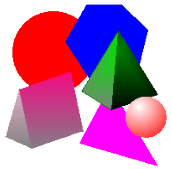

Progression in Geometry

Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Vocabulary							
sides corners straight flat round in on under up down besides between Circle Rectangle Oblong Triangle Cuboid Cube Pyramid Sphere	Circle Rectangle Oblong Triangle Square Cuboid Cube Pyramid Sphere Repeat pattern	2D 3D Oblong Rectangle Square Triangle Circle Cuboid Cube Pyramid Sphere whole turn half turn quarter turn three quarter turn left/right top/middle/bottom on top of in front of above between around near/close/far up/down forwards/backwards inside/outside clockwise	sides line of symmetry edges vertices faces surface quadrilateral polygon Cuboid Prism Cone Sort rotation anti-clockwise turn	angle right angle horizontal and vertical lines perpendicular and parallel lines symmetrical non-symmetrical Polyhedron acute obtuse	quadrilateral Isosceles Equilateral Scalene Parallelogram Rhombus Trapezium regular irregular acute obtuse line of symmetry classify co-ordinate quadrant translation axes integer label	degree reflex regular irregular polygon diagonal angle sum fact	dimension angle net unknown radius diameter circumference at a point on a straight line vertically opposite quadrant co-ordinate translation co-ordinate plane axes
3D Shape names							
		Recognise and name common 3-D shapes 3D shapes – Cuboids (including cubes), pyramids and spheres Cuboid Cube Pyramid Sphere	Cuboid Prism Cone				

2d Shape names							
		Recognise and name common 2-D shapes. 2D shapes - rectangles (including squares), circles and triangles. Oblong Rectangle Square Triangle Circle			Parallelogram Rhombus Trapezium		
Properties of Shape							
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'. *Focus teach activities linked to topics. E.g. build a bed for an animal, make Rangoli shape patterns.*			Identify and describe the properties of 2-D shapes, including the number of sides and 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, for example a circle on a cylinder and a triangle on a pyramid	Recognise 3-D shapes in different orientations; and describe them with increasing accuracy	Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	Identify 3-D shapes, including cubes and cuboids, from 2-D representations Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. State and use the properties of a rectangle (including squares) to deduce related facts	Recognise and describe 3-D shapes Illustrate and name parts of circles, including radius, diameter and circumference

Making shapes and patterns							
Combine shapes to make new ones – an arch, a bigger triangle etc. *Selection of construction equipment available for the children to choose from, indoors and outdoors.* Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc.			Order and arrange combinations of mathematical objects in patterns	Draw 2-D shapes and make 3-D shapes using modelling materials		Make 3d models by linking given faces and edges on a net using construction materials (clixi, polydron)	Draw 2d shapes using given dimensions and shapes. Build simple 3-D shapes, including making nets Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
Reflective symmetry							
			Identify and describe vertical line symmetry on 2d polygons.	Identify and describe horizontal and vertical line symmetry on 2d regular and irregular polygons. Explore line symmetry on a range of polyhedral.	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.	Pupils should recognise and use reflection and translation in a variety of diagrams, including continuing to use a 2-D grid and coordinates in the first quadrant. Reflection should be in lines that are parallel to the axes.	
Position and direction							
Understand position through words alone – for example, "The bag is under the table," – with no pointing. *Focus teach games linked to topic.* Describe a familiar route.		Describe position, directions Including whole, half, quarter and three-quarter turns	Use mathematical vocabulary to describe position, direction and movement		Describe positions on a 2-D grid as coordinates in the first quadrant Describe movements between positions as translations of a given unit to the left/right and up/down	Introduce reflex angle 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) Draw and translate simple shapes on the coordinate plane and reflect them in the axes.

Discuss routes and locations, using words like 'in front of' and 'behind'. *Focus teach games linked to topic.* Talk about and identifies 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. *Children are taught how to make patterns during group time, focus time. A variety of equipment is used including-* *Cotton reels and thread* *Pegs and boards* *Unifix cubes* *Mosaic tiles* *Shapes* *Printing*					Plot specified points and draw sides to complete a given polygon		
Making turns, knowledge or angles and rotation							

		Describe movements, including half, quarter and three-quarter turns.	Distinguish between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise), and movement in a straight line.	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, vertical, perpendicular and parallel lines in relation to other lines.	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 measure them and draw a given angle, writing its size in degrees (o) Identify: multiples of 90o angles at a point on a straight line and ½ a turn (total 180o) angles at a point and one whole turn (total 360o) reflex angles and compare different angles	Find unknown angles where they meet at a point, are on a straight line, and are vertically opposite.
Reasoning about shapes							
							Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons