The Sutton Academy

Knowledge Rich Curriculum Plan

Year 11 Higher – Geometry 2

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Steps to Success	Prior Knowledge: *In order to know this, students need to already know that…*	Feedback
To learn how to calculate the area of a trapezium	• Students will know that the formula for the area of a trapezium is $\frac{1}{2}(a+b)h$ where a and b are the parallel sides and h is the height of the trapezium • Students will know how to calculate the area of a trapezium • Students will know how to calculate the area of compound shapes involving trapezia • Students will know how to solve worded problems involving the area of a trapezium • Students will know how to work backwards to find missing lengths given the area of a trapezium	**Area –** the amount of space inside a 2D shape **Trapezium –** a quadrilateral with one pair of sides parallel. **Quadrilateral –** a four-sided shape	•	• Students should already know how to calculate the area of rectangles, squares, parallelograms and triangles • Students should already know how to calculate the area of compound shapes involving rectangles, squares, parallelograms and triangles	
To learn how to solve problems involving circumference and area of circles	• Students will know how to calculate the circumference of a circle using the formula - πd, giving their answer to a suitable degree of accuracy • Students will know how to use inverse operations to find the missing radius or diameter when given the circumference. • Students will know how to solve problems involving area and circumference of circles • Students will know how to calculate the area of a circle using the formula πr^2 leaving answers rounded to a given degree of accuracy • Students will know how to calculate the area of a circle using the formula πr^2, without a calculator leaving answers in terms of π. • Students will know how to use inverse operations to find the missing radius or diameter when given the area. • Students will know how to solve problems involving the area of circles. • Students will know how to calculate the area of compound shapes involving circles or parts of circles	**Circumference –** the perimeter of a circle **Perimeter –** the distance around the outside of a shape **Arc –** a part of a curve, a part of the circumference of a circle **Radius –** a straight line from the centre to the circumference of a circle or sphere **Diameter –** a straight line passing from side to side through the centre of a body or figure, especially a circle or sphere	•	• Students should already know how to calculate circumference	
To learn how to calculate the length of an arc and the perimeter of a sector	• Students will know how to calculate the arc length of the sector using the formula $Arc\ Length = \frac{\theta}{360}\pi d$ • Students will know how to calculate the perimeter of a sector • Students will know how to calculate the angle of a sector given its arc length using inverse operations • Students will know how to calculate the radius of a sector given its arc length	**Arc – A fraction of the circumference of a circle**	•	•	

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Steps to Success	Prior Knowledge: *In order to know this, students need to already know that…*	Feedback
To learn how to calculate the area of a sector	• Students will know how to calculate the area of a sector using the formula, $Area\ of\ a\ Sector = \frac{\theta}{360}\pi r^2$ • Students will know how to calculate the angle of a sector given its area • Students will know how to calculate the radius of a sector given its area	**Sector –** a part of a circle made of the arc of the circle along with its two radii.	•	• Students need to know how to calculate area and circumference of a circle • Students need to know that angles around a point add to 360	
To learn how to solve problems using Pythagoras' theorem in 3D	• Students will know how to calculate missing lengths in 3D shapes using Pythagoras' theorem	**Hypotenuse** – the longest side in a right-angled triangle. It can always be found opposite the right angle **Theorem** – a statement that has been proved, or can be proved	•	• Students will need to be confident using Pythagoras' theorem to find missing lengths in right angled triangles	
To learn how to use Trigonometry	• Students will memorize the SOHCAHTOA • Students will be able to calculate missing sides and angles of Right Angled Triangles using SOHCAHTOA • Students will know how to answer multiple step questions on Trigonometry		•	•	