Progression in the Curriculum:

Maths—Shape

Year Group	Key Vocabulary
KS3	Concave Convex Order of rotation symmetry Elevation Bisect Centre of enlargement Scale factor
6	Vertically opposite, complementary angles Adjacent Circumference, radius, diameter, arc Concentric Net, open, closed Intersecting, intersection Plane Compasses Origin Four quadrants Transformation
5	Regular, irregular polygons Radius, diameter Congruent Axis of symmetry, reflective symmetry Octahedron, decagon, dodecagon, nonagon Coordinate Angle at a point Angle on a line Reflex angle Transformations
4	Quadrilaterals Triangles Right angle, acute, obtuse Reflect, reflection Rectilinear Equilateral triangle, isosceles triangle, scalene triangle Parallelogram, rhombus, trapezium, kite Polygon Spherical Cylindrical Tetrahedron, polyhedron Translate, translation Area Protractor Square centimetre Coordinates Quadrant X-axis, Y-axis Rotation Degree
3	Horizontal, vertical, diagonal Perpendicular line, parallel line Perimeter Regular, irregular Pentagonal, hexagonal, octagonal Quadrilateral Right-angled Hemisphere Prism, triangular prism Square-based pyramid Triangle-based pyramid Compass points (north, south, east, west) Angle, acute, obtuse
2	Size Bigger, larger, smaller Symmetrical, line of symmetry Fold, match Mirror line, reflection Pattern, repeating pattern Surface Quadrilateral, rectangle, rectangular, circle, circular, triangle, triangular, pentagon, hexagon, heptagon, octagon Vertex, vertices Route Angle, right angle Rotation, ninety degree turn Clockwise, anticlockwise Straight line
1	Group, sort Cube, cuboid, pyramid, sphere, cone, cylinder, circle, triangle, square, oblong Shape Flat, curved, straight, round Continuous surface Hallow, solid Corner (point, pointed) Face, side, edge Volume Position Over, under, underneath, above, below, top, bottom, side Between, middle, edge, centre Direction Left, right, up, down, forwards, backwards, sideways Close, far, near To, from, towards, away from Movement Side, roll, turn, whole turn, half turn, quarter turn
EYFS	Diagonal Straight Turn Top Bottom In between In the middle Above Below In front of Behind Sides Corners Flat

Maths Strand: Properties of Shape

Year 6
- Illustrate and name parts of circles including radius, diameter and circumference and know that diameter is twice the radius

Year 6
- Recognise, describe and build simple 3D shapes including making nets

Year 6
- Draw 2D shapes using given dimensions and angles

Year 6
- Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons

Year 5
- Identify 3D shapes including cubes and other cuboids from 2D representations

Year 5
- **Distinguish between regular and irregular polygons based on reasoning about equal sides and angles**

Year 5
- Use the properties of rectangles to deduce related facts and find missing lengths and angles

Year 4
- Complete a simple symmetric figure with respect to a specific line of symmetry

Year 4
- **Identify lines of symmetry in 2D shapes presented in different orientations**

Year 4
- **Compare and classify geometric shapes including quadrilaterals and triangles based on properties and sizes**

Year 3
- Recognise 3D shapes in different orientation and describe them

Year 3
- Make 3D shapes using modelling materials

Year 3
- Draw 2D shapes

Year 2
- Read and write the names of shapes appropriate to their reading and speaking ability
- Draw lines and shapes using a ruler

Year 2
- Identify and describe the properties of 3D shapes including the number of edges, vertices and faces
- Identify 2D shapes on the surface of 3D shapes

Year 2
- Identify and describe the properties of 2D shapes including:
  - number of sides
  - line symmetry in a vertical line

Year 2
- **Compare and sort common 2D and 3D shapes and everyday objects**

Year 1
- **Recognise and name common 2D shapes e.g. square, circle, rectangle and triangle**

Year 1
- **Recognise and name common 3D shapes e.g. cube, cuboids, pyramids and spheres**

Reception
- Compose and decompose shapes so that children can recognise a shape can have other shapes within it, just as numbers can.

