Comparing two quantities using percentages

We need to be able to change fractions and quantities into percentages, so that we can compare them and write them in order.

Write in order:

$\frac{2}{5}$ $\quad 39\,\%$ $\quad \frac{4}{9}$ $\quad 0{\cdot}41$

They all need to be in the same format, in this case we are choosing to change them to percentages:

$2 \div 5 \times 100 = 40\,\%$ $\quad 4 \div 9 \times 100 = 44{\cdot}4\,\%$ $\quad 0{\cdot}41 = 41\,\%$

So, in order: $39\,\%$, $\frac{2}{5}$, $0{\cdot}41$ and $\frac{4}{9}$

What percentage of 1 m is 37 cm?

Because there are 100 cm in 1 m, 37 cm is $37\,\%$ of 1 m.

Which is greater, 350 g or 36 % of 1 kg?

There are 1000 g in a kg, so 350 g is $35\,\%$ of 1 kg.
$36\,\%$ of 1 kg (1000 g) is 360 g.
So, $36\,\%$ of 1 kg is greater.

45 % or $\frac{7}{15}$, which is greater?

Change $\frac{7}{15}$ into a percentage:

$7 \div 15 \times 100 = 46{\cdot}6666\,\%$

So $\frac{7}{15}$ is greater than $45\,\%$.

£300 is to be increased by either 12 % or $\frac{4}{35}$.

Which is better?

Change the $\frac{4}{35}$ into a percentage:

$4 \div 35 \times 100 = 11{\cdot}4\,\%$

$11{\cdot}4\,\%$ is lower than $12\,\%$, so a 12 % increase would be better.

Check that you can:

- calculate the percentage of an amount
- change between fractions, decimals and percentages
- write one number as the percentage of another
- change between metric units of measure
- round numbers to decimal places and significant figures
- know how to use inequality symbols ($<$, $>$, $=$).

We need to recognise basic fractions and be able to change them into percentages:

$\frac{1}{2} = 50\,\%$ $\quad \frac{1}{4} = 25\,\%$ $\quad \frac{3}{4} = 75\,\%$

$\frac{1}{10} = 10\,\%$ $\quad \frac{1}{5} = 20\,\%$ $\quad$ and so on....

If we don't recognise the fraction, we need to be able to apply a method to convert it into its percentage equivalent:

$\frac{3}{8}$ is $3 \div 8 = 0{\cdot}375\,\%$, which is $37{\cdot}5\,\%$.

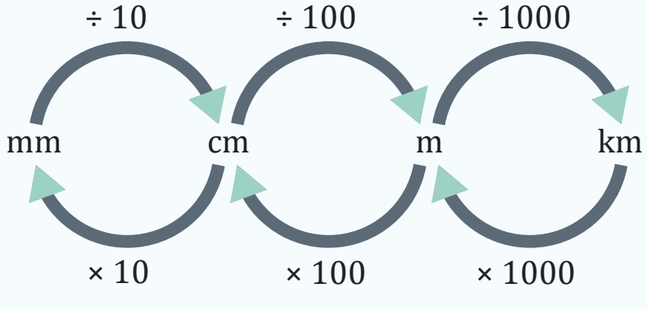
As long as we can write a quantity as a fraction, we can change it into a percentage.

e.g. $\frac{38}{40}$ in a test is a fraction,

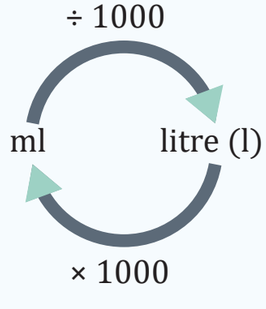
$38 \div 40 \times 100 = 95\,\%$

Metric units

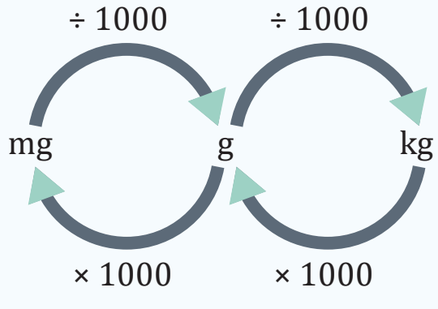
Length



Capacity



Mass



REMEMBER!

The key to comparing anything that looks like a fraction, or a figure that is a proportion of another, is that it can be written as a percentage. Because percentages are consistently 'out of 100', they are easy to compare.