After studying this chapter, you should be able to:

1. Describe how the cost principle applies to plant assets.
2. Explain the concept of depreciation.
3. Compute periodic depreciation using different methods.
4. Describe the procedure for revising periodic depreciation.
5. Distinguish between revenue and capital expenditures, and explain the entries for these expenditures.
6. Explain how to account for the disposal of a plant asset.
7. Compute periodic depletion of natural resources.
8. Explain the basic issues related to accounting for intangible assets.
9. Indicate how plant assets, natural resources, and intangible assets are reported and analyzed

**PLANT ASSETS**

- Plant assets
  - tangible resources used in the operations of a business
  - not intended for sale to customers
- Plant assets are subdivided into four classes:
  1. Land
  2. Land improvements
  3. Buildings
  4. Equipment

![Plant assets as a percentage of total assets chart]
DETERMINING THE COST OF PLANT ASSETS (Study Objective 1)

- Plant assets are recorded at cost in accordance with the cost principle.
- Cost
  - consists of all expenditures necessary to acquire the asset and make it ready for its intended use
  - includes purchase price, freight costs, and installation costs
- Expenditures that are not necessary
  - recorded as expenses, losses, or other assets

LAND

- The cost of Land includes:
  1. cash purchase price
  2. closing costs such as title and attorney’s fees
  3. real estate brokers’ commissions
  4. accrued property taxes and other liens on the land assumed by the purchaser, for example:
     a. Permits from government agencies
     b. Broker’s commissions
     c. Title fees
     d. Surveying fees
     e. Delinquent real estate taxes
     f. Razing or removing unwanted buildings, less any salvage
     g. Grading and leveling
     h. Paving a public street bordering the land
- All necessary costs incurred to make land ready for its intended use are debited to the Land account.

COMPUTATION OF COST OF LAND

Sometimes purchased land has a building on it that must be removed before construction of a new building. In this case, all demolition and removal costs, less any proceeds from salvaged materials are debited to the Land account.

<table>
<thead>
<tr>
<th>Land</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash price of property</td>
</tr>
<tr>
<td>Net removal cost of warehouse</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td>Attorney’s fee</td>
</tr>
<tr>
<td>Real estate broker’s commission</td>
</tr>
<tr>
<td>Cost of land</td>
</tr>
</tbody>
</table>

**LAND IMPROVEMENTS**

The cost of land improvements includes: all expenditures needed to make the improvements ready for their intended use such as:

1. Parking lots
2. Fencing
3. Lighting

**BUILDINGS**

- The cost
  - Includes all necessary expenditures relating to the purchase or construction of a building:
    - Costs include the purchase price, closing costs, and broker’s commission
- Costs to make the building ready for its intended use include
  - Expenditures for remodeling and replacing or repairing the roof, floors, wiring, and plumbing
- If a new building is constructed, costs include
  - Contract price plus payments for architects’ fees, building permits, interest payments during construction, and excavation costs

**EQUIPMENT**

- Cost of equipment
  - Consists of the cash purchase price and certain related costs
  - Costs include sales taxes, freight charges, and insurance paid by the purchaser during transit
  - Includes all expenditures required in assembling, installing, and testing the unit
- Recurring costs such as licenses and insurance are expensed as incurred.
ENTRY TO RECORD PURCHASE OF MACHINERY

<table>
<thead>
<tr>
<th>Factory Machinery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash price</td>
</tr>
<tr>
<td>Sales taxes</td>
</tr>
<tr>
<td>Insurance during shipping</td>
</tr>
<tr>
<td>Installation and testing</td>
</tr>
<tr>
<td>Cost of factory machinery</td>
</tr>
</tbody>
</table>

The summary entry to record the cost of the factory machinery and related expenditures is as follows:

**Factory Machinery** 54,500
**Cash** 54,500

COMPUTATION OF COST OF DELIVERY TRUCK

The cost of equipment consists of the cash purchase price, sales taxes, freight charges, and insurance during transit paid by the purchaser. It also includes expenditures required in assembling, installing, and testing the unit. However, motor vehicle licenses and accident insurance on company cars and trucks are expensed as incurred, since they represent annual recurring events that do not benefit future periods.

