



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
<p>To learn how to use the binomial expansion involving negative or fractional indices.</p>	<ul style="list-style-type: none"> Students will know that a different version of the binomial expansion is needed when the power on the bracket is negative or fractional. Students will know that the binomial expansion of a bracket with a negative or fractional power will produce an infinite number of terms. Students will know how to manipulate a bracket to then use the binomial expansion. Students will know that this version of the binomial expansion will only work with brackets with 1 and an x. Students will know how to state the range of values of x for which the expansion is valid for example when $x < 1$ or $bx < 1$ or $x < 1/ b$. 		<p>Students need to know how to expand brackets. Students need to know how to use the binomial expansion. Students need to know how to use a basic modulus function. Students need to know how to manipulate expressions using index laws. Students need to know how to add, subtract, multiply and divide fractions. Students need to know how to rearrange formulae. Students need to know how to substitute into formulae.</p>	
<p>To learn how to use the binomial expansion to find approximations and to find unknowns</p>	<ul style="list-style-type: none"> Students will know how to use substitution and the binomial expansion to estimate a value. Students will know how to rearrange a fraction to then expand one bracket using the binomial expansion and then expand with another bracket. Students will know how to expand a bracket with unknowns and the coefficient of a term to find the unknown constant. Students will know how to find the coefficient of a particular term without fully expanding the bracket. 		<p><i>Students need to know how to use the binomial expansion with fractional or negative indices.</i> <i>Students need to know how to manipulate expressions using index laws.</i> <i>Students need to know how to add, subtract, multiply and divide fractions.</i> <i>Students need to know how to expand brackets.</i> <i>Students need to know how to collect like terms.</i> <i>Students need to know how to find the range for the value of x.</i> <i>Students need to know how to substitute into formulae.</i> <i>Students need to know how to compare coefficients.</i></p>	
<p>To learn how to manipulate brackets before using the binomial expansion.</p>	<ul style="list-style-type: none"> Students will know how to manipulate a bracket to end up with the number 1 and an x left inside the bracket. Students will know how to state the range of values of x for which the expansion is valid for example when $b/ax < 1$ or $x < b/a$. 		<p><i>Students need to know how to use the binomial expansion with fractional or negative indices.</i> <i>Students need to know how to manipulate expressions using fractional or negative index laws.</i> <i>Students need to know how to find the range for the value of x.</i> <i>Students need to know how to add, subtract, multiply and divide fractions.</i> <i>Students need to know how to substitute into formulae.</i> <i>Students need to know how to rearrange formulae.</i></p>	
<p>To learn how to use partial fractions to simplify the expansions of more difficult expressions.</p>	<ul style="list-style-type: none"> Students will know when to use partial fractions before using the binomial expansion. Students will know how to split a single fraction into partials and apply the binomial expansion. 		<p><i>Students need to know how to use the binomial expansion with fractional or negative indices.</i> <i>Students need to know how to find the range for the value of x.</i> <i>Students need to know how to split a single fraction into partial fractions.</i> <i>Students need to know how to add, subtract, multiply and divide fractions.</i> <i>Students need to know how to add and subtract algebraic fractions.</i> <i>Students need to know how to substitute into formulae.</i> <i>Students need to know how to compare coefficients.</i> <i>Students need to know how to rearrange formulae.</i></p>	

