

Knowledge Organiser

Year Group	Subject	Topic
6	Mathematics	Converting units of measure

The Big Picture

Children will learn to convert between different units of measure. They will understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. Children will use metric and imperial vocabulary, and the symbols for each unit of measure. Children will build on previous work measurement to work out word problems involving different units of measure. Children will use their knowledge of multiplying and dividing by 10, 100 and 1,000 to convert between different units of measure. Children will use all four operations to solve problems involving measure. They will be given opportunities to see different measures of mass, capacity and length in context.

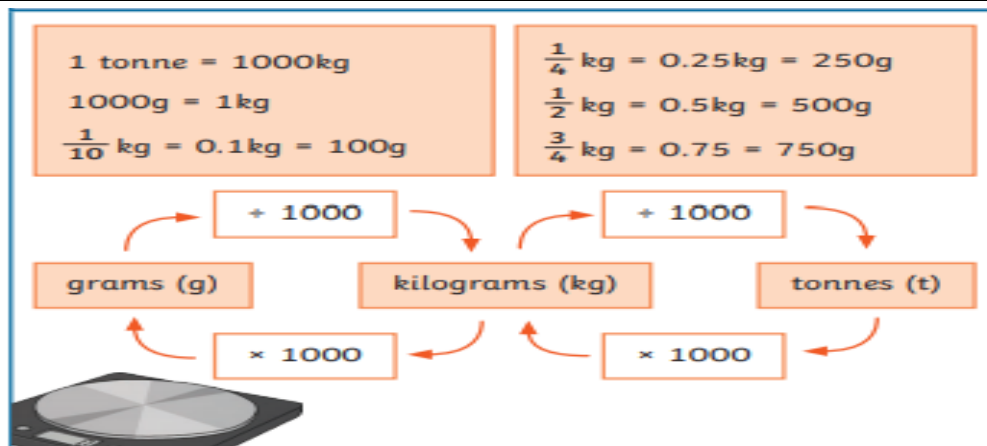
Enquiry Question

What unit of measure is most appropriate to use? Can you estimate the mass/length/capacity of this object?

What operation will be used to convert between km and m, g and kg, millimetres and centimetres, millilitres and litres? What is the units used to represent the measurement? What metric measurements can be used? What imperial measurements can be used? How can we interpret and understand timetables? What units of time do we use and how can we convert between these?


	Key Vocabulary
mass	gram
kilogram	capacity
volume	millimetre
litre	millilitre
centimetre	kilometre
foot	inch
pound	ounce
stone	pint
gallon	length
imperial	metric

Converting mass



Converting length

$1000\text{m} = 1\text{km}$ $100\text{cm} = 1\text{m}$ $10\text{mm} = 1\text{cm}$	$\frac{1}{2}\text{m} = 0.5\text{m} = 50\text{cm}$ $\frac{1}{4}\text{m} = 0.25\text{m} = 25\text{cm}$	$\frac{3}{4}\text{m} = 0.75\text{m} = 75\text{cm}$ $\frac{1}{10}\text{m} = 0.01\text{m} = 10\text{cm}$
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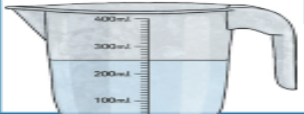


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    graph TD
      mm[millimetres (mm)] -- "+ 10" --> cm[centimetres (cm)]
      cm -- "+ 100" --> m[metres (m)]
      m -- "+ 1000" --> km[kilometres (km)]
      km -- "x 1000" --> m
      m -- "x 100" --> cm
      cm -- "x 10" --> mm
  
```

Converting Capacity

$1000\text{ml} = 1\text{l}$ $\frac{1}{10}\text{l} = 0.1\text{l} = 100\text{ml}$ $\frac{1}{4}\text{l} = 0.25\text{l} = 250\text{ml}$	$\frac{1}{2}\text{l} = 0.5\text{l} = 500\text{ml}$ $\frac{3}{4}\text{l} = 0.75\text{l} = 750\text{ml}$ $\frac{1}{100}\text{l} = 0.01\text{l} = 10\text{ml}$
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    graph TD
      ml[millilitre (ml)] -- "+ 1000" --> l[litres (l)]
      l -- "x 1000" --> ml
  
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Miles to Kilometres

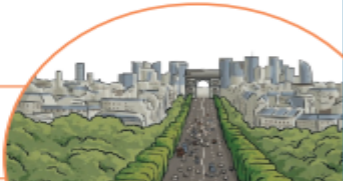
You might measure the length of a road or the distance between two cities in miles or kilometres.

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    graph TD
      m[miles (m)] -- "+ 5" --> km[kilometres (km)]
      km -- "x 8" --> m
      km -- "+ 8" --> m
      m -- "x 5" --> km
  
```

5 miles = 8 kilometres

≈ means approximately equal to



Imperial Measures

Things that could be measured using imperial units:

- Someone's height in feet and inches
- The mass of a bag of sugar in ounces
- The mass of a sack of potatoes in pounds
- A person's mass in stones
- A carton of milk in pints
- The amount of water in a bath in gallons

1 foot = 12 inches
1 pound = 16 ounces
1 stone = 14 pounds
1 gallon = 8 pints

Metric to Imperial Conversions

metric (new)	imperial (old)
2.5 centimetres	1 inch
1 kilogram	2.2 pounds
4.5 litres	1 gallon

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    graph TD
      cm[centimetres] -- "+ 2.5" --> in[ inches ]
      in -- "x 2.5" --> cm
      l[litres] -- "+ 4.5" --> gal[ gallons ]
      gal -- "x 4.5" --> l
      kg[kilograms] -- "+ 2.2" --> lb[ pounds ]
      lb -- "x 2.2" --> kg
  
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What can my child do at home?

Practise multiplying and dividing numbers by 10, 100 and 1,000.
 Practise recalling the different metric and imperial measures and which measurements are used for items of mass, length and capacity.
 Children should regularly practise reading the time on an analogue clock and 24-hour digital clock.
 Take ownership for areas which they find difficult and use Mathletics to help revise.
 Children should practise reading decimal numbers, paying particular attention to the value of each digit.