**Delivery Truck**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash price</td>
<td>$ 22,000</td>
</tr>
<tr>
<td>Sales taxes</td>
<td>1,320</td>
</tr>
</tbody>
</table>
Painting and lettering  500
Cost of delivery truck  $23,820

Cost of Acquiring Fixed Assets Excludes:

- Vandalism
- Mistakes in installation
- Uninsured theft
- Damage during unpacking and installing
- Fines for not obtaining proper permits from government agencies

Classifying Costs

Is the purchased item long-lived?

NO ➔ Expense

YES ➔ Is the asset used in a productive purpose?

  If YES ➔ Fixed Assets
  If NO ➔ Investment property

REVENUE EXPENDITURES: Normal and ordinary repairs and maintenance

CAPITAL EXPENDITURES:

  1) Additions
  2) Improvements
  3) Extraordinary repairs
LEASING FIXED ASSETS:

A **capital lease** is accounted for as if the lessee has, in fact, purchased the asset. The asset is then amortized over the life of the capital lease.

A lease that is not classified as a capital lease for accounting purposes is classified as an **operating lease** (an operating leases is treated as an expense).

**DEPRECIATION (Study Objective 2)**

- **Depreciation:**
  Allocation of the cost of a plant asset to expense over its useful (service) life in a rational and systematic manner.

- **Cost allocation:**
  Provides for the proper matching of expenses with revenues in accordance with the matching principle.

- **Usefulness may decline because of wear and tear or obsolescence.**

- **Depreciation does not result in an accumulation of cash for the replacement of the asset.**

- **Land is the only plant asset that is not depreciated**

**FACTORS IN COMPUTING DEPRECIATION**

Three factors that affect the computation of depreciation are:
1. Cost: all expenditures necessary to acquire the asset and make it ready for intended use
2. Useful life: estimate of the expected life based on need for repair, service life, and vulnerability to obsolescence
3. Salvage value: estimate of the asset’s value at the end of its useful life

DEPRECIATION

USE OF DEPRECIATION METHODS IN 600 LARGE U.S. COMPANIES (Study Objective 3)

Three methods of recognizing depreciation are: 1 Straight-line, 2 Units of activity, and 3 Declining-balance. Each method is acceptable under generally accepted accounting principles. Management selects the method that is appropriate in the circumstances. Once a method is chosen, it should be applied consistently.
DELIVERY TRUCK DATA

Compare the three depreciation methods, using the following data for a small delivery truck purchased by Barb’s Florists on January 1, 2005.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>$13,000</td>
</tr>
<tr>
<td>Expected salvage value</td>
<td>$1,000</td>
</tr>
<tr>
<td>Estimated useful life in years</td>
<td>5</td>
</tr>
<tr>
<td>Estimated useful life in miles</td>
<td>100,000</td>
</tr>
</tbody>
</table>

STRAIGHT-LINE

- Straight-line method
  - Depreciation is the same for each year of the asset’s useful life.
  - It is measured solely by the passage of time.
- It is necessary to determine depreciable cost.
- Depreciable cost
  - Total amount subject to depreciation and is computed as follows:
- Cost of asset - salvage value

FORMULA FOR STRAIGHT-LINE METHOD

The formula for computing annual depreciation expense is: Depreciable Cost / Useful Life (in years) = Depreciation Expense

\[
\text{Depreciable Cost} = \text{Cost} - \text{Salvage Value}
\]

\[
\text{Annual Depreciation Expense} = \frac{\text{Depreciable Cost}}{\text{Useful Life (in Years)}}
\]

\[
\begin{align*}
\text{Depreciable Cost} & = \$13,000 - \$1,000 = \$12,000 \\
\text{Annual Depreciation Expense} & = \frac{\$12,000}{5} = \$2,400
\end{align*}
\]
UNITS-OF-ACTIVITY

- Useful life = total units of production or total expected use expressed in hours, miles, etc.
- Depreciable Cost ÷ Total Units of Activity = Depreciation Cost per Unit
- Depreciation Cost per Unit X Units of Activity During the Year = Annual Depreciation Expense → It is often difficult to make a reasonable estimate of total activity.
- When productivity varies from one period to another, this method results in the best matching of expenses with revenues.

