Financial Accounting

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McGraw-Hill/Irwin

Chapter 05

Reporting and Analyzing Inventories

Conceptual Chapter Objectives

C1: Identify the items making up merchandise inventory.

C2: Identify the costs of merchandise inventory.

Analytical Chapter Objectives

A1: Analyze the effects of inventory methods for both financial and tax reporting.

A2: Analyze the effects of inventory errors on current and future financial statements.

A3: Assess inventory management using both inventory turnover and days' sales in inventory.

Procedural Chapter Objectives

P1: Compute inventory in a perpetual system using the methods of specific identification, FIFO, LIFO, and weighted average.

P2: Compute the lower of cost or market amount of inventory.

P3: Appendix 5A – Compute inventory in a periodic system using the methods of specific identification, FIFO, LIFO, and weighted average (see text for details).

P4: Appendix 5B – Apply both the retail inventory and gross profit methods to estimate inventory (see text for details).

C 1

Determining Inventory Items

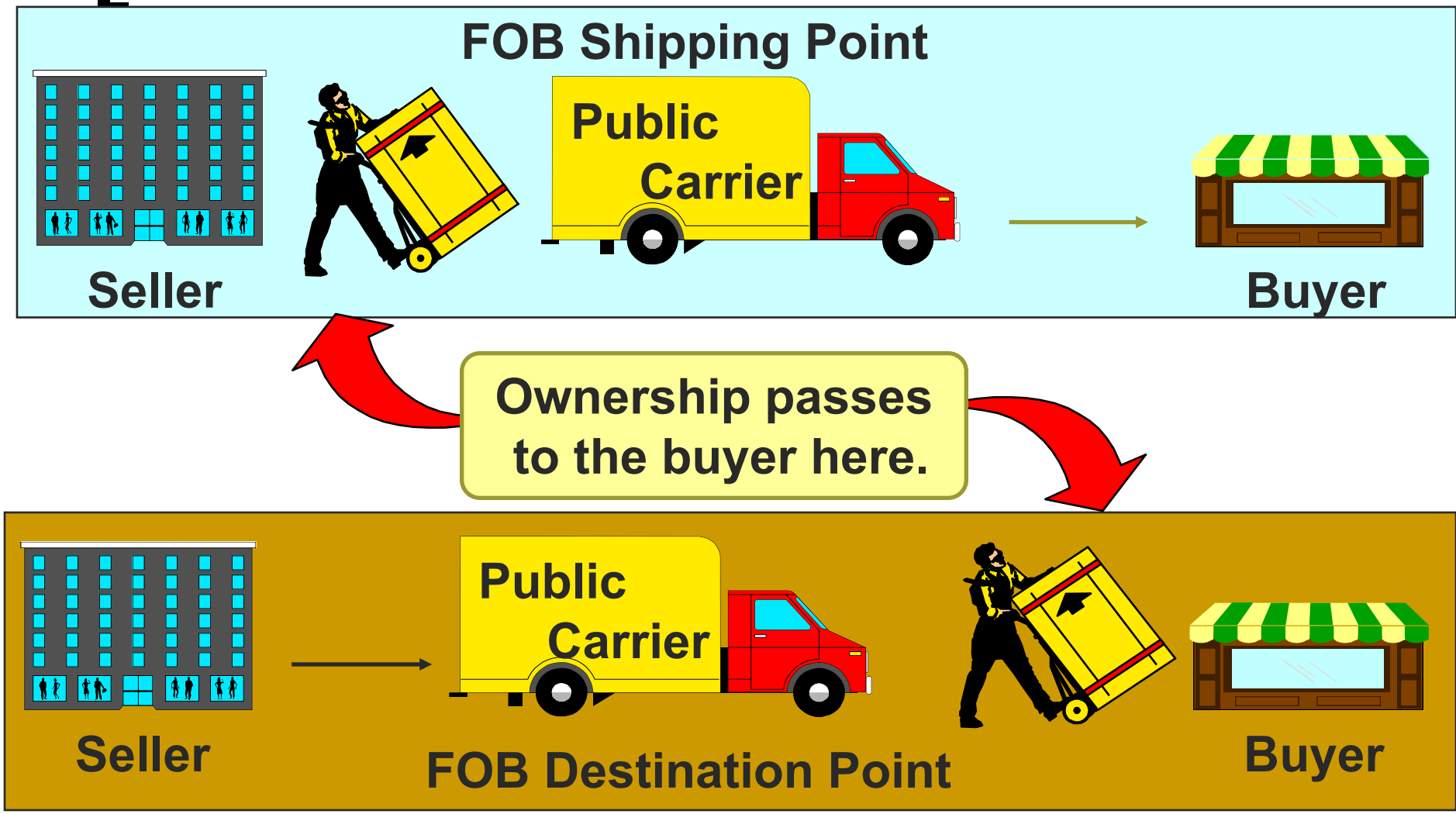
Merchandise inventory includes all goods that a company owns and holds for sale, regardless of where the goods are located when inventory is counted.

