

## Declining-Balance Method of Depreciation

The straight-line method of depreciation charges an equal amount of depreciation expense each year. However, many plant assets depreciate more in the early years of useful life than in later years. For example, a truck's value will decrease more in the first year than in later years. Therefore, charging more depreciation expense in the early years may be more accurate than charging the same amount each year.

Multiplying the book value by a constant depreciation rate at the end of each fiscal period is called **declining-balance method of depreciation**. The declining-balance depreciation rate is a multiple of the straight-line method rate. Many businesses use a declining-balance rate that is two times the straight-line rate. This method of depreciation is referred to as the **double declining-balance method**.

$$\begin{array}{rcl} \text{Estimated Depreciation Expense} & \div & \text{Years of Useful Life} = \text{Straight-Line Rate} \\ 100\% & \div & 5 = 20\% \end{array}$$

$$\begin{array}{rcl} \text{Straight-Line Rate} & \times & 2 = \text{Double-Declining Balance Rate} \\ 20\% & \times & 2 = 40\% \end{array}$$

Plant Asset: Truck Depreciation Method: Double-Declining Balance		Original Cost: \$25,000.00 Estimated Salvage Value: \$2,500.00 * Estimated Useful Life: 5 years		
Year	Beginning Book Value	Declining-Balance Rate	Annual Depreciation	Ending Book Value
1	\$25,000.00	40%	\$10,000.00	\$15,000.00
2	15,000.00	40%	6,000.00	9,000.00
3	9,000.00	40%	3,600.00	5,400.00
4	5,400.00	40%	2,160.00	3,240.00
5	3,240.00	--	740.00 *	2,500.00 *

Although the depreciation rate is the same each year, the annual depreciation expense declines from one year to the next. A plant asset is never depreciated below its estimated salvage value. Therefore, in the last year, only enough depreciation expense is recorded to reduce the book value of the plant asset to its salvage value.

Regardless of the depreciation method used, the total depreciation expense over the useful life of a plant asset is the same. The accounts used in the journal entries to record depreciation expense and the sale of plant assets are also the same. Each depreciation method is acceptable according to generally accepted accounting principles (GAAP).

The straight-line method is easy to calculate. The same amount of depreciation expense is recorded for each year of estimated useful life. The double-declining balance method is slightly more complicated. This method records a greater depreciation expense in the early years than the straight-line method. The declining-balance method is referred to as an accelerated depreciation method. The method accelerates depreciation in the early years of the asset's useful life.

### Practice Problem 1: Declining Balance Method of Depreciation

Plant Asset: Truck Depreciation Method: Double-Declining Balance		Original Cost: \$22,000 Estimated Salvage Value: \$2,200.00 Estimated Useful Life: 4 years		
Year	Beginning Book Value	Declining-Balance Rate	Annual Depreciation	Ending Book Value
1		50%		
2		50%		
3		50%		
4		--		

**Practice Problem 2: Declining Balance Method of Depreciation**

Plant Asset: Cash Register Depreciation Method: Double-Declining Balance		Original Cost: \$1,200.00 Estimated Salvage Value: \$100.00 Estimated Useful Life: 5 years		
Year	Beginning Book Value	Declining-Balance Rate	Annual Depreciation	Ending Book Value
1				
2				
3				
4				
5				

**Practice Problem 3: Declining Balance Method of Depreciation**

Plant Asset: Clothing Rack Depreciation Method: Double-Declining Balance		Original Cost: \$500.00 Estimated Salvage Value: \$50.00 Estimated Useful Life: 8 years		
Year	Beginning Book Value	Declining-Balance Rate	Annual Depreciation	Ending Book Value
1				
2				
3				
4				
5				
6				
7				
8				

**Practice Problem 4: Declining Balance Method of Depreciation**

Plant Asset: Delivery Truck Depreciation Method: Double-Declining Balance		Original Cost: \$25,000.00 Estimated Salvage Value: \$2,000.00 Estimated Useful Life: 3 years		
Year	Beginning Book Value	Declining-Balance Rate	Annual Depreciation	Ending Book Value
1				
2				
3				

**Practice Problem 5: Declining Balance Method of Depreciation**

Plant Asset: Filing Cabinet Depreciation Method: Double-Declining Balance		Original Cost: \$600.00 Estimated Salvage Value: \$50.00 Estimated Useful Life: 4 years		
Year	Beginning Book Value	Declining-Balance Rate	Annual Depreciation	Ending Book Value
1				
2				
3				
4				

# Disposing of Plant Assets

When a plant asset is no longer useful to a business, the asset may be disposed of. The old plant asset may be sold, traded for a new asset, or discarded. When a plant asset is disposed of, a journal entry is recorded that achieves the following:

1. Removes the original cost of the plant asset and its related accumulated depreciation.
2. Recognizes any cash or other asset received for the old plant asset.
3. Recognizes any gain or loss on the disposal.

## Sample Problem: Sale for Book Value

On January 6, 2017, received cash from sale of display case, \$250.00: original cost, \$3,250.00; total accumulated depreciation, \$3,000.00. Receipt No. 4.

### CASH RECEIPTS JOURNAL

PAGE 1

2017 Date	Account Title	Doc. No.	Post Ref.	General		Accts Receivable CR	Sales CR	Sales Tax Payable CR	Sales Discount DR	Cash DR
				DR	CR					
Jan 6	Accum Depr - Equip	RA		3	0 0 0 0 00					
	Equipment				3 2 5 0 00					2 5 0 00

## Sample Problem: Sale for More Than Book Value

On April 4, 2017, received cash from sale of safe, \$425.00: original cost, \$1,800.00; total accumulated depreciation, \$1,500.00. Receipt No. 47.

### CASH RECEIPTS JOURNAL

PAGE 1

2017 Date	Account Title	Doc. No.	Post Ref.	General		Accts Receivable CR	Sales CR	Sales Tax Payable CR	Sales Discount DR	Cash DR
				DR	CR					
Apr 4	Accum Depr - Equip	RA		1	5 0 0 0 00					
	Equipment				1 8 0 0 00					4 2 5 00
	Gain on Plant Assets				1 2 5 00					

## Sample Problem: Sale for Less Than Book Value

On October 6, 2017, received cash from sale of computer, \$150.00: original cost, \$1,900.00; total accumulated depreciation, \$1,500.00. Receipt No. 98.

### CASH RECEIPTS JOURNAL

PAGE 1

2017 Date	Account Title	Doc. No.	Post Ref.	General		Accts Receivable CR	Sales CR	Sales Tax Payable CR	Sales Discount DR	Cash DR
				DR	CR					
Oct 6	Accum Depr - Equip	RA		1	5 0 0 0 00					
	Loss on Plant Assets				2 5 0 00					
	Equipment				1 9 0 0 00					1 5 0 00

