

3-D shapes

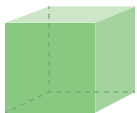
3-D shapes have 3 dimensions: length (or height), width and depth.

3-D shapes are also called three-dimensional or 'solid' shapes, even though they might be hollow.

Shapes with flat faces

Prism

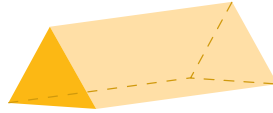
A prism (such as a triangular prism, hexagonal prism or octagonal prism) has the same cross-section along its length. This cross-section can be any of the 2-D shapes. Think of a prism as a 2-D shape that has been stretched to make a 3-D shape.



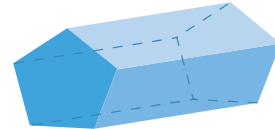
cube



cuboid
(rectangular prism)



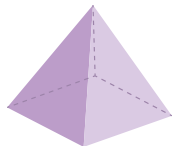
triangular prism



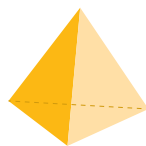
pentagonal prism

Pyramid

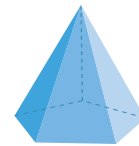
A pyramid (such as a square-based pyramid or pentagonal-based pyramid) has a 2-D base, like a square, triangle or pentagon. The other **faces** are triangles and join together at a point or **vertex**.



square-based
pyramid



triangular-based
pyramid



pentagonal-based
pyramid

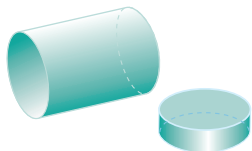
Polyhedra

A 3-D shape with only flat faces is called a **polyhedron**. The shapes above are all polyhedra. Polyhedra are described by the number of faces they have.

- tetrahedron: a triangular-based pyramid with four faces
- hexahedron: a cube or cuboid with six faces
- octahedron: has eight flat faces
- decahedron: 10 flat faces
- dodecahedron: 12 flat faces
- icosahedron: 20 flat faces

Shapes with curved faces

The shapes below are not polyhedra as they have curved faces.



cylinder (circular prism)



cone



sphere



hemisphere

A coin is a 3-D shape and so is called a cylinder.

Test yourself

1. Cover up the text above, and name these shapes:

a



b



c



Remember

3-D shapes have three dimensions (length, width and height).
A polyhedron has only flat faces.