Items requiring special attention include:

- Goods in Transit
- Goods on Consignment
- Goods Damaged or Obsolete

C 1

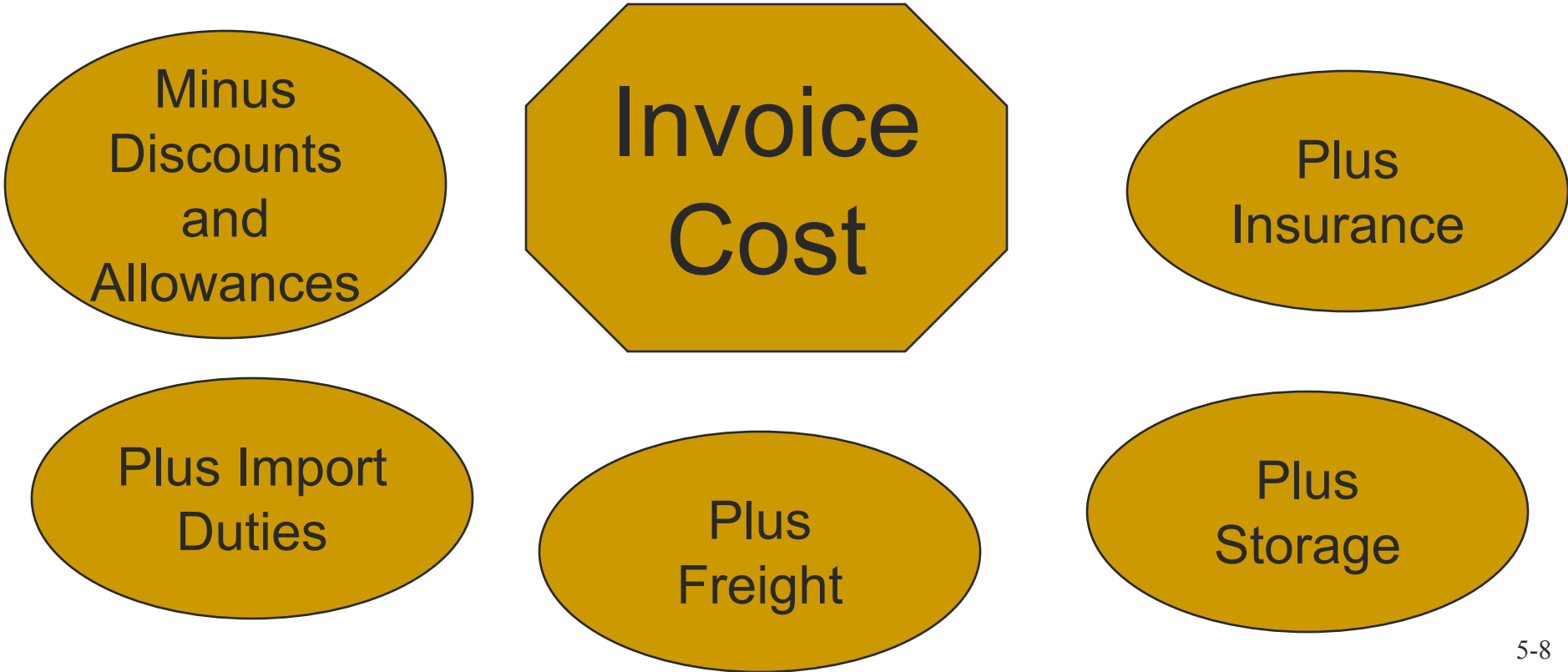
Goods in Transit



C 2

Determining Inventory Costs

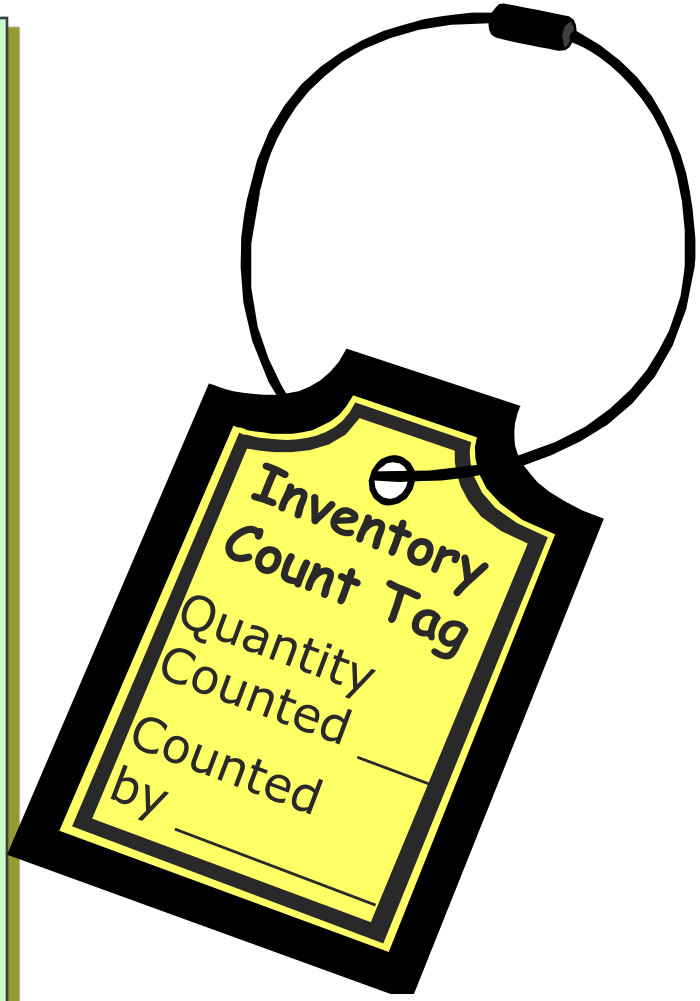
Include all expenditures necessary to bring an item to a salable condition and location.



C 2

Internal Controls and Taking a Physical Count

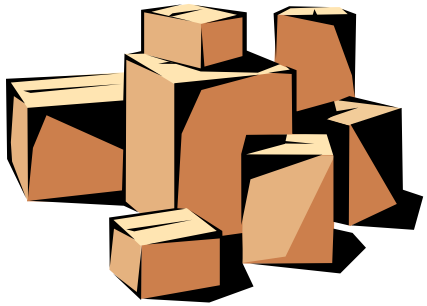
- Most companies take a physical count of inventory at least once each year.
- When the physical count does not match the Merchandise Inventory account, an adjustment must be made.



P1

Inventory Costing Under a Perpetual System

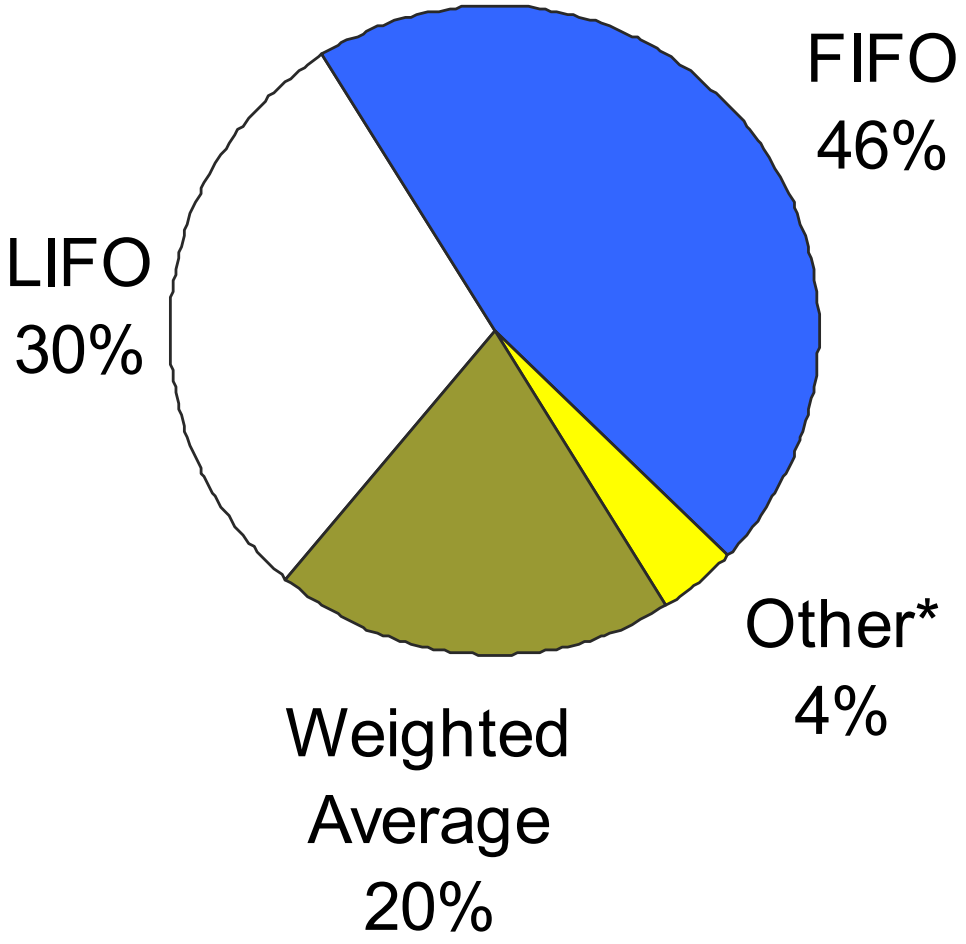
Accounting for inventory requires several decisions . . .



- **Costing Method**
  - Specific Identification, FIFO, LIFO, or Weighted Average
- **Inventory System**
  - Perpetual or Periodic

P1

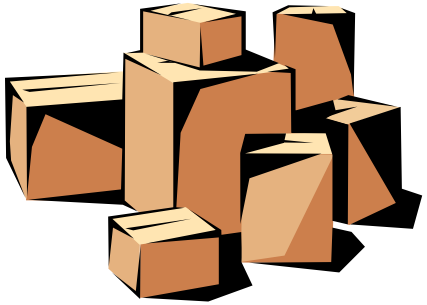
Frequency in Use of Inventory Methods



P1

Inventory Cost Flow Assumptions

First-In, First-Out (FIFO)	Assumes costs flow in the order incurred.
Last-In, First-Out (LIFO)	Assumes costs flow in the reverse order incurred.
Weighted Average	Assumes costs flow at an average of the costs available.



P1

Inventory Costing Illustration

Cost of Goods Available for Sale

Aug.	1	Beg. Inventory	10 units @	$	91	=	$ 910
Aug.	3	Purchased	15 units @	$	106	=	$ 1,590
Aug.	17	Purchased	20 units @	$	115	=	$ 2,300
Aug.	28	Purchased	10 units @	$	119	=	$ 1,190

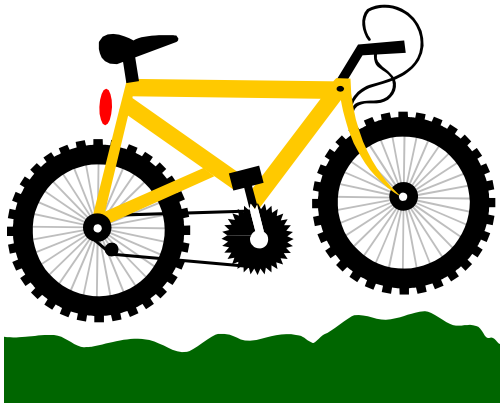
Retail Sales of Goods

Aug.	14	Sales	20 units @	$	130	=	$ 2,600
Aug.	31	Sales	23 units @	$	150	=	$ 3,450

P1

Specific Identification

Date	Purchases	Cost of Goods Sold	Inventory Balance
Aug. 1	10 @ $ 91 = $ 910		$ 910
Aug. 3	15 @ $ 106 = $ 1,590		$ 2,500



The above purchases were made in August. On August 14, a company sold 8 bikes originally costing $91 and 12 bikes originally costing $106.

P1

Specific Identification

Date	Purchases	Cost of Goods Sold	Inventory Balance
Aug. 1	10 @ $ 91 = $ 910		$ 910
Aug. 3	15 @ $ 106 = $ 1,590		$ 2,500

The cost of goods sold for the 20 bikes sold on the August 14 sale is $2,000.

8 bikes @ 91 = $ 728
12 bikes @ 106 = $1,272

After this sale, there are five units in inventory at $500:

2 bikes @ $91 = $ 182
3 bikes @ $106 = $ 318

P1

Specific Identification

Date	Purchases	Cost of Goods Sold	Inventory Balance
Aug. 1	10 @ $ 91 = $ 910		$ 910
Aug. 3	15 @ $ 106 = $ 1,590		$ 2,500
Aug. 14		8 @ $ 91 = $ 728 12 @ $ 106 = $ 1,272	$ 500
Aug. 17	20 @ $ 115 = $ 2,300		$ 2,800
Aug. 28	10 @ $ 119 = $ 1,190		$ 3,990

Additional purchases were made on August 17 and 28.

