



# Knowledge Organiser

## Geometry



### Year 4

### Properties of Shape

In Year 4, we learn about the different types of triangles and quadrilaterals. They can be identified through their properties, including types of angles. An angle is created when two straight lines meet at a point or intersect.

#### Builds from Year 3:

Identify horizontal, vertical, perpendicular and parallel lines.  
Compare angles and identify right angles.  
Identify the properties of 2D and 3D shapes.  
Draw 2D shapes.

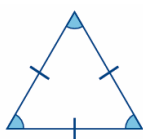
#### This year:

Compare and classify quadrilaterals and triangles.  
Identify acute and obtuse angles.  
Compare and order angles.  
Identify lines of symmetry in 2-D shapes.

#### Leads to Year 5:

Draw angles.  
Know the number of degrees around a point and on a straight line.  
Calculate missing angles and lengths in rectangles.

## Triangles

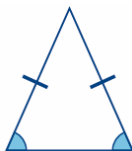


An **equilateral** triangle is a regular polygon.

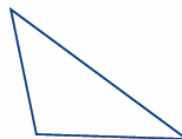
It has sides of equal length and each angle is  $60^\circ$ .

All triangles have 3 sides and 3 vertices.

The total of the angles in a triangle is  $180^\circ$ .



An **isosceles** triangle has two sides of equal length and two angles of equal size.



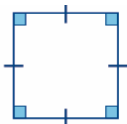
A **scalene** triangle has no equal sides or angles.



A **right-angled** triangle always has one  $90^\circ$  angle.

It can be isosceles or scalene.

## Quadrilaterals

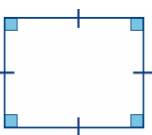
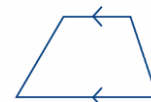


A **square** has four sides of equal length and four right angles.

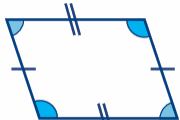
A quadrilateral is a polygon with 4 sides.

The total of the angles in a quadrilateral is  $360^\circ$ .

A **trapezium** has only one pair of opposite parallel sides.

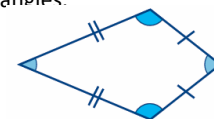


A **rectangle** has two pairs of parallel, equal sides and four right angles.



A **parallelogram** has two pairs of parallel, equal sides and opposite equal angles.

A **kite** has two pairs of adjacent equal sides and one pair of opposite equal angles.



A **rhombus** has four sides of equal length and opposite equal angles. A rhombus is also a parallelogram.

## Angles

The intersection of **perpendicular** lines creates a **right angle**.



Any angle measuring more than 0 degrees and less than 90 degrees is **acute**.



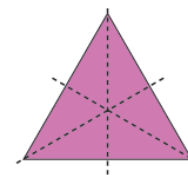
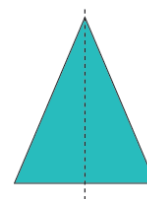
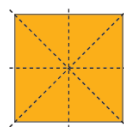
Any angle measuring more than 90 degrees and less than 180 degrees is **obtuse**.



## Lines of Symmetry

Lines of symmetry may be **horizontal**, **vertical** or **diagonal**.

Some 2D shapes have no lines of symmetry and some have multiples lines of symmetry.



## Key Vocabulary

angle right angle acute obtuse horizontal vertical diagonal parallel perpendicular polygon regular irregular line of symmetry reflection mirror line isosceles equilateral scalene quadrilateral rhombus parallelogram trapezium two-dimensional