Speed, Distance, Time
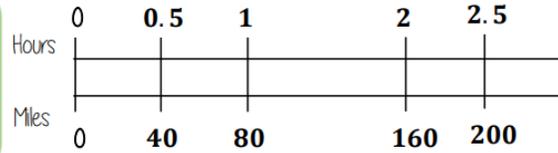
"per" for every
e.g. 80 miles per hour (mph)
Travel 80 miles every hour
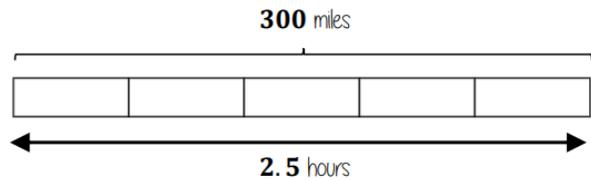
$$speed = \frac{distance}{time}$$

You can use a double number line to help you calculate distance

Hours: 0   0.5   1   2   2.5

Miles: 0   40   80   160   200

e.g. A boat travels at a constant speed for **2.5** hours
It travels 300 miles.

Bar models can help to calculate mph

300 miles

2.5 hours

Each part is half an hour
Each part is 60 miles

Speed, Distance, Time

÷ 60

minutes   hours

× 60

Before calculations – make sure you are working in the same units as the speed
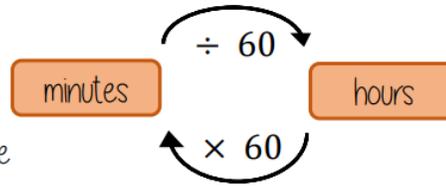
Learn or learn how to rearrange the formular for speed, distance and time

$$time = \frac{distance}{speed}$$

Substitute in the variables given

$$distance = speed \times time$$

Converting Areas

$1m^2 = 100cm \times 100cm$
$= 10,000\ cm^2$

$1cm^2 = 10mm \times 10mm$
$= 100\ mm^2$

Converting Volumes

$1m^3 = 100cm \times 100cm \times 100cm$
$= 1,000,000\ cm^2$

$1cm^3 = 10mm \times 10mm \times 10mm$
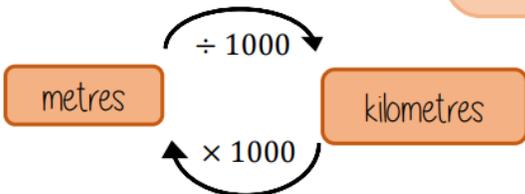$= 1000\ mm^3$

Rates of change & units

Common rates of change relationships

Revisit your conversions between units of length and capacity

Speed: miles **per** hour
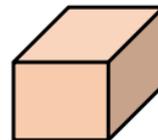
Exchange rates: euros **per** pounds

Density: mass **per** volume

÷ 1000

metres   kilometres

× 1000

Density, Mass, Volume

$$density = \frac{mass}{volume}$$

$$volume = \frac{mass}{density}$$

$$mass = volume \times density$$

volume of prism = Area of cross section × Depth

Pressure

$$Pressure = \frac{Force}{Area}$$

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