Geometry: Properties of Shapes

IDENTIFYING SHAPES AND THEIR PROPERTIES						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
select, rotate and manipulate shapes in order to develop spatial reasoning skills	recognise and name common 2-D and 3-D shapes, including: * 2-D shapes [e.g. rectangles (including squares), circles and triangles] * 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres].	identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line		identify lines of symmetry in 2-D shapes presented in different orientations	identify 3-D shapes, including cubes and other cuboids, from 2-D representations	recognise, describe and build simple 3-D shapes, including making nets (appears also in Drawing and Constructing)
		identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces				illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
		identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]				
DRAWING AND CONSTRUCTING						
			draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different	complete a simple symmetric figure with respect to a specific line of symmetry	draw given angles, and measure them in degrees (^{o})	draw 2-D shapes using given dimensions and angles
						recognise, describe and build simple 3-D shapes,

			orientations and describe them			including making nets (appears also in Identifying Shapes and Their Properties)
COMPARING AND CLASSIFYING						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
compose and decompose shapes so that children can recognise a shape can have other shapes within it, just as numbers can		compare and sort common 2-D and 3-D shapes and everyday objects		compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	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	compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
ANGLES						
			recognise angles as a property of shape or a description of a turn		know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles	

			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	identify: * angles at a point and one whole turn (total 360°) * angles at a point on a straight line and ½ a turn (total 180°) * other multiples of 90°	recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles
			identify horizontal and vertical lines and pairs of perpendicular and parallel lines			

VOCABULARY PROGRESSION – YEARS 1-6					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Group, sort Cube, cuboid, pyramid, sphere, cone, cylinder, circle, triangle, square Shape	Size Bigger, larger, smaller Symmetrical, line of symmetry Fold Match Mirror line, reflection Pattern, repeating pattern	Horizontal, vertical, perpendicular and parallel lines	Quadrilaterals Triangles Right angle, acute and obtuse angles	Regular and irregular Polygons	Vertically opposite (angles) Circumference, radius, diameter

Flat, curved, straight, round Hollow, solid Corner (point, pointed) Face, side, edge Make, build, draw					

Geometry: Position and Direction

POSITION, DIRECTION AND MOVEMENT						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	describe position, direction and movement, including half, quarter and three-quarter turns.	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		describe positions on a 2-D grid as coordinates in the first quadrant	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	describe positions on the full coordinate grid (all four quadrants)
				describe movements between positions as translations of a given unit to the left/right and up/down		draw and translate simple shapes on the coordinate plane, and reflect them in the axes.

		three-quarter turns (clockwise and anti-clockwise)				
				plot specified points and draw sides to complete a given polygon		
PATTERN						
continue, copy and create repeating patterns		order and arrange combinations of mathematical objects in patterns and sequences				

By the end of KS1

By the end of Year 2, we aim for children at Wren Park to be confident in recognising common 2-D and 3-D shapes and be able to identify and describe their properties and use this knowledge to sort them. We aim for children to be confident in using mathematical vocabulary to describe position, direction and movement and to order and arrange mathematical objects in patterns and sequences.

By the end of LKS2

By the end of Year 4, we aim for children at Wren Park to be able to use their existing knowledge of shape to compare and classify geometric shapes as well as identify lines of symmetry. At this stage, we aim for children to be able to recognise angles using the correct mathematical vocabulary as well as plot and describe points in the first quadrant.

By the end of UKS2

By the end of Year 6, we aim for children at Wren Park to be able to use their extensive knowledge of shape to recognise, describe and build 3-D shape, including making nets. At this stage, we aim for children to be confident naming parts of a circle as well as drawing 2-D shapes using given dimensions and angles. Children will be able to describe positions in the four quadrants as well as translate and reflect shapes.