

# 9

## Plant Assets, Natural Resources, and Intangible Assets

### Learning Objectives

1

Explain the accounting for plant asset expenditures.

2

Apply depreciation methods to plant assets.

3

Explain how to account for the disposal of plant assets.

4

Describe how to account for natural resources and intangible assets.

5

Discuss how plant assets, natural resources, and intangible assets are reported and analyzed.

## Explain the accounting for plant asset expenditures.

**Plant assets** are resources that have

- ◆ **physical substance** (a definite size and shape),
- ◆ are **used in the operations** of a business,
- ◆ are **not intended for sale** to customers,
- ◆ are expected to **be of use** to the company for a number of years.

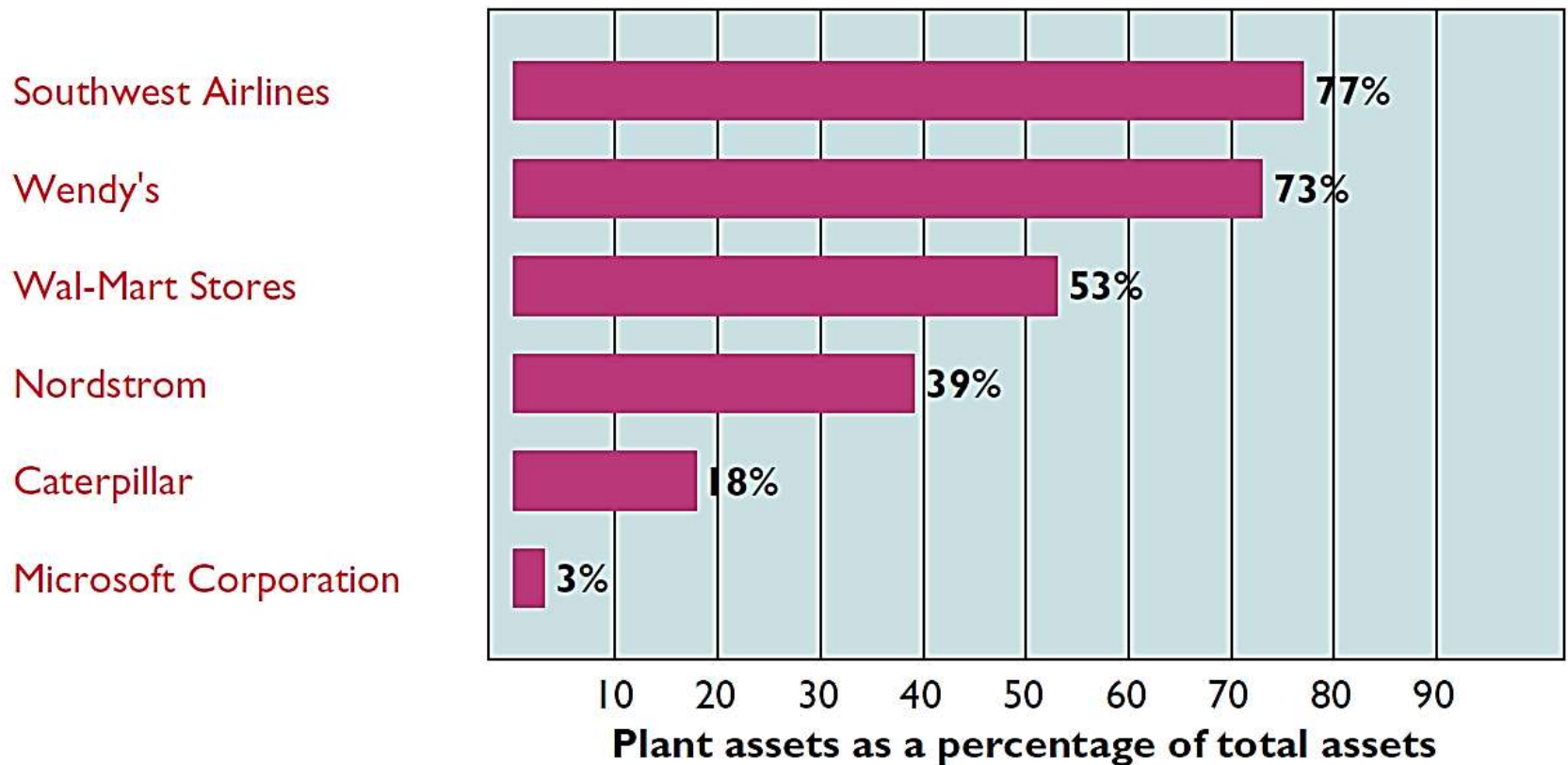
Referred to as property, plant, and equipment; plant and equipment; and fixed assets.

# Plant Assets

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**Plant assets** are critical to a company's success.

Illustration 9-1



# Determining the Cost of Plant Assets

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**Historical Cost Principle** requires that companies record plant assets at cost.

**Cost consists of all expenditures necessary to acquire an asset and make it ready for its intended use.**

# Determining the Cost of Plant Assets

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## LAND

**All necessary costs** incurred in making the land **ready for its intended use** increase **(debit)** the Land account.

**Costs typically include:**

1. cash purchase price,
2. closing costs such as title and attorney's fees,
3. real estate brokers' commissions, and
4. accrued property taxes and other liens on the land assumed by the purchaser.

# Determining the Cost of Plant Assets

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**Illustration:** Hayes Company acquires real estate at a cash cost of \$100,000. The property contains an old warehouse that is razed at a net cost of \$6,000 (\$7,500 in costs less \$1,500 proceeds from salvaged materials). Additional expenditures are the attorney's fee, \$1,000, and the real estate broker's commission, \$8,000.

**Required:** Determine the amount to be reported as the cost of the land.

# Determining the Cost of Plant Assets

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**Required:** Determine amount to be reported as the cost of the land.

	<u>Land</u>
Cash price of property (\$100,000)	\$100,000
Net removal cost of warehouse (\$7,500-\$1,500)	6,000
Attorney's fees (\$1,000)	1,000
Real estate broker's commission (\$8,000)	8,000
	<u>\$115,000</u>
<b>Cost of Land</b>	<b><u>\$115,000</u></b>

**Illustration 9-2**  
Computation of cost of land

# Determining the Cost of Plant Assets

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## LAND IMPROVEMENTS

**Structural additions** made to land. **Cost includes all expenditures** necessary to make the improvements **ready for their intended use**.

- ◆ **Examples:** driveways, parking lots, fences, landscaping, and underground sprinklers.
- ◆ Limited useful lives.
- ◆ Expense (depreciate) the cost of land improvements over their useful lives.



# Determining the Cost of Plant Assets

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## BUILDINGS

**Includes all costs** related directly to purchase or construction.

### **Purchase costs:**

- ◆ Purchase price, closing costs (attorney's fees, title insurance, etc.) and real estate broker's commission.
- ◆ Remodeling and replacing or repairing the roof, floors, electrical wiring, and plumbing.

### **Construction costs:**

- ◆ Contract price plus payments for architects' fees, building permits, and excavation costs.

# Determining the Cost of Plant Assets

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## Equipment

**Include all costs** incurred in acquiring the equipment and preparing it for use.

**Costs typically include:**

- ◆ Cash purchase price.
- ◆ Sales taxes.
- ◆ Freight charges.
- ◆ Insurance during transit paid by the purchaser.
- ◆ Expenditures required in assembling, installing, and testing the unit.

# Determining the Cost of Plant Assets

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**Illustration:** Lenard Company purchases a delivery truck at a cash price of \$22,000. Related expenditures are sales taxes \$1,320, painting and lettering \$500, motor vehicle license \$80, and a three-year accident insurance policy \$1,600. **Compute the cost** of the delivery truck.

	<u>Truck</u>
Cash price	\$22,000
Sales taxes	1,320
Painting and lettering	500

Illustration 9-4

**Cost of Delivery Truck**

<u>\$23,820</u>
<u><u>\$23,820</u></u>

# Determining the Cost of Plant Assets

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**Illustration:** Lenard Company purchases a delivery truck at a cash price of \$22,000. Related expenditures are sales taxes \$1,320, painting and lettering \$500, motor vehicle license \$80, and a three-year accident insurance policy \$1,600. **Prepare the journal entry** to record these costs.

Equipment	23,820	
License Expense	80	
Prepaid Insurance	1,600	
Cash		25,500

# Expenditures During Useful Life

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**Ordinary Repairs** are expenditures to **maintain** the operating efficiency and productive life of the unit.

- ◆ **Debit** to Maintenance and Repairs Expense.
- ◆ Referred to as **revenue expenditures**.

**Additions and Improvements** are costs incurred to **increase** the operating efficiency, productive capacity, or useful life of a plant asset.

- ◆ **Debit** the plant asset affected.
- ◆ Referred to as **capital expenditures**.

## ANATOMY OF A FRAUD

Bernie Ebers was the founder and CEO of the phone company WorldCom. The company engaged in a series of increasingly large, debt-financed acquisitions of other companies. These acquisitions made the company grow quickly, which made the stock price increase dramatically. However, because the acquired companies all had different accounting systems, WorldCom's financial records were a mess. When WorldCom's performance started to flatten out, Bernie coerced WorldCom's accountants to engage in a number of fraudulent activities to make net income look better than it really was and thus prop up the stock price. One of these frauds involved treating \$7 billion of line costs as capital expenditures. The line costs, which were rental fees paid to other phone companies to use their phone lines, had always been properly expensed in previous years. Capitalization delayed expense recognition to future periods and thus boosted current-period profits.

**Total take: \$7 billion**

### THE MISSING CONTROLS

# Accounting Across the Organization

## Many U.S. Firms Use Leases

Leasing is big business for U.S. companies. For example, business investment in equipment in a recent year totaled \$800 billion. Leasing accounted for about 33% of all business investment (\$264 billion).

Who does the most leasing? Interestingly, major banks such as **Continental Bank**, **J.P. Morgan Leasing**, and **US**

**Bancorp Equipment Finance** are the major lessors. Also, many companies have established separate leasing companies, such as **Boeing Capital Corporation**, **Dell Financial Services**, and **John Deere Capital Corporation**. And, as an excellent example of the magnitude of leasing, leased planes account for nearly 40% of the U.S. fleet of commercial airlines. Leasing is also becoming more common in the hotel industry. **Marriott**, **Hilton**, and **InterContinental** are increasingly choosing to lease hotels that are owned by someone else.

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Why might airline managers choose to lease rather than purchase their planes? (Go to **WileyPLUS** for this answer and additional questions.)

# DO IT!

## 1

## Cost of Plant Assets

Assume that Drummond Heating and Cooling Co. purchases a delivery truck for \$15,000 cash, plus sales taxes of \$900 and delivery costs of \$500. The buyer also pays \$200 for painting and lettering, \$600 for an annual insurance policy, and \$80 for a motor vehicle license. Explain how each of these costs would be accounted for.

### Solution

- ◆ The first four payments (\$15,000, \$900, \$500, and \$200) are include in the **cost of the truck (\$16,600)**.
- ◆ The payments for **insurance** and the **license** are operating costs and therefore are **expensed**.

