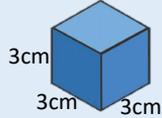


1. Cube Numbers

A cube number is the result of multiplying a number by itself and then by itself again. They are called cube numbers because the same process can also be used to find the volume of a cube, e.g:



$$3\text{cm} \times 3\text{cm} \times 3\text{cm} = 27\text{cm}^3$$

$$1^3 = 1$$

$$5^3 = 125$$

$$2^3 = 8$$

$$6^3 = 216$$

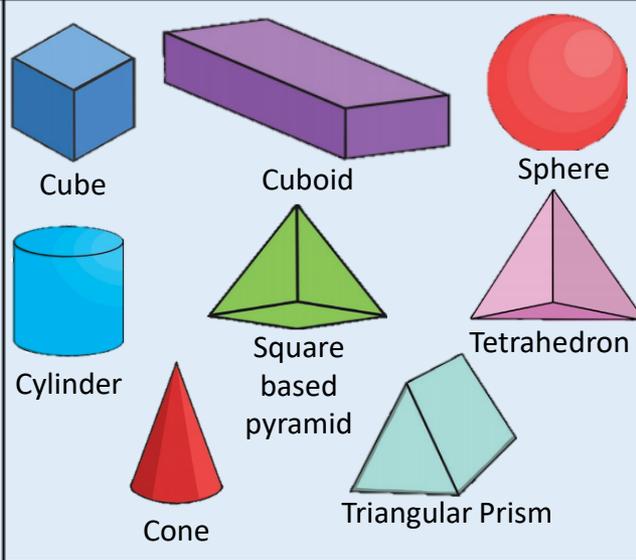
$$3^3 = 27$$

$$9^3 = 729$$

$$4^3 = 64$$

$$10^3 = 1000$$

2. 3D Shapes



3. Geometric Language

Faces - the flat surfaces on a solid 3D shape.

Vertex - a corner where two or more line segments meet. A vertex can be on a 2D or 3D shape. The plural of a vertex is **vertices**.

Edge - a line segment where two faces meet.

Prism - a 3D shape that has identical end faces, flat faces and the same cross section all along its length. *e.g. a cube is a prism, but a tetrahedron is not*

The **cross section** of a prism is the shape revealed by a straight cut through it. *e.g. the cross section on a cube is a square*

Polygons - 2D shapes made up only of straight sides.

Plan view - the view of an object from above it.

Side elevation - looking at an object from a side.

Front elevation - looking at an object from the front.

4. Volume and Surface Area

Volume - the amount of space that a 3 dimensional object takes up. To find the **volume** of a **prism** you multiply the area of the **cross section** by the depth.

Volume is measured in **cubic** units e.g. cm^3

Surface area - the total area of all faces of a 3 dimensional shape.

Surface area is measured in square units e.g. m^2

Net - a pattern made up of polygons that you can cut and fold to make a model of a solid shape.

A net can be used to calculate the surface area of a 3D shape.

5. Constructions

Locus - a path of points that follow a rule *e.g. are a set distance from a point.*

Loci - the plural of locus.

Equidistant - points are the same distance from a point.

Bisecting - an angle or a line is to cut it into two equal parts.

Perpendicular - lines that intersect at a right angle.

Some examples of constructions are:

- An angle bisector
- A perpendicular bisector
- Perpendicular line from a point
- Constructing different types of triangles

6. Congruence

Congruent - shapes that are exactly the same size. They have equal sides and angles but may have a different orientation.

We mostly look at congruent triangles. To prove that two triangles are congruent you must use one of the four reasons:

SSS (Side Side Side) – All the sides are the same size.

ASA (Angle Side Angle) – An angle, a side, and another angle are the same size

SAS (Side Angle Side) – A side, an angle and another side are the same size

RHS (Right angle Hypotenuse Side) – There is a right angle and the hypotenuse and another side are the same size.