Maths Progression

Shape

Year 3

- draw 2-D shapes
- 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 lines of symmetry in 2-D shapes presented in different orientations
- 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
- 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
- plot specified points and draw sides to complete a given polygon

Year 6

- draw 2-D 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 3-D shapes, including making nets
- 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
- 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

EYFS

- Compare quantities using language: 'more than', 'fewer than',
- 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'.
- Select, rotate and manipulate shapes in order to develop spatial reasoning skills.
- Responds to and uses language of position and direction
- Predicts, moves and rotates objects to fit the space or create the shape they would like
- Uses spatial language, including following and giving directions, using relative terms and describing what they see from different viewpoints
- Investigates turning and flipping objects in order to make shapes fit and create models; predicting and visualising how they will look (spatial reasoning)
- May enjoy making simple maps of familiar and imaginative environments, with landmarks
- 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 prisms for a roof, etc.
- Combine shapes to make new ones - an arch, a bigger triangle, etc.
- Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.
- Chooses items based on their shape which are appropriate for the child's purpose
- Responds to both informal language and common shape names
- Shows awareness of shape similarities and differences between objects
- Enjoys partitioning and combining shapes to make new shapes with 2D and 3D shapes
- Attempts to create arches and enclosures when building, using trial and improvement to select blocks
- Uses informal language and analogies, (e.g. heart-shaped and hand-shaped leaves), as well as mathematical terms to describe shapes .
- Enjoys composing and decomposing shapes, learning which shapes combine to make other shapes
- Uses own ideas to make models of increasing complexity, selecting blocks needed, solving problems and visualising what they will build.
- 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.
- Continue, copy and create repeating patterns.
- Creates their own spatial patterns showing some organisation or regularity
- Explores and adds to simple linear patterns of two or three repeating items, e.g. stick, leaf (AB) or stick, leaf, stone (ABC)
- Joins in with simple patterns in sounds, objects, games and stories dance and movement, predicting what comes next
- Spots patterns in the environment, beginning to identify the pattern "rule"
- Chooses familiar objects to create and recreate repeating patterns beyond AB patterns and begins to identify the unit of repeat

Year 5

- 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
- know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • draw given angles, and measure them in degrees
- identify: Ø angles at a point and one whole turn (total 360°) Ø angles at a point on a straight line and a half turn (total 180°) Ø other multiples of 90°
- 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 1

- recognise and name common 2-D shapes [for example, rectangles (including squares), circles and triangles]
- recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]
- describe position, direction and movement, including whole, half, quarter and three-quarter turns

Year 2

- identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line
- identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]
- compare and sort common 2-D shapes and everyday objects
- recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]
- compare and sort common 3-D shapes and everyday objects
- 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 three-quarter turns (clockwise and anticlockwise)