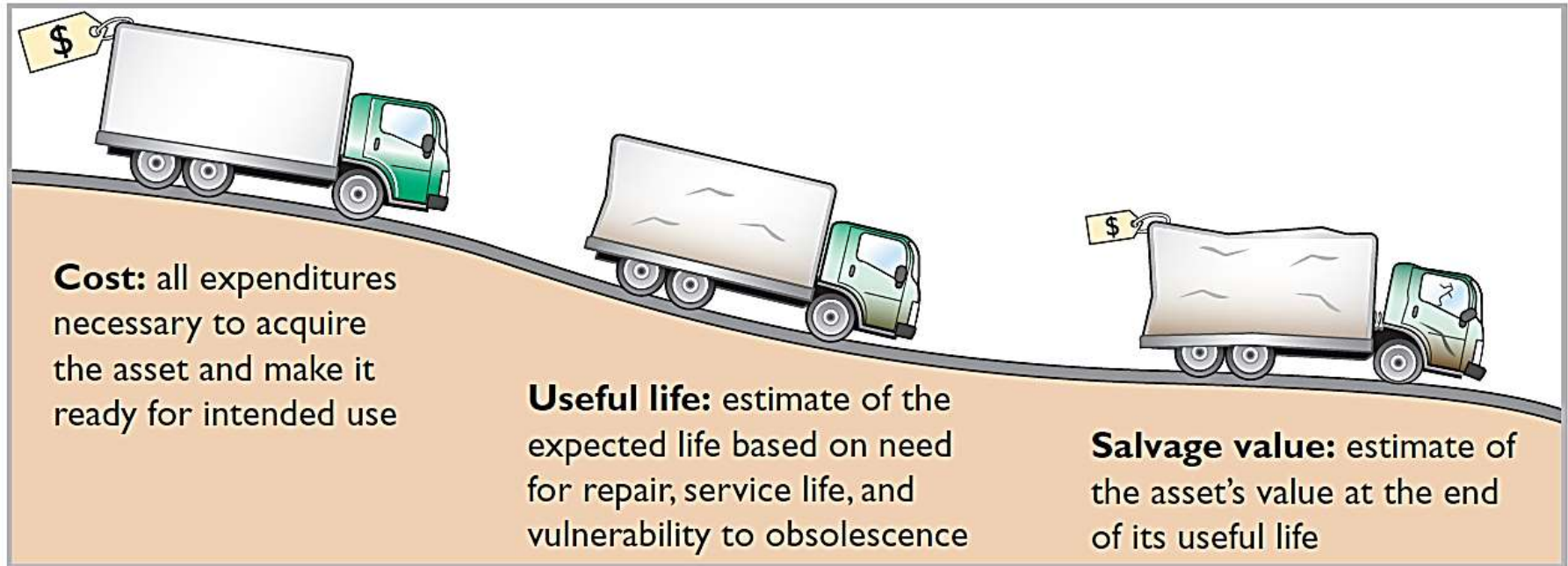


## Depreciation

**Process of allocating to expense the cost of a plant asset over its useful (service) life in a rational and systematic manner.**

- ◆ Process of **cost allocation, not asset valuation.**
- ◆ Applies to land improvements, buildings, and equipment, **not land.**
- ◆ Depreciable because the **revenue-producing ability of asset will decline** over the asset's useful life.

# Factors in Computing Depreciation



**Illustration 9-6**

Three factors in computing depreciation

## **Alternative Terminology**

Another term sometimes used for salvage value is *residual value*.

## **Helpful Hint**

Depreciation expense is reported on the income statement. Accumulated depreciation is reported on the balance sheet as a deduction from plant assets.

# Depreciation Methods

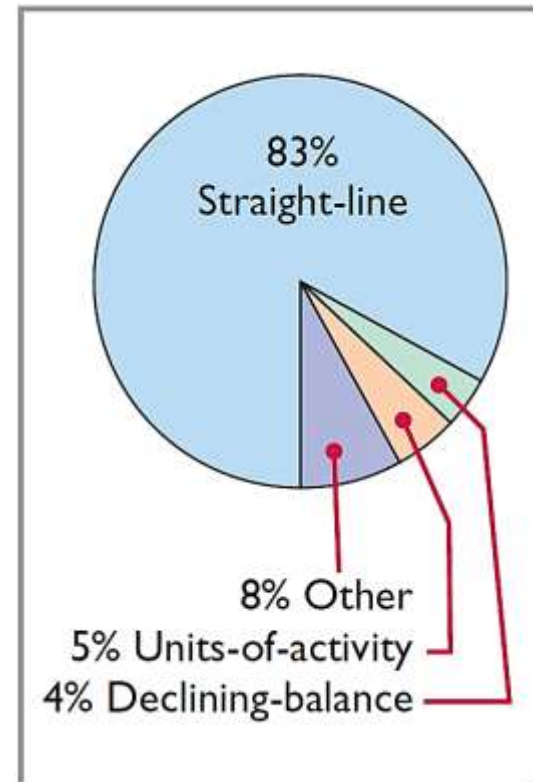
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**Management selects the method** it believes best measures an asset's contribution to revenue over its useful life.

**Examples** include:

1. Straight-line method.
2. Units-of-activity method.
3. Declining-balance method.

**Illustration 9-8**  
Use of depreciation methods  
in major U.S. companies



# Depreciation Methods

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**Illustration:** Barb's Florists purchased a small delivery truck on January 1, 2017.

Cost	\$13,000
Expected salvage value	\$1,000
Estimated useful life in years	5
Estimated useful life in miles	100,000

**Illustration 9-7**  
Delivery truck data


**Required:** Compute depreciation using the following.

(a) Straight-Line. (b) Units-of-Activity. (c) Declining Balance.

# Depreciation Methods

## STRAIGHT-LINE METHOD

- ◆ Expense is **same amount** for each year.
- ◆ Depreciable cost = Cost less salvage value.

