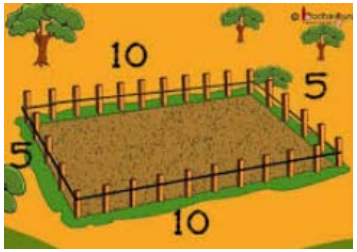
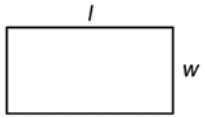
Geometry and Measure 1 – Calculating with Space – Knowledge Organiser

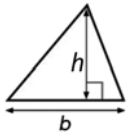
Objective
Calculate perimeters of 2D shapes
Calculate area of triangles and special quadrilaterals
Calculate the area and circumference of circles
Find the volume of cubes and cuboids
Recognise and use nets of 3-D shapes
Recognise and draw plan and elevation view of 3-D shapes



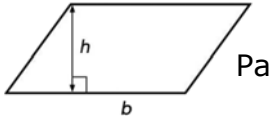
Key Facts and Formulas



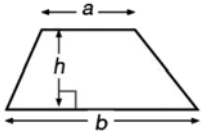
Rectangle area = l x w



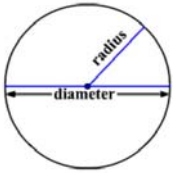
Triangle area = $\frac{1}{2}$ b x h



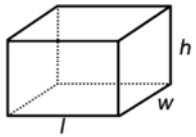
Parallelogram area = b x h



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

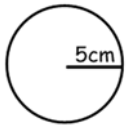


Circumference of a circle = πd
Area of a circle = πr^2



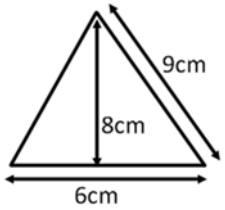
Cuboid volume = l x w x h

Example:



Area	Circumference
= πr^2	= 2πr
= π x 5 x 5	= 2 x π x 5
= 25 π cm^2	= 10 π cm
≈ 78.5 cm^2	≈ 31.4cm

Key Concept Check



Sue claims that the area of this triangle is 6 x 9 ÷ 2 = 27cm². Explain why she is wrong.

Which diagram represents the plan view of the shape above?

Key words used in this unit:

Perimeter – the distance around a 2D shape
Area – the amount of space inside a 2D shape
Volume – the amount of space inside a 3D shape
Circumference – the distance around a circle (its perimeter)
Chord – a straight line joining two points on a circumference of a circle
Diameter –a chord of a circle that passes through the centre
Radius – the distance around a circle (its perimeter)
Face – individual flat surface of a 3D shape
Edge – line segment where 2 faces meet on a 3D shape
Vertex (plural vertices) – corner of a shape where edges meet
Net – 2D shape formed from a 3D shape opened out and laid back
Plan – Drawing of a shape when viewed from above
Elevation – Drawing of a shape when viewed from the front/side