GCSE Maths – Geometry and Measures

Faces, Surfaces, Edges and Vertices

Notes

WORKSHEET

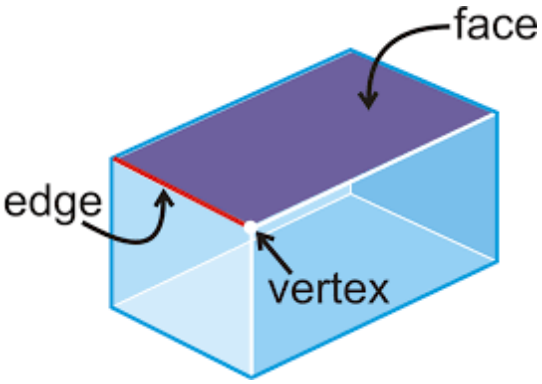
Faces, Surfaces, Edges and Vertices

3D shapes are **solid shapes** with 3 dimensions:

- **Length**
- **Width**
- **Height**

3D shapes also have the following characteristics which allow us to identify which shape we are dealing with:

- **Faces**
- **Edges**
- **Vertices**
- **Surfaces**

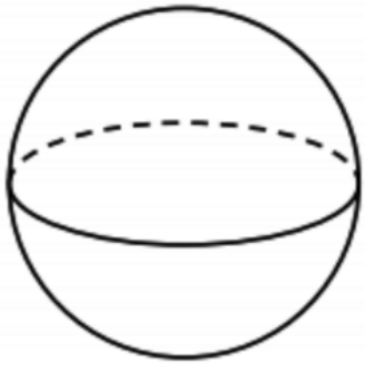


Faces and Surfaces

A **face** is a **flat** or **curved 2D surface** of a 3D shape.

A 3D shape will have **multiple faces** and surfaces.

Example: Name the 3D shape and state the number of faces



Face – A flat or curved surface on a 3D shape

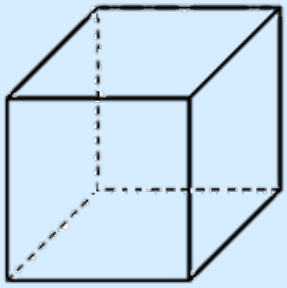
The given shape has only one face. The only 3D shape with this property is a sphere so we identify that the given 3D shape must be a sphere.

Edges

An edge is where **two faces meet**.

If a shape has only **one face,** there will be **no edges**.

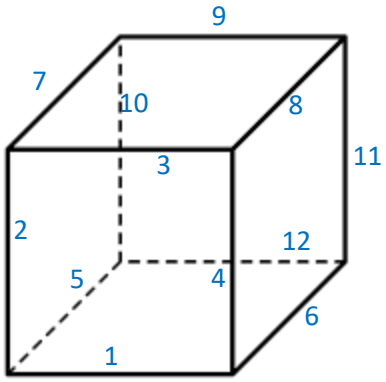
Example: How many edges does the following cuboid have?



Edge – where two faces meet.

Counting all the edges:

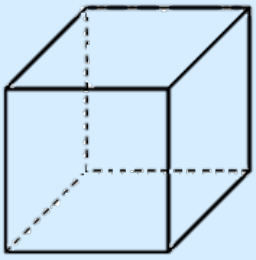
There are 12 edges.



Vertices

A vertex is where **two edges meet (corner)**. We can consider vertices to be 'points' or 'corners' on a shape.

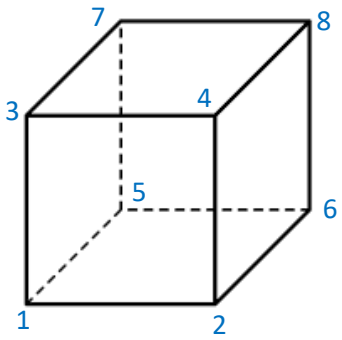
Example: How many vertices does the following cuboid have?



Vertex– where two edges meet (corner)

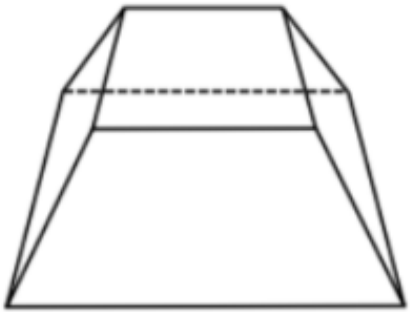
Counting all the vertices:

There are 8 vertices.

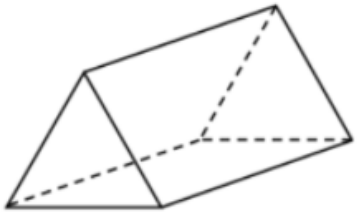


Faces, Surfaces, Edges and Vertices – Practice Questions

1. State the number of faces, edges and vertices in the following 3D shape.



2. Give the number of faces, edges and vertices of the triangular-based prism below.



Faces: *Edges:* *Vertices:*

Worked solutions for the practice questions can be found amongst the worked solutions for the corresponding worksheet file.