Cost	–	Salvage Value	=	Depreciable Cost
\$13,000	–	\$1,000	=	\$12,000
				
Depreciable Cost	÷	Useful Life (in years)	=	Annual Depreciation Expense
\$12,000	÷	5	=	\$2,400

**Illustration 9-9**  
Formula for straight-line method

# Depreciation Methods

## Illustration: (Straight-Line)

Illustration 9-10

Year	Depreciable Cost	x	Rate	=	Annual Depreciation Expense	Accumulated Depreciation	Book Value
2017	\$ 12,000		20%		\$ 2,400	<b>\$ 2,400</b>	\$ 10,600 *
2018	12,000		20		2,400	<b>4,800</b>	8,200
2019	12,000		20		2,400	<b>7,200</b>	5,800
2020	12,000		20		2,400	<b>9,600</b>	3,400
2021	12,000		20		2,400	<b>12,000</b>	<b>1,000</b>

<b>2017</b>	Depreciation Expense	2,400	
<b>Journal</b>	Accumulated Depreciation		2,400
<b>Entry</b>			

# Depreciation Methods

**Partial  
Year**

## Illustration: (Straight-Line)

Assume the delivery truck was **purchased on April 1, 2017.**

Year	Depreciable Cost		Rate		Annual Depreciation Expense		Partial Year		Current Year Expense		Accumulated Depreciation			
2017	\$	12,000	x	20%	=	\$	2,400	x	9/12	=	\$	1,800	\$	1,800
2018		12,000	x	20%	=		2,400					2,400		4,200
2019		12,000	x	20%	=		2,400					2,400		6,600
2020		12,000	x	20%	=		2,400					2,400		9,000
2021		12,000	x	20%	=		2,400					2,400		11,400
2022		12,000	x	20%	=		2,400	x	3/12	=		600		12,000
											\$	12,000		

### Journal entry:

2017	Depreciation Expense	1,800	
	Accumulated Depreciation		1,800

On January 1, 2017, Iron Mountain Ski Corporation purchased a new snow-grooming machine for \$50,000. The machine is estimated to have a 10-year life with a \$2,000 salvage value. What journal entry would Iron Mountain Ski Corporation make at December 31, 2017, if it uses the straight-line method of depreciation?

**Solution**

Depreciation expense	2,400	
Accumulated depreciation		2,400

$$(\$50,000 - \$2,000) \div 10 = \$4,800$$



# Depreciation Methods

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## UNITS-OF-ACTIVITY METHOD

- ◆ Companies estimate total units of activity to calculate depreciation cost per unit.
- ◆ Expense varies based on units of activity.
- ◆ Depreciable cost is cost less salvage value.

### **Alternative Terminology**

Another term often used is the *units-of-production method*.

# Depreciation Methods

<b>Depreciable Cost</b>	<b>÷</b>	<b>Total Units of Activity</b>	<b>=</b>	<b>Depreciable Cost per Unit</b>
\$12,000	÷	100,000 miles	=	\$0.12
				
<b>Depreciable Cost per Unit</b>	<b>×</b>	<b>Units of Activity during the Year</b>	<b>=</b>	<b>Annual Depreciation Expense</b>
\$0.12	×	15,000 miles	=	\$1,800

**Illustration 9-11**  
Formula for units-of-activity method

# Depreciation Methods

## Illustration: (Units-of-Activity)

Illustration 9-12

Year	Miles Driven	x	Cost per Unit	=	Annual Depreciation Expense	Accumulated Depreciation	Book Value
2017	15,000		\$ 0.12		\$ 1,800	\$ 1,800	\$ 11,200
2018	30,000		0.12		3,600	5,400	7,600
2019	20,000		0.12		2,400	7,800	5,200
2020	25,000		0.12		3,000	10,800	2,200
2021	10,000		0.12		1,200	12,000	1,000

<b>2017</b>	Depreciation Expense	1,800	
<b>Journal Entry</b>	Accumulated Depreciation		1,800

# Depreciation Methods

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## DECLINING-BALANCE METHOD

- ◆ Accelerated method.
- ◆ Decreasing annual depreciation expense over the asset's useful life.
- ◆ Twice the straight-line rate with Double-Declining-Balance.
- ◆ Rate applied to book value.

Illustration 9-13

Book Value at Beginning of Year	×	Declining- Balance Rate	=	Annual Depreciation Expense
\$13,000	×	40%	=	\$5,200

# Depreciation Methods

## Illustration: (Declining-Balance)

Illustration 9-14

Year	Beginning Book value	x	Declining Balance Rate	=	Annual Depreciation Expense	Accumulated Depreciation	Book Value
2017	\$13,000		40%		\$ 5,200	\$ 5,200	\$ 7,800
2018	7,800		40		3,120	8,320	4,680
2019	4,680		40		1,872	10,192	2,808
2020	2,808		40		1,123	11,315	1,685
2021	1,685		40		685*	12,000	1,000

<b>2017 Journal Entry</b>	Depreciation Expense	5,200	
	Accumulated Depreciation		5,200

# Depreciation Methods

**Partial  
Year**

## Illustration: (Declining-Balance)

Year	Beginning Book Value		Declining Balance Rate		Annual Depreciation Expense		Partial Year		Current Year Expense	Accumulated Depreciation
2017	\$ 13,000	x	40%	=	\$ 5,200	x	9/12	=	\$ 3,900	\$ 3,900
2018	9,100	x	40%	=	3,640				3,640	7,540
2019	5,460	x	40%	=	2,184				2,184	9,724
2020	3,276	x	40%	=	1,310				1,310	11,034
2021	1,966	x	40%	=	786				786	11,821
2022	1,179	x	40%	=	472		Plug	→	179	12,000
									<u>\$ 12,000</u>	

