

Ch 10 & 11

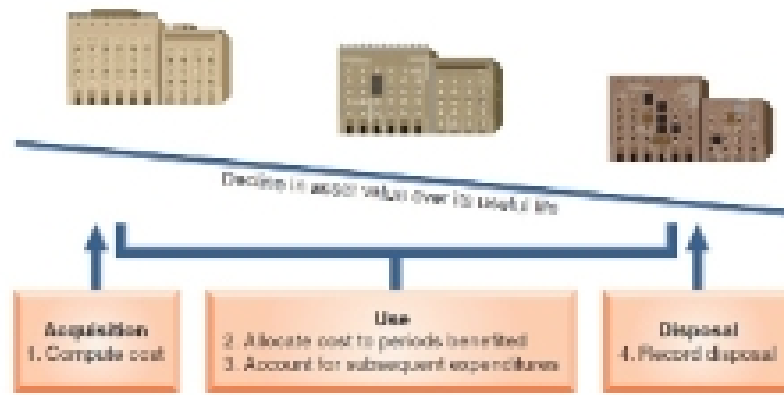
Plant Assets

Tangible in Nature

Actively Used in Operations

Expected to Benefit Future Periods

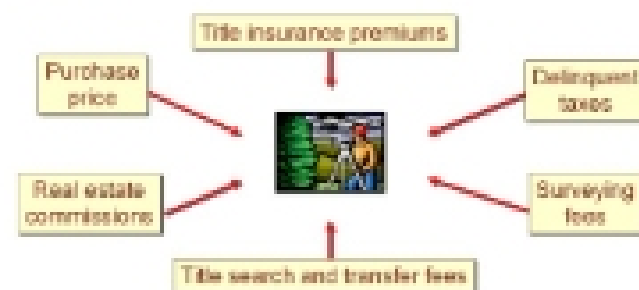
Called Property, Plant & Equip



Cost Determination



Land



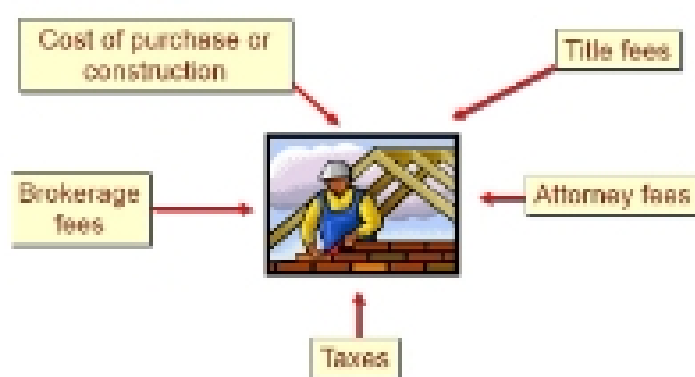
Not Depreciable

Land Improvements

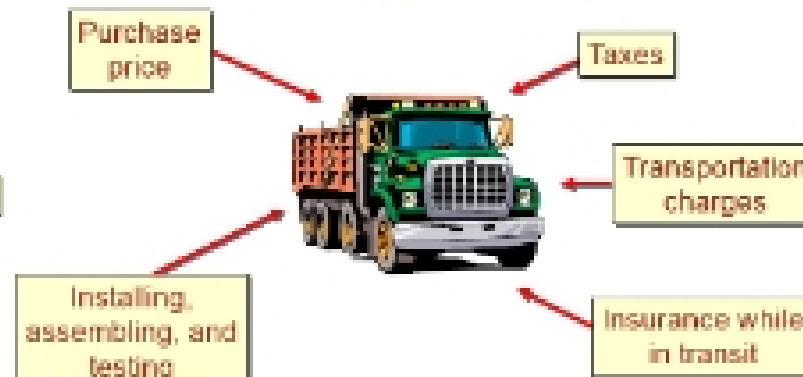
Parking lots, driveways, fences, walks, shrubs & lighting systems

Depreciate over useful life of improvements

Buildings



Machinery & Equip



Lump Sum Asset Purchase

Total cost of a combined purchase of land & building is separated on the basis of their relative fair market values

Ex) CarMax paid \$90,000 cash to acquire a group of items consisting of land appraised at \$30,000, land improvements at \$10,000, and a building at \$60,000. The \$90,000 cost will be allocated on the basis of appraised values as shown.

