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…*	Assessment
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. •	**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	
To learn how to calculate the surface area of cubes and cuboids	• Students will know how to find the surface area of cubes and cuboids • Students will know how to solve problems involving the surface area of cubes and cuboids	**Surface area** - the total area of all of the faces of a 3D solid added together	• Students need to know how to calculate the area of squares and rectangles	
To learn how to calculate the surface area of prisms	• Students will know how to find the surface area of 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	**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 triangles, rectangles, squares and compound shapes	
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	

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Prior Knowledge: *In order to know this…*	Assessment
To learn how to calculate density, mass and volume	•		• Students will need	
To learn how to calculate speed, distance and time	•Students will know that $Speed = \frac{distance}{time}$ •Students will know that $Time = \frac{distance}{speed}$ •Students will know that $Distance = Speed \times Time$ •Students will know the formula triangle for speed, distance and time •Students will know how to solve basic SDT problems where the time is an integer number of hours and all units correspond •Students will know how to make simple conversions for minutes to decimal hours - they will know that 30 minutes is 0.5 hours and 15 minutes is 0.25 hours •Students will know how to calculate speed, distance or time given the two other variables including where the time needs to be converted into a decimal number of minutes or hours •Students will know how to calculate speed, distance or time using two variables where they need to convert time written in hours and minutes to a decimal •Students will know how to calculate average speed given distance and time for multi-stage journeys •Students will need to know how to solve more complex problems involving speed, distance and time •	Speed – the rate at which someone or something moves or operates or is able to move or operate. Distance - Time -	• Students should already know how to convert from minutes to hours and minutes	
To learn how to draw and interpret distance-time graphs	•Students will know how to draw distance–time graphs. •Students will know how to work out time intervals for graph scales. •Students will know how to find the total time taken of individual sections of a distance-time graph. •Students will know how to find the speed of individual sections of a distance-time graph. •Students will know how to find the total distance in individual sections of a distance-time graph. •Students will know how to interpret information presented in a range of linear and non-linear graphs; •Students will know how to interpret graphs with negative values on axes; 1. Students will know how to interpret gradient as the rate of change in distance–time and speed–time graphs, graphs of containers filling and emptying, and unit price graphs.	Gradient – the change in height divided by the horizontal distance.	• Students need to know how to find the difference between two times	