### Journal entry:

2017	Depreciation Expense	3,900	
	Accumulated Depreciation		3,900

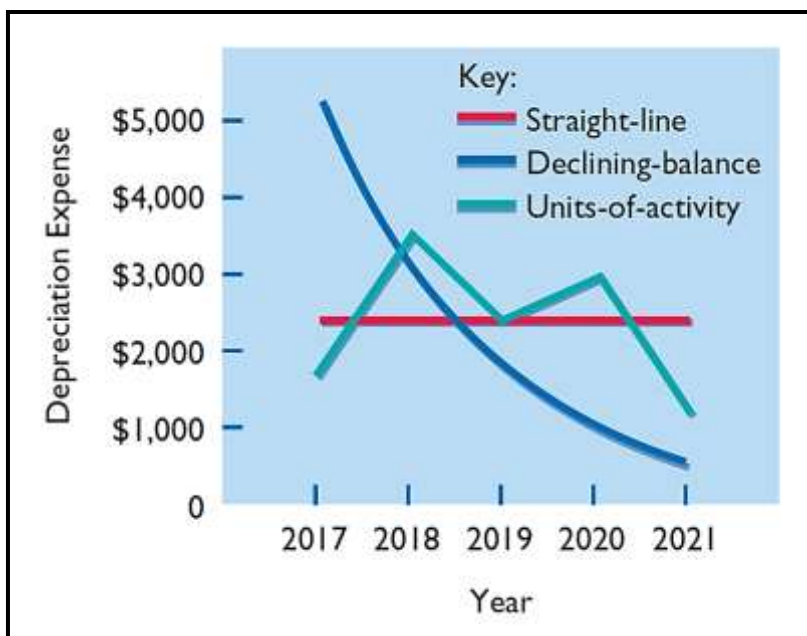
# Depreciation Methods

Illustration 9-15

## COMPARISON OF METHODS

Year	Straight-Line	Units-of-Activity	Declining-Balance
2017	\$ 2,400	\$ 1,800	\$ 5,200
2018	2,400	3,600	3,120
2019	2,400	2,400	1,872
2020	2,400	3,000	1,123
2021	2,400	1,200	685
	<u><u>\$12,000</u></u>	<u><u>\$12,000</u></u>	<u><u>\$12,000</u></u>

Illustration 9-16



### Helpful Hint

Under any method, depreciation stops when the asset's book value equals expected salvage value.

# Depreciation and Income Taxes

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IRS does not require taxpayer to use the same depreciation method on the tax return that is used in preparing financial statements.

Taxpayers must use the **straight-line** method or a special accelerated-depreciation method called the **Modified Accelerated Cost Recovery System** (MACRS).

MACRS is **NOT acceptable** under GAAP.



# Revising Periodic Depreciation

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- ◆ Accounted for in the period of change and future periods (**Change in Estimate**).
- ◆ No change in depreciation reported for prior years.
- ◆ Not considered an error.

## Helpful Hint

Use a step-by-step approach: (1) determine new depreciable cost; (2) divide by remaining useful life.

# Revising Periodic Depreciation

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**Illustration:** Arcadia HS, purchased equipment for \$510,000 which was estimated to have a useful life of 10 years with a salvage value of \$10,000 at the end of that time. Depreciation has been recorded for 7 years on a straight-line basis. In 2015 (year 8), it is determined that the total estimated life should be 15 years with a salvage value of \$5,000 at the end of that time.

## Questions:

- ◆ What is the journal entry to correct the prior years' depreciation?
- ◆ Calculate the depreciation expense for 2015.

**No Entry  
Required**



# Revising Depreciation

After 7 years

Equipment cost	\$510,000
Salvage value	- 10,000
Depreciable base	<u>500,000</u>
Useful life (original)	<u>÷ 10 years</u>
Annual depreciation	<u><u>\$ 50,000</u></u>

First, establish NBV  
at date of change in  
estimate.

x 7 years = **\$350,000**

## Balance Sheet (Dec. 31, 2014)

Plant Assets:

Equipment	\$510,000
Accumulated depreciation	<u>350,000</u>
Net book value (NBV)	<u><b>\$160,000</b></u>

# Revising Depreciation

After 7 years

Net book value	\$160,000
Salvage value (new)	- 5,000
Depreciable base	<u>155,000</u>
Useful life remaining	<u>8 years</u>
Annual depreciation	<u><u>\$ 19,375</u></u>

Depreciation  
Expense calculation  
for 2015.

Journal entry for 2015 and future years.

Depreciation Expense	19,375	
Accumulated Depreciation		19,375

# Explain how to account for the disposal of plant assets.

Companies dispose of plant assets in three ways — **Sale, Retirement, or Exchange** (appendix).

**Illustration 9-18**  
Methods of plant  
asset disposal



Record depreciation up to the **date of disposal**.

**Eliminate asset** by (1) debiting Accumulated Depreciation, and (2) crediting the asset account.

# Retirement of Plant Assets

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- ◆ **No cash** is received.
- ◆ **Decrease (credit) the asset account** for the original cost in the asset.
- ◆ **Decrease (debit) Accumulated Depreciation** for the full amount of depreciation taken over the life of the asset.

# Retirement of Plant Assets

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**Illustration:** Hobart Enterprises retires its computer printers, which cost \$32,000. The accumulated depreciation on these printers is \$32,000. Prepare the entry to record this retirement.

Accumulated Depreciation	32,000	
Equipment		32,000

**Question:** What happens if a fully depreciated plant asset is still useful to the company?

# Retirement of Plant Assets

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**Illustration:** Sunset Company discards delivery equipment that cost \$18,000 and has accumulated depreciation of \$14,000. The journal entry is?

Accumulated Depreciation	14,000	
Loss on Disposal of Plant Assets	4,000	
Equipment		18,000

Companies report a loss on disposal in the “**Other expenses and losses**” section of the income statement.



# Sale of Plant Assets

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Compare the **book value** of the asset with the **proceeds** received from the sale.

- ◆ If proceeds **exceed** the book value, a **gain** on disposal occurs.
- ◆ If proceeds **are less than** the book value, a **loss** on disposal occurs.

# Sale of Plant Assets

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## GAIN ON SALE

**Illustration:** On July 1, 2017, Wright Company sells office furniture for \$16,000 cash. The office furniture originally cost \$60,000. As of January 1, 2017, it had accumulated depreciation of \$41,000. Depreciation for the first six months of 2017 is \$8,000. Prepare the journal entry to record depreciation expense up to the date of sale.