The cost of the 23 items sold on August 31 were as follows:

2 @ $91
3 @ $106
15 @ $115
3 @ $119

P1

Specific Identification

Date	Purchases	Cost of Goods Sold	Inventory Balance
Aug. 1	10 @ $ 91 = $ 910		$ 910
Aug. 3	15 @ $ 106 = $ 1,590		$ 2,500
Aug. 14		8 @ $ 91 = $ 728 12 @ $ 106 = $ 1,272	$ 500
Aug. 17	20 @ $ 115 = $ 2,300		$ 2,800
Aug. 28	10 @ $ 119 = $ 1,190		$ 3,990
Aug. 31		2 @ $ 91 = $ 182 3 @ $ 106 = $ 318 15 @ $ 115 = $ 1,725 3 @ $ 119 = $ 357	$ 1,408

Cost of goods sold for August 31 = $2,582

P1

Specific Identification

Here are the entries to record the purchases and sales. The numbers in red are determined by the cost flow assumption used.

All purchases and sales are made on credit.
The selling price of inventory was as follows:

8/14	$130
8/31	150

Aug. 3	Merchandise Inventory	1,590	
	Accounts Payable		1,590
Aug. 14	Accounts Receivable	2,600	
	Sales		2,600
Aug. 14	Cost of Goods Sold	2,000	
	Merchandise Inventory		2,000
Aug. 17	Merchandise Inventory	2,300	
	Accounts Payable		2,300
Aug. 28	Merchandise Inventory	1,190	
	Accounts Payable		1,190
Aug. 31	Accounts Receivable	3,450	
	Sales		3,450
Aug. 31	Cost of Goods Sold	2,582	
	Merchandise inventory		2,582

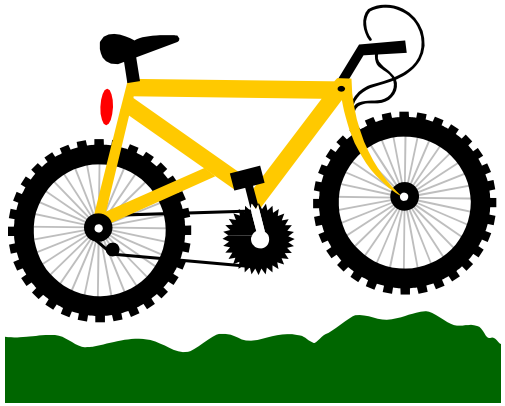
P1

First-In, First-Out (FIFO)

Date	Purchases	Cost of Goods Sold	Inventory Balance
Aug. 1	10 @ $ 91 = $ 910		$ 910
Aug. 3	15 @ $ 106 = $ 1,590		$ 2,500

The above purchases were made in August.

On August 14, the company sold 20 bikes.



P1

First-In, First-Out (FIFO)

Date	Purchases	Cost of Goods Sold	Inventory Balance
Aug. 1	10 @ $ 91 = $ 910		$ 910
Aug. 3	15 @ $ 106 = $ 1,590		$ 2,500
Aug. 14		10 @ $ 91 = $ 910 10 @ $ 106 = $ 1,060	$ 530

The Cost of goods sold for the August 14 sale is $1,970.

After this sale, there are five units in inventory at $530: 5 @ $106

P1

First-In, First-Out (FIFO)

Date	Purchases	Cost of Goods Sold	Inventory Balance
Aug. 1	10 @ $ 91 = $ 910		$ 910
Aug. 3	15 @ $ 106 = $ 1,590		$ 2,500
Aug. 14		10 @ $ 91 = $ 910 10 @ $ 106 = $ 1,060	$ 530
Aug. 17	20 @ $ 115 = $ 2,300		$ 2,830
Aug. 28	10 @ $ 119 = $ 1,190		$ 4,020
Aug. 31		5 @ $ 106 = $ 530 18 @ $ 115 = $ 2,070	$ 1,420

Cost of goods sold for August 31 = $2,600

P1

First-In, First-Out (FIFO)

Cost of Goods Sold	Inventory Balance
	$ 910
	$ 2,500
10 @ $ 91 = $ 910	
10 @ $ 106 = $ 1,060	$ 530
	$ 2,830
	$ 4,020
5 @ $ 106 = $ 530	
18 @ $ 115 = $ 2,070	$ 1,420

Income Statement
COGS = $4,570

Balance Sheet
Inventory = $1,420

P1

First-In, First-Out (FIFO)

Here are the entries to record the purchases and sales entries. The numbers in red are determined by the cost flow assumption used.

