Term 1 Year 9 - Number, Fractions and Pythagoras

Year group 9	Subject: Number
Prior learning- linked to National curriculum	This term consolidates and extends numerical methods taught throughout Years 7 and 8. Students have previously covered calculations with integers , decimals , and fractions. Topics such as HCF/LCM and squares/roots were introduced in Year 7. This term builds directly on this foundation, using squares and roots as the basis for introducing Pythagoras' Theorem and introducing surds as a new class of numbers.
Rationale	The focus of this term is to ensure students have a high degree of fluency and confidence in number work, which is essential for problem-solving across all mathematical topics. **Number and Fractions:** Deepening understanding of these topics is crucial for advanced proportional reasoning, which is a key requirement at GCSE. **Pythagoras' Theorem:** This is a cornerstone of geometry and a fundamental tool for calculating distance. Mastery of this topic is not only vital for its direct applications in construction, design, and navigation but also as a prerequisite for studying trigonometry in Key Stage 4.
Vocabulary:	**Keywords** **Numbers:** Integer, Decimal, Highest Common Factor (HCF), Lowest Common Multiple (LCM), Surd, Rational, Irrational. **Fractions:** Numerator, Denominator, Improper Fraction, Mixed Number, Reciprocal. **Pythagoras:** Square, Square Root, Right-angled Triangle, Hypotenuse, Theorem, Pythagorean Triple.
Cultural Capital:	**History of Mathematics:** Discuss the ancient history of Pythagoras' Theorem, exploring evidence that Babylonian and Egyptian civilisations used its principles for construction (e.g., ensuring square corners in the pyramids) centuries before Pythagoras of Samos. **Real-World Application:** Relate Pythagoras' Theorem to practical modern scenarios like calculating screen sizes (which are measured diagonally), navigation (finding the shortest distance "as the crow flies"), and construction (using the 3-4-5 triangle method to check for perfect right angles).

	Finance and Trade: Emphasise the importance of accurate calculations with integers, decimals, and fractions in everyday life, from budgeting and banking to international trade and currency conversion.
SEND	Include SENDSational 6 Introducing SENDsational 6
Key assessments- name the assessments	Mini Assessment for: ● Calculations with decimals and integers/Factors, primes and multiples ● Calculations with fractions ● Roots, squares and Pythagoras In addition for this a Unit wrapper for this Term.
What do children know/ can do now (EDSM)	By the end of this term: ● **All Emerging students will be able to:** perform calculations with integers , convert between mixed numbers and improper fractions , and find squares and square roots. ● **All Developing students will be able to:** perform calculations with decimals , multiply fractions , and apply Pythagoras' theorem in 2D shapes. ● **All Secure students will be able to:** find the HCF and LCM of numbers , divide fractions , and use Pythagoras' theorem with coordinates. ● **All Mastered students will be able to:** simplify surds , add and subtract fractions , and solve complex problems involving Pythagoras' theorem.
What **amendments** are you going to make following evaluation of this module?	

YEAR 9 - TERM 1		
Unit 1 - Numbers	**Unit 2 - Calculations with fractions**	**Unit 3 - Pythagoras**
E - Calculations with integers (M928/M347/M187/M354)	E - Convert mixed numbers/improper fractions (M601)	E - Squares and roots (M135)
D - Calculations with decimals (M949/M152/M803/M491)	D - Multiply fractions (M157)	D -Pythagoras in 2D (M677)
S - HCF/LCM (M698/M227)	S - Divide fractions (M110)	S - Pythagoras problems (M480)
M - Simplifying surds (U338)	M - Add/subtract fractions (M835)	M - Pythagoras with coordinates (M677)