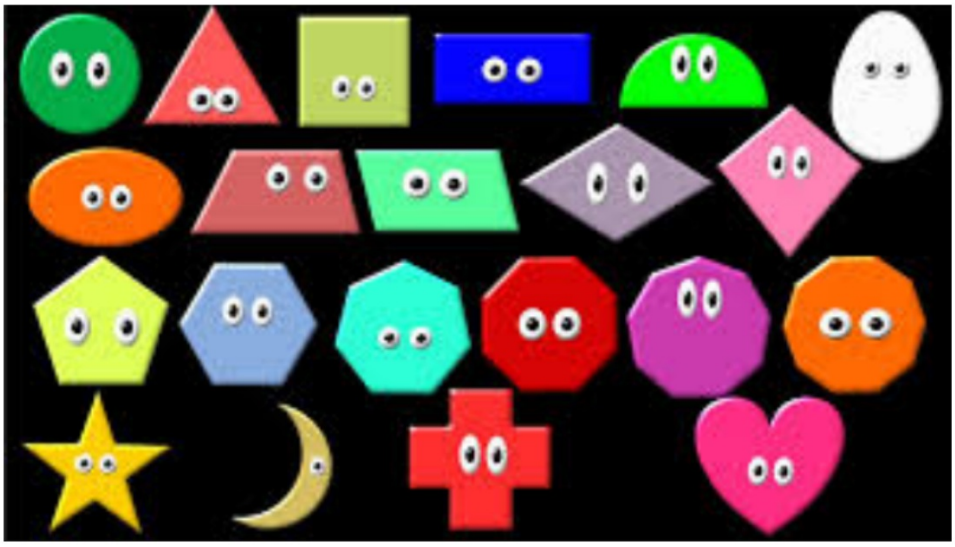
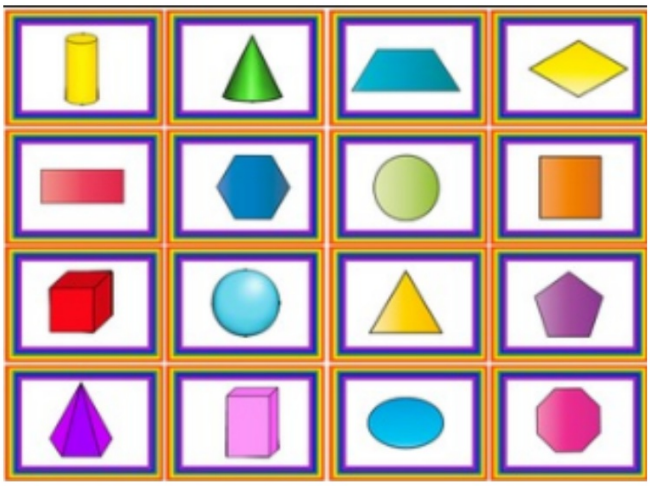
To revise my shape knowledge



Sort the shapes on your tables into 2D and 3D shapes.



Discuss on your tables how you knew the difference between the two different types of shapes.

From the 2D shapes find a quadrilateral

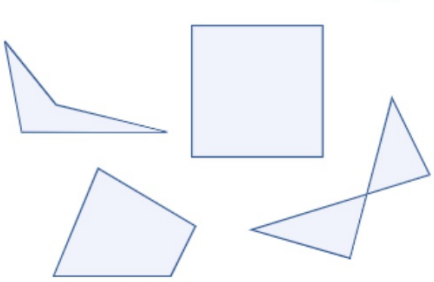
What is a quadrilateral?

What do all quadrilaterals have in common?

From the 2D shapes find a quadrilateral

What is a quadrilateral?

What do all quadrilaterals have in common?

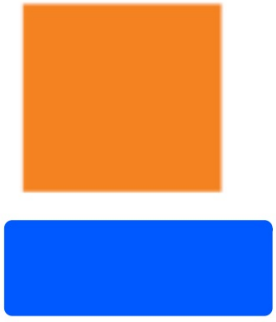


Quadrilateral just means "four sides"
(*quad* means four, *lateral* means side).

A Quadrilateral has four-sides, it is **2-dimensional** (a flat shape), **closed** (the lines join up), and has **straight** sides.

Some quadrialterals have specific names.

Can you name them?



What are the properties of these quadrilaterals?