All purchases and sales are made on credit.
The selling price of inventory was as follows:

8/14	$130
8/31	150

Aug. 3	Merchandise Inventory	1,590	
	Accounts Payable		1,590
Aug. 14	Accounts Receivable	2,600	
	Sales		2,600
Aug. 14	Cost of Goods Sold	1,970	
	Merchandise Inventory		1,970
Aug. 17	Merchandise Inventory	2,300	
	Accounts Payable		2,300
Aug. 28	Merchandise Inventory	1,190	
	Accounts Payable		1,190
Aug. 31	Accounts Receivable	3,450	
	Sales		3,450
Aug. 31	Cost of Goods Sold	2,600	
	Merchandise Inventory		2,600

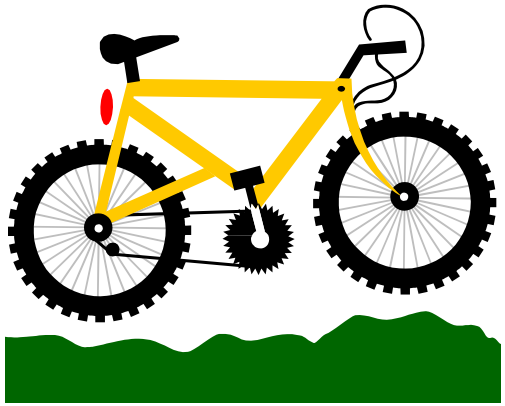
P1

Last-In, First-Out (LIFO)

Date	Purchases	Cost of Goods Sold	Inventory Balance
Aug. 1	10 @ $ 91 = $ 910		$ 910
Aug. 3	15 @ $ 106 = $ 1,590		$ 2,500

The above purchases were made in August.

On August 14, the company sold 20 bikes.



P1

Last-In, First-Out (LIFO)

Date	Purchases	Cost of Goods Sold	Inventory Balance
Aug. 1	10 @ $ 91 = $ 910		$ 910
Aug. 3	15 @ $ 106 = $ 1,590		$ 2,500
Aug. 14		15 @ $ 106 = $ 1,590 5 @ $ 91 = $ 455	$ 455

The Cost of goods sold for the August 14 sale is $2,045.

After this sale, there are five units in inventory at $455:
5 @ $91

P1

Last-In, First-Out (LIFO)

Date	Purchases	Cost of Goods Sold	Inventory Balance
Aug. 1	10 @ $ 91 = $ 910		$ 910
Aug. 3	15 @ $ 106 = $ 1,590		$ 2,500
Aug. 14		15 @ $ 106 = $ 1,590 5 @ $ 91 = $ 455	$ 455
Aug. 17	20 @ $ 115 = $ 2,300		$ 2,755
Aug. 28	10 @ $ 119 = $ 1,190		$ 3,945
Aug. 31		10 @ $ 119 = $ 1,190 13 @ $ 115 = $ 1,495	$ 1,260

Cost of goods sold for August 31 = $2,685

P1

Last-In, First-Out (LIFO)

Cost of Goods Sold	Inventory Balance
	$ 910
	$ 2,500
15 @ $ 106 = $ 1,590	
5 @ $ 91 = $ 455	$ 455
	$ 2,755
	$ 3,945
10 @ $ 119 = $ 1,190	
13 @ $ 115 = $ 1,495	$ 1,260

Income Statement COGS = $4,730

Balance Sheet Inventory = $1,260

P1

Last-In, First-Out (LIFO)

Here are the entries to record the purchases and sales entries. The numbers in red are determined by the cost flow assumption used.

All purchases and sales are made on credit.
The selling price of inventory was as follows:

8/14	$130
8/31	150

Aug. 3	Merchandise Inventory	1,590	
	Accounts Payable		1,590
Aug. 14	Accounts Receivable	2,600	
	Sales		2,600
Aug. 14	Cost of Goods Sold	2,045	
	Merchandise Inventory		2,045
Aug. 17	Merchandise Inventory	2,300	
	Accounts Payable		2,300
Aug. 28	Merchandise Inventory	1,190	
	Accounts Payable		1,190
Aug. 31	Accounts Receivable	3,450	
	Sales		3,450
Aug. 31	Cost of Goods Sold	2,685	
	Merchandise Inventory		2,685

P1

Weighted Average

When a unit is sold, the **average cost** of each unit in inventory is assigned to cost of goods sold.

