Knowledge Organiser

Year 5 | Measurement

We can use our knowledge of perimeter and area to find the length of missing sides and the area of compound shapes. Volume refers to the amount of space an object takes up. For example, you may need to know how much water you need to fill up a fish tank. Being able to convert between units of measure enables us to use different systems and scales to share measurements.

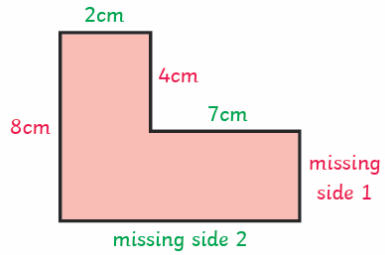
Builds from Year 4:
Convert between different units of measure.
Calculate the perimeter of rectilinear figures.
Find the area of shapes by counting squares.

This year:
Calculate and estimate area.
Convert between units of length.
Volume and capacity.

Leads to Year 6:
Convert between standard units.
Convert between miles and kilometres.
Use formulae for area and volume of shapes.
Calculate the area of parallelograms and triangles.

Calculating Perimeter

To calculate the missing sides of this rectilinear shape, we need to look carefully at the information we have.



Missing side 1 + 4cm = 8cm,
so missing side 1 = 4cm.

Missing side 2 = 2cm + 7cm = 9cm

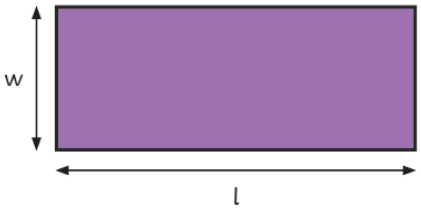
perimeter = sum of all sides

2cm + 4cm +7cm + 4cm + 9cm + 8cm = 34cm

Area of Rectangles

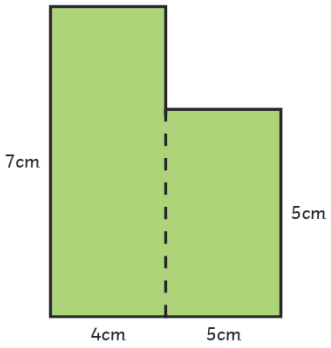
Area of a rectangle = length x width

l x w = units^2



To find the area of compound shapes, we need to divide the shapes into rectangles first.

7cm x 4cm = 28cm^2
5cm x 5cm = 25cm^2
28cm^2 + 27cm^2 = **53cm^2**

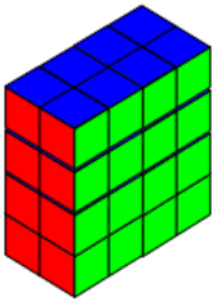


Volume

Volume is measured in **cubed units**: cm^3 m^3 km^3

To calculate the volume of cubes and cuboids:

1. Calculate the area of one face.
2. Multiply the area of the face by its depth.



4cm x 4cm = 16cm^2

16cm^2 x 2 = 32cm^3

Volume = 32cm^3

Converting Units

×1000
kg g
÷1000

1000g = 1kg
$\frac{1}{10}$kg = 0.1kg = 100g
$\frac{1}{4}$kg = 0.25kg = 250g
$\frac{1}{2}$kg = 0.5kg = 500g
$\frac{3}{4}$kg = 0.75kg = 750g

×1000
l ml
÷1000

1000ml = 1 litre
$\frac{1}{10}$l = 0.1l = 100ml
$\frac{1}{4}$l = 0.25l = 250ml
$\frac{1}{2}$l = 0.5l = 500ml
$\frac{3}{4}$l = 0.75l = 750ml
$\frac{1}{100}$l = 0.01l = 10ml

×1000 ×100 ×10
km m cm mm
÷1000 ÷100 ÷10

1000 metres = 1 kilometre
100cm = 1m
10mm = 1cm
$\frac{1}{10}$km = 0.1km = 100m
$\frac{1}{4}$km = 0.25km = 250m
$\frac{1}{2}$km = 0.5km = 500m
$\frac{3}{4}$km = 0.75km = 750m

Key Vocabulary

length width area perimeter rectangle rectilinear squares units squared volume units cubed depth height capacity convert units of measure