

YR4 Knowledge Organiser - Geometry

Key Concepts

- Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
- Identify acute and obtuse angles and compare and order angles up to two right angles by size
- Identify lines of symmetry in 2D shapes presented in different orientations
- Complete a single symmetric figure with respect to a specific line of symmetry

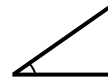
Key Vocabulary

- acute / right / obtuse angles
- polygon
- triangle
- equilateral / scalene / isosceles / right-angled
- quadrilateral
- parallelogram
- rhombus
- trapezium
- regular / irregular
- parallel / perpendicular side
- symmetry / symmetric / symmetrical

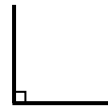


Angles

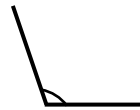
Types of angles can be identified by their size.



An acute angle is larger than 0° but smaller than 90° .



A right angle is 90° .

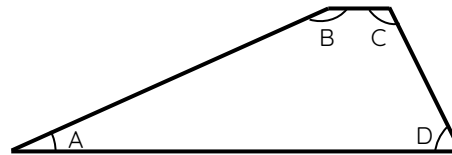
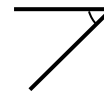


An obtuse angle is larger than 90° but smaller than 180° .

When the types of angles can be identified, we can estimate, compare and order them too.



"I estimate that the angle is 45° because it looks about half the size of a right angle."



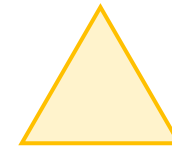
$B > C$

$A < D$

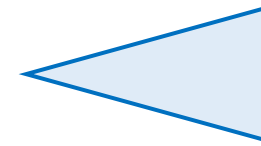
$B > C > D > A$

Triangles

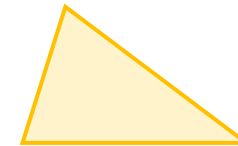
There are different types of triangles.



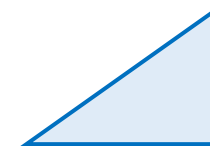
An equilateral triangle has 3 sides of equal length and 3 equal angles of 60° .



An isosceles triangle has 2 sides of equal length and 2 equal angles.



A scalene triangle has no equal side lengths and no equal angles.



A right-angled triangle has one right angle and two acute angles. It is possible for a right-angled triangle to be described as isosceles or scalene.



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Quadrilaterals

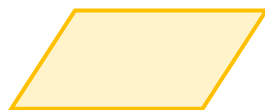
Quadrilaterals are shapes with 4 sides. They have different names depending on their properties.



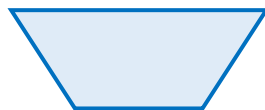
A square has 2 pairs of parallel sides and all 4 side lengths are equal. It also has 4 right angles. A rectangle also has 2 pairs of parallel sides and 4 right angles. However, its side lengths are not all equal. The opposite sides are equal in length.



A rhombus has 4 equal side-lengths. Its opposite sides are parallel and its opposite angles are equal.



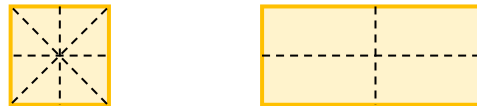
A parallelogram's opposite sides are parallel and equal in length. Their opposite angles are equal. It does not have 4 equal side lengths.



A trapezium has one pair of parallel sides.

Lines of Symmetry

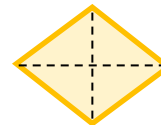
Lines of symmetry can be vertical, horizontal or diagonal. Some 2D shapes have no lines of symmetry, some have one and others have more than one.



Squares have 4 lines of symmetry and rectangles have 2.



Equilateral triangles have 3 lines of symmetry and isosceles triangles have 1.



A rhombus has 2 lines of symmetry.



Parallelograms, some trapeziums and scalene triangles have no lines of symmetry.

We can check if a shape has a line of symmetry by using mirrors and tracing paper. If the shape looks identical on each side of the line, then it is symmetrical.

Symmetric Figures

We can use our knowledge of symmetry to complete 2D shapes and patterns along vertical, horizontal and diagonal lines of symmetry.

