# Progression of Geometry

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| **Year 1** | **Properties of shapes**<br>• recognise and name common 2-D and 3-D shapes, including:<br>• 2-D shapes [for example, rectangles (including squares), circles and triangles]<br>• 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].<br>**Position and direction**<br>• describe position, direction and movement, including whole, half, quarter and three-quarter turns. |
| **Year 2** | **Properties of shapes**<br>• identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line<br>• identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces<br>• identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]<br>• compare and sort common 2-D and 3-D shapes and everyday objects.<br>**Position and direction**<br>• order and arrange combinations of mathematical objects in patterns and sequences<br>• 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 anti-clockwise). |
| **Year 3** | **Properties of shapes**<br>• draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them<br>• recognise angles as a property of shape or a description of a turn<br>• 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<br>• identify horizontal and vertical lines and pairs of perpendicular and parallel lines.<br>**Position and direction -** |
| **Year 4** | **Properties of shapes**<br>• compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes<br>• identify acute and obtuse angles and compare and order angles up to two right angles by size<br>• identify lines of symmetry in 2-D shapes presented in different orientations<br>• complete a simple symmetric figure with respect to a specific line of symmetry<br>**Position and direction**<br>• describe positions on a 2-D grid as coordinates in the first quadrant<br>• describe movements between positions as translations of a given unit to the left/right and up/down<br>• plot specified points and draw sides to complete a given polygon. |
| **Year 5** | **Properties of shapes**<br>• identify 3-D shapes, including cubes and other cuboids, from 2-D representations<br>• know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles<br>• draw given angles, and measure them in degrees ($^\circ$)<br>• identify: angles at a point and one whole turn (total $360^\circ$); angles at a point on a straight line and ½ a turn (total $180^\circ$) other multiples of $90^\circ$<br>• use the properties of rectangles to deduce related facts and find missing lengths and angles<br>• distinguish between regular and irregular polygons based on reasoning about equal sides and angles.<br>**Position and direction**<br>• 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 6** | **Properties of shapes**<br>• draw 2-D shapes using given dimensions and angles<br>• recognise, describe and build simple 3-D shapes, including making nets<br>• compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons<br>• illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius<br>• recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.<br>**Position and direction**<br>• describe positions on the full coordinate grid (all four quadrants)<br>• draw and translate simple shapes on the coordinate plane, and reflect them in the axes. |