Knowledge and Progression in Shape

Early Learning Goals	Can describe his/her relative position such as 'behind' or 'next to'• Recognises, creates and describes patterns •Explores characteristics of everyday objects and shapes and uses mathematical language to describe them.					
Year Group	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Properties of 2D shape	•Recognise and name common 2-D shapes (e.g. Square, circle, triangle) •Recognise and name shapes regardless of orientation and size	•Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. •Compare and sort common 2-D and 3-D shapes and everyday objects. •Draw shapes with straight edges using a ruler	•Compare and classify geometric shapes, including quadrilaterals and triangles, based on properties and sizes •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. •Draw 2D shapes to measure a straight line using a ruler •Identify horizontal and vertical lines and pairs of perpendicular and parallel lines	•Become confident in identifying an increasing number of 2D shapes focusing on quadrilaterals and different types of triangles •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. •Identify horizontal and vertical lines and pairs of perpendicular and parallel lines •Complete patterns or shapes with one horizontal, vertical or diagonal line of symmetry where the figure may not touch the line.	•Draw 2-D shapes using given dimensions and angles compare and classify geometric shapes based on their properties and sizes •Calculate missing angles in triangles and quadrilaterals	•Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius

Properties of 3D shape	•Recognise and name common 3-D shapes (e.g. Cubes, cuboids, pyramids & spheres)	•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. • Compare 2D and 3D shapes, identifying similarities and differences	•Make 3-D shapes using modelling materials recognise 3-D shapes in different orientations and describe them •Identify 3-D shapes, including cubes and other cuboids, from 2-D representations		•Recognise, describe and build simple 3-D shapes, including making nets •Find unknown angles in any triangles, quadrilaterals, and regular polygons	•Investigate and make the nets of a range of 3D shapes
Key vocabulary	Corner (point, pointed), face, side, edge, make, build, draw Rectangle, square, circle and triangle cuboid, cube, pyramid, cylinder and sphere	Size, bigger, larger, smaller, symmetrical, line of symmetry, fold, match, mirror line, reflection, pattern, repeating pattern Hexagon, octagon, triangular based prism	Horizontal, perpendicular and parallel lines Heptagon, pentagon, all prisms	Quadrilaterals, triangles (for example, isosceles, equilateral, scalene and parallelogram, rhombus, trapezium, Regular and irregular polygons	All pyramids including tetrahedron	
Angles	•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 or less than right angle	•Identify acute and obtuse angles and compare and order angles up to two right angles by size	•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°); at a point on a straight line and ½ a turn (total 180°) •Identify 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	•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 or less than right angle	•Identify acute and obtuse angles and compare and order angles up to two right angles by size

Position and direction	•Describe position, direction and movement, including whole, half, quarter and three-quarter turns.	•Order and arrange combinations of mathematical objects in patterns and sequences. •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 ¾ turns •Describe positions on a 2-D grid as coordinates in the first quadrant		•Begin to read co-ordinates in all 4 quadrants •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 •Describe movements between positions as translations of a given unit to the left/right and up/down.	•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 •Reflect shapes in 4 quadrants and in a diagonal line	•Draw and translate simple shapes on all four quadrants, reflect them in the axes and express this algebraically (e.g. translating vertex (a,b) to (a-2, b+3)
Area and perimeter			•Measure the perimeter of simple 2-D shapes	•Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres •Find the area of rectilinear shapes by counting squares	•Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres •Calculate and compare the area of rectangles (including squares) and compound shapes including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes	•Recognise that shapes with the same areas can have different perimeters and vice versa •Recognise when it is possible to use formulae for area and volume of shapes •Calculate the area of parallelograms and triangles •Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units.
Key vocabulary	Before, after, besides, next to, opposite, apart, between, middle, edge, centre, corner, direction, journey, left, right, up, down, forwards, backwards, sideways, across, close, far, near, along, though, to, from, towards,	Rotation, clockwise, anticlockwise, straight line, ninety degree turn, right angle	Greater/less than ninety degrees, orientation (same orientation, different orientation)	Co-ordinate, translate, quadrant, X-axis, Y-axis, perimeter, area, right, acute and obtuse angles	Reflex angle, dimensions Four quadrants (for co-ordinates)	Vertically opposite (angles), circumference, radius, diameter

	away from, movement, slide, roll, turn, whole turn, half turn, stretch, bend					