FORMULA FOR UNITS-OF-ACTIVITY METHOD

To use the units-of-activity method, 1) the total units of activity for the entire useful life are estimated, 2) the amount is divided into depreciable cost to determine the depreciation cost per unit, and 3) the depreciation cost per unit is then applied to the units of activity during the year to determine the annual depreciation.

$\text{Depreciable Cost} \div \text{Total Units of Activity} = \text{Depreciation Cost per Unit}$

$\frac{\$12,000}{100,000 \text{ miles}} = \$0.12$

$\text{Depreciable Cost per Unit} \times \text{Units of Activity during the Year} = \text{Annual Depreciation Expense}$

$\$0.12 \times 15,000 \text{ miles} = \$1,800$

DECLINING-BALANCE

- Decreasing annual depreciation expense over the asset's useful life
- Periodic depreciation is based on a *declining book value
  - (cost - accumulated depreciation)
To compute annual depreciation expense
  - Multiply the book value at the beginning of the year by the declining-balance depreciation rate
- Depreciation rate remains constant from year to year
  - book value declines each year
- Book value for the first year is the cost of the asset.
  - Balance in accumulated depreciation at the beginning of the asset's useful life is zero
- In subsequent years, book value is the difference between cost and accumulated depreciation at the beginning of the year.
- Formula for computing depreciation expense:
  - Book Value at Beginning of Year x Declining Balance Rate = Annual Depreciation Expense
    - Method compatible with the matching principle the higher depreciation in early years is matched with the higher benefits received in these years.

FORMULA FOR DECLINING-BALANCE METHOD

Unlike the other depreciation methods, salvage value is ignored in determining the amount to which the declining balance rate is applied.

A common application of the declining-balance method is the double-declining-balance method, in which the declining-balance rate is double the straight-line rate.

If Barb's Florists uses the double-declining-balance method, the depreciation is 40% (2 X the straight-line rate of 20%).

\[
\text{Depreciable Cost per Unit} \times \text{Units of Activity during the Year} = \text{Annual Depreciation Expense}
\]

\[
$13,000 \times 40\% = $5,200
\]

PATTERNS OF DEPRECIATION

![Depreciation Expense Chart](chart.png)
REVISING PERIODIC DEPRECIATION (STUDY OBJECTIVE 4)

- Changes should be made
  - Excessive wear and tear or obsolescence indicate that annual depreciation estimates are inadequate.
- When a change is made
  - No correction of previously recorded depreciation expense
  - Depreciation expense for current and future years is revised
- To determine the new annual depreciation expense
  - The depreciable cost at the time of the revision is divided by the remaining useful life.

REVISED DEPRECIATION COMPUTATION

Barb’s Florists decides on January 1, 2008, to extend the useful life of the truck one year because of its excellent condition. The company has used the straight-line method to depreciate the asset to date, and book value is $5,800 ($13,000 - $7,200). The new annual depreciation is $1,600, calculated as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book value, 1/1/08</td>
<td>$5,800</td>
</tr>
<tr>
<td>Less: Salvage value</td>
<td>1,000</td>
</tr>
<tr>
<td>Depreciable cost</td>
<td>$4,800</td>
</tr>
<tr>
<td>Remaining useful life</td>
<td>3 years  (2008-2010)</td>
</tr>
<tr>
<td>Revised annual depreciation ($4,800 ÷ 3)</td>
<td>$1,600</td>
</tr>
</tbody>
</table>

EXPENDITURES DURING USEFUL LIFE (STUDY OBJECTIVE 5)

- Ordinary repairs
expenditures to maintain the operating efficiency and productive life of the unit
such repairs are debited to Repairs Expense as incurred and are often referred to as revenue expenditures.

EXPENDITURES DURING USEFUL LIFE

- Capital expenditures
- Additions and improvements
  increases the operating efficiency, productive capacity, or useful life of a plant asset
  1. Usually material in amount and occur infrequently.
  2. Increase the company’s investment in productive facilities. Debit the plant asset affected.

