



The Sutton Academy

Knowledge Rich Curriculum Plan

Course/Unit



Lesson/Learning Sequence	Intended Knowledge: <i>Students will know that...</i>	Tiered Vocabulary	Prior Knowledge: <i>In order to know this students, need to already know that...</i>	Assessment
To learn how to convert between Cartesian and parametric equations.	<ul style="list-style-type: none"> Students will know that a curve can be defined using parametric equations $x=p(t)$ and $y=q(t)$. Students will know that each value of the parameter, t, defines a point on the curve with coordinates $(p(t) q(t))$ Students will know that you can convert between parametric equations and cartesian equations by using substitution to eliminate the parameter Students will know that for parametric equations $x=p(t)$ and $y=q(t)$ with cartesian equation $y=f(x)$ Students will know the domain $f(x)$ is the range of $p(t)$ Students will know the range of $f(x)$ is the range of $q(t)$ Students will know that a curve can be defined using parametric equations $x=p(t)$ and $y=q(t)$. Students will know how to convert a parametric equation into a cartesian equation. 		Students will need to know how to rearrange formula Students will need to know how to substitute into a formula. Students will need to know how to solve equations involving logs. Students will need to know how to find range and domain. Students will know how the equation of a circle.	
To learn how to use trigonometric identities to convert parametric equations to Cartesian equations	<ul style="list-style-type: none"> Students will know how to use trigonometric identities to convert trigonometric parametric equations. Students will know how to sketch the curve of a parametric equation involving trigonometric parametric equations. 		Students will need to know the double angle formulae Students will need to know that $\cos^2x + \sin^2x = 1$ Students will need to know that $1 + \cot^2x = \operatorname{cosec}^2x$ Students will know the addition formulae. Students will need to be able to solve problems involving trigonometric equations. Students will need to know how to find range and domain. Students will know how the equation of a circle.	
To learn how to sketch parametric curves.	<ul style="list-style-type: none"> Students will know that you can plot any parametric curve by substituting values of the parameter into each equation Students will know to only calculate values of x and y for values of t in the given domain. Students will know that when sketching parametric graphs, sometimes you only have a partial curve. Students will know that you can also plot a curve by converting to cartesian form and consider the domain and range of the cartesian function. 		Students will need to know how to substitute into a formula. Students will need to know to sketch functions Students will need to know how to substitute into a formula. Students will need to know how to find the range and domain of functions.	
To learn how to solve coordinate geometry problems involving parametric equations.	<ul style="list-style-type: none"> Students will know how to be able to solve coordinate geometry problems involving parametric equations. Students will know how to find missing constants given a point of interception Students will know how to find the coordinates of the points where the parametric equations crosses the axe Students will know how to find points of interception even the equation of a line. Students will know that when you are given a sketch diagram in a question, you can't read off the values. Students will know that when you are given a sketch diagram in a question you can check whether your answers have the correct sign. 		Students will know that a curve can be defined using parametric equations $x=p(t)$ and $y=q(t)$. Students will know that each value of the parameter, t , defines a point on the curve with coordinates $(p(t) q(t))$ Students will know that you can convert between parametric equations and cartesian equations by using substitution to eliminate the parameter Students will know that for parametric equations $x=p(t)$ and $y=q(t)$ with cartesian equation $y=f(x)$ Students will know the domain $f(x)$ is the range of $p(t)$ Students will know the range of $f(x)$ is the range of $q(t)$ Students will know that a curve can be defined using parametric equations $x=p(t)$ and $y=q(t)$. Students will know how to convert a parametric equation into a cartesian equation. Students will need to know how to substitute into a formula. Students will need to know to sketch functions	

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			<p>Students will need to know how to substitute into a formula. Students will need to know how to find the range and domain of functions.</p>	
<p>To learn how to model with parametric equations.</p>	<p>Students will know that you can use parametric equations to model real-life situations. Students will know that in mechanics you will use parametric equations with time as a parameter to model motion in two dimensions. Students will know how to find the angle of elevation given a parametric equation. Students will know how to find parametric equations for a body's motion. Students will know how to find the horizontal and vertical distance travelled by objects. Students will know how to interpret the range and domain of models.</p>		<p>Students will know that a curve can be defined using parametric equations $x=p(t)$ and $y =q(t)$. Students will know that each value of the parameter, t, defines a point on the curve with coordinates $(p(t) q(t))$ Students will know that you can convert between parametric equations and cartesian equations by using substitution to eliminate the parameter Students will know that for parametric equations $x=p(t)$ and $y=q(t)$ with cartesian equation $y=f(x)$ Students will know the domain $f(x)$ is the range of $p(t)$ Students will know the range of $f(x)$ is the range of $q(t)$ Students will know that a curve can be defined using parametric equations $x=p(t)$ and $y =q(t)$. Students will know how to covert a parametric equation into a cartesian equation. Students will need to know how to substitute into a formula. Students will need to know to sketch functions Students will need to know how to substitute into a formula. Students will need to know how to find the range and domain of functions.</p>	

<p>To learn how to use trigonometric identities to convert parametric equations to Cartesian equations</p>	<ul style="list-style-type: none"> • Students will know how to use trigonometric identities to convert trigonometric parametric equations. • Students will know how to sketch the curve of a parametric equation involving trigonometric parametric equations. 		<p>Students will need to know the double angle formulae Students will need to know that $\cos^2x + \sin^2x = 1$ Students will need to know that $1 + \cot^2t = \operatorname{cosec}^2x$ Students will know the addition formulae. Students will need to be able to solve problems involving trigonometric equations. Students will need to know how to find range and domain. Students will know how the equation of a circle.</p>	
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