



Knowledge Organiser Focus:

2D geometry

I should already know:

The names of the different 2d shapes

How to measure an angle

I will learn:

How to draw and measure angles

To remember certain angle facts

To find unknown angles using angle facts

The types of symmetry

How to classify shapes

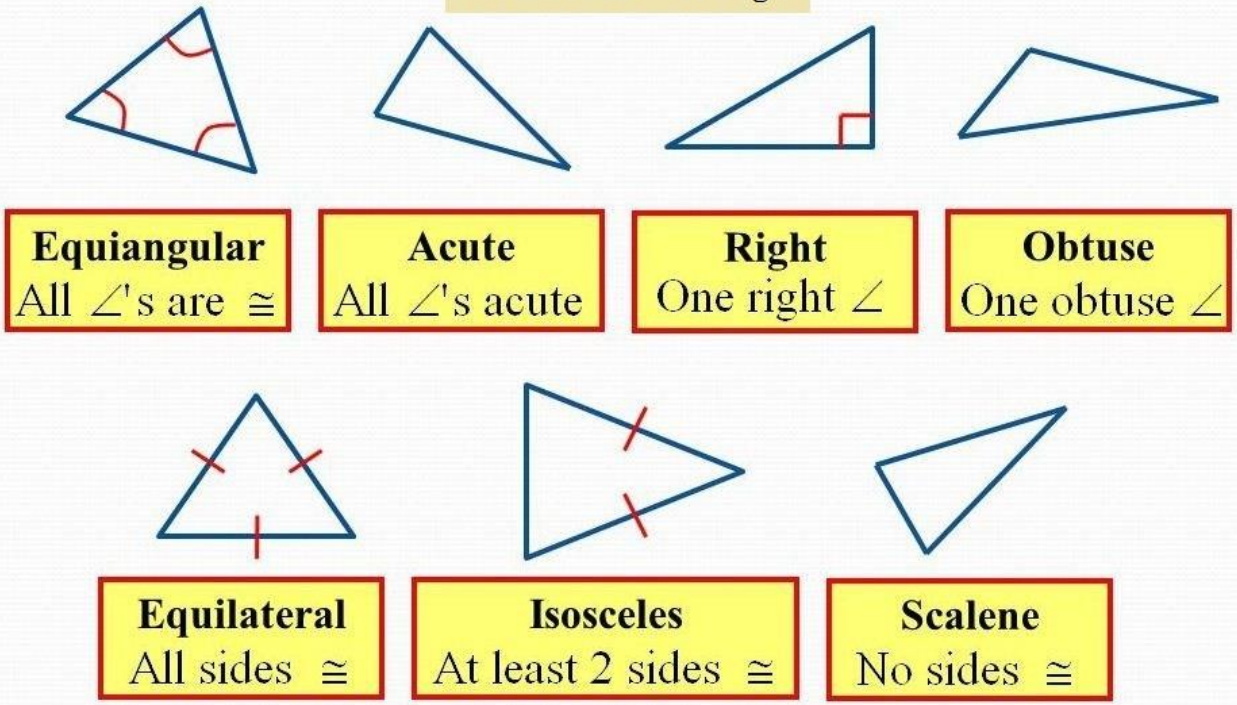
This will help in the future:

We will learn to recognise and use properties of shapes so we can apply this knowledge to problem solving context later in our learning.

Key Words

Angle	The amount of turn to get from one position to another
Parallel	Straight lines that go in the same direction and so stay the same distance apart
Perpendicular	Lines that are at 90° to each other
Property (shape)	Something that can be used to describe a shape
Quadrilateral	Any shape made of 4, straight sides

Classification of Triangles



Greater Depth Challenge

Can you create a flow chart to show how to classify the different triangles and quadrilaterals?

