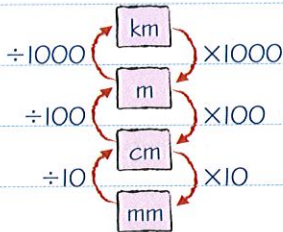


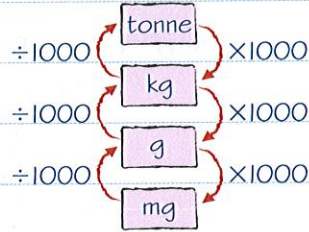
Converting units

You can convert between METRIC UNITS by multiplying or dividing by 10, 100 or 1000.

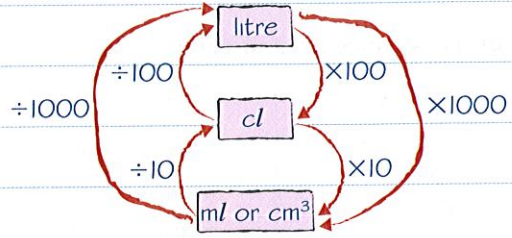
Length



Weight



Volume or capacity



$1 \text{ m}^3 = 1000 \text{ litres}$

Imperial units

You need to remember these conversions for your exam.

Metric unit	Imperial unit
1 (kg)	2.2 pounds (lb)
1 litre (l)	$1\frac{3}{4}$ pints
4.5 litres	1 gallon
8 km	5 miles
30 cm	1 foot (ft)

When converting between imperial units you will be GIVEN the conversions.

Worked example

grade C

Waseem drives at an average speed of 60 mph. How long will it take him to drive 120 km?

$8 \text{ km} = 5 \text{ miles}$

$60 \div 5 = 12$

$8 \times 12 = 96$

$60 \text{ mph} = 96 \text{ km/h}$

Time = $\frac{\text{distance}}{\text{average speed}}$

$= \frac{120}{96} = 1\frac{1}{4} \text{ hours}$

Converting compound units

To convert between measures of speed you need to convert one unit first then the other. Write the new units at each step of your working. To convert 72 km/h into m/s:

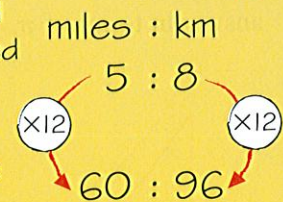
$72 \text{ km/h} \rightarrow 72 \times 1000 = 72\,000 \text{ m/h}$

$72\,000 \text{ m/h} \rightarrow 72\,000 \div 3600 = 20 \text{ m/s}$

$1 \text{ hour} = 60 \times 60 = 3600 \text{ seconds}$

First of all, you need to convert the speed from mph to km/h.

Convert 60 miles into km. You can use equivalent ratios:



Kilometres are smaller than miles so the speed in km/h should be a larger number than the speed in mph.

Then use the formula triangle for speed (see page 64) to work out the answer.

Now try this

grade C

edexcel

Jane walks at an average speed of 5 km/h.

Mattie walks at an average speed of 3 miles per hour.

How long will they each take to walk 5 miles? (3 marks)

Speed is a compound measure. Another compound measure is density. Density is covered on page 65.