Reception
- Select, rotate and manipulate shapes in order to develop spatial reasoning skills.

Nursery
- Talk about and explore 2D and 3D shapes using informal mathematical language
- Select shapes appropriately: flat surfaces for a building, a triangular patter for a roof etc.
- Combine shapes to make new ones—an arch, a bigger triangle etc

Maths Strand: Angles

Year 6
- Calculate missing angles based on knowledge of angle sum facts
  e.g. 2 angles in a triangle are 42° and 108°

Year 6
- Recognise angles where they meet at a point, are on a straight line or are vertically opposite and find missing angles

Year 5
- Identify other multiples of 90°

Year 5
- Identify angles at a point (360°) and at a point on a straight line (180°)
- Know that one whole turn =360° and that 1/2 turn = 180°

Year 5
- **Draw given angles and measure them in degrees using a protractor**

Year 5
- Estimate and compare acute, obtuse and reflex angles

Year 5
- Know angles are measured in degrees (°)

Year 4
- **Compare and order angles up to 180°**

Year 4
- Identify acute and obtuse angles

Year 3
- Identify whether angles are greater or less than a right angle

Year 3
- **Recognise that 2 right angles make 1/2 turn, 3 make 3/4 turn and 4 make a whole turn**

Year 3
- **Identify right angles**

Year 3
- Recognise angles as a property of shapes of a description of a turn

Maths Strand: Position & Direction

Year 6
- Draw and translate simple shapes on the coordinate plane and reflect them in the axes

Year 6
- Draw and label axes in all 4 quadrants with equal scaling

Year 6
- Describe positions on the full coordinate grid (all four quadrants)

Year 5
- Reflect shapes lines parallel to the axes

Year 5
- 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 4
- Draw axes and label integer scales

Year 4
- **Plot specific points and draw sides to complete a given polygon**

Year 4
- Describe movements between positions as translations of a given unit to the left/right and up/down

Year 4
- **Describe positions on a 2D grid as coordinates in the 1st quadrant e.g. (2,5)**

Year 3
- Identify pairs of perpendicular and parallel lines

Year 3
- Identify horizontal and vertical lines

Year 2
- Understand the terms clockwise & anti-clockwise

Year 2
- Use programmable robots, giving turning instructions in right angles

Year 2
- **Distinguish between rotation as a turn and in terms of right angles for 1/4, 1/2 and 3/4 turns**

Year 2
- **Use mathematical vocabulary to describe position, direction and movement including movement in a straight line**

Year 2
- Order and arrange combinations of mathematical objects in patterns and sequences

Year 1
- Use vocabulary such as left, right, top, bottom, above, between, near to etc.

Year 1
- Relate 'clockwise' to the clock face

Year 1
- Describe position, direction and movement including whole, 1/2, 1/4 and 3/4 turns

Reception
- Draw information from a simple map

Reception
- Continue, copy and crate repeating pattern

Nursery
- Understand position through words alone—for example: 'The bag is under the table.' with no pointing

Nursery
- Describe a familiar route
- Discuss routes and locations using words like 'in front of' and 'behind'

Nursery
- Talk about and identify patterns around them
- Extend and create ABAB patterns
- Notice and correct an error in a repeating pattern

Early Learning

- Personal, Social and Emotional
- Expressive Arts and Design
- Creating with Materials
- Managing Self

Year Group	Wider Opportunities and Experiences
6	• Working collaboratively on a challenge or investigation • Having work displayed • Learn about a famous mathematician
5	• Working collaboratively on a challenge or investigation • Having work displayed • Explore nets and packaging—which is best for the environment?
4	• Working collaboratively on a challenge or investigation • Having work displayed • Epping Forest trip — orientation
3	• Working collaboratively on a challenge or investigation • Having work displayed • Explore 3D shapes by making dens and shelters • Snowflake patterns and lines of symmetry
2	• Working collaboratively on a challenge or investigation • Having work • Directional language games
1	• Working collaboratively on a challenge or investigation • Having work displayed • Explore patterns find in nature that contain shapes they know