	Appraised Value	Percent of Total	Apportioned Cost
Land	\$ 30,000	30% (\$30,000/\$100,000)	\$27,000 (\$90,000 × 30%)
Land Improvements	10,000	10 (\$10,000/\$100,000)	9,000 (\$90,000 × 10%)
Building	60,000	60 (\$60,000/\$100,000)	54,000 (\$90,000 × 60%)
Totals	\$100,000	100%	\$ 90,000

Depreciation

: process of allocating the cost of a plant asset to expense in the accounting periods benefiting from its use

Calculation requires 3 amounts for each asset

- Cost
- Salvage value
- Useful life



Depreciation Methods

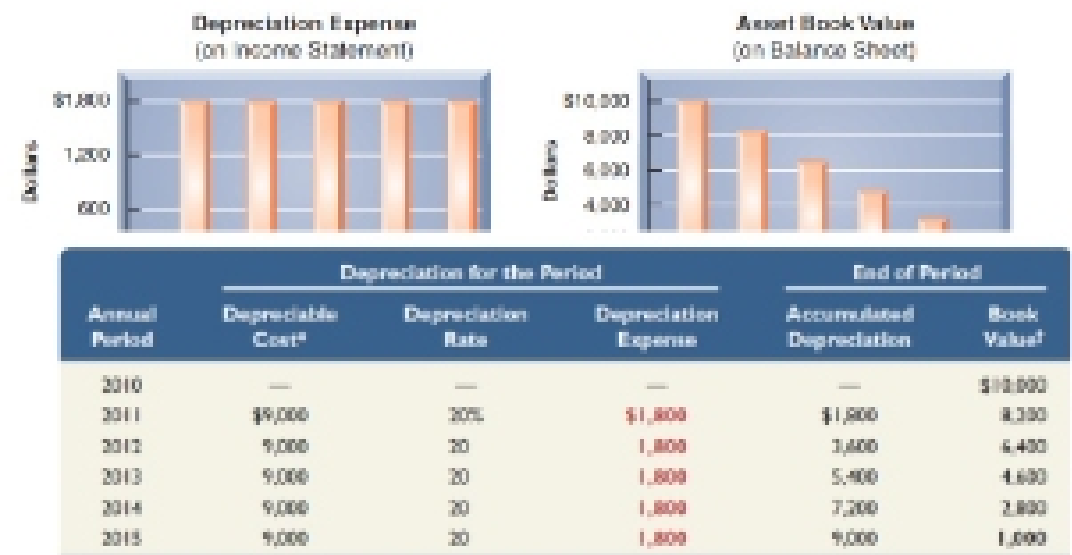
1. Straight line

Cost	\$10,000
Salvage value	1,000
Depreciable cost	\$ 9,000
Useful life	
Accounting periods	5 years
Units inspected	30,000 shoes

$$\frac{\text{Cost} - \text{Salvage value}}{\text{Useful life in periods}} = \frac{\$10,000 - \$1,000}{5 \text{ years}} = \$1,800 \text{ per year}$$

Dec. 31	Depreciation Expense	1,800	
	Accumulated Depreciation—Machinery		1,800
	To record annual depreciation.		

Equipment	Accumulated Depreciation	Depreciation Expense
10,000	1,800	1,800



* \$10,000 - \$1,000. † Book value is total cost minus accumulated depreciation.

2. Units of Production

$$\text{Step 1: } \frac{\text{Depreciation}}{\text{Per Unit}} = \frac{\text{Cost} - \text{Salvage Value}}{\text{Total Units of Production}}$$

$$\text{Step 2: } \text{Depreciation Expense} = \text{Depreciation Per Unit} \times \text{Number of Units Produced in the Period}$$

Ex) Assuming 7,000 units were inspected, depreciation would be calculated as follows.

