Maths Geometry – Properties of Shapes: Progression of Skills

EYFS

	Recognise 2D and 3D Shapes and their Properties	Compare and Classify Shapes
Three and four year olds (nursery)	• 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 a building, a triangular pattern for a roof, etc. Combine shapes to make new ones – an arch, a bigger triangle, etc.	
Reception	• Select, rotate and manipulate shapes in order to develop spatial reasoning skills.	• Compose and decompose shapes so that children can recognise a shape can have other shapes within it, just as numbers can.
Early Learning Goals (End of Reception)		

KS1

Year 1:	• recognise and name common 2-D shapes e.g. rectangles (including squares), circles and triangles • recognise and name common 3-D shapes e.g. cuboids (including cubes), pyramids and spheres
Year 2:	• identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line • identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces • identify 2-D shapes on the surface of 3-D shapes e.g. a circle on a cylinder and a triangle on a pyramid • compare and sort common 2-D and 3-D shapes and everyday objects

KS2

Year 3: .	• draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them • recognise angles as a property of shape or a description of a turn • 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:	• compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes • identify acute and obtuse angles and compare and order angles up to two right angles by size • identify lines of symmetry in 2-D shapes presented in different orientations • complete a simple symmetric figure with respect to a specific line of symmetry • begin to recognise where angles are greater than two right angles. Know the term straight angle referring to two right angles together • Begin exploring line symmetry with two lines of symmetry.

Year 5:	• identify 3-D shapes, including cubes and other cuboids, from 2-D representations • know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • draw given angles, and measure them in degrees (°) • identify angles at a point and one whole turn (total 360°) • identify angles at a point on a straight line and 1/2 a turn (total 180°) • identify other multiples of 90° • use the properties of rectangles to deduce related facts and find missing lengths and angles • distinguish between regular and irregular polygons based on reasoning about equal sides and angles
Year 6:	• draw 2-D shapes using given dimensions and angles • recognise, describe and build simple 3-D shapes, including making nets • compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons • illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius • recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

Maths Statistics: Progression of Skills

EYFS

	Record, Present and Interpret Data
Three and four year olds (nursery)	• Experiment with their own symbols and marks, as well as numerals.
Reception	
Early Learning Goals (End of Reception)	

KS1

Year 1:	
Year 2:	• interpret and construct simple pictograms, tally charts, block diagrams and simple tables • ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity • ask and answer questions about totalling and comparing categorical data

KS2

Year 3: .	• interpret and present data using bar charts, pictograms and tables • solve one-step and two-step questions e.g. 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables

Year 4:	• interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs • solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs
Year 5:	• solve comparison, sum and difference problems using information presented in a line graph • complete, read and interpret information in tables, including timetables
Year 6:	• interpret and construct pie charts and line graphs and use these to solve problems • calculate and interpret the mean as an average