July 1	Depreciation Expense	8,000	
	Accumulated Depreciation		8,000

# GAIN ON SALE

**Illustration 9-19**  
Computation of gain  
on disposal

Cost of office furniture	\$60,000
Less: Accumulated depreciation (\$41,000 + \$8,000)	<u>49,000</u>
Book value at date of disposal	11,000
Proceeds from sale	<u>16,000</u>
<b>Gain on disposal of plant asset</b>	<b><u><u>\$ 5,000</u></u></b>

**Illustration:** Wright records the sale as follows.

July 1	Cash	16,000	
	Accumulated Depreciation	49,000	
	Equipment		60,000
	Gain on Disposal of Plant Assets		5,000

# LOSS ON SALE

**Illustration:** Assume that instead of selling the office furniture for \$16,000, Wright sells it for \$9,000.

**Illustration 9-20**  
Computation of  
loss on disposal

Cost of office furniture	\$60,000
Less: Accumulated depreciation	<u>49,000</u>
Book value at date of disposal	11,000
Proceeds from sale	<u>9,000</u>
<b>Loss on disposal of plant asset</b>	<b><u><u>\$ 2,000</u></u></b>

July 1	Cash	9,000	
	Accumulated Depreciation	49,000	
	Loss on Disposal of Plant Assets	2,000	
	Equipment		60,000

**DO IT!**

**3**

## Plant Asset Disposal

Overland Trucking has an old truck that cost \$30,000, and it has accumulated depreciation of \$16,000 on this truck. Overland has decided to sell the truck. **(a)** What entry would Overland Trucking make to record the sale of the truck for **\$17,000 cash**?

### Solution

Cash	17,000	
Accumulated Depreciation—Equipment	16,000	
Equipment		30,000
Gain on Disposal of Plant Assets		3,000
[\$17,000 - (\$30,000 - \$16,000)]		

**DO IT!**

**3**

## Plant Asset Disposal

Overland Trucking has an old truck that cost \$30,000, and it has accumulated depreciation of \$16,000 on this truck. Overland has decided to sell the truck. **(b)** What entry would Overland Trucking make to record the sale of the truck for **\$10,000 cash**?

### Solution

Cash	10,000	
Accumulated Depreciation—Equipment	16,000	
Loss on Disposal of Plant Assets	4,000	
Equipment		30,000
[\$10,000 - (\$30,000 - \$16,000)]		

## Describe how to account for natural resources and intangible assets.

**Natural resources** consist of standing timber and underground deposits of oil, gas, and minerals.

### Distinguishing characteristics:

- ◆ Physically extracted in operations.
- ◆ Replaceable only by an act of nature.

**Cost** is the price needed to acquire the resource **and** prepare it for its intended use.

# Depletion

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The allocation of the cost to expense in a rational and systematic manner over the resource's useful life.

- ◆ Companies generally use **units-of-activity** method.
- ◆ Depletion generally is a function of the **units extracted**.

$$\frac{\text{Total Cost} - \text{Salvage Value}}{\text{Total Estimated Units Available}} = \text{Depletion Cost per Unit}$$

$$\frac{\$5,000,000}{\$1,000,000} = \$5.00 \text{ per ton}$$

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## Illustration 9-21

Formula to compute depletion expense



# Depletion

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**Illustration:** Lane Coal Company invests \$5 million in a mine estimated to have 1 million tons of coal and no salvage value.

$$\frac{\text{Total Cost} - \text{Salvage Value}}{\text{Total Estimated Units Available}} = \text{Depletion Cost per Unit}$$
$$\frac{\$5,000,000}{1,000,000} = \$5.00 \text{ per ton}$$

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**Illustration 9-21**

Formula to compute depletion expense

# Depletion

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**Illustration:** Lane Coal Company invests \$5 million in a mine estimated to have 1 million tons of coal and no salvage value. In the first year, Lane extracts and sells 250,000 tons of coal. Lane computes the depletion as follows:

$$\$5,000,000 \div 1,000,000 = \$5.00 \text{ depletion cost per ton}$$

$$\$5.00 \times 250,000 = \$1,250,000 \text{ annual depletion}$$

## Journal entry:

Inventory (coal)	1,250,000	
Accumulated Depletion		1,250,000

# Intangible Assets

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**Intangible assets** are rights, privileges, and competitive advantages that result from ownership of long-lived assets that do not possess physical substance.

**Limited life or indefinite life.**

**Common types** of intangibles:

- ◆ Patents
- ◆ Copyrights
- ◆ Goodwill
- ◆ Trademarks and Trade Names
- ◆ Franchises

# Accounting for Intangible Assets

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## Limited-Life Intangibles:

- ◆ Amortize to expense.
- ◆ Credit asset account.

### Helpful Hint

Amortization is to intangibles what depreciation is to plant assets and depletion is to natural resources.

## Indefinite-Life Intangibles:

- ◆ No foreseeable limit on time the asset is expected to provide cash flows.
- ◆ No amortization.

# Accounting for Intangible Assets

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## PATENTS

- ◆ Exclusive right to manufacture, sell, or otherwise control an invention for a period of **20 years** from the date of the grant.
- ◆ **Capitalize costs of purchasing** a patent and amortize over its 20-year life or its useful life, whichever is shorter.
- ◆ **Expense any R&D** costs in developing a patent.
- ◆ **Legal fees** incurred successfully defending a patent are capitalized to the Patent account.

# Accounting for Intangible Assets

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**Illustration:** National Labs purchases a patent at a cost of \$60,000 on June 30. National estimates the useful life of the patent to be eight years. Prepare the journal entry to record the amortization for the six-month period ended December 31.

Cost	\$60,000
Useful life	÷ 8
Annual expense	<u>\$ 7,500</u>
6 months	x 6/12
Amortization	<u><u>\$ 3,750</u></u>

Dec. 31

Amortization Expense

3,750

Patents

3,750

# Accounting for Intangible Assets

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## COPYRIGHTS

- ◆ Give the owner the exclusive right to reproduce and sell an artistic or published work.
- ◆ Extend for the life of the creator plus 70 years.
- ◆ Cost of the copyright is the cost of acquiring and defending it.
- ◆ Amortized to expense over useful life.

# Accounting for Intangible Assets

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## TRADEMARKS AND TRADE NAMES

- ◆ Word, phrase, jingle, or symbol that identifies a particular enterprise or product.
  - ▶ Wheaties, Monopoly, Kleenex, Coca-Cola, Big Mac, and Jeep.
- ◆ Legal protection for indefinite number of **20 year renewal periods**.
- ◆ Capitalize acquisition costs.
- ◆ No amortization.



