Depreciation

Learning Intentions

By the end of this week's lesson you should be able to

- Explain what is meant by depreciation
- Describe how to estimate depreciation
- Discuss the straight line method of depreciation
- Solve reducing depreciation method questions
- State how to deal with the sale or disposal of a fixed asset
- Understand the revaluation of fixed assets

What is depreciation?

Fixed Assets are items of value which are owned by a business and are expected to last a number of years. These assets loose value over time and this loss in value is an expense to the business. This is known as **depreciation**.

Depreciation is the writing off of a **fixed** or **tangible** asset, as an operational expense in the Profit & Loss Account. This is done over the estimated useful life of the asset.

Depreciation occurs because of;

- Wear and tear in the assets use
- Obsolescence, the asset goes out of date or fashion or is replaced by new tech
- Passage of time ex. a lease on a building

These occurrences bring the value of the asset down over time. If depreciation is not charged, profits will be overstated and the Balance Sheet will not show a true and fair view of our assets. For example if we purchase a delivery van for €12,000 and at the end of 5 years the van has a scrap value of €600 then the cost of using the van for 6 years is €11,400.

How do we estimate depreciation?

We should take note of the fact that the annual depreciation charge we make is only an **estimate**. The actual depreciation figure will only come to light when the asset is disposed of or when it has no further useful economic life. In accounting however it is **prudent** to make a charge against the Profit & Loss as we know that some depreciation is occurring.

Five factors are considered when estimating depreciation and these are;

1. The cost of the asset
2. The estimated life of the asset
3. The estimated scrap value of the asset
4. The method used
5. The type of the asset

There are several methods of depreciation but we will focus on two;

- Straight line instalment method
- Reducing/diminishing balance method

Straight line depreciation

This method reduces the value of the asset by the **same** amount each year. It allocates depreciation cost equally for each year of the useful life of the asset. As a result the depreciation charge to the Profit & Loss Account each year will be the same.

This charge is calculated by using a **percentage** of the cost of the asset or by dividing the cost by the number of years of its expected life.

Now we are looking at the assets of **a non-manufacturing** business. Later the charge will be made to the Manufacturing Account if the asset is part of the manufacturing process.

We will create a Provision for Depreciation Account when we make the necessary accounting entries to record depreciation. In this account **depreciation** is on the **credit** side and in the Profit and Loss it is **debited** as an expense.

Remember;

- A tangible asset is reduced by an equal amount each year over the assets useful life.
- It is calculated as a fixed expense by dividing the assets cost by the number of years the asset is estimated to be in use.
- We charge the depreciable amount to the Profit & Loss Account in equal amounts every year of the expected use of the asset.

Example;

A piece of machinery which cost €10,000 is depreciated by 10% each year. This means that €2,000 is charged to the Profit & Loss each year.

We need a Provision for Depreciation Account when we are making our necessary accounting entries to record depreciation. Again **depreciation** is accumulated on the **credit** side of this account and **debited** as an expense in the Profit and Loss.

Double Entry Rules;

Debit the Profit and Loss Account

Credit the Provision for Depreciation Account

It is important to remember that all entries made into the asset account are at cost and the difference between the cost of the asset and the accumulated depreciation is known as the **book value**.

Let's take a look at a question;

Q 5.1

We will use the previous example of the delivery van. We are told that there was a purchase of a delivery van for €12,000 and at the end of 5 years the van has scrap value of €600 and the cost of using the van for 6 years is €11,400.

We can see our **annual depreciation charge** then is €1,900, i.e. $\frac{€11,400}{6}$

You are asked to show;

a) The delivery van account for years 2010, 2011 and 2012
b) The provision for depreciation account for the same years
c) The relevant extracts from the Profit & Loss Account and the Balance sheet for the same years

Delivery Van Account

2010			2010			
Jan-01	Bank	€ 12,000.00	Dec-31	Balance c/d	€ 12,000.00
		€ 12,000.00			€ 12,000.00
2011			2011		
Jan-01	Balance b/d	€ 12,000.00	Dec-31	Balance c/d	€ 12,000.00
		€ 12,000.00			€ 12,000.00
2012			2012		
Jan-01	Balance b/d	€ 12,000.00	Dec-31	Balance c/d	€ 12,000.00
		€ 12,000.00			€ 12,000.00
2013			2013		
Jan-01	Balance b/d	€ 12,000.00			

