Term 1 Year 7 - Algebraic Thinking

Year group 7	Subject: Sequences, Algebraic Notation and Equality
Prior learning- linked to National curriculum	Students will build upon their Key Stage 2 knowledge of number patterns, function machines, and the use of symbols to represent unknown values. Their understanding of inverse operations is crucial for the introduction to solving one-step equations. This term's work formalises these concepts and introduces the precise language of algebra.
Rationale	This term is designed to introduce students to formal algebraic thinking, a cornerstone of secondary mathematics. **Sequences** develop pattern recognition, logical reasoning, and the ability to describe relationships mathematically. **Algebraic notation** provides the fundamental language for generalising numerical concepts and relationships. **Equality and equivalence** introduces the critical skill of solving equations, which is essential for problem-solving across all STEM subjects and is a key competency for GCSE and beyond.
Vocabulary:	**Keywords** **Sequences:** Term, Rule, Position, Ascending, Descending, Linear Sequence, Term-to-term rule, Position-to-term rule. **Algebra:** Expression, Term, Variable, Constant, Coefficient, Substitute, Like terms, Function machine, Input, Output. **Equations:** Equation, Solve, Unknown, Inverse operation, Balance, Solution, Equivalence.
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Cultural Capital:	**History of Mathematics:** Discuss the origins of the word "algebra" from the title of the book by Persian mathematician Al-Khwarizmi. **Nature and Art:** Explore the Fibonacci sequence and its appearance in nature (e.g., pinecones, flower petals) and its link to the Golden Ratio in art and architecture.

	Real-World Application: Connect algebra to real-world formulae, such as calculating the cost of a mobile phone bill (e.g., total cost = standing charge + (cost per gigabyte × gigabytes used)) or converting between units like Celsius and Fahrenheit.
Key assessments- name the assessments	Students will have a baseline assessment at the start of the year which will help decide classes moving forwards. Students will also have mini-Assessment for: ● Sequences ● Algebraic Notation ● Equality and equivalence In addition for this a Unit wrapper for this Term.
What do children know/ can do now (EDSM)	**All Emerging students will be able to:** work with sequences in pictures , understand basic algebraic notation, and solve one-step equations. **All Developing students will be able to:** work with sequences of numbers , use function machines with algebra , and solve equations involving division. **All Secure students will be able to:** understand special sequences , collect like terms , and solve equations where the unknown is the denominator. **All Mastered students will be able to:** find position-to-term rules , substitute into algebraic expressions , and solve two-step equations.
What **amendments** are you going to make following evaluation of this module?	

YEAR 7 - TERM 1		
Unit 1 - Sequences	**Unit 2 - Algebraic notation**	**Unit 3 - Equality and equivalence**
E - Sequences in pictures (M241)	E - Algebraic Notation (M813)	E - Solving one step equations (M707)
D - Sequence with numbers (M381)	D - Function machines using algebra (M428)	D - Solving equations involving division (M707)
S - Special sequences (M981)	S - Collecting like terms (M531)	S - Solving two step equations (M509)
M - Position to term rules (M866)	M - Substitute into algebraic expressions (M327)	M - Solving equations with the unknown as a denominator (M707)