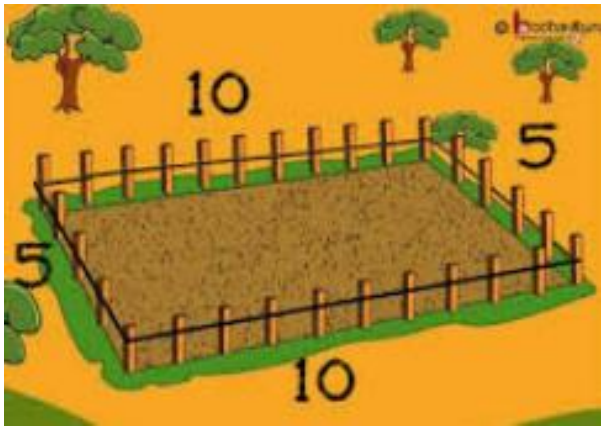
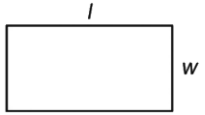
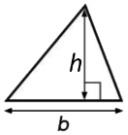
Year 7 – Unit 4 – Calculating with Space – Knowledge Organiser
Objective
Know and use units related to length, area, volume and capacity
Convert between different units
Calculate perimeters of 2D shapes
Calculate area of a variety of 2D shapes
Find the volume of solids
Know and apply formula to calculate area and volume



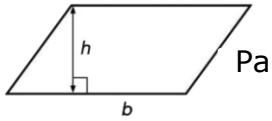
Key Facts



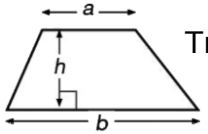
Rectangle area = l x w



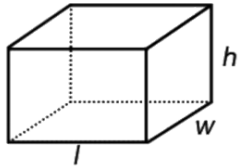
Triangle area = $\frac{1}{2}$ b x h



Parallelogram area = b x h



Trapezium area = $\frac{1}{2}$ (a + b) h



Cuboid volume = l x w x h

Units for

Length:
1km = 1000m
1m = 100cm
1cm = 10mm

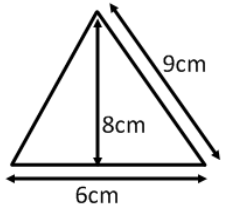
Area:
$1m^2$ = 10 000cm^2
$1cm^2$ = 100mm^2

Volume:
$1m^3$ = 1000 000cm^3
$1cm^3$ = 1000mm^3

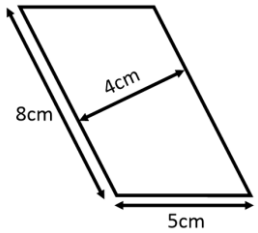
Capacity:
1 litre (l) = 1000 ml

Since 1 litre = 1000cm^3 then $1cm^3$ = 1ml

Key Concept Check



Sue claims that the area of this triangle is 6 x 9 ÷ 2 = 27cm^2. Explain why she is wrong.



How can you find the area of this parallelogram?

Why does this work?

Key words used in this unit:

Perimeter – the distance around a 2D shape

Area – the amount of space inside a 2D shape

Surface area – the total area of the surfaces of a 3D shape, found by adding together all the areas of the faces of the shape

Volume – the amount of space inside a 3D shape

Capacity – the volume of liquid or gas a hollow 3D shape can hold

Polygon – a 2D shape whose sides are all straight lines

Formula - a mathematical relationship or rule expressed in symbols

Parallel – lines or surfaces that always have the same distance between them

Perpendicular – at right angles