Step 1: $(9,000 / 6,000) = \$0.25/\text{unit}$

Step 2: $\$0.25 \times 7,000 = \$1,750$

Annual Period	Depreciation for the Period			End of Period	
	Number of Units	Depreciation per Unit	Depreciation Expense	Accumulated Depreciation	Book Value
2010	—	—	—	—	\$10,000
2011	7,000	\$0.25	\$1,750	\$1,750	8,250
2012	8,000	0.25	2,000	3,750	6,250
2013	9,000	0.25	2,250	6,000	4,000
2014	7,000	0.25	1,750	7,750	2,250
2015	1,000	0.25	250	9,000	1,000

red box is # of units produced & sold during the period

3. Double Declining balance

Step 1
Straight-line rate = 100% ÷ Useful life = 100% ÷ 5 years = 20%

Step 2
Double-declining-balance rate = 2 × Straight-line rate = 2 × 20% = 40%

Step 3
Depreciation expense = Double-declining-balance rate × Beginning-period book value
40% × \$10,000 = \$4,000

Equipment	Accumulated Depr.	Depreciation expense
10,000	4,000	4,000

Year 2: still 40% but have to decline the basis so instead of 10k we use 6k
40% x (10k-4k)= 6k

Annual Period	Depreciation for the Period			End of Period	
	Beginning of Period Book Value	Depreciation Rate	Depreciation Expense	Accumulated Depreciation	Book Value
2010	—	—	—	—	\$10,000
2011	\$10,000	40%	\$4,000	\$4,000	6,000
2012	6,000	40%	2,400	6,400	3,600
2013	3,600	40%	1,440	7,840	2,160
2014	2,160	40%	864	8,704	1,296
2015	1,296	40%	518.4	9,222.4	1,077.6

* Year 2015 depreciation is \$1,296 - \$1,000 = \$296 (cannot depreciate book value below salvage value)

Comparing Methods

Period	Straight-Line	Units of Production	Double-Declining-Balance
2011	\$ 1,800	\$ 1,750	\$ 4,000
2012	1,800	2,000	2,400
2013	1,800	2,250	1,440
2014	1,800	1,750	864
2015	1,800	1,250	296
Totals	\$ 9,000	\$ 9,000	\$ 9,000

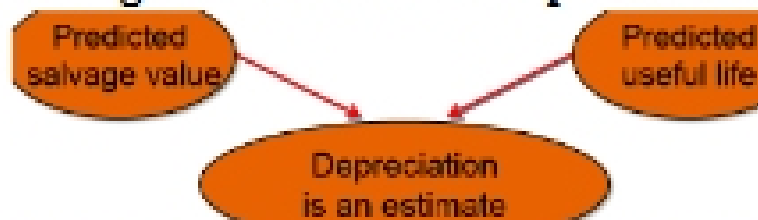
Partial Year Depreciation

When a plant asset is acquired during the year, depreciation is calculated for that time

Ex) Machinery was purchased on Oct 8 2013. Calculate depreciation expense for 2013 using straight line method.

$$\frac{\$10,000 - \$1,000}{5 \text{ years}} \times \frac{3}{12} = \$450$$

Change in Estimates for Depreciation



Over an asset's life, new info may indicate that the original estimates were inaccurate

Ex) Using straight line depreciation, at the beginning of the 3rd year, book value is \$6,400 (\$10,000 cost less \$3,600 accumulated depreciation). At that time, it is determined that the machinery will have a remaining useful life of 4 years & estimated salvage value will be revised downward from \$1,000 to \$400.

$$\frac{\text{Book value} - \text{Revised salvage value}}{\text{Revised remaining useful life}} = \frac{\$6,400 - \$400}{4 \text{ years}} = \$1,500 \text{ per year}$$