

Y7 Maths Knowledge Organiser Topic 12: Constructions and classifying 2D shapes

What must I be able to do?

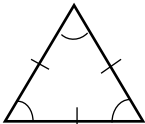
- Classify triangles and quadrilaterals according to their properties
 - Sparx M276
- Use a ruler and protractor to construct triangles and quadrilaterals from given data. Extend to construction of hexagons, pentagons etc. Can also include other constructions such as right angles etc.
- Draw and measure acute and obtuse angles reliably to the nearest degree
 - Sparx M331
- Estimate the size of any given angle
 - Sparx M541
- Solve problems involving coordinates in all four quadrants
 - Sparx Q761

Key vocabulary

Classify	Decide a category that something belongs to.
Construct	Draw something accurately.
Coordinate	Position on a grid written as (x, y).
Quadrant	One of the four parts of a coordinate grid.
Compass	Mathematical instrument that can be used to draw circles or parts of circles.
Protractor	Mathematical instrument used to measure angles.

Triangle properties

The dashes tell you which sides are equal



Equilateral



Isosceles

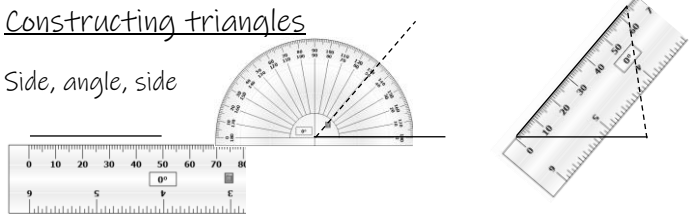


Scalene

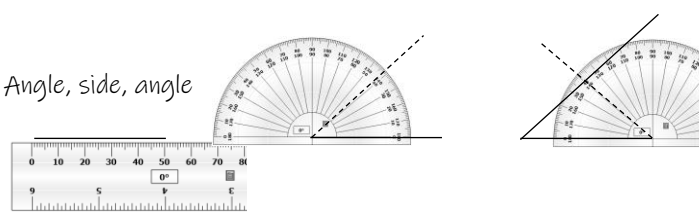
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|--|--|---|
| <ul style="list-style-type: none"> • 3 equal sides • 3 equal angles • 3 lines of symmetry | <ul style="list-style-type: none"> • 2 equal sides • 2 equal base angles • 1 line of symmetry | <ul style="list-style-type: none"> • no equal sides • no equal angles • no lines of symmetry |
|--|--|---|

Constructing triangles

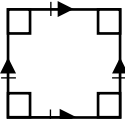
Side, angle, side



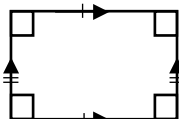
Angle, side, angle



Quadrilateral properties



Square

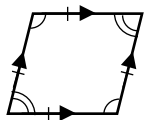


Rectangle

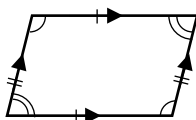


Kite

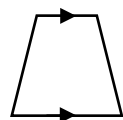
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| <ul style="list-style-type: none"> • 4 equal sides • Opposite sides are parallel • 4 right angles • 4 lines of symmetry | <ul style="list-style-type: none"> • Opposite sides are equal • Opposite sides are parallel • 4 right angles • 2 lines of symmetry | <ul style="list-style-type: none"> • 2 pairs of equal sides • 2 equal angles • 1 line of symmetry |
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Rhombus

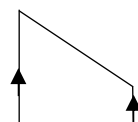


Parallelogram



Trapezium

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> • 4 equal sides • Opposite sides are parallel • Opposite angles are equal • 2 lines of symmetry | <ul style="list-style-type: none"> • 2 pairs of equal sides • Opposite sides are parallel • Opposite angles are equal • No lines of symmetry | <ul style="list-style-type: none"> • One pair of parallel sides |
|--|--|--|



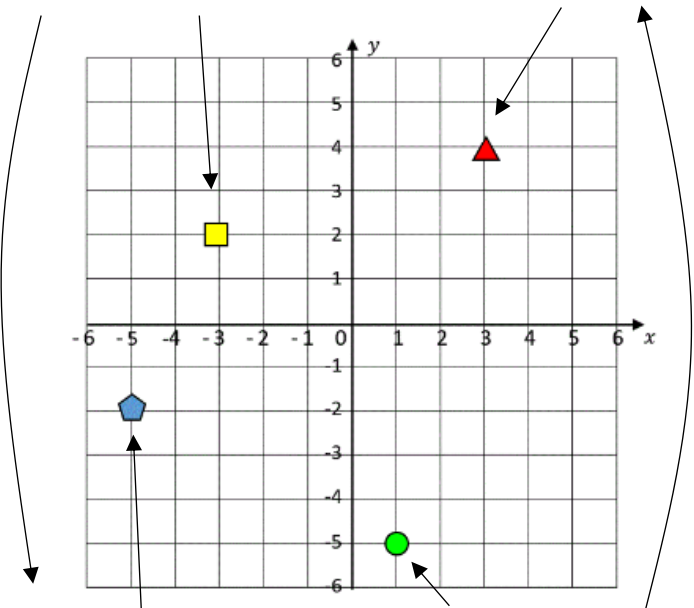
Coordinates in 4 quadrants

2nd quadrant. x is negative and y is positive

1st quadrant. x and y are both positive

Coordinate = (-3, 2)

Coordinate = (3, 4)



3rd quadrant. x and y are both negative

4th quadrant. x is positive and y is negative

Coordinate = (-5, -2)

Coordinate = (1, -5)