Y8 Term 1 - Ratio and Scale; Multiplicative Change and Sequences

Year group 8	
Prior learning- linked to National curriculum	Students will build directly upon their Year 7 number skills. The study of ratio and multiplicative change utilises foundational knowledge of **multiplication and division with integers and decimals** and the concept of **equivalent fractions**. The work on sequences is an explicit extension of **Unit 1 from Year 7** , where students were first introduced to picture and number sequences and the concept of a position-to-term rule. This prior learning is revisited and developed to introduce more formal algebraic representations like the nth term
Rationale	These topics are fundamental for developing proportional reasoning, a crucial skill both in mathematics and in everyday life. **Ratio and multiplicative change** are essential for understanding concepts such as scale diagrams in geography, recipe adjustments in cooking, and currency conversions in finance. **Sequences** provide a vital introduction to algebraic thinking, pattern recognition, and generalisation, forming the bedrock for understanding functions and graphs later in their studies.
Vocabulary:	**Keywords:** **Ratio and Multiplicative change:** Ratio, Part, Whole, Proportion, Simplify, Equivalent, Scale, Scale Factor, Direct Proportion, Unitary Method, Conversion Graph , Currency **For Sequences:** Sequence, Term, Term-to-term rule, Position, Position-to-term rule, nth term, Linear, Arithmetic, Common Difference, Ascending, Descending
Cultural Capital:	This term offers opportunities to connect mathematics to the wider world and enrich students' cultural capital. ● **Art & Architecture:** When studying ratio, you could explore the Golden Ratio (ϕ) and its perceived use in historical art and architecture, from the Parthenon in Athens to Leonardo da Vinci's "The Last Supper".

	• **Geography & Travel:** The work on scale and currency conversion can be linked to map reading, planning journeys, and understanding the relative costs of goods in different countries, enhancing students' global awareness. • **Biology & Nature:** When exploring sequences, students can be introduced to the Fibonacci sequence and its fascinating appearance in the natural world, such as the petal arrangements on flowers and the spiral patterns on pinecones.
SEND	Include SENDSational 6 Introducing SENDsational 6
Key assessments- name the assessments	Green Sheets for • **Unit 1:** Ratio and Scale • **Unit 2:** Multiplicative Change • **Unit 3:** Sequences 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 simplify ratios , work with direct proportion , and understand sequences in numbers. • All **Developing** students will be able to share amounts in a given ratio , use conversion graphs , and find term-to-term rules for sequences. • All **Secure** students will be able to use a ratio to find an unknown amount , perform currency conversions , and determine position-to-term rules. • All **Mastery** students will be able to solve proportion problems , work with direct proportion graphs , and find the nth term for sequences of patterns.

YEAR 8 - TERM 1		
Unit 1 - Ratio and Scale	**Unit 2 - Multiplicative Change**	**Unit 3 - Sequences**
E - Simplify ratios (M885)	E - Direct Proportion (M478)	E - Sequences in numbers (M381)
D - Share in a ratio (M525)	D - Conversion Graphs (M771)	D - Term to term rules (M241)
S - Use a ratio to find an unknown amount (M801)	S - Currency Conversion (M448)	S - Position to term rules (M991)
M - Solving proportion problems (M478)	M - Direct proportion graphs (M448)	M - nth term for sequences of patterns (M866)