

## Term 1 Year 7 - Algebraic Thinking

<b>Year group 7</b>	<b>Subject: Sequences, Algebraic Notation and Equality</b>
<b>Prior learning- linked to National curriculum</b>	Students would have seen some algebra in primary school, but this unit seeks to give the fundamental knowledge needed for them to be successful in maths in secondary school. Some of this unit would have been covered in years 5 and 6, but we build on this and ensure students are familiar with the notation required as well as any nuances that are needed for KS3
<b>Rationale</b>	Students start year 7 in mixed ability classes and we decided to begin with an Algebra topic. This is something that students would have seen previously but not to the depth that we will do in year 7. This forms the basis of much of the algebra work in Secondary school, and allows students to start to spot patterns and think abstractly. These are two key skills that are needed to be successful mathematicians
<b>Vocabulary:</b>	<b>Keywords</b> Term, sequence, equations, expression, equivalence, variable, substitution,
<b>Cultural Capital:</b>	One of the main applications of this is development of the art of problem solving. Spotting patterns in information will help students to see patterns in the real world. Also the idea of following procedure, having precise steps to solve something is key for any form of computing or algorithmic work.
<b>Key assessments- name the assessments</b>	Mini Assessment for: <ul style="list-style-type: none"> <li>● Sequences</li> <li>● Algebraic Notation</li> <li>● Equality and equivalence</li> </ul> In addition for this a Unit wrapper for this Term.
<b>What do children know/ can do now (EDSM)</b>	<b>Emerging Students will:</b> See Sequences in pictures, Use basic Algebraic Notation and solve one step equations <b>Developing students will:</b> See Sequence with numbers, Use Function machines using algebra, Solving equations involving division <b>Secure students will:</b> Recognise Special sequences, Collect like terms, solve equations with the unknown as a denominator <b>Mastered students will:</b> Know Position to term rules of sequences, substitute into algebraic expressions and Solve two step equations

What **amendments** are you going to make following evaluation of this module?

## TERM 1

Unit 1 - Sequences	Unit 2 - Understand and use algebraic notation	Unit 3 - Equality and equivalence
Describe and continue sequences	Given a numerical input, find the output of a single function machine	Understand the meaning of equality
Predict and check next term	Use inverse operations to find the input given the output	Understand and use fact families, numerically and algebraically
Sequences in a table and graphically	Use diagrams and letters to generalise number operations	Solve one-step linear equations involving $\pm$ using inverse operations
Linear and non-linear sequences	Use diagrams and letters with single function machines	Solve one-step linear equations involving $\times/\div$ using inverse operations
Continue linear sequences	Find the function machine given a simple expression	Understand the meaning of like and unlike terms
Continue non-linear sequences	Substitute values into single operation expressions	Understand the meaning of equivalence
Explain term-to-term rule	Find numerical inputs and outputs for a series of two function machines	Simplify algebraic expressions by collecting like terms, using the $\equiv$ symbol
Find missing terms	Use diagrams and letters with a series of two function machines	
	Find the function machines given a two-step expression	
	Substitute values into two-step expressions	
	Generate sequences given an algebraic rule	

Represent one- and two-step functions graphically