Square

Kite

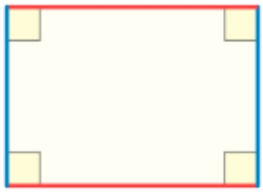
Trapezium

Rectangle

Rhombus

Parallelogram

The Rectangle

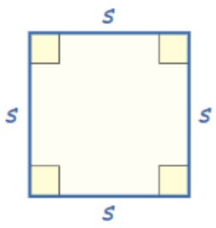


the little squares in each corner mean "right angle"

A rectangle is a four-sided shape where every angle is a right angle (90°).

Also **opposite sides** are parallel and of equal length.

The Square



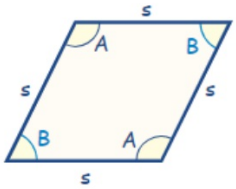
the little squares in each corner mean "right angle"

A square has equal sides (marked "s") and every angle is a right angle (90°)

Also opposite sides are parallel.

A square also fits the definition of a **rectangle** (all angles are 90°), and a **rhombus** (all sides are equal length).

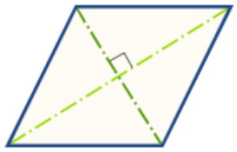
The Rhombus



A rhombus is a four-sided shape where all sides have equal length (marked "s").

Also opposite sides are parallel *and* opposite angles are equal.

Another interesting thing is that the diagonals (dashed lines) meet in the middle at a right angle. In other words they "bisect" (cut in half) each other at right angles.



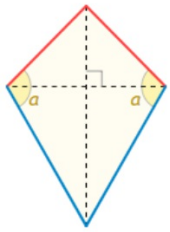
A rhombus is sometimes called a **rhomb** or a **diamond**.

The Parallelogram

A parallelogram has opposite sides parallel and equal in length. Also opposite angles are equal (angles "A" are the same, and angles "B" are the same).

NOTE: Squares, Rectangles and Rhombuses are all Parallelograms!

The Kite



Hey, it looks like a kite (usually).

It has **two pairs** of sides:

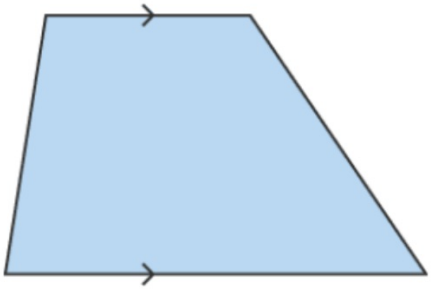
Each pair is made of two equal-length sides that join up.

Also:

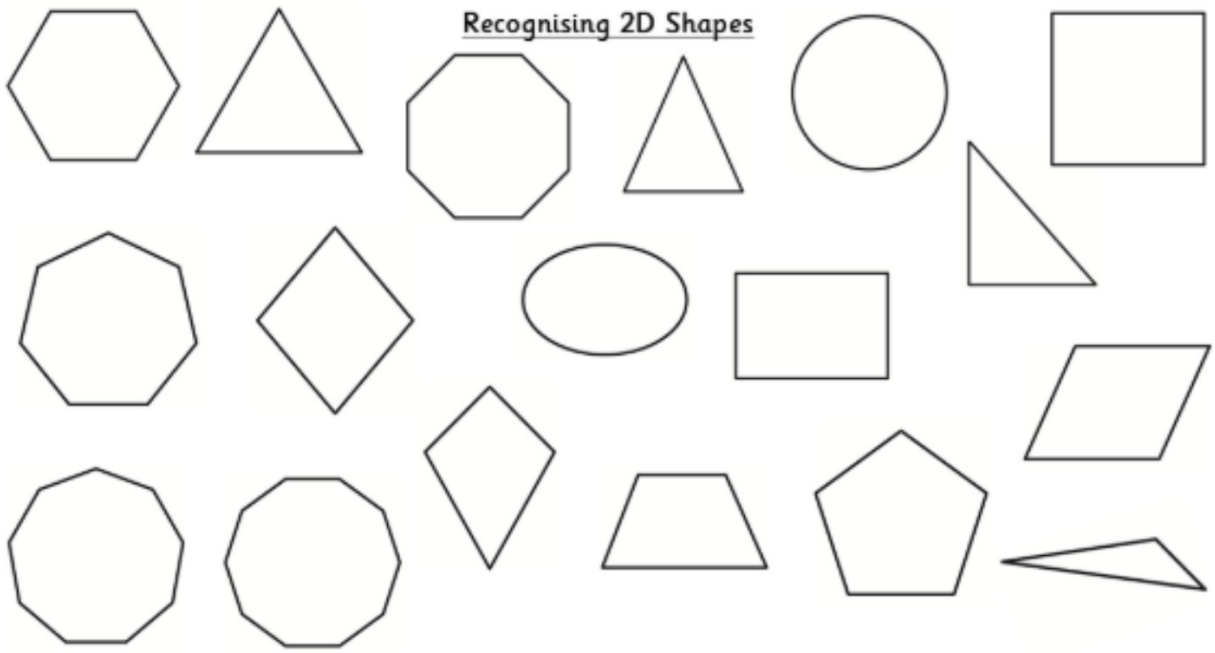
- the angles where the two pairs meet are equal.
- the diagonals, shown as dashed lines above, meet at a right angle.
- one of the diagonals *bisects* (cuts equally in half) the other.

Trapezium

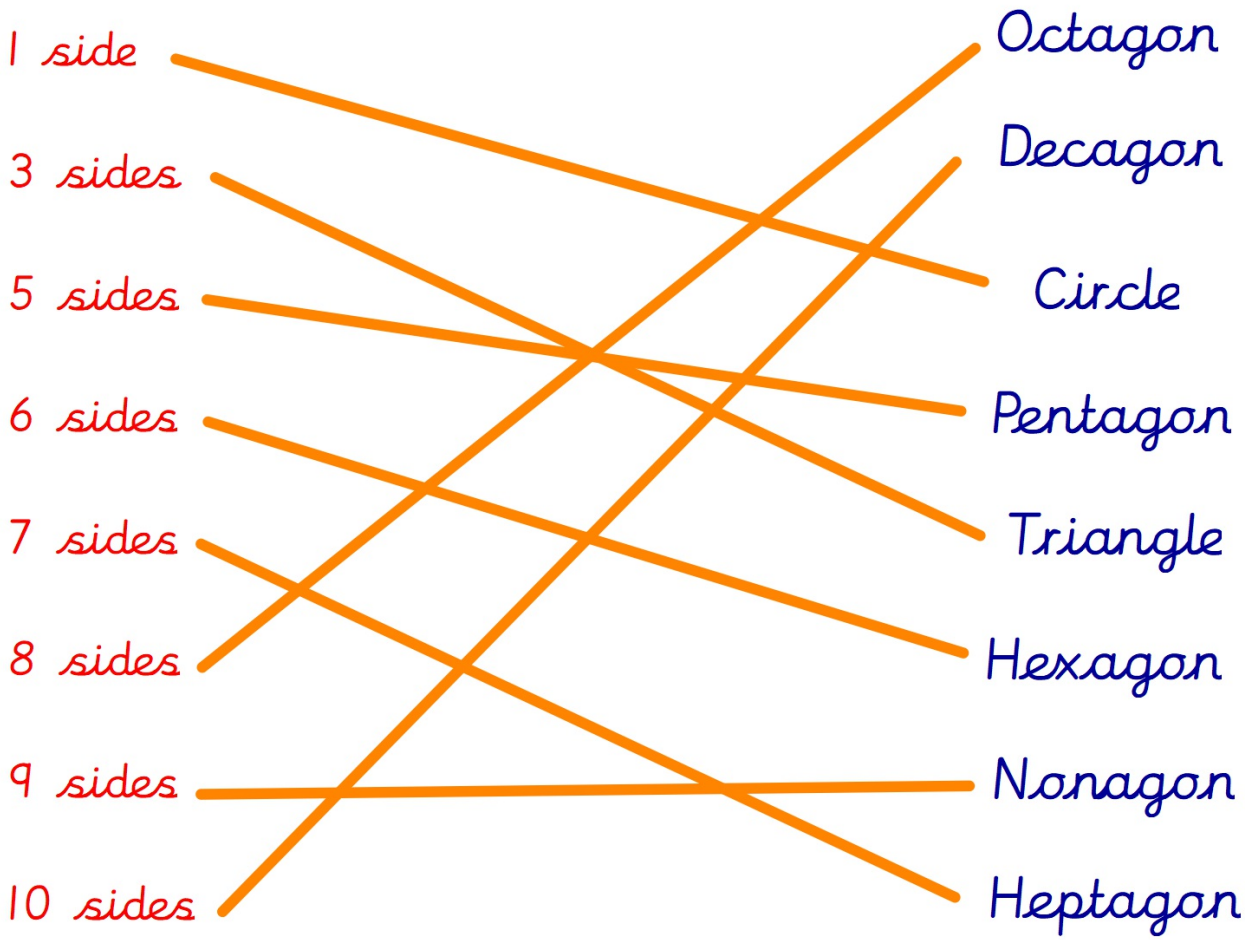
with a **trapezium**, one pair of opposite sides is parallel



Sort the 2D shapes by the amount of sides they have.