# Accounting for Intangible Assets

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## FRANCHISES

- ◆ Contractual arrangement between a franchisor and a franchisee.
  - ▶ Shell, Subway, and Rent-A-Wreck are franchises.
- ◆ Franchise (or license) with a limited life should be amortized to expense over its useful life.
- ◆ If the life is indefinite, the cost is not amortized.

# Accounting for Intangible Assets

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## GOODWILL

- ◆ **Includes** exceptional management, desirable location, good customer relations, skilled employees, high-quality products, etc.
- ◆ **Only recorded** when an **entire business is purchased**.
- ◆ Goodwill is recorded as the excess of **purchase price over the fair value of the net assets** acquired.
- ◆ Not amortized.

## Accounting Across the Organization

### Google



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### We Want to Own Glass

Google, which has trademarked the term "Google Glass," now wants to trademark the term "Glass." Why? Because the simple word Glass has marketing advantages over the term Google Glass. It is easy to remember and is more universal. Regulators, however, are balking at Google's request. They say that the possible trademark is too similar to other existing or pending software trademarks that contain the word "glass." Also, regulators suggest that the term Glass is merely descriptive and therefore lacks trademark protection. For

example, regulators note that a company that makes salsa could not trademark the term "Spicy Salsa."

BorderStylo LLC, which developed a Web-browser extension called Write on Glass, has filed a notice of opposition to Google's request. Google is fighting back and has sent the trademark examiner a 1,928-page application defense.

Source: Jacob Gershman, "Google Wants to Own 'Glass'," *Wall Street Journal* (April 4, 2014), p. B5.

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If Google is successful in registering the term Glass, where will this trademark be reported on its financial statements? (Go to WileyPLUS for this answer and additional questions.)

# Research and Development Costs

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**Expenditures** that may lead to

- ◆ patents,
- ◆ copyrights,
- ◆ new processes, and
- ◆ new products.

All R & D costs  
are **expensed**  
**when incurred.**

## **Helpful Hint**

Research and development (R&D) costs are not intangible assets. But because they may lead to patents and copyrights, we discuss them in this section.

**Illustration:** Identify the term most directly associated with each statement.

1. The allocation of the cost of a natural resource to expense in a rational and systematic manner.
2. Rights, privileges, and competitive advantages that result from the ownership of long-lived assets that do not possess physical substance.
3. An exclusive right granted by the federal government to reproduce and sell an artistic or published work.

**Depletion**

**Intangible  
Assets**

**Copyrights**

**Illustration:** Identify the term most directly associated with each statement.

4. A right to sell certain products or services or to use certain trademarks or trade names within a designated geographic area.
5. Costs incurred by a company that often lead to patents or new products. These costs must be expensed as incurred.

**Franchise**

**Research and  
Development  
Costs**

**LEARNING  
OBJECTIVE****5**

**Discuss how plant assets, natural resources, and intangible assets are reported and analyzed.**

**Real  
World****THE PROCTER & GAMBLE COMPANY**

Balance Sheet (partial)  
(in millions)

	<b>June 30</b>	
	<b>2013</b>	<b>2012</b>
Property, plant, and equipment		
Buildings	\$ 7,829	\$ 7,324
Machinery and equipment	34,305	32,029
Land	878	880
	<u>43,012</u>	<u>40,233</u>
Accumulated depreciation	(21,346)	(19,856)
Net property, plant, and equipment	<u>21,666</u>	<u>20,377</u>
Goodwill and other intangible assets		
Goodwill	55,188	53,773
Trademarks and other intangible assets, net	<u>31,572</u>	<u>30,988</u>
Net goodwill and other intangible assets	<u>\$86,760</u>	<u>\$84,761</u>



# Presentation

Real  
World

## OWENS-ILLINOIS, INC. Balance Sheet (partial) (in millions)

Property, plant, and equipment			
Timberlands, at cost, less accumulated depletion		\$ 95.4	
Buildings and equipment, at cost	\$2,207.1		
Less: Accumulated depreciation	<u>1,229.0</u>	<u>978.1</u>	
Total property, plant, and equipment			\$1,073.5
Intangibles			
Patents			<u>410.0</u>
Total			\$1,483.5

### Illustration 9-23

Owens-Illinois' presentation of property, plant, and equipment, and intangible assets



# Analysis

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**Illustration:** P&G's net sales for 2013 were \$84,167 million. Its total ending assets were \$139,263 million, and beginning assets were \$132,244 million.

Illustration 9-25  
Asset turnover formula and computation

Net Sales	÷	Average Total Assets	=	Asset Turnover
\$84,167	÷	$\frac{\$132,244 + \$139,263}{2}$	=	.62 times

Each dollar invested in assets produced \$0.62 in sales. If a company is using its assets efficiently, each dollar of assets will create a high amount of sales.

**DO IT!**

**5**

## Asset Turnover

Paramour Company reported net income of \$180,000, net sales of \$420,000, and had total assets of \$460,000 on January 1, 2017, and total assets on December 31, 2017, of \$540,000 billion. Determine Paramour's asset turnover for 2017.

### Solution

The asset turnover for Paramour Company is computed as follows.

$$\begin{array}{rclcl} \text{Net Sales} & \div & \text{Average Total Assets} & = & \text{Asset Turnover} \\ \$420,000 & \div & \frac{\$460,000 + \$540,000}{2} & = & .84 \end{array}$$

- ◆ Ordinarily, companies record a gain or loss on the exchange of plant assets.
- ◆ Most exchanges have **commercial substance**.
- ◆ **Commercial substance** if the future cash flows change as a result of the exchange.

# Loss Treatment

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**Illustration:** Roland Company exchanged used trucks (cost \$64,000 less \$22,000 accumulated depreciation) plus cash of \$17,000 for a new semi-truck. The used trucks had a fair market value of \$26,000.