PLANT ASSET DISPOSALS (STUDY OBJECTIVE 6)

- Retirement
  - Plant asset is scrapped or discarded.
  - Eliminate the book value of the plant asset at the date of sale by debiting accumulated depreciation and crediting the asset account for its cost.
  - Debit cash to record the cash proceeds from the sale.
  - Compute gain or loss.
- If the cash proceeds > the book value
  - Recognize a gain by crediting gain on disposal for the difference.
- If the cash proceeds are < the book value
  - Recognize a loss by debiting loss on disposal for the difference.

PLANT ASSET DISPOSALS

GAIN ON DISPOSAL

On July 1, 2005, Wright Company sells office furniture for $16,000 cash. Original cost was $60,000 and as of January 1, 2005, had accumulated depreciation of $41,000.
Depreciation for the first 6 months of 2005 is $8,000. The entry to record depreciation expense and update accumulated depreciation to July 1 is as follows:

\[
\begin{align*}
&\text{Depreciation Expense} & & 8,000 \\
&\text{Accumulated Depreciation} & & 8,000
\end{align*}
\]

After the accumulated depreciation is updated, a gain on disposal of $5,000 is computed:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of office furniture</td>
<td>$ 60,000</td>
</tr>
<tr>
<td>Less: Accumulated depreciation ($41,000 + $8,000)</td>
<td>49,000</td>
</tr>
<tr>
<td>Book value at date of disposal</td>
<td>11,000</td>
</tr>
<tr>
<td>Proceeds from sale</td>
<td>16,000</td>
</tr>
<tr>
<td>Gain on disposal</td>
<td>$ 5,000</td>
</tr>
</tbody>
</table>

The entry to record the sale and the gain on disposal is as follows:

\[
\begin{align*}
&\text{Cash} & & 16,000 \\
&\text{Accumulated Depr.-Office Furniture} & & 49,000 \\
&\text{Office Furniture} & & 60,000 \\
&\text{Gain on Disposal} & & 5,000
\end{align*}
\]

**LOSS ON DISPOSAL**

Instead of selling the office furniture for $16,000, Wright sells it for $9,000. In this case, a loss of $2,000 is computed:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of office furniture</td>
<td>$ 60,000</td>
</tr>
<tr>
<td>Less: Accumulated depreciation ($41,000 + $8,000)</td>
<td>49,000</td>
</tr>
<tr>
<td>Book value at date of disposal</td>
<td>11,000</td>
</tr>
</tbody>
</table>
Proceeds from sale | 9,000
---|---
Loss on disposal | $ 2,000

The entry to record the sale and the loss on disposal is as follows:

Cash | 9,000
Accumulated Depr.-Office Furniture | 49,000
Loss on Disposal | 2,000
Office Furniture | 60,000

**NATURAL RESOURCES (STUDY OBJECTIVE 7)**

- Natural resources consists of standing timber and underground deposits of oil, gas, and minerals
- These long-lived productive assets have two distinguishing characteristics:
  1. They are physically extracted in operations.
  2. They are replaceable only by an act of nature

**DEPLETION**

- Allocation of the cost of natural resources to expense in a rational and systematic manner over the resource’s useful life.
- Units-of-activity method is generally used to compute depletion.
- Depletion generally is a function of the units extracted during the year

**FORMULA TO COMPUTE DEPLETION EXPENSE**

\[
\frac{\text{Total Cost minus Salvage Value}}{\text{Total Estimated Units}} = \frac{\text{Depletion Cost per Unit}}{\text{Number of Units Extracted and Sold}} = \text{Annual Depletion Expense}
\]

Helpful hint: This computation for depletion is similar to the computation for depreciation using the units-of-activity method of depreciation.
RECORDING DEPLETION
The Lane Coal Company invests $5 million in a mine estimated to have 10 million tons of coal and no salvage value. In the first year, 800,000 tons of coal are extracted and sold. Using the formulas, the calculations are as follows:

$5,000,000 ÷ 10,000,000 = $.50 depletion cost per ton

$.50 X 800,000 = $400,000 depletion expense

The entry to record depletion expense for the first year of operations is as follows:

