**Geometry**

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| Curriculum level | 3 | 4 | 5 | 6 |
| Shape | Classify 2-dimensional shapes and prisms by their spatial features.   * Use number of sides, angles, parallel or non-parallel sides, side length, lines of mirror symmetry, order of rotational symmetry. * Identify prisms by their cross section.   Represent objects with drawings and models.   * Use plan views or nets. * Create two-dimensional drawings of three-dimensional models. Models may be built with interlocking cubes. | Identify classes of 2- and 3-dimensional shapes by their geometric properties.   * Classes of polygons by number of sides eg) quadrilaterals have 4 sides, as well as sub-classes eg) squares within rectangles, circles within ellipses, cubes within rectangular prisms. * Classes of 3-D shapes as prisms, cylinders, pyramids, cones, regular polyhedral etc.   Relate 3-dimensional models to 2-dimensional representations, and vice versa.   * Drawings can be isometric projections, plan views or nets. * Construct a model (using interlocking cubes) from different plan views. * Create nets for simple 3-D shapes | Deduce the angle properties of intersecting and parallel lines and the angle properties of polygons and apply these properties.   * Vertically opposite angles * Adjacent angles * Corresponding angles * Interior angles * Alternate angles * Find and apply properties of polygons (including interior and exterior angles).   Create accurate nets for simple 3-dimensional shapes and connect 3-dimensional solids with different 2-dimensional representations.   * Include cuboids, right-angled prisms and pyramids. * Draw plan views, isometric projections or nets from 3-D models. | Recognise when shapes are similar and use proportional reasoning to find an unknown length.  Deduce and apply the angle properties related to circles   * Circle theorems. |
| Position and orientation | Use a co-ordinate system or the language of direction and distance to specify locations and describe paths eg) Position of D1 or road runs East-West. | Communicate and interpret locations and directions, using compass directions, distances, and grid references.   * Use grid references, distances and direction from a landmark, compass directions, map scales. | Interpret points and lines on co-ordinate planes, including scales and bearings on maps. Eg) Be able to identify the location of a person on a map given 2 bearings from given landmarks. | Use a co-ordinate plane or map to show points in common and areas contained by two or more loci.   * Using bearings in relation to a trigonometric context |
| Transformation | Describe the transformations (reflection, rotation, translation, or enlargement) that have mapped one object onto another. | Use the invariant properties of figures and objects under transformations (reflection, rotation, translation, or enlargement).   * Identify what doesn’t change under different transformations (eg- under rotation, lengths, angles and areas do not change, but orientation does. | Define and use transformations and describe the invariant properties of figures and objects under these transformations.   * Describe the transformation of an object in depth including angle, center of rotation, direction of translation, magnitude and centre of enlargement, line of reflections and describe the invariant properties. * Draw the image when given instructions to transform objects.   Apply trigonometric ratios and Pythagoras’ theorem in two dimensions.   * Use Pythagoras to find the length of the hypotenuse * Use Pythagoras to find the length of a shorter side. * Identify sides of a right angled triangle as O, A or H * Use trigonometry to find lengths of sides in right-angled triangles * Use trigonometry to find angles in right-angled triangles. * Recognise similar triangles and that ratios of side lengths are the same. | Compare and apply single and multiple transformations.  Analyse symmetrical patterns by the transformations used to create them.  Use trigonometric ratios and Pythagoras’ theorem in two and three dimensions. |