Provision for Depreciation Account

2010			2010		
Dec-31	Balance c/d	€ 1,900.00	Dec-31	Profit & Loss	€ 1,900.00
		€ 19,000.00			€ 1,900.00
2011			2011		
Dec-31	Balance c/d	€ 3,800.00	Jan-01	Balance b/d	€ 1,900.00
			Dec-31	Profit & Loss	€ 1,900.00
		€ 3,800.00			€ 3,800.00
2012			2012		
Dec-31	Balance c/d	€ 5,700.00	Jan-01	Balance b/d	€ 3,800.00
			Dec-31	Profit & Loss	€ 1,900.00
		€ 5,700.00			€ 5,700.00
2013			2013		
			Jan-01	Balance b/d	€ 5,700.00

Profit & Loss

Date	Expenses	Dr.	Cr.
2010	Provision for Depreciation	€ 1,900.00	
2011	Provision for Depreciation	€ 1,900.00	
2012	Provision for Dep[reciation	€ 1,900.00	

Balance Sheet

Date	Fixed Assets	Cost	Depreciation	Book Value
2010	Delivery Van	€ 12,000.00	€ 1,900.00	€ 10,100.00
2011	Delivery Van	€ 12,000.00	€ 3,800.00	€ 8,200.00
2012	Delivery Van	€ 12,000.00	€ 5,700.00	€ 6,300.00

Reducing or diminishing balance depreciation

This method reduces the value of the asset by a smaller amount each year. The amount of the depreciation decreases as the value of the asset drops.

We calculate the annual depreciation provision by applying a fixed percentage to the cost of the asset in year one and thereafter to the **book value**.

Remember;

- The written down or **book value** of a tangible asset is reduced by a fixed percentage every year i.e. a fixed percentage of the cost minus the depreciation.
- This method leads to larger depreciation amounts in the earlier years of an assets useful life and lower amounts in later years.
- The depreciable amount is charged to the Profit & Loss Account in varying amounts for each year of the useful life of the asset.

Example;

A machine costing €20,000 is depreciated by 10% of its book value each year.

Year 1 – depreciation = €2,000 (10% of €20,000)
Year 2 – depreciation = €1,800 (10% of €20,000 - €2,000)
Year 3 – depreciation = €1,620 (10% of €20,000 - €3,800)

Let's take a look at a question;

Q 5.2

Use the previous question involving the delivery van and apply an annual diminishing balance depreciation charge of 20%. For the three years.

You are asked to show;

a) The provision for depreciation account
b) The relevant extracts from the Profit & Loss Account and the Balance Shee

Annual Depreciation Charge			
Year 1	20% x (12,000)	€	2,400.00
Year 2	20% x (12,000 - 2,400)	€	1,920.00
Year 3	20% x (12,000 - 2,400 - 1,920)	€	1,536.00

Provision for Depreciation Account					
2010			2010		
Dec-31	Balance c/d	€ 2,400.00	Dec-31	Profit & Loss	€ 2,400.00
		€ 2,400.00			€ 2,400.00
2011			2011		
Dec-31	Balance c/d	€ 4,320.00	Jan-01	Balance b/d	€ 2,400.00
			Dec-31	Profit & Loss	€ 1,920.00
		€ 4,320.00			€ 4,320.00
2012			2012		
Dec-31	Balance c/d	€ 5,856.00	Jan-01	Balance b/d	€ 4,320.00
			Dec-31	Profit & Loss	€ 1,536.00
		€ 5,856.00			€ 5,856.00
2013			2013		
			Jan-01	Balance b/d	€ 5,856.00

Profit & Loss			
Date	**Expenses**	**Dr.**	**Cr.**
2010	Provision for depreciation	€ 2,400.00	
2011	Provision for depreciation	€ 1,920.00	
2012	Provision for depreciation	€ 1,536.00	

Balance Sheet				
Date	**Fixed Assets**	**Cost**	**Depreciation**	**Book Value**
2010	Delivery Van	€ 12,000.00	€ 2,400.00	€ 9,600.00
2011	Delivery Van	€ 12,000.00	€ 4,320.00	€ 7,680.00
2012	Delivery Van	€ 12,000.00	€ 5,856.00	€ 6,144.00

Sale or disposal of a fixed asset

When we sell an asset there is likely to be a profit or a loss made on the sale as the amount received is very unlikely to equal the book value of that asset. This happens because the annual depreciation is only an estimate and the depreciation charge may have been over or under estimated.