Depletion Expense 400,000
Accumulated Depletion 400,000

STATEMENT PRESENTATION OF ACCUMULATED DEPLETION
Accumulated Depletion is a contra asset account similar to accumulated depreciation. It is deducted from the cost of the natural resource in the balance sheet as follows:

Lane Coal Company
Balance Sheet (partial)

<table>
<thead>
<tr>
<th>Coal mine</th>
<th>$5,000,00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Less: Accumulated depletion</td>
<td>400,000</td>
</tr>
<tr>
<td></td>
<td>$4,600,00</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

INTANGIBLE ASSETS (Study Objective 8)

- Intangible assets
  - Rights, privileges, and competitive advantages that result from the ownership of long lived assets that do not possess physical substance
  - May arise from government grants, acquisition of another business, and private monopolistic arrangements
ACCOUNTING FOR INTANGIBLE ASSETS

- In general, accounting for intangible assets parallels the accounting for plant assets.
- Intangible assets are:
  1. Recorded at cost
  2. Written off over useful life in a rational and systematic manner
  3. At disposal, book value is eliminated and gain or loss, if any, is recorded
- Key differences between accounting for intangible assets and accounting for plant assets include:
  o The systematic write-off of an intangible asset is referred to as amortization
- To record amortization
  o Debit Amortization Expense and credit the specific intangible asset
  o Intangible assets typically amortized on a straight-line basis

PATENTS

- A patent
  o Exclusive right issued by the patent office
  o Manufacture, sell, or otherwise control an invention for a period of 20 years from the date of grant
- Cost of a patent
  o Initial cost is the cash or cash equivalent price paid to acquire the patent
  o Legal costs – amount an owner incurs in successfully defending a patent are added to the patent account and amortized over the remaining useful life of the patent
  o Should be amortized over its 20-year legal life or its useful life, whichever is shorter.

RECORDING PATENTS

National Labs purchases a patent at a cost of $60,000. If the useful life of the patent is 8 years, the annual amortization expense is $7,500 ($60,000 ÷ 8).

Amortization Expense is classified as an operating expense in the income statement. The entry to record the annual patent amortization is:

<table>
<thead>
<tr>
<th>Account</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amortization Expense</td>
<td>7,500</td>
</tr>
<tr>
<td>Patents</td>
<td>7,500</td>
</tr>
</tbody>
</table>

COPYRIGHTS
Copyrights
- Grants from the federal government
  - Gives the owner the exclusive right to reproduce and sell an artistic or published work
- Copyrights extend for the life of the creator plus 70 years.
- The cost of a copyright is the cost of acquiring and defending it.

TRADEMARKS AND TRADE NAMES
- A trademark or trade name is word, phrase, jingle or symbol identifying a particular enterprise or product
- Trademark or trade name purchased: the cost is purchase price
- Trademark developed by a company: the cost includes attorney’s fees, registration fees, design costs and successful legal defense fees

FRANCHISES AND LICENSES
- Franchise
  - Contractual arrangement under which the franchisor grants the franchisee the right to sell certain products, render specific services, or use certain trademarks or trade names, usually restricted to a designated geographical area
  - Another type of franchise, commonly referred to as a license or permit
    - Entered into between a governmental body and a business enterprise and permits the enterprise to use public property in performing its services.

GOODWILL
- Value of all favorable attributes that relate to a business enterprise
- Attributes may include exceptional management, desirable location, good customer relations and skilled employees
- Cannot be sold individually in the marketplace; it can be identified only with the business as a whole

Goodwill
- Recorded only when a transaction involves the purchase of an entire business
- Excess of cost over the fair market value of the net assets (assets less liabilities) acquired
- Not amortized
- Reported under intangible assets

RESEARCH AND DEVELOPMENT COSTS
- Research and development costs
  - Pertain to expenditures incurred to develop new products and processes
- These costs are not intangible costs
  - Recorded as an expense when incurred

