**Curriculum Related Expectations**

HT2: Constructing in 2 and 3 dimensions

**Students can define the following terms:**

|  |  |  |
| --- | --- | --- |
| 2D | 3D | Arc |
| Bisector | Congruent | Cross-section |
| Dimensions | Edge | Equidistant |  |
| Face | Locus | Net |
| Perspective | Perpendicular | Plan |
| Polygon | Prism | Protractor |
| Rectangle | Tetrahedron | Vertex |

**Students know:**

* How to draw plans and elevations of 3d shapes and use this to help to explore the surface area and volume of 3d shapes.
* How to formally look at the idea of a locus and the standard constructions using a straight edge and a pair of compasses.
* The meaning of congruency and the formal aspect of identifying congruent triangles.
* The key formulas of volume and surface area for 3d shapes
* Can identify plans and elevations and the shapes they represent.

**Students can:**

* Use language and properties precisely to analyse numbers, algebraic expressions, 2D and 3D shapes
* Use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3D
* Derive and apply formulae to calculate and solve problems involving; perimeter and area of triangles, parallelograms, trapezia, volume of cuboids and other prisms
* Draw and measure line segments and angles in geometric figures, including interpreting scale drawings
* Derive and use the standard ruler constructions; recognise and use the perpendicular distance from a point to a line as the shortest distance to the line.
* Describe, sketch and draw using conventional terms and notations; points, lines, parallel lines, perpendicular lines, right angles, regular polygons and other polygons that are reflective and rotationally symmetric
* Use the standard conventions for labelling the sides and angles of a triangle ABC and know how to use the criteria for congruence of triangles.