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| **F Unit 15:**  **Constructions: triangles, nets, plan and elevation, loci, scale drawings and bearings.** | **Road Map** | | | | | |
| In this unit you will learn about Geometry & Measures. The aims are as follows:  **LG1**: Knowledge  **LG2**: Application  **LG3**: Skills | Assessment Grades |  |  | | | |
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| **Themes** | **Learning Goals/Outcomes/Content** | | |  |  |  |
| 15a Plans and Elevations | Understand clockwise and anticlockwise; | | |  |  |  |
| Draw circles and arcs to a given radius or given the diameter; | | |  |  |  |
| Measure and draw lines, to the nearest mm; | | |  |  |  |
| Measure and draw angles, to the nearest degree; | | |  |  |  |
| Know and use compass directions; | | |  |  |  |
| Draw sketches of 3D solids; | | |  |  |  |
| Know the terms face, edge and vertex; | | |  |  |  |
| Identify and sketch planes of symmetry of 3D solids; | | |  |  |  |
| Use isometric grids to draw 2D representations of 3D solids; | | |  |  |  |
| Make accurate drawings of triangles and other 2D shapes using a ruler and a protractor; | | |  |  |  |
| Construct diagrams of everyday 2D situations involving rectangles, triangles, perpendicular and parallel lines; | | |  |  |  |
| Understand and draw front and side elevations and plans of shapes made from simple solids; | | |  |  |  |
| Given the front and side elevations and the plan of a solid, draw a sketch of the 3D solid. | | |  |  |  |

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| 15b Constructions, loci and bearings | Understand congruence, as two shapes that are the same size and shape; |  |  |  |
| Visually identify shapes which are congruent; |  |  |  |
| Use straight edge and a pair of compasses to do standard constructions |  |  |  |
| Understand that triangles satisfying SSS, SAS, ASA and RHS are unique, but SSA triangles are not; |  |  |  |
| Construct  a) the perpendicular bisector of a given line |  |  |  |
| b) the perpendicular from a point to a line c) the bisector of a given angle, d) angles of 90°, 45°; |  |  |  |
| Draw & construct diagrams from given instructions, including the following: a) a region bounded by a circle and an intersecting line, b) a given distance from a point and a given distance from a line c) equal distances from two points or two line segments; |  |  |  |
| Find & describe regions satisfying a combination of loci (regions may be defined by ‘nearer to’ or ‘greater than’) |  |  |  |
| Use constructions to solve loci problems (2D only); |  |  |  |
| Use & interpret maps and scale drawings; |  |  |  |
| Estimate lengths using a scale diagram; |  |  |  |
| Make an accurate scale drawing from a diagram; |  |  |  |
| Use three-figure bearings to specify direction; |  |  |  |
| Mark on a diagram the position of point *B* given its bearing from point *A*; |  |  |  |
| Give a bearing between the points on a map or scaled plan; |  |  |  |
| Given the bearing of a point *A* from point *B*, work out the bearing of *B* from *A*; |  |  |  |
| Use accurate drawing to solve bearings problems; |  |  |  |
| Solve locus problems including bearings. |  |  |  |

**Links:**

LG1: You will accurately carry out a number of different constructions, draw 3d shapes and draw and recognise different views of 3d shapes.

LG2: You will apply your knowledge of constructions to solve loci problems.

LG3: You will solve complex problems by linking this topic to other topics you have already covered, such as combining bearings with trigonometry.