1 side	Octagon
3 sides	Decagon
5 sides	Circle
6 sides	Pentagon
7 sides	Triangle
8 sides	Hexagon
9 sides	Nonagon
10 sides	Heptagon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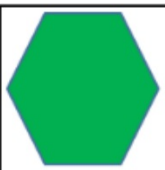
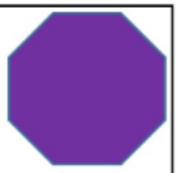
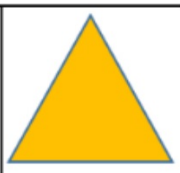
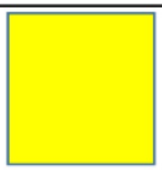
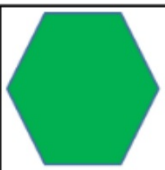
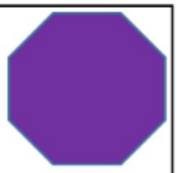
Regular shapes

						
Circle	Equilateral triangle	Square	Pentagon	Hexagon	Heptagon	Octagon
This is a regular shape but not a polygon because it doesn't have straight sides.	Three equal length sides and three equal interior angles of 60°.	Four equal length sides and four interior angles of 90°	Five equal length sides and five interior angles of 108°	Six equal length sides and six interior angles of 120°	Seven equal length sides and seven interior angles of 128.57°	Eight equal length sides and eight interior angles of 135°

What do you notice?

Regular shapes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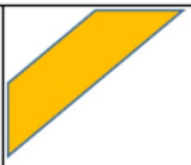
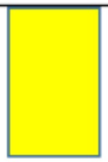
What do you notice?

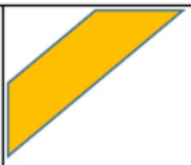
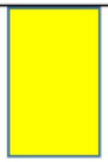
All of the sides and angles are even within each shape

Irregular shapes

						
Right-angle Triangle	Quadrilateral	Rectangle (also a Quadrilateral)	Irregular Pentagon	Irregular Hexagon	Irregular Hexagon	Irregular Octagon
This has three sides and three internal angles, one angle is always at 90°.	All four-sided polygons are called quadrilateral but some also have special names like a kite or a rhombus.		This shape has five sides and internal angles that are not all equal.	This shape has six sides and six internal angles that are not all equal.	Here is an example of a completely different hexagon.	This shape has eight sides and eight internal angles that are not all equal.

What do you notice?

Irregular shapes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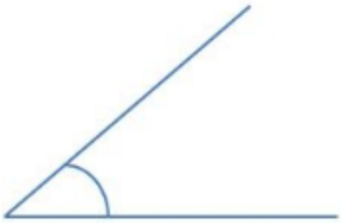
What do you notice?

The sides and angles are not all equal



Acute angle
Less than 90°

Right angle
Exactly 90°

Obtuse angle
More than 90°
Less than 180°

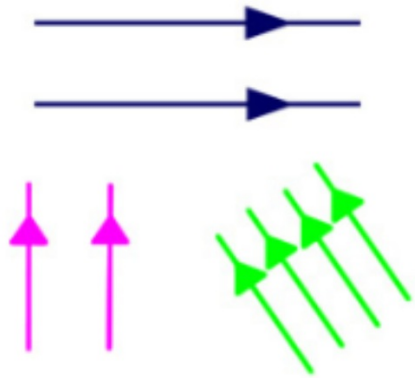
Reflex angle
More than 180°
Less than 360°

Can you find a 2D shape with each of the following angles?

