



Changing fractions to decimals using equivalent fractions

There are many ways to change **fractions to decimals**. On this factsheet you'll find out how to use **equivalent fractions** to help you make the conversion.

Example

What is $\frac{2}{5}$ expressed as a decimal?

The key here is to remember that the **decimal system** is based on **10s, 100s, 1,000s** etc. You can see this if you remind yourself of the column headings for **place value**:

Tens	Units	.	Tenths	Hundredths	Thousandths
10	1		$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$

To change $\frac{2}{5}$ to a decimal you have to turn it into a fraction which has 10, 100 or 1,000 etc. on the bottom.

To do this use your knowledge of equivalent fractions:

$$\frac{2}{5} = ?$$

You have to **multiply the bottom number by 2** to change it to 10.

Now do the same to the top number (this way the fraction's value does not change):

$$2 \times 2 = 4$$

$$\text{so } \frac{2}{5} = \frac{4}{10}$$

Now use the column headings to write this fraction as a decimal:

Tens	Units	.	Tenths	Hundredths	Thousandths
10	1		$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
	0	.	4		

A four in the tenths column is exactly **the same as** $\frac{4}{10}$.

You've worked out that $\frac{2}{5}$ **is the same as 0.4**.

Remember: take any fraction and find an equivalent fraction with 10, 100, 1,000 etc on the bottom. This new fraction can easily be written as a decimal.