

# Maths Curriculum Progression

## Geometry - Properties of Shapes

### Properties of shape

Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Show interest in shape by playing with shapes</p> <p>Show awareness of similarities of shapes in the environment</p> <p>Show interest in shape by sustained construction activity or by talking about shapes</p> <p>Show interest in shapes in the environment</p>	<p>Begin to use mathematical names for 'flat' 2D shapes, and mathematical terms to describe shapes</p> <p>Select a particular named shape (<i>2D and 3D</i>)</p> <p><b>ELG: Explore characteristics of everyday objects and shapes and use mathematical language to describe them</b></p>	<p>Recognise and name common 2-D shapes, including rectangles (including squares), circles and triangles</p>	<p>Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line</p> <p>Identify 2-D shapes on the surface of 3-D shapes, (for example, a circle on a cylinder and a triangle on a pyramid)</p> <p>Compare and sort common 2-D and 3-D shapes and everyday objects</p>	<p>Draw 2-D shapes and describe them</p>	<p>Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes</p> <p>Identify lines of symmetry in 2-D shapes presented in different orientations</p> <p>Complete a simple symmetric figure with respect to a specific line of symmetry</p>	<p>Distinguish between regular and irregular polygons based on reasoning about equal sides and angles</p>	<p>Compare and classify geometric shapes based on their properties and sizes</p> <p>Draw 2-D shapes using given dimensions and angles</p>
<p>Use shapes appropriately for tasks</p>				<p>Identify horizontal and vertical lines and pairs of perpendicular and parallel lines</p>	<p><i>Continue to identify horizontal and vertical lines and pairs of perpendicular and parallel lines</i></p>	<p>Use the properties of rectangles to deduce related facts and find missing lengths and angles</p>	<p>Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</p>

Begin to talk about the shapes of everyday objects, e.g. 'round' and 'tall'	Begin to use mathematical names for 'solid' 3D shapes, and mathematical terms to describe shapes	Recognise and name common 3-D shapes, including cuboids (including cubes), pyramids and spheres	Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces	Make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them	Compare and classify geometric shapes based on their properties and sizes	Identify 3-D shapes, including cubes and other cuboids, from 2-D representations	Recognise, describe and build simple 3-D shapes, including making nets
---	--	---	---	---	---	--	--

### Angles and Rotation

		Describe movement, including whole, half, quarter and three-quarter turns	Use mathematical vocabulary to describe movement, including rotation as a turn	Recognise angles as a property of shape or a description of a turn			
			Understand the link between rotation and turns in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)	Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle	Identify acute and obtuse angles and compare and order angles up to two right angles by size	<p>Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</p> <p>Draw given angles, and measure them in degrees (<math>^{\circ}</math>)</p> <p>Identify:</p> <ul style="list-style-type: none"> <li>- angles at a point and one whole turn (total <math>360^{\circ}</math>)</li> <li>- angles at a point on a straight line and <math>\frac{1}{2}</math> a turn (total <math>180^{\circ}</math>)</li> <li>- other multiples of <math>90^{\circ}</math></li> </ul>	<p>Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles</p> <p>Find unknown angles in any triangles, quadrilaterals, and regular polygons</p>

## Vocabulary

<p>curved circle round straight Triangle Square Rectangle sides corners shape, 2D shape flat semi-circle, big/small</p>	<p>2-d shapes rectangle square circle triangle characteristics 3-d shapes cuboids cubes cone spheres curved straight flat</p>	<p>sides corners properties pyramids faces position direction movement whole turn quarter turn half turn three-quarter turn</p>	<p>pentagon hexagon line of symmetry properties cylinder edges vertices vertex clockwise anti-clockwise straight line rotation arrange sequences</p>	<p>right-angle triangle heptagon octagon polygon properties prism orientations angles acute/obtuse angle turn right angles half turn <math>\frac{3}{4}</math> of a turn greater than right angle less than right angle horizontal lines vertical lines perpendicular lines parallel lines</p>	<p>isosceles equilateral scalene trapezium rhombus parallelogram kite geometric shapes quadrilaterals coordinates first quadrant grid translation plot polygon axis</p>	<p>regular polygon irregular polygon reflex angles degrees one whole turn angles on straight line angles around a point vertically opposite missing angles reflection</p>	<p>radius diameter circumference dimensions</p>
---	---	---	--	---	---	---	---