The Sutton Academy

Knowledge Rich Curriculum Plan

Year 10 Foundation – Algebra 2 – Equations and Inequalities

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Prior Knowledge: *In order to know this…*	Assessment
To learn how to solve problems involving function machines	• Students will learn how to use function machines to do one and two step calculations including inverse operations. • Students will know that inverse operations are the opposite of each-other, they will know that the inverse of addition is subtraction, the inverse of multiplication is division, the inverse of squaring is square rooting and vice versa etc. • Students will know that functions are a relation or expression involving one or more variables.	**Inverse –** opposite	• Students should know how to use the four operations with positive and negative integers.	
To learn how to solve linear equations	• Students will know how to solve simple two step linear equations with one unknown using the balancing method e.g. 2x+3 =15. • Students will be able to solve linear equations involving fractions and brackets.	**Solve –** find an answer **Equation –** A mathematical statement that two numbers or letters are equal. **Linear Equation –** an equation where the highest power of x is 1. **Inverse –** opposite	• Students should already know how to solve one-step equations • Students will need to know how to expand single brackets	
To learn how to solve linear equations involving brackets and fractions.	• Students will know how to calculate with fractions. • Students will know how to expand single brackets by multiplying a single term over a bracket. • Students will know how to solve an equation that involved expanding one or more brackets. • Students will know how to solve an equation that involves fractional unknowns. Extension Solve with unknowns on both sides		• Students will need to know how to solve basic 1 step linear equations • Students will need to know how to solve 2 step equations.	
To learn how to form and solve equations from worded scenarios	• Students will know how to set up and solve equations for a word problem. • Students will know how to solve shape problems by forming equations		• Students will need to know how to solve linear equations • Students should know how to form expressions. • Students will need to know how to calculate perimeter and area	
To learn how to interpret inequalities and represent them on number lines	• Students will know that an inequality is a symbol >, ≤, <, ≥ that can be used to compare two values. • Students will know how to use the inequality symbols correctly • Students will know that > means greater than, ≤ means less than or equal to, < means less than and ≥ means greater than or equal to • Students will know how to list integers that satisfy an inequality e.g. -2< x <3. • Students will know how to represent inequalities on number lines. • Students will know how to write linear inequalities to represent a set shown on a number line.	**Integer –** whole number **Inequality –** a symbol which makes a non-equal comparison between two numbers or/and letters e.g. >, <, ≥ and ≤ **Satisfies –** meet the expectations **Represent** - show	• Students should be able to use the four operations with positive and negative integers.	

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Prior Knowledge: *In order to know this…*	Assessment
To learn how to solve linear inequalities	• Students will know the solution set is the set of values that satisfy a given set of equations or inequalities. • Students will know how to solve simple linear inequalities in one variable, and represent the solution set on a number line. • Students will solve an inequality such as $-3 < 2x + 1 < 7$ and show the solution set on a number line. • Students will know how to solve two inequalities in x, find the solution sets and compare them to see which value of x satisfies both.		• Students will know how to list integers that satisfy inequality e.g. $-2 < x < 3$. • Students will know how to represent inequalities on number lines. • Students will know how to construct inequalities to represent a set shown on a number line. • Students know how to solve one and two step equations.	
To learn how to rearrange formulae	• Students will know how to rearrange simple formulae to change the subject. • Students will know how to rearrange kinematic formulae. • Students will know that rearrange means change the position of. • Students will know how to change the subject of a more complicated formula involving powers and roots. • Students will know that Kinematics concerns the motion of objects,	**Rearrange –** change the position of. **Formula –** A mathematical relationship or rule expressed in symbols. Example $A=\pi r^2$ **Inverse –** opposite	• Students should have the ability to use negative numbers with the four operations and recall and use hierarchy of operations and understand inverse operations • Students should know how to expand brackets.	