The Sutton Academy

Knowledge Rich Curriculum Plan

Year 13 Trig and modelling

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
Lesson Objective: To learn how to find and use addition formulae.	• *Students will know that sin(A + B) ≡ sinAcosB + cosAsinB* • *Students will know that sin(A - B) ≡ sinAcosB – cosAsinB* • *Students will know that cos(A + B) ≡ cosAcosB - sinAsinB* • *Students will know that cos(A - B) ≡ cosAcosB + sinAsinB* • *Students will know that tan(A+B) ≡* $\frac{tanA+tanB}{1-tanAtanB}$ • *Students will know that tan(A-B) ≡* $\frac{tanA-tanB}{1+tanAtanB}$ • *Students will know how to derive the addition formulae from diagrams.* • *Students will be able to prove negative addition formulae, by replacing B with -b* • *Students will know how to solve basic problems using the addition formulae.*	.	Students will need to have basic understanding of right angled trigonometry. Students will need know that Tan x = Sin x / Cos x Students will have a knowledge of algerbraic fractions. Students will need to know basic angle knowledge.	
To learn how to use the addition formulae to find exact values of trigonometric functions of different angles.	• *Students will know how to find sin A when given cos A* • *Students will know how to find cos A when given sin A* • *Students will need to know how to solve problems using the addition formulae.* • *Students will need to know how to find values using the addition formulae.*		*Students will need to know that sin(A + B) ≡ sinAcosB + cosAsinB* *Students will need know that sin(A - B) ≡ sinAcosB – cosAsinB* *Students will need know that cos(A + B) ≡ cosAcosB - sinAsinB* *Students will need to know that cos(A - B) ≡ cosAcosB + sinAsinB* *Students will need to l know that tan(A+B) ≡* $\frac{tanA+tanB}{1-tanAtanB}$ *Students will need to know that tan(A-B) ≡* $\frac{tanA-tanB}{1+tanAtanB}$	
To learn how to use double-angle formulae to simplify trigonometric expressions.	• *Students will know that sin2A = 2sinAcosA* • *Students will know that cos2A = cos^2x - sin^2x* • *Students will know that tan2A = 2tanA / 1-tan^2A* • *Students will know to use the double angle formula to write trig sums as a single trigonometric ratio* • *Students will know how to express y in terms of x, when given x and y equal to trigonometric expressions.* • *Students will know how to find a double angle, when given a value of cosx or sinx* • *Students will know how to use the addition formulae to prove the double angle formulae.*		Students need to know exact trig. Students need to know the addition formulae. Students need to know that $cos^2x + sin^2x = 1$ Students need to know the cosine rule.	
To learn how to solve trigonometric equations using the addition and double-angle formulas.	• *Students will learn how to solve equations using the addition formulae.* • *Students will know how manipulate the addition formula to solve equations.* • *Students will know how to solve trigonometric equations for any given domain.*		Students will need know how to find different values of sin, cos and tan Students will need to know know how to solve quadtratic equations. Students will need to know trigonometric identities. Students will need to know how to find different values of sin, cos and tan Stduenyts will need to know how to use the double angle formulae. .	

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To learn how to solve trigonometric equations using the addition and double-angle formulas 2.	• *"Students will learn how to solve equations using the double angle formulae.* • *Students will know how manipulate the double angle formula to solve equations.* • *Students will know how to solve trigonometric equations for any given domain*		Students will need know how to find different values of sin, cos and tan Students will need to know know how to solve quadtratic equations. Students will need to know trigonometric identities. Students will need to know how to find different values of sin, cos and tan Stduenyts will need to know how to use the double angle formulae.	
To learn how to use the addition formulae to simplify trigonometric expressions.	• *Students will know that asinx ± bcos x can be expressed in the form Rsin(x± α)* • *Students will know that acosx ± bsin x can be expressed in the form Rcos(x± α)* • *Students will know how to express acosx ± bsin x can be expressed in the form Rcos(x± α)* • *Students will know how to express a asinx ± bcos x can be expressed in the form Rsin(x± α)* • *Students will know how to solve trigonometric equations using asinx ± bcos x can be expressed in the form Rsin(x± α)*		Students need to know the addition formulae. Students need to know $\cos^2 x + \sin^2 x = 1$	
To learn how to prove trigonometric identities.	• *Students will know how to prove trigonometric identities using the double angle formulae* • *Students will know prove trigonometric identities using the addition formulae.* • *Students will know prove trigonometric identities using facts for cot, sec, and cosec.*		Students will need know how to find different values of sin, cos and tan Students will need to know know how to solve quadratic equations. Students will need to know trigonometric identities. Students will need to know how to find different values of sin, cos and tan Students will need to know how to use the double angle formulae.	
To learn how to model with trigonometric functions.	• *Students will know how to model with trigonometric functions using Rsin(x +a)* • *Students will know how to model with trigonometric functions using Rsin(x - a)* • *Students will know how to model with trigonometric functions using Rcos(x +a)* • *Students will know how to model with trigonometric functions using Rcos(x - a)*		Students will need know how to find different values of sin, cos and tan Students will need to know know how to solve quadratic equations. Students will need to know trigonometric identities. Students will need to know how to find different values of sin, cos and tan Stduenyts will need to know how to use the double angle formulae.	

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