The Sutton Academy

Knowledge Rich Curriculum Plan

Year 10 Foundation – Geometry 3

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Prior Knowledge: *In order to know this, students need to already know that…*	Assessment
To learn how to identify 3D shapes	• Students will know the properties of 3D shapes • Students will know the names of various 3D shapes		• Students will need to know the names and properties of 2D shapes.	
To learn how to identify 3D shapes and draw and recognise nets	• Students will know how to determine the number of faces, edges and vertices for 3D solids. • Students will know that a face is the individual flat surface of a 3D solid. • Students will know how to identify a 3D shape from its net • Students will know how to draw nets of 3D solids.	**Prism** – A solid object with two identical ends and flat sides **Vertex (plural vertices) –** corner **Net** – net means a pattern that you can cut and fold to make a model of a solid shape. **Face** – in maths, a face is a flat surface of a solid object **Polygon** – a closed shape with straight sides **Edge** – a line segment where two faces meet	• Students will need to be able to name different prisms, pyramids and spheres.	
To learn how to calculate the surface area of prisms	• Students will know how to find the surface area of prisms including cubes, cuboids and triangular prisms • Students will know how to find the surface area of other prisms including compound prisms. • Students will know how to solve problems involving the surface area of prisms • Students will know how to find the surface area of cylinders. Students will know how to calculate this in terms of π as well as by using a calculator. • Students will know how to solve problems involving the surface area of cylinders	**Surface area** - the total area of all of the faces of a 3D solid added together **Prism** – A solid object with two identical ends and flat sides **Compound Solid** - a solid that is made up of 2 or more solids.	• Students need to know how to calculate the area of squares, rectangles, triangles and compound shapes • Students need to know how to calculate area and circumference of circles	
To learn how to identify and draw plans and elevations from shapes and draw shapes from plans and elevations	• Students will identify front, side and plan elevations of 3D solids. Students will know that an elevation means a 2D drawing of a 3D shape from different viewpoints. • Students will draw the front, side and plan elevations of 3D solids. • Students will know how to sketch a 3D solid using the front, side and plan elevations. • Students will know how to use isometric grids to sketch 3D solids.	**Plan –** A drawing of something as viewed from above **Elevation –** the view of a 3D shape when it is looked at from the side or from the front.	• Students need to be able to recognise 2D shapes	

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Prior Knowledge: *In order to know this, students need to already know that…*	Assessment
To learn how to calculate the volume of prisms	• Students will know that: Volume of a Prism = Area of Cross Section x Length • Students will know how to find the volume of cubes, cuboids, triangular prisms and compound prisms by calculating the area of the cross-section and multiplying it by the length of the prism • Students will know how to solve problems involving the volume of prisms	**Volume** – the amount of space inside a 3D object **Prism** – A solid object with two identical ends and flat sides **Compound Solid** - a solid that is made up of 2 or more solids.	• Students need to be able to calculate the area of squares, rectangles, triangles and compound shapes	
To learn how to calculate the volume of cylinders	• Students will know how to find the volume of cylinders. Students will know how to leave their answers for this in terms of π. • Students will know how to work backwards from the volume of a cylinder to calculate its height or the radius/diameter • Students will know how to solve problems involving the volume of cylinders		• Students need to be able to calculate the area of circles	