The Sutton Academy

Knowledge Rich Curriculum Plan

Year 11 Higher+ Algebra 1

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Steps to Success	Prior Knowledge: *In order to know this…*	Feedback
To learn how to solve linear equations	• Students will know how to solve linear equations involving fractions • Students will know how to solve linear equations involving unknowns on both sides • Students will know how to solve linear equations with unknowns on both sides including where there are fractions and brackets	**Solve –** find an answer **Equation –** A mathematical statement that two amounts, or groups of symbols representing an amount, are equal: Example 3x - 3 = 15 **Linear Equation –** an equation between two variables that can be written in the form y=mx+c. Linear equations give a straight line when plotted on a graph. **Inverse –** opposite	•	• Students should know how to solve linear equations in the form ax + b = c • Students should know how to solve linear equations in the form a(bx + c) = d	Exam Prep 2
To learn how to form and solve linear equations	• Students will know how to form and solve linear equations for a worded scenario • Students will know how to form and solve linear equations involving shape		•	• Students will need to know how to calculate perimeter and area • Students will need to know the basic angle facts • Students will need to know the properties of special triangles	Exam Prep 2
To learn how to rearrange formulae	• Students will know how to rearrange formulae involving fractions, powers and roots • Students will know how to rearrange formulae involving brackets • Students will know how to rearrange formulae where factorisation is required to isolate the variable we are trying to make the subject	**Rearrange –** change the position of. **Formula –** A mathematical relationship or rule expressed in symbols. Example $A=\pi r^2$	•	• Students will need to know how to factorise • Students should already know how to rearrange very simple formulae	Exam Prep 2
To learn how to factorise quadratics	• Students will know how to factorise quadratics in the form $ax^2 + bx + c$ where b and c are either positive or negative and a = 1 • Students will know how to factorise the difference of two squares where the coefficient of x^2 is 1 • Students will know how to factorise quadratics in the form $ax^2 + bx + c$ where b and c are either positive or negative and a > 1 • Students will know how to factorise the difference of two squares where the coefficient of x^2 is greater than 1	**Factorise –** put back into brackets by bringing common factors outside **Quadratic –** involving a squared algebraic term but no other power higher than 2 **Co-efficient –** a number placed before and multiplying the variable in an algebraic expression	•	• Students need to know how to factorise into single brackets • Students should already know how to factorise quadratics in the form $ax^2 + bx + c$ where b and c are either positive or negative and a = 1 •	Exam Prep 2

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Steps to Success	Prior Knowledge: *In order to know this…*	Feedback
To learn how to factorise and solve quadratics	• Students will know how to factorise and solve quadratic equations in the form $ax^2 + bx + c = 0$ where $a \geq 1$ • Students will know that in order to factorise and solve quadratic equations they must be equal to zero. • Students will know how to rearrange equations to make them equal to zero before factorising and solving them • Students will know how to form and solve quadratic equations	**Factorise –** put back into brackets by bringing common factors outside **Quadratic –** involving a squared algebraic term but no other power higher than 2 **Co-efficient –** a number placed before and multiplying the variable in an algebraic expression	•	• Students need to be able to factorise quadratics including where the coefficient of x^2 is greater than 1	
To learn how to solve quadratics using the quadratic formula	• Students will know that the quadratic formula is $x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$ • Students will know that we use the quadratic formula when a quadratic cannot be factorised • Students will know how to identify the values for a, b and c from a quadratic equation including where the equation is not necessarily in the order $ax^2 + bx + c$ • Students will know how to substitute the values for a, b and c into the quadratic formula to solve the corresponding quadratic equation • Students will know that in order to solve quadratic equations they must be equal to zero. • Students will know how to rearrange equations to make them equal to zero before using the quadratic formula to solve them • Students will know how to form and solve quadratic equations using the quadratic formula •	**Formula –** A mathematical relationship or rule expressed in symbols.	•	• Students need to be able to use a calculator efficiently • Students need to be able to substitute numbers into formulae	
To learn how to solve quadratic inequalities	• Students will know how to solve quadratic inequalities	**Quadratic –** involving a squared algebraic term but no other power higher than 2 **Inequality –** a symbol which makes a non-equal comparison between two numbers or other mathematical expressions e.g. >, <, $\geq$ and $\leq$	•	• Students will need to know how to solve quadratic equations • Students will need to know how to sketch quadratics showing the roots	

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