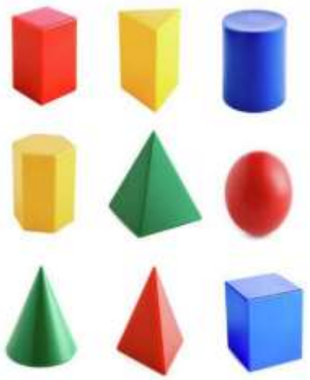
SHAPE

KNOWLEDGE ORGANISER

Year 6

Overview



Shape we learn to:

-Measure with a Protractor -Draw Lines and Angles Accurately

-Calculate Angles -Angles in a Triangle -Draw Nets of 3-D Shapes

-Calculating Angles on a Straight Line/Around a Point -Draw Shapes

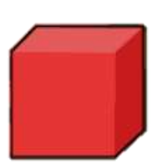
-Angles in Special Quadrilaterals -Angles in Regular Polygons

This learning is important because...

...it helps us to understand and organise the things that we see in the world around us. Shapes help us to describe the similarities and differences between objects.

Properties of 3-D Shapes

3-D shapes have 3 dimensions: height, width and depth. They have faces, vertices and edges.
A polyhedron is a 3-D shape with flat faces, e.g. a cube is a polyhedron, but a sphere is not.



Cube
-6 flat faces
-12 flat edges
-8 vertices

Cuboid
-6 flat faces
-12 flat edges
-8 vertices

Tetrahedron
-4 flat faces
-6 flat edges
-4 vertices

Hexagonal Prism
-8 flat faces
-18 flat edges
-12 vertices

Square-Based Pyramid
-5 flat faces
-8 flat edges
-5 vertices

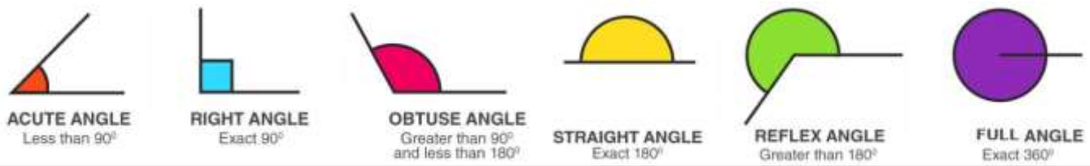
Triangular Prism
-5 flat faces
-9 flat edges
-6 vertices

Pentagonal Prism
-7 flat faces
-15 flat edges
-10 vertices

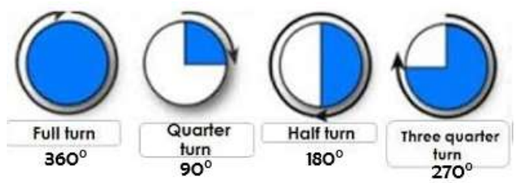
Octagonal Prism
-10 flat faces
-24 flat edges
-16 vertices

Calculating Angles

Angle Types



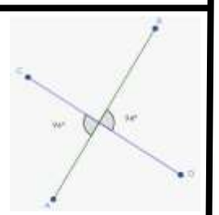
Turns



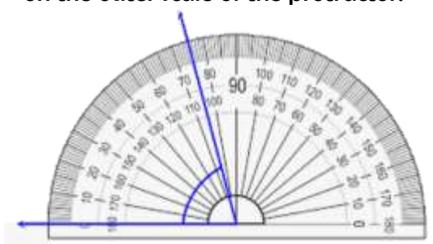
Angles on a straight line add up to 180°

Angles around a point total 360°

Opposite angles sharing a vertex are equal.



Protractors can be used to measure the degree of angles. Place the circle or cross at the point of the angle. Read from 0 on the outer scale of the protractor.

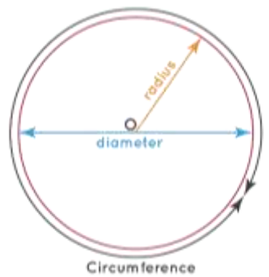


Parts of Circles/ Nets of 3-D Shapes

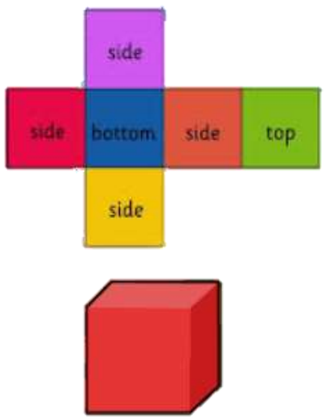
Parts of a Circle

Circumference (c) is the name given to the perimeter of a circle. It is the distance around the outside.

Diameter (d) is the distance across the circle, passing directly through the centre point.



Radius (r) is the distance between the centre of the circle and the outside of the circle.



Nets of 3-D Shapes

Shape nets show what a 3-D shape would look like if it was opened out and laid flat.

You can draw and fold nets to make 3-D shapes. Shapes can have more than one possible net.

Key Vocabulary

Edge Apex Faces Vertices Dimension Protractor Right Angle Obtuse Acute Reflex Vertical Horizontal Diagonal Parallel Perpendicular