Templars Primary School Knowledge Organiser

Year 4 Shape, Position and Direction

Key Vocabulary

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

Identify angles

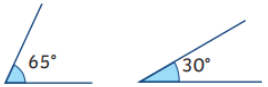
An angle is created when two straight lines meet at a point or intersect.

Right angle

The intersection of perpendicular lines creates a right angle. A right angle is 90 degrees.

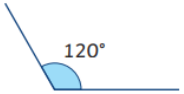
Acute angle

Any angle measuring more than – degrees and less than 90 degrees is acute. Acute angles are smaller than a right angle.



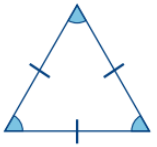
Obtuse angle

Any angle measuring more than 90 degrees but less than 180 degrees is obtuse. Obtuse angles are larger than a right angle.

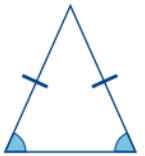


Triangles

Triangles have 3 sides and 3 vertices. The total of the angles in a triangle is 180 degrees.

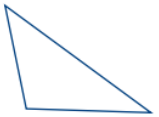


An equilateral triangle is a regular polygon. It has sides of equal length and each angle measures 60 degrees because 180 degrees ÷ 3 = 60 degrees.



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

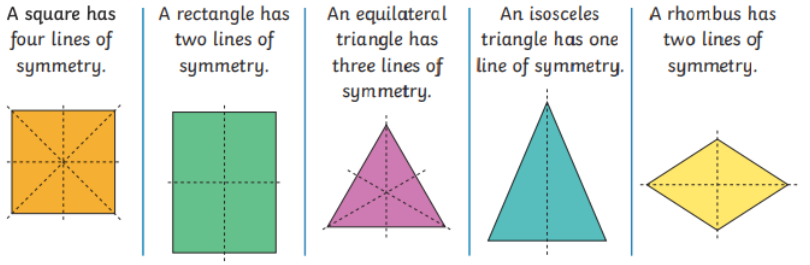
A right-angled triangle always has one 90 degree angle. It can be isosceles or scalene.



A scalene triangle has no equal sides or angles.

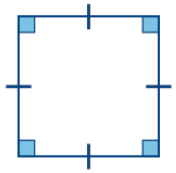
Lines of symmetry

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.

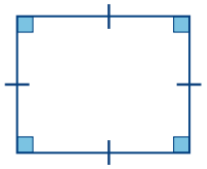


Quadrilaterals

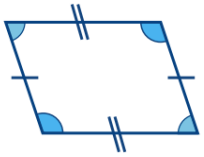
A quadrilateral is a polygon with four sides.



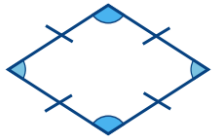
A square has four sides of equal length and four right angles (90 degrees). A square is also a rectangle, a rhombus and a parallelogram.



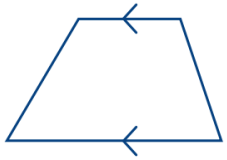
A rectangle has two pairs of parallel, equal sides and four right angles. A rectangle is also a parallelogram.



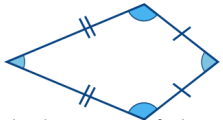
A parallelogram has two pairs of parallel, equal sides and opposite equal angles.



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



A trapezium only has one pair of opposite parallel sides.



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

Position and Direction

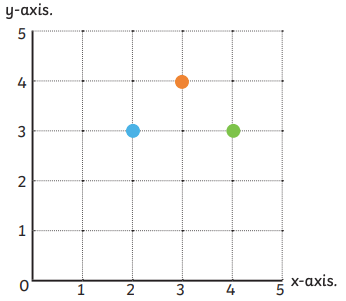
Key Vocabulary

- coordinate
- quadrant
- x-axis
- y-axis
- translation
- vertex
- vertices

Position in the First Quadrant

Coordinates are a useful way to locate a position on a map or grid.

The numbers across the horizontal line are on the x-axis.
The numbers on the vertical line are on the y-axis.

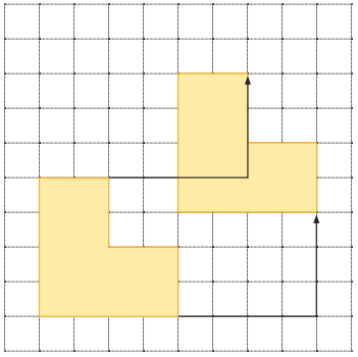


We always read or write the number on the x-axis before the y axis. To help us remember which point to read or write first, we can say **'along the corridor and up the stairs'**.

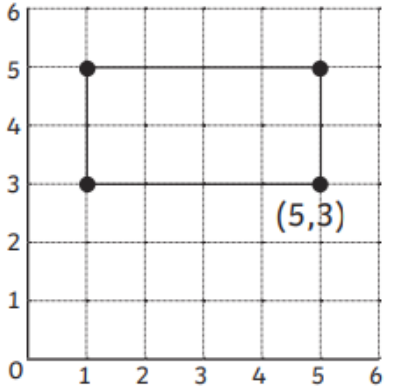
The x and y position are written in brackets with a comma. The coordinate of the blue spot is (2, 3).

Translation

Translation means moving an object on a grid. The object is moved without changing in size, turning or reflecting. The object can move up, down, left or right.



Plotting 2D shapes



Each vertex of a 2D polygon can be represented as a coordinate on a 2D grid.