Illustration 9A-  
1 & 9A-2

Cost of used trucks	\$64,000
Less: Accumulated depreciation	22,000
Book value	<u>42,000</u>
Fair market value of used trucks	<u>26,000</u>
<b>Loss on disposal of plant assets</b>	<b><u>\$16,000</u></b>
Fair market value of used trucks	\$26,000
Cash paid	17,000
Cost of new truck	<u>\$43,000</u>

# Loss Treatment

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**Illustration:** Roland Co. exchanged old trucks (cost \$64,000 less \$22,000 accumulated depreciation) plus cash of \$17,000 for a new semi-truck. The old trucks had a fair market value of \$26,000.

Prepare the entry to record the exchange of assets by Roland Co.

Equipment (new)	43,000	
Accumulated Depreciation (old)	22,000	
Loss on Disposal of Plant Assets	16,000	
Equipment (old)		64,000
Cash		17,000

# Gain Treatment

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**Illustration:** Mark Express Delivery trades its old delivery equipment (cost \$40,000 less \$28,000 accumulated depreciation) for new delivery equipment. The old equipment had a fair market value of \$19,000. Mark also paid \$3,000.

Cost of old equipment	\$40,000
Less: Accumulated depreciation	28,000
Book value	<u>12,000</u>
Fair market value of old equipment	<u>19,000</u>
<b>Gain on disposal of plant assets</b>	<b><u>\$ 7,000</u></b>
Fair market value of old equipment	\$19,000
Cash paid	<u>3,000</u>
Cost of new equipment	<u>\$22,000</u>

Illustration  
9A-3 & 9A-4

# Gain Treatment

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**Illustration:** Mark Express Delivery trades its old delivery equipment (cost \$40,000 less \$28,000 accumulated depreciation) for new delivery equipment. The old equipment had a fair market value of \$19,000. Mark also paid \$3,000.

Prepare the entry to record the exchange of assets by Mark Express.

Equipment (new)	22,000	
Accumulated Depreciation (old)	28,000	
Equipment (old)		40,000
Gain on Disposal of Plant Assets		7,000
Cash		3,000



# A Look at IFRS

## LEARNING OBJECTIVE

7

Compare the accounting for long-lived assets under GAAP and IFRS.

## Key Points

### Similarities

- ◆ The definition for plant assets for both **IFRS** and **GAAP** is essentially the same.
- ◆ Both **IFRS** and **GAAP** follow the historical cost principle when accounting for property, plant, and equipment at date of acquisition. Cost consists of all expenditures necessary to acquire the asset and make it ready for its intended use.





# A Look at IFRS

## Key Points

### Similarities

- ◆ Under both IFRS and GAAP, interest costs incurred during construction are capitalized. Recently, IFRS converged to GAAP requirements in this area.
- ◆ IFRS also views depreciation as an allocation of cost over an asset's useful life. IFRS permits the same depreciation methods (e.g., straight-line, accelerated, and units-of-activity) as GAAP.
- ◆ Under both GAAP and IFRS, changes in the depreciation method used and changes in useful life are handled in current and future periods. Prior periods are not affected. GAAP recently conformed to international standards in the accounting for changes in depreciation methods.



# A Look at IFRS

## Key Points

### Similarities

- ◆ The accounting for subsequent expenditures (such as ordinary repairs and additions) are essentially the same under IFRS and GAAP.
- ◆ The accounting for plant asset disposals is essentially the same under IFRS and GAAP.
- ◆ Initial costs to acquire natural resources are essentially the same under IFRS and GAAP.
- ◆ The definition of intangible assets is essentially the same under IFRS and GAAP.



# A Look at IFRS

## Key Points

### Similarities

- ◆ The accounting for exchanges of nonmonetary assets has recently converged between IFRS and GAAP. GAAP now requires that gains on exchanges of nonmonetary assets be recognized if the exchange has commercial substance. This is the same framework used in IFRS.

### Differences

- ◆ IFRS uses the term residual value rather than salvage value to refer to an owner's estimate of an asset's value at the end of its useful life for that owner.



# A Look at IFRS

## Key Points

### Differences

- ◆ IFRS allows companies to revalue plant assets to fair value at the reporting date. Companies that choose to use the revaluation framework must follow revaluation procedures. If revaluation is used, it must be applied to all assets in a class of assets. Assets that are experiencing rapid price changes must be revalued on an annual basis, otherwise less frequent revaluation is acceptable.
- ◆ IFRS requires component depreciation. Component depreciation specifies that any significant parts of a depreciable asset that have different estimated useful lives should be separately depreciated. Component depreciation is allowed under GAAP but is seldom used.



# A Look at IFRS

## Key Points

### Differences

- ◆ As in GAAP, under IFRS the costs associated with research and development are segregated into the two components. Costs in the research phase are always expensed under both IFRS and GAAP. Under IFRS, however, costs in the development phase are capitalized as Development Costs once technological feasibility is achieved.
- ◆ IFRS permits revaluation of intangible assets (except for goodwill). GAAP prohibits revaluation of intangible assets.



# A Look at IFRS

## Looking to the Future

The IASB and FASB have identified a project that would consider expanded recognition of internally generated intangible assets. IFRS permits more recognition of intangibles compared to GAAP.



## A Look at IFRS

### IFRS Self-Test Questions

Which of the following statements is correct?

- a) Both IFRS and GAAP permit revaluation of property, plant, and equipment and intangible assets (except for goodwill).
- ➔ b) IFRS permits revaluation of property, plant, and equipment and intangible assets (except for goodwill).
- c) Both IFRS and GAAP permit revaluation of property, plant, and equipment but not intangible assets.
- d) GAAP permits revaluation of property, plant, and equipment but not intangible assets.



## IFRS Self-Test Questions

Research and development costs are:

- ➡ a) expensed under GAAP.
- b) expensed under IFRS.
- c) expensed under both GAAP and IFRS.
- d) None of the above.





## IFRS Self-Test Questions

Under IFRS, value-in-use is defined as:

- a) net realizable value.
- b) fair value.
- ➡ c) future cash flows discounted to present value.
- d) total future undiscounted cash flows.