

## Y7 Maths Knowledge Organiser Topic 9: Working with units

<u>What must I be able to do?</u>	<u>Key vocabulary</u>								
<ul style="list-style-type: none"> <li>□ Record and order measurements using decimal notation</li> <li>□ Estimate and/or measure:                             <ul style="list-style-type: none"> <li>Length in: kilometres (km), metres (m), centimetres (cm), millimetres (mm)</li> <li>➤ Sparx MB28, U388</li> </ul> </li> <li>Mass in: kilograms (kg), grams (g)                             <ul style="list-style-type: none"> <li>➤ Sparx MB28, U388</li> </ul> </li> <li>Volume and capacity in: litres (l), millilitres (ml)                             <ul style="list-style-type: none"> <li>➤ Sparx MB28, U388</li> </ul> </li> </ul>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"><b>Measure</b></td> <td>To find the <u>size</u> of something by using an instrument marked in <u>standards units</u>.</td> </tr> <tr> <td><b>Length</b></td> <td>The <u>distance</u> from one point to another.</td> </tr> <tr> <td><b>Mass</b></td> <td>A measurement of how <u>heavy</u> an object is.</td> </tr> <tr> <td><b>Volume</b></td> <td>The <u>amount of space</u> that an object occupies.</td> </tr> </table>	<b>Measure</b>	To find the <u>size</u> of something by using an instrument marked in <u>standards units</u> .	<b>Length</b>	The <u>distance</u> from one point to another.	<b>Mass</b>	A measurement of how <u>heavy</u> an object is.	<b>Volume</b>	The <u>amount of space</u> that an object occupies.
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<u>Metric unit conversions</u>		Length: 1km = 1000m
Mass: 1000g = 1kg	Volume: 1000ml = 1 litre	1m = 100cm
1000kg = 1 tonne	1 litre is the amount of water equal to the weight of 1kg	1cm = 10mm

Converting units examples

Three steps for converting units.

1. Find the conversion factor (see box above)
2. Decide whether to multiply or divide by it
  - To go from a bigger unit to a smaller unit, multiply.
  - To go from a smaller unit to a bigger unit, divide.
3. Do the calculation

If you measure in a large unit e.g. kilometers, you will need more of a smaller unit e.g. metres to measure the same distance, hence multiply.

e.g. Convert 5.4km to metres.

1. The conversion is 1km = 1000m
2. Going from a bigger unit of measurement to a smaller so, multiply.
3. 5.4 km x 1000 = 5400 m.

Another good way to set these out is to use a proportion table.

e.g. Convert 5.4 km to metres.

Put the known conversion into a table

Kilometres	Metres
1	1000

Add in what you know from the question

Kilometres	Metres
1	1000
5.4	

We can use a multiplier to determine missing values. This can be done in 2 ways.

Kilometres	Metres
1	1000
5.4	5400m

↖ x 5.4      ↗ x 5.4

or

Kilometres	Metres
1	1000
5.4	5400m

↔ x 1000