✓

Beginning finished goods inventory was \$130,000. The cost of goods manufactured for the month was \$760,000. And the ending finished goods inventory was \$150,000. What was the cost of goods sold for the month?

A. \$ 20,000.

B. \$740,000.

C. \$780,000.

D. \$760,000.

$$\$130,000 + \$760,000 = \$890,000$$

$$\$890,000 - \$150,000 = \$740,000$$