Geometry (Properties of Shape, Position and Direction and Angles and Lines) Progression

Year group	Objectives
EYFS	**Shape** **3 and 4-year-olds will be learning to:** ● Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'. ● Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc. ● Combine shapes to make new ones – an arch, a bigger triangle. ● Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc. ● Extend and create ABAB patterns – stick, leaf, stick, leaf. ● Notice and correct an error in a repeating pattern. ● Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...' **Children in reception will be learning to:** ● Select, rotate and manipulate shapes to develop spatial reasoning skills. ● Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. ● Continue, copy and create repeating patterns. **Position and Direction** **3 and 4-year-olds will be learning to:** ● Understand position through words alone – for example, "The bag is under the table," – with no pointing. ● Describe a familiar route. ● Discuss routes and locations, using words like 'in front of' and 'behind'.
Year 1	**Shape** ● Recognise and name common 2D and 3D shapes including rectangles (including squares), circles and triangles, cuboids (including cubes), pyramids and spheres ● Sorting shapes by their properties

	Position and Direction ● describe position, direction and movement, including half, quarter and three-quarter turns.
Year 2	**Shape** ● Identify and describe the properties of 2D shapes including the number of sides, vertices and lines of symmetry ● Identify and describe the properties of 3D shapes including the numbers of edges, faces and vertices ● Identify 2D shapes on a surface of the 3D shape ● Compare and sort common 2D and 3D shapes and everyday objects **Position and Direction** ● use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)
Year 3	**Shape** ● Draw 2D and 3D shapes using modelling materials ● Recognise 3D shapes in different orientations and describe them ● Recognise angles as a property of shape or a description of a term ● 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 horizontal and vertical lines and pairs of perpendicular and parallel lines
Year 4	**Shape** ● Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes ● Identify lines of symmetry in 2D shapes presented in different orientations **Angles and Lines** ● Identify acute and obtuse angles and compare and order angles up to two right angles by size ● Complete a simple symmetric figure with respect to a specific line of symmetry **Position and DIrection** ● Describe positions on a 2D grid as co-ordinates in the first quadrant ● Describe movements between positions as translations of a given unit to the left/right and up/down ● Plot specified points and draw sides to complete a given polygon
Year 5	**Shape**

	• Distinguish between regular and irregular polygons based on reasoning about equal sides and angles • Use the properties of rectangles to deduce related facts and find missing lengths and angles • Identify 3-D shapes, including cubes and other cuboids, from 2-D representations **Angles and Lines** • Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • Draw given angles and measure in degrees • Identify: angles at a point and one whole turn; angles at a point on a straight line and half a turn; other multiples of 90 degrees **Position and Direction** • identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed
Year 6	**Shape** • Draw 2D shapes using given dimensions and angles • Compare and classify geometric shapes based on their properties and sizes • Illustrate and name parts of circles including radius, diameter and circumference, and know that the diameter is twice the radius • Recognise, describe and build simple 3D shapes including making nets **Angles and Lines** • Find unknown angles in any triangles, quadrilaterals and regular polygons • Recognise angles where they meet at a point, are on a straight line or are vertically opposite, and find missing angles **Position and Direction** • describe positions on the full coordinate grid (all four quadrants) • draw and translate simple shapes on the coordinate plane, and reflect them in the axes