When we dispose of an asset we will need to open a disposal of asset account in order to ascertain the profit or loss on the sale. All of the information with regard to the disposed asset is collected in this account.

Double Entry Rules;

1. Transfer asset at cost from asset account to disposal account.

Debit the disposal account

Credit the fixed asset account (with the cost or revalued amount of the asset)

2. Transfer all depreciation charges for the asset from provision for depreciation account to disposal account.

Credit the disposal account

Debit the provision for depreciation account (with total depreciation of the asset)

3. Enter in disposal account any “money or allowance” received for the asset.

Credit the disposal account

Debit the bank account (with the amount received for the sale of the asset)

4. We treat any difference in the disposal account as a profit/loss.
   If the credit side is greater than the debit side then there is a profit on disposal.
   If the debit side is greater than the credit side then there is a loss on disposal.
   This difference is transferred to the profit and loss account at the end of the year.

If a profit, debit the disposal account and credit the profit and loss account.

If a loss, debit the profit and loss account and credit the disposal account.

Let's take a look at a question;

Q 5.3

The following details were taken from the books of James Ltd:

1/1/2009	Vehicles at cost amounted to €100,000
1/1/2009	The balance in the provision for depreciation account was €12,000
1/5/2009	Purchased a vehicle for €35,000
31/12/2009	Total depreciation for the year ended 31/12/2009 was €8,000
1/6/2010	Sold a vehicle for €9,000 which had cost €21,000. The book value of this vehicle on 1/6/2010 was €14,000
31/12/2010	Total depreciation for the year ended 31/12/2010 was €5,000

You are asked to show;

a) The vehicles account for the two years 2009 and 2010
b) The provision for depreciation account for the two years 2009 and 2010
c) The vehicles disposal account for the year ended 31/12/2010
d) The relevant extracts from the profit and loss account and the balance sheet for the years 2009 and 2010

Vehicles Account

2009				2009			
Jan-01	Balance b/d	€	100,000.00				
May-01	Bank	€	35,000.00	Dec-31	Balance c/d	€	135,000.00
		€	135,000.00			€	135,000.00
2010				2010			
Jan-01	Balance b/d	€	135,000.00	Jun-01	Disposal	€	21,000.00
				Dec-31	Balance c/d	€	114,000.00
		€	135,000.00			€	135,000.00
2011				2011			
Jan-01	Balance b/d	€	114,000.00				

Provision for Depreciation Account

2009				2009			
				Jan-01	Balance b/d	€	12,000.00
Dec-31	Balance c/d	€	20,000.00	Dec-31	Profit & Loss	€	8,000.00
						€	20,000.00
2010				2010			
Jun-01	Disposal	€	7,000.00	Jan-01	Balance b/d	€	20,000.00
Dec-31	Balance c/d	€	18,000.00	Dec-31	Profit & Loss	€	5,000.00
		€	25,000.00			€	25,000.00
2011				2011			
				Jan-01	Balance b/d	€	18,000.00

Disposal Account

2010				2010			
Jun-01	Vechicle	€	21,000.00	Jun-01	Depreciation	€	7,000.00
				Jun-01	Bank	€	9,000.00
				Dec-31	P&L (Loss)	€	5,000.00
		€	21,000.00			€	21,000.00

Profit & Loss

Date	Expenses	Dr.	Cr.
2009	Provision for depreciation	€ 8,000.00	
2010	Provision for depreciation	€ 5,000.00	
	Loss on disposal of fixed asset	€ 5,000.00	

Balance Sheet

Date	Fixed Assets	Cost	Depreciation	Book Value
2009	Vehicles	€ 135,000.00	€ 20,000.00	€ 115,000.00
2010	Vehicles	€ 114,000.00	€ 18,000.00	€ 96,000.00

Revaluation of tangible fixed assets

Assets such as land and buildings increase in value over time. These assets then should be shown in the balance sheet at their true value. We revalue fixed assets in order to show these assets at their up to date value.

