



Knowledge Organiser

Geometry



Year 6

Properties of Shape

In Year 6, we use our knowledge of the properties of shape to calculate missing lengths and angles. Geometry is important for many different jobs, including graphic designers, fashion designers and game developers.

Builds from Year 5:

Draw angles.
Know the number of degrees around a point and on a straight line.
Calculate missing angles and lengths in rectangles.

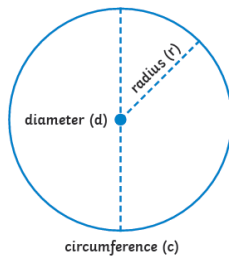
This year:

Name parts of a circle.
Draw 2D shapes with given measurements.
Calculate missing angles in triangles and quadrilaterals.
Describe the properties of 3D shapes.

Leads to Key Stage 3:

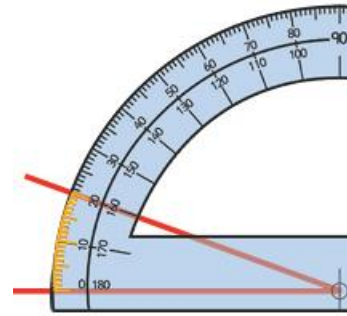
Draw and measure line segments and angles in geometric figures.
Pythagoras' Theorem.

Parts of a Circle



The diameter is **twice** the length of the radius.

Using a Protractor



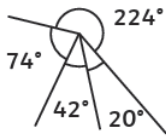
Place the circle or cross at the point of the angle you are measuring.

Read from zero.

Calculating Angles

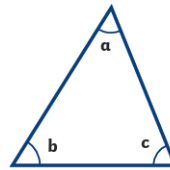
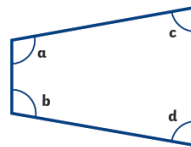


Angles on a **straight line** always total **180°**.

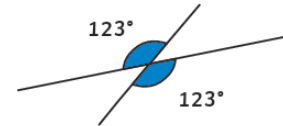


Angles **around a point** always total **360°**.

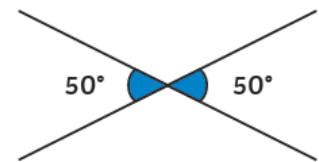
Angles in a **quadrilateral** will always total **360°**.












Angles in a **triangle** always total **180°**.



Opposite angles that share a vertex are **equal**.



3D shapes

Cube  6 square faces 12 edges 8 vertices	Tetrahedron  4 triangular faces 6 edges 4 vertices	Sphere  1 curved surface 0 edges 0 vertices
Cuboid  6 faces 12 edges 8 vertices	Octahedron  8 faces 12 edges 6 vertices	Triangular prism  5 faces 9 edges 6 vertices
Square-based pyramid  5 faces 8 edges 5 vertices	Cone  1 circular face 1 curved surface 1 curved edge 1 apex	Cylinder  2 circular faces 1 curved surface 2 curved edges 0 vertices

A **polyhedron** is a 3D shape with flat faces.

Spheres, cylinders and cones are **not polyhedrons** as they have curved surfaces.

Key Vocabulary

angle right angle acute obtuse reflex horizontal vertical parallel perpendicular polygon regular irregular flat/curved face edge vertex vertices radius diameter circumference apex two-dimensional three-dimensional protractor