Cost of goods available for sale ÷ Units on hand on the date of sale

P1

Weighted Average

Date	Purchases	Cost of Goods Sold	Inventory Balance
Aug. 1	10 @ $ 91 = $ 910		$ 910
Aug. 3	15 @ $ 106 = $ 1,590		$ 2,500

First, we need to compute the weighted average cost per unit of items in inventory.

Cost of goods available for sale	**$ 2,500**
Total units in inventory	**÷ 25**
Weighted average cost per unit	**$ 100**

The cost of goods sold for the August 14 sale is $2,000. After this sale, there are five units in inventory at $500:

P1

Weighted Average

Date	Purchases	Cost of Goods Sold	Inventory Balance
Aug. 1	10 @ $ 91 = $ 910		$ 910
Aug. 3	15 @ $ 106 = $ 1,590		$ 2,500
Aug. 14		20 @ $ 100 = $ 2,000	$ 500
Aug. 17	20 @ $ 115 = $ 2,300		$ 2,800
Aug. 28	10 @ $ 119 = $ 1,190		$ 3,990

Additional purchases were made on August 17 and 28.

Twenty-three bikes were sold on August 31.

What is the weighted average cost per unit of items in inventory?

P1

Weighted Average

Date	Purchases	Cost of Goods Sold	Inventory Balance
Aug. 1	10 @ $ 91 = $ 910		$ 910
Aug. 3	15 @ $ 106 = $ 1,590		$ 2,500
Aug. 14		20 @ $ 100 = $ 2,000	$ 500
Aug. 17	20 @ $ 115 = $ 2,300		$ 2,800
Aug. 28	10 @ $ 119 = $ 1,190		$ 3,990

	Units
Inventory 8/14	5
Purchase 8/17	20
Purchase 8/28	10
Units available for sale	35

Cost of goods available for sale	$	3,990
Total units in inventory	÷	35
Weighted average cost per unit	$	114

P1

Weighted Average

Date	Purchases	Cost of Goods Sold	Inventory Balance
Aug. 1	10 @ $ 91 = $ 910		$ 910
Aug. 3	15 @ $ 106 = $ 1,590		$ 2,500
Aug. 14		20 @ $ 100 = $ 2,000	$ 500
Aug. 17	20 @ $ 115 = $ 2,300		$ 2,800
Aug. 28	10 @ $ 119 = $ 1,190		$ 3,990
Aug. 31		23 @ $ 114 = $ 2,622	$ 1,368

Cost of goods sold for August 31 = $2,622

Ending inventory is comprised of 12 units @ an average cost of $114 each or $1,368.

P1

Weighted Average

Cost of Goods Sold	Inventory Balance
	$ 910
	$ 2,500
20 @ $ 100 = $ 2,000	$ 500
	$ 2,800
	$ 3,990
23 @ $ 114 = $ 2,622	$ 1,368

Income Statement COGS = $4,622

Balance Sheet Inventory = $1,368

P1

Weighted Average

Here are the entries to record the purchases and sales entries for Trekking. The numbers in red are determined by the cost flow assumption used.

All purchases and sales are made on credit.
The selling price of inventory was as follows:

8/14 $130
8/31 150

Aug. 3	Merchandise Inventory	1,590	
	Accounts Payable		1,590
Aug. 14	Accounts Receivable	2,600	
	Sales		2,600
Aug. 14	Cost of Goods Sold	2,000	
	Merchandise Inventory		2,000
Aug. 17	Merchandise Inventory	2,300	
	Accounts Payable		2,300
Aug. 28	Merchandise Inventory	1,190	
	Accounts Payable		1,190
Aug. 31	Accounts Receivable	3,450	
	Sales		3,450
Aug. 31	Cost of Goods Sold	2,622	
	Merchandise Inventory		2,622

A1

Financial Statement Effects of Costing Methods

Because prices change, inventory methods nearly always assign different cost amounts.

TREKKING COMPANY
For Month Ended August 31

	Specific Identification	FIFO	LIFO	Weighted Average
Sales	$ 6,050	$ 6,050	$ 6,050	$ 6,050
Cost of goods sold	4,582	4,570	4,730	4,622
Gross profit	$ 1,468	$ 1,480	$ 1,320	$ 1,428
Operating expenses	450	450	450	450
Income before taxes	$ 1,018	$ 1,030	$ 870	$ 978
Income tax expense (30%)	305	309	261	293
Net income	$ 713	$ 721	$ 609	$ 685
Balance sheet inventory	$ 1,408	$ 1,420	$ 1,260	$ 1,368

A1

Financial Statement Effects of Costing Methods

Advantages of Methods

Weighted Average

Smoothes out price changes.