## FINANCIAL STATEMENT PRESENTATION (STUDY OBJECTIVE 9)

- Plant assets and natural resources
  - Under “property, plant, and equipment” in the balance sheet
  - Major classes of assets, such as land, buildings, and equipment, and accumulated depreciation by major classes or in total should be disclosed
  - Depreciation and amortization methods that were used should be described. Finally, the amount of depreciation and amortization expense for the period should be disclosed
- Intangibles are shown separately under intangible assets

### LANDS’ END’S PRESENTATION OF PROPERTY, PLANT, AND EQUIPMENT, AND INTANGIBLES

The financial statement presentation of property, plant, and equipment by Lands’ End in its 2005 balance sheet is quite brief, as shown below:

<table>
<thead>
<tr>
<th>Balance Sheet - Partial</th>
<th>Jan. 28, 2005</th>
<th>Jan. 29, 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Property, plant and equipment, at costs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land and buildings</td>
<td>102,776</td>
<td>102,018</td>
</tr>
<tr>
<td>Fixtures and equipment</td>
<td>175,910</td>
<td>154,663</td>
</tr>
<tr>
<td>Leasehold improvements</td>
<td>4,453</td>
<td>5,475</td>
</tr>
<tr>
<td><strong>Total property, plant and equipment</strong></td>
<td>283,139</td>
<td>262,156</td>
</tr>
<tr>
<td>Less: accumulated depr. and amort.</td>
<td>117,317</td>
<td>101,570</td>
</tr>
<tr>
<td><strong>Property, plant and equipment, net</strong></td>
<td>165,822</td>
<td>160,586</td>
</tr>
<tr>
<td><strong>Intangibles, net</strong></td>
<td>966</td>
<td>1,030</td>
</tr>
</tbody>
</table>

The notes to Lands’ End financial statements present greater details, namely, that “intangibles” contains goodwill and trademarks…

### PRESENTATION OF PROPERTY, PLANT, AND EQUIPMENT AND INTANGIBLE ASSETS

A more comprehensive presentation of property, plant, and equipment is excerpted from the balance sheet of Owens-Illinois and shown below.
EXCHANGES OF PLANT ASSETS

- Exchanges
  - Can be for similar or dissimilar assets
  - For similar assets, the new asset performs the same function as the old asset
- Necessary to determine two things:
  1. The cost of the asset acquired
  2. The gain or loss on the asset given up

LOSS TREATMENT

- Losses on exchange of similar assets
  Recognized immediately
- Cost of the new asset received
  Equal to the fair market value of the old asset exchanged plus any cash or other consideration given up
- Losses result when the book value is greater than the fair market value of the asset given up

COMPUTATION OF COST OF NEW OFFICE EQUIPMENT

Roland Company exchanges old office equipment for new similar office equipment. The book value of the old office equipment is $26,000 ($70,000 cost less $44,000 accumulated depreciation), AND its fair market value is $10,000, and $81,000 of cash is paid. The cost of the new office equipment, $91,000, is calculated as follows:

| Fair market value of old office equipment | $ 10,000 |
Cash 81,000
Cost of new office equipment $ 91,000

**COMPUTATION OF LOSS ON DISPOSAL**

Through this exchange, a loss on disposal of $16,000 is incurred. A loss results when the book value is greater than the fair market value of the asset given up. The calculation is as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book value of old office equipment ($70,000 — $44,000)</td>
<td>$ 26,000</td>
</tr>
<tr>
<td>Fair market value of old office equipment</td>
<td>10,000</td>
</tr>
<tr>
<td>Loss on disposal</td>
<td>$ 16,000</td>
</tr>
</tbody>
</table>

In recording the exchange at a loss three steps are required: 1) eliminate the book value of the asset given up, 2) record the cost of the asset acquired, and 3) recognize the loss on disposal.