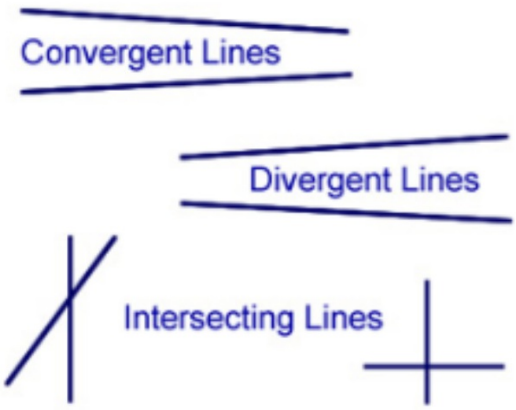
Parallel Lines

Parallel Lines are two or more lines which are going in the exact same direction. They stay the same distance apart.

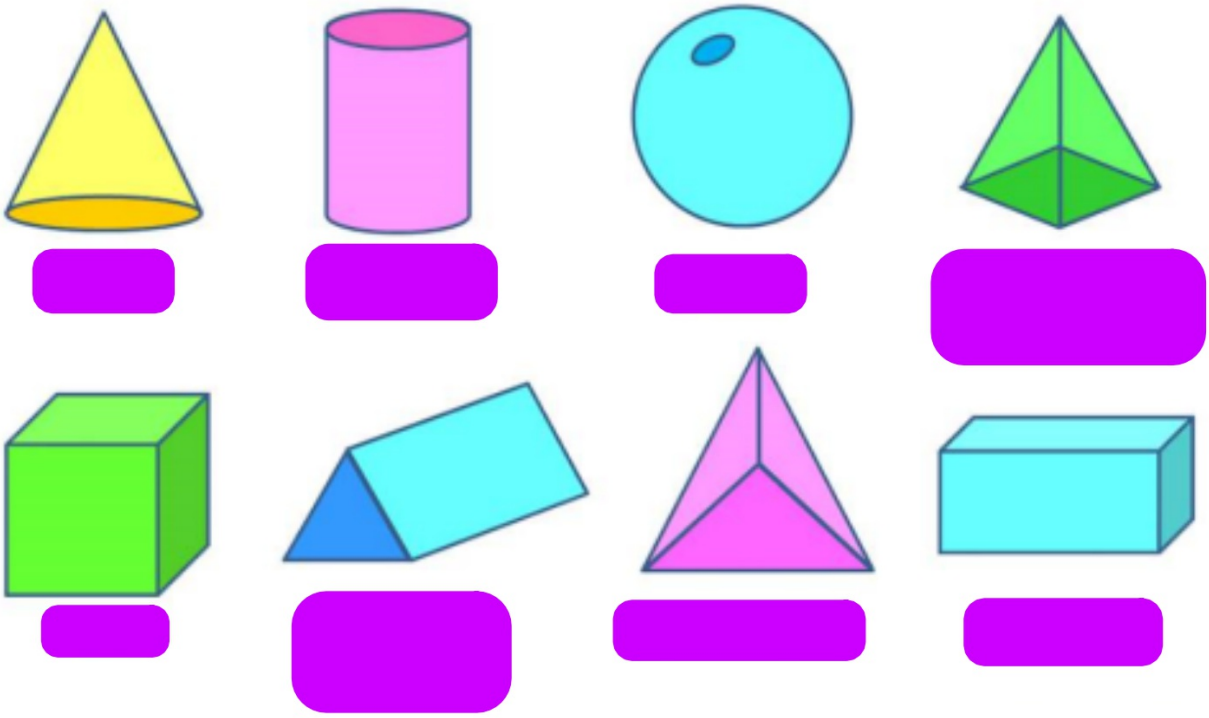
Parallel Lines



Non-Parallel Lines

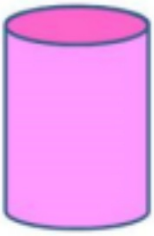


3D shapes



3D shapes

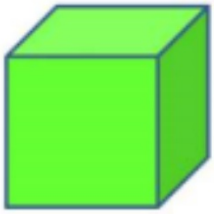
Cone



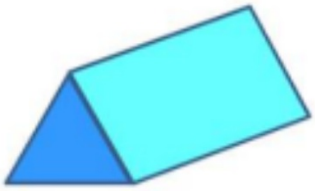
Cylinder

Sphere

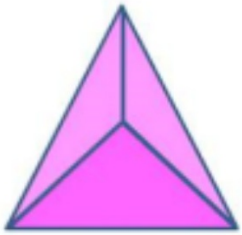
Square Based Pyramid



Cube



Triangular Prism



Tetrahedron

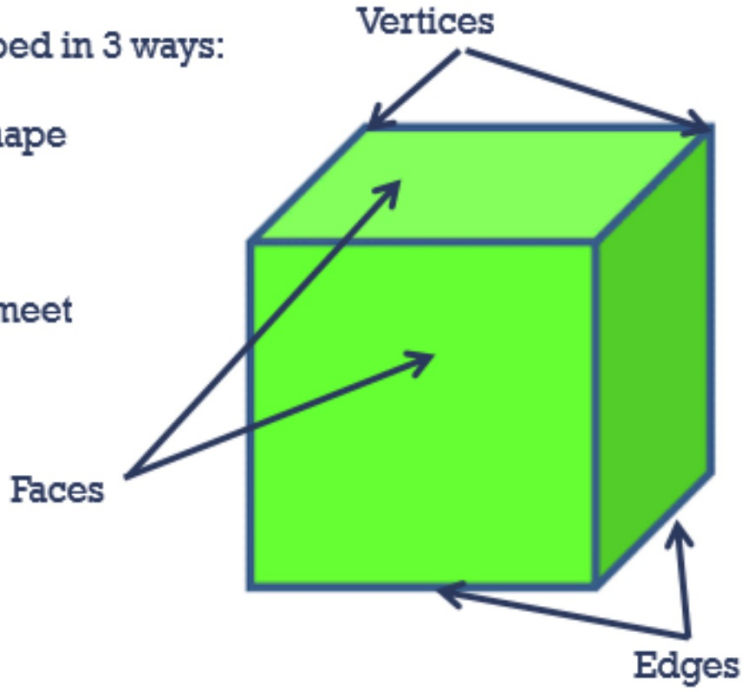
Cuboid

3D shapes can be described in 3 ways:

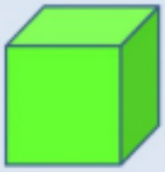