First-In, First-Out

Ending inventory approximates current replacement cost.

Last-In, First-Out

Better matches current costs in cost of goods sold with revenues.

A1

Tax Effects of Costing Methods

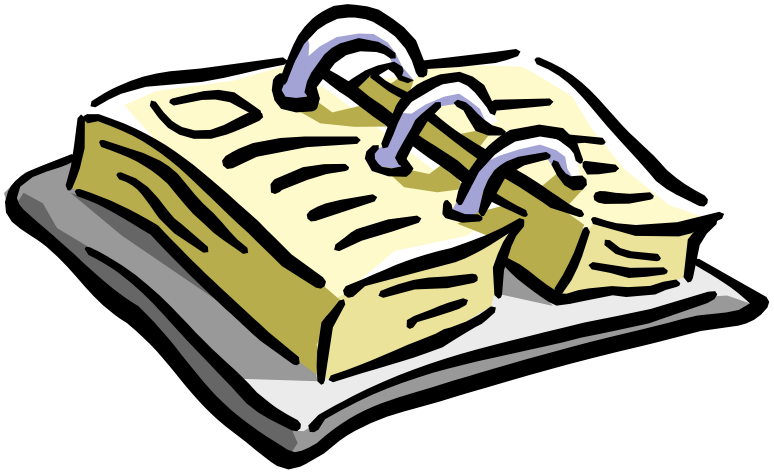
The Internal Revenue Service (IRS) identifies several acceptable methods for inventory costing for reporting taxable income.

If LIFO is used for tax purposes, the IRS requires it be used in financial statements.

A1

Consistency in Using Costing Methods

The consistency concept requires a company to use the same accounting methods period after period so that financial statements are comparable across periods.



P2

Lower of Cost or Market

Inventory must be reported at market value when market is *lower* than cost.

Defined as current replacement cost (not sales price). Consistent with the conservatism principle.

Can be applied three ways:

(1) separately to each individual item.

(2) to major categories of assets.

(3) to the whole inventory.

P2

Lower of Cost or Market

A motorsports retailer has the following items in inventory:

Inventory Items	Units on Hand	Per Unit Cost	Per Unit Market	Total Cost	Total Market
Cycles:					
Roadster	20	$ 8,000	$ 7,000	$160,000	$ 140,000
Sprint	10	5,000	6,000	50,000	60,000
Category subtotal				210,000	200,000
Off-Road					
Trax-4	8	5,000	6,500	40,000	52,000
Blazer	5	9,000	7,000	45,000	35,000
Category subtotal				85,000	87,000
Total				$295,000	$ 287,000

P2

Lower of Cost or Market

Here is how to compute lower of cost or market for individual inventory items.

Inventory Items	Units on Hand	Total Cost	Total Market	LCM Applied to Items	LCM Applied to Categories	LCM Applied to Whole
Cycles:						
Roadster	20	$ 160,000	$ 140,000	$ 140,000		
Sprint	10	50,000	60,000	50,000		
Category subtotal		$ 210,000	$ 200,000			
Off-Road						
Trax-4	8	$ 40,000	$ 52,000	40,000		
Blazer	5	45,000	35,000	35,000		
Category subtotal		$ 85,000	$ 87,000			
Total		$ 295,000	$ 287,000	$ 265,000		

A2

Financial Statement Effects of Inventory Errors

Income Statement Effects		
Inventory Error	**Cost of Goods Sold**	**Net Income**
Understate ending inventory	Overstated	Understated
Understate beginning inventory	Understated	Overstated
Overstate ending inventory	Understated	Overstated
Overstate beginning inventory	Overstated	Understated

A2

Financial Statement Effects of Inventory Errors

Balance Sheet Effects		
Inventory Error	**Assets**	**Equity**
Understate ending inventory	Understated	Understated
Overstate ending inventory	Overstated	Overstated

A3

Inventory Turnover

Shows how many times a company turns over its inventory during a period. Indicator of how well management is controlling the amount of inventory available.

$$\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

$$\text{Average inventory} = (\text{Beg. Inv.} + \text{End Inv.}) \div 2$$

A3

Days' Sales in Inventory

Reveals how much inventory is available in terms of the number of days' sales.

$$\text{Days' sales in inventory} = \frac{\text{Ending inventory}}{\text{Cost of goods sold}} \times 365$$

End of Chapter 05