Office Equipment (new) 91,000
Accumulated Depreciation-Office Equipment 44,000
Loss on Disposal 16,000
Office Equipment (old) 70,000
Cash 81,000

**GAIN TREATMENT**

- Gains of similar assets not recognized immediately, but, are deferred by reducing the cost basis of the new asset
- Cost of the new asset fair market value of the old asset exchanged plus any cash or other consideration given up
- Gains result when the fair market value is greater than the book value of the asset given up

**COST OF NEW EQUIPMENT (BEFORE DEFERRAL OF GAIN)**
Mark’s Express Delivery exchanges old delivery equipment plus $3,000 cash for new delivery equipment. The book value of the old delivery equipment is $12,000 ($40,000 cost less $28,000 accumulated depreciation), its fair market value is $19,000. The cost of the new delivery equipment, $22,000, is calculated as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fair market value of old delivery equipment</td>
<td>$19,000</td>
</tr>
<tr>
<td>Cash</td>
<td>3,000</td>
</tr>
<tr>
<td>Cost of new delivery equipment (before deferral of gain)</td>
<td>$22,000</td>
</tr>
</tbody>
</table>

**COMPUTATION OF GAIN ON DISPOSAL**

For Mark’s Express Delivery, there is a gain of $7,000, calculated as follows, on the disposal:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fair market value of old delivery equipment</td>
<td>$19,000</td>
</tr>
<tr>
<td>Book value of old delivery equipment ($40,000 – $28,000)</td>
<td>12,000</td>
</tr>
<tr>
<td>Gain on disposal</td>
<td>$7,000</td>
</tr>
</tbody>
</table>

**COST OF NEW DELIVERY EQUIPMENT (AFTER DEFERRAL OF GAIN)**

The $7,000 gain on disposal is then offset against the $22,000 cost of the new delivery equipment. The result is a $15,000 cost of the new delivery equipment, after deferral of the gain.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of new delivery equipment (before deferral of gain)</td>
<td>$22,000</td>
</tr>
<tr>
<td>Less: Gain on disposal</td>
<td>7,000</td>
</tr>
<tr>
<td>Cost of new delivery equipment (after deferral of gain)</td>
<td>$15,000</td>
</tr>
</tbody>
</table>
The entry to record the exchange is as follows:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery Equipment (new)</td>
<td>15,000</td>
</tr>
<tr>
<td>Accumulated Depreciation - Delivery Equipment (old)</td>
<td>28,000</td>
</tr>
<tr>
<td>Delivery Equipment (old)</td>
<td>40,000</td>
</tr>
<tr>
<td>Cash</td>
<td>3,000</td>
</tr>
</tbody>
</table>

ACCOUNTING RULES FOR PLANT EXCHANGES

<table>
<thead>
<tr>
<th>Type of Event</th>
<th>Recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss</td>
<td>Recognize immediately by debiting Loss on Disposal</td>
</tr>
<tr>
<td>Gain</td>
<td>Defer and reduce cost of new asset</td>
</tr>
</tbody>
</table>

REVIEW

1. Depreciation is a process of:
   a. valuation.
   b. cost allocation.
   c. cash accumulation.
   d. appraisal.

2. In exchanges of similar assets:
   a. Neither gains nor losses are recognized immediately.
   b. Gains, but not losses, are recognized immediately.
   c. Losses, but not gains, are recognized immediately.
   d. Both gains and losses are recognized immediately.

3. Manu Company, a furniture wholesale, acquired new equipment at a cost of Rp150,000,000.00 at the beginning of the fiscal year. The equipment has an estimated life of 5 years and estimated residual value or salvage value of Rp12,000,000.00. Ella Manu, the president, has requested information regarding alternative depreciation methods.

   Instructions:
   1. Determine the annual depreciation for each of the 5 years of estimated useful life of the equipment, the accumulated depreciation at the end of each year, and the book value of the equipment at the end of each year by (a) a straight-line method and (b) the double-declining-balance method
   2. Assume that the equipment was depreciated under the double-declining-balance method. In the first week of the fifth year, the equipment was traded
in for similar equipment priced at Rp175.000.000,00. The trade-in allowance on the old equipment was Rp10.000.000,00 and cash was paid for the balance. Journalize the entry to record the exchange.

Reference

Weigandt, Jerry J., Donald E. Kieso, Paul D. Kimmel  *Accounting Principle*, 8th Ed. New York: John Willey and Sons, Inc. (W)

Reeve, James M, Caarl S. Waren and Jonathan E. Duchac.  
Principles of Accounting. Singapore: Cengage Learning Asia Pte Ltd. (R)