Further Reading

Hegarty Maths

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Unit 6/7 – triangles and quadrilaterals		
Question	Answer	Example
What are the properties of an equilateral triangle?	All angles are the same size and all sides are the same length.	
What are the properties of a scalene triangle?	All angles are different sizes and all sides are different lengths.	
What are the properties of a right-angled triangle?	Contains one angle of 90°	
What are the properties of an isosceles triangle?	Has 2 sides of equal length and 2 angles of equal size	
What are the properties of a square?	<ol style="list-style-type: none"> All of its sides are the same length. All of its angles are equal (90°) It has 2 pairs of parallel sides 	
What are the properties of a rectangle?	<ol style="list-style-type: none"> Opposite sides are the same length All of its angles are equal (90°) It has 2 pairs of parallel sides 	
What are the properties of a rhombus?	<ol style="list-style-type: none"> All sides are the same length None of its angles are 90° It has 2 pairs of parallel sides 	
What are the properties of a parallelogram?	<ol style="list-style-type: none"> Opposite sides are the same length None of its angles are 90° It has 2 pairs of parallel sides 	
What are the properties of a kite?	<ol style="list-style-type: none"> Adjacent sides are the same length 1 pair of opposite angles are equal It has 0 pairs of parallel lines 	
What are the properties of a trapezium?	<ol style="list-style-type: none"> It has 1 pairs of parallel lines In the special case of an isosceles trapezium it has 1 pair of opposite sides of equal length 	

Unit 8 – angles		
Question	Answer	Example
What is an angle less than 90°?	Acute	
What is an angle between 90° and 180°?	Obtuse	
What is an angle greater than 180°?	Reflex	
What is a right angle?	90°	
Adjacent angles on a straight line sum to...	180°	
Angles around a point sum to...	360°	
Vertically opposite angles are...	Equal	
Interior angles in a triangle...	sum to 180°	
Interior angles in a quadrilateral...	sum to 360°	
All angles in an equilateral triangle...	are 60°	
Alternate angles...	are equal	
Corresponding angles...	are equal	
Co-interior angles...	add up to 180	
What does parallel mean?	2 lines at an equal distance apart that will never intersect	
What does perpendicular mean?	2 lines that meet at a 90° angle	

Unit 9 - area		
Question	Answer	Example
1cm	10mm	
1m	100cm	
1km	1000m	
1g	10mg	
1kg	1000g	
1l	1000ml	
$\text{km} \begin{matrix} \xrightarrow{\times 1000} \\ \xleftarrow{\div 1000} \end{matrix} \text{m} \begin{matrix} \xrightarrow{\times 100} \\ \xleftarrow{\div 100} \end{matrix} \text{cm} \begin{matrix} \xrightarrow{\times 10} \\ \xleftarrow{\div 10} \end{matrix} \text{mm}$		
$\text{Kg} \begin{matrix} \xrightarrow{\times 1000} \\ \xleftarrow{\div 1000} \end{matrix} \text{g} \begin{matrix} \xrightarrow{\times 1000} \\ \xleftarrow{\div 1000} \end{matrix} \text{mg}$		
$\text{l} \begin{matrix} \xrightarrow{\times 1000} \\ \xleftarrow{\div 1000} \end{matrix} \text{ml}$		
$\text{mm}^2 \begin{matrix} \xrightarrow{\div 10^2} \\ \xleftarrow{\times 10^2} \end{matrix} \text{cm}^2 \begin{matrix} \xrightarrow{\div 100^2} \\ \xleftarrow{\times 100^2} \end{matrix} \text{m}^2 \begin{matrix} \xrightarrow{\div 1000^2} \\ \xleftarrow{\times 1000^2} \end{matrix} \text{km}^2$		
Area of a rectangle...	length x width	
Area of a parallelogram...	base x perpendicular height	
Area of a triangle...	$\frac{1}{2}$ base x perpendicular height	
Area of a trapezium...	$\frac{1}{2}(a + b) \times h$	



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What are the properties of a right-angled triangle?		
What are the properties of an isosceles triangle?		
What are the properties of a square?		
What are the properties of a rectangle?		
What are the properties of a rhombus?		
What are the properties of a parallelogram?		
What are the properties of a kite?		
What are the properties of a trapezium?		

Unit 8 – angles		
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What is an angle less than 90°?		
What is an angle between 90° and 180°?		
What is an angle greater than 180°?		
What is a right angle?		
Adjacent angles on a straight line sum to...		
Angles around a point sum to...		
Vertically opposite angles are...		
Interior angles in a triangle...		
Interior angles in a quadrilateral...		
All angles in an equilateral triangle...		
Alternate angles...		
Corresponding angles...		
Co-interior angles...		
What does parallel mean?		
What does perpendicular mean?		

Unit 9 - area		
Question	Answer	Example
1cm		
1m		
1km		
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1l		
Area of a rectangle...		
Area of a parallelogram...		
Area of a triangle...		
Area of a trapezium...		