Assets once revalued must be depreciated based on the revalued amount. Revaluation brings about increased depreciation and lower profits on disposal.

When fixed assets are revalued the amount of the increase in valuation is entered in a **revaluation reserve account** as well as in the **fixed assets** account.

Any depreciation already accumulated must be transferred to the revaluation reserve account, as it is now unnecessary.

The depreciation figure is part of the increase in value as this increase value is the difference between the **book value** and the revalued figure.

Procedure for dealing with revaluation;

1. **Debit the asset account**

   Credit the revaluation reserve account (with the increase)

2. **Debit the provision for depreciation account**

   Credit the revaluation reserve account (with total depreciation charged on the asset)

3. **When a revalued asset is disposed of:**
   Debit the revaluation reserve

   Credit the revenue reserve account (with the total amount relating to the asset)

Q5.4

The following details were taken from the books of James Ltd:

1/1/2009 Buildings at cost amounted to €600,000

1/1/2009 The balance in the provision for depreciation account was €55,000

1/5/2009 Purchased a building for €200,000

1/6/2009 Sold a building for €250,000 that had cost of €180,000. The book value of this building on 1/6/2009 was €140,000

31/12/2009 Total depreciation for the year ended 31/12/2009 was €30,000

1/1/2010 Revalued buildings to €900,000

31/12/2010 Provide for depreciation at the rate of 2% of the value of the buildings on 1/1/2010

You are asked to show;

a) The buildings account for the two years 2009 and 2010
b) The provision for depreciation account for the two years 2009 and 2010
c) The buildings disposal account for the year ended 31/12/2010
d) The revaluation reserve account
e) The relevant extracts from the balance sheet for the year 2010

Buildings Account					
2009			2009		
Jan-01	Balance b/d	€ 600,000.00	Jun-01	Disposal	€ 180,000.00
May-01	Bank	€ 200,000.00	Dec-31	Balance c/d	€ 620,000.00
		€ 800,000.00			€ 800,000.00
2010			2010		
Jan-01	Balance b/d	€ 620,000.00			
Jan-01	Revaluation reserve	€ 280,000.00	Dec-31	Balance c/d	€ 900,000.00
		€ 900,000.00			€ 900,000.00
2011			2011		
Jan-01	Balance b/d	€ 900,000.00			

Provision for Depreciation Account					
2009			2009		
Jun-01	Disposal	€ 40,000.00	Jan-01	Balance b/d	€ 55,000.00
Dec-31	Balance c/d	€ 45,000.00	Dec-31	Profit & Loss	€ 30,000.00
		€ 85,000.00			€ 85,000.00
2010			2010		
Jan-01	Revaluation	€ 45,000.00	Jan-01	Balance b/d	€ 45,000.00
Dec-31	Balance c/d	€ 18,000.00	Dec-31	Profit & Loss	€ 18,000.00
		€ 63,000.00			€ 63,000.00
2011			2011		
			Jan-01	Balance b/d	€ 18,000.00

Disposal Account					
2009			2009		
Jun-01	Buildings	€ 180,000.00	Jun-01	Depreciation	€ 40,000.00
Dec-31	P/L (Profit)	€ 110,000.00	Jun-01	Bank	€ 250,000.00
		€ 290,000.00			€ 290,000.00

Revaluation Reserve Account					
2010			2010		
Dec-31	Balance c/d	€ 325,000.00	Jan-01	Buildings	€ 280,000.00
			Jan-01	Depreciation	€ 45,000.00
		€ 325,000.00			€ 325,000.00

Balance Sheet as at 31/12/2010			
Fixed Assets	**Cost**	**Depreciation**	**Book Value**
Building	€ 900,000.00	€ -	€ 900,000.00
Financed By			
Revaluation reserve	€ 325,000.00		