Faces – the sides of the shape

Vertices – the corners

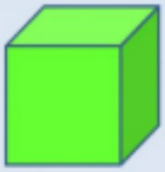
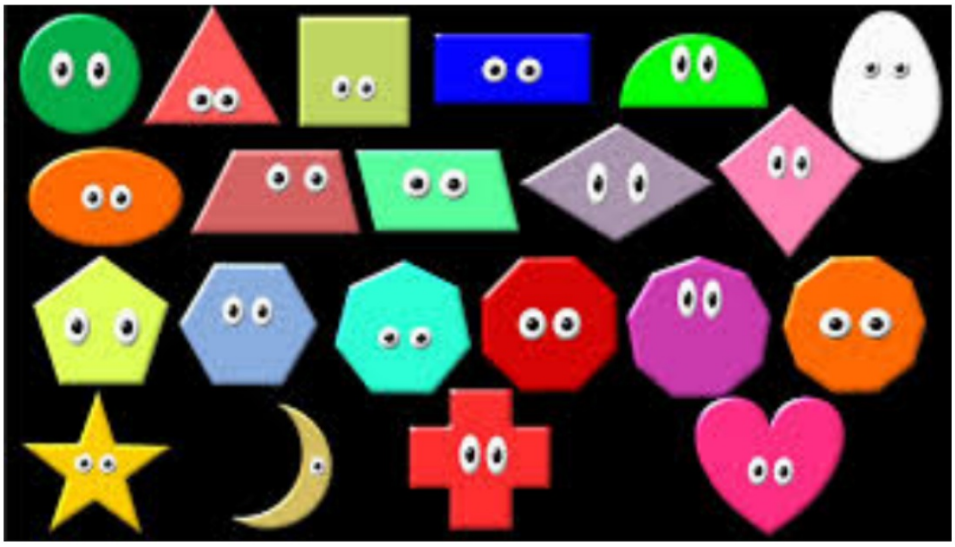
Edges – where the faces meet



Properties of 3D shapes

Cone	Sphere	Tetrahedron	Cuboid
Cylinder	Cube	Triangular Prism	Square-based pyramid
			

Properties of 3D shapes

Cone	Sphere	Tetrahedron	Cuboid
2 Faces 1 Edge 1 Vertex	1 Face 1 Edge 0 Vertices	4 Faces 6 Edges 4 Vertices	6 Faces 12 Edges 8 Vertices
Cylinder	**Cube**	**Triangular Prism**	**Square-based pyramid**
			
3 Faces 2 Edges 0 Vertices	6 Faces 12 Edges 8 Vertices	5 Faces 9 Edges 6 Vertices	5 Faces 8 Edges 5 Vertices

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