



Key Vocabulary	Definition
If you see * next to a word, there is a diagram to explain it	
angle	The number of degrees rotated around a point
horizontal	Describes a line parallel to the earth's surface
vertical	A line which is at right angles to a horizontal line
diagonal	A straight line connecting two non- adjacent vertices (corners) of a polygon.
parallel	Lines which are always an equal distance apart
perpendicular	A line at right angles to another line
two-dimensional (2d)	Having two dimensions of length and width (cannot be picked up)
polygon	A two-dimensional shape having three or more straight sides
symmetry	Identical on either side of a line of symmetry
line of symmetry	A line dividing a shape into symmetrical parts
reflection	A mirror image
mirror line	a line drawn onto a shape to show that both sides have exact reflective symmetry
isosceles *	A triangle with two sides of equal length and two angles of equal size
equilateral *	A triangle which is a regular polygon. It has sides of equal length and each angle is equal (60°)
scalene *	A triangle with no equal sides or angles
quadrilateral *	A four-sided shape
rhombus *	A four-sided shape which four sides of equal lengths and opposite equal angles (it is also a parallelogram)
parallelogram *	A four-sided shape with two pairs of parallel, equal sides and opposite equal angles
trapezium *	A four-sided shape with one pair of opposite parallel sides

Triangles	Quadrilaterals
<p>Triangles have 3 sides and 3 vertices. The total of the angles in a triangle is 180°.</p> <p>An equilateral triangle is a regular polygon. It has sides of equal length and each angle is 60°.</p>	<p>A quadrilateral is a polygon with four sides.</p> <p>A square has four sides of equal length and four right angles (90°). A square is also a rectangle, a rhombus and a parallelogram.</p>
<p>An isosceles triangle has two sides of equal length and two angles of equal size.</p>	<p>A rectangle has two pairs of parallel, equal sides and four right angles. A rectangle is also a parallelogram.</p>
<p>A right-angled triangle always has one 90° angle. It can be isosceles or scalene.</p>	<p>A parallelogram has two pairs of parallel, equal sides and opposite equal angles.</p>
<p>A scalene triangle has no equal sides or angles.</p>	<p>A rhombus has four sides of equal length and opposite equal angles. A rhombus is also a parallelogram.</p>
	<p>A trapezium only has one pair of opposite parallel sides.</p>
	<p>A kite has two pairs of adjacent equal sides and one pair of opposite equal angles.</p>

Real Life
<ul style="list-style-type: none"> • Building: Making sure shelves / doors are at right angles. • Sports players: Knowing what angle to kick / hit a ball at to pass / score. • Turning boats / planes - When boats and planes turn, they need to set the number of degrees they want to turn • What else can you think of?

Angles

An angle is created when two straight lines meet at a point or intersect.

Right angle

The intersection of perpendicular lines creates a right angle.



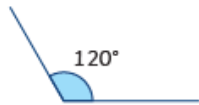
Acute angle

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



Obtuse angle

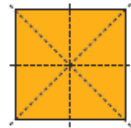
Any angle measuring more than 90 degrees but less than 180 degrees is obtuse.



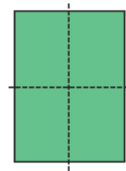
Lines of Symmetry

Lines of symmetry may be horizontal, vertical or diagonal. Some 2D shapes will have no lines of symmetry and some 2D shapes will have multiple lines of symmetry.

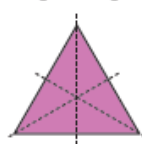
A square has four lines of symmetry.



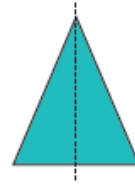
A rectangle has two lines of symmetry.



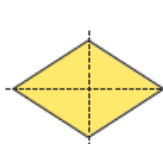
An equilateral triangle has three lines of symmetry.



An isosceles triangle has one line of symmetry.

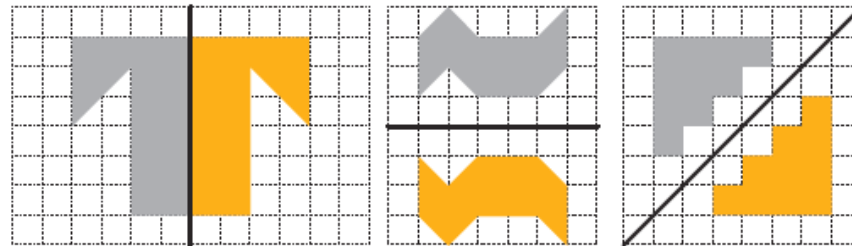


A rhombus has two lines of symmetry.



Symmetric Figures

Patterns and shapes can be reflected in a mirror line. Mirror lines can be vertical, horizontal or diagonal.



Zooming out...

- **Ancient Egyptians.** In 1500BC in Egypt, measurements were taken of the Sun's shadow against graduations marked on stone tables (a sun dial)
- 'Geometry' comes from the Greek word *geometria*, meaning 'earth measurement'
- **Ancient Egyptians** are thought to be the first group to begin studying geometry. We can see evidence of this type of thinking with their design and construction of the Great Pyramids



Prior Knowledge

Type of Lines

horizontal	vertical	parallel	perpendicular
$\frac{1}{4}$ turn	$\frac{1}{2}$ turn	$\frac{3}{4}$ turn	1 turn