Retrieval practice: HCF/LCM and Prime Factorisation (Y7 HT4), Negative Number Operations (Y7 HT1-HT3), Fractions of Amounts (Y7 HT5) + Class assessment gaps

	Developing	Good	Strong
YEAR 10 FOUNDATION — AUTUMN 1 Number, Fractions, Decimals, Indices & Standard Form	• Basic understanding of place value and ordering integers and decimals • Rounding to whole numbers or tenths • Identify simple factors and multiples • Attempted calculations with fractions and decimals, with frequent errors • Some understanding of indices and standard form	• Correct rounding to decimal places and significant figures • Sensible use of estimation to check calculations • Accurate calculations with fractions and decimals using familiar methods • Identification of factors, multiples, HCF and LCM of common numbers • Use of simple index rules and writing numbers in standard form • Secure understanding of place value	• Accurate use of rounding and estimation in context, including selecting appropriate accuracy and judging calculator answers • Confident calculation with fractions and decimals using all four operations, including multi-step problems • Secure use of HCF, LCM and prime factorisation, including index notation where appropriate • Correct application of index notation and interpretation of powers • Use of standard form to compare, calculate and interpret very large and very small numbers in real-life contexts

What you need to know before this half term

- Use a number line to order positive and negative numbers
- Apply the four operations with whole numbers
- Understand place value in whole numbers and decimals

Career links this half term

Pharmacy Assistant / Pharmacy Technician Support
Uses decimals and large/small numbers to measure medicine doses and check calculations are sensible and safe.

Laboratory Technician
Uses very small numbers, standard units and estimation to measure chemicals and record accurate results.

Tier 3 - Key Vocab

Nearest ten / hundred – Rounding a number to the closest multiple of 10 or 100
Significant figures – Digits in a number that show its accuracy
Decimal places – The number of digits after the decimal point
Overestimate – An estimate that is greater than the exact value
Underestimate – An estimate that is smaller than the exact value
Reasonable – An answer that makes sense for the situation
Prime – A number with exactly two factors: 1 and itself
Product – The result of multiplying numbers together
Divisible – A number that can be divided exactly by another number
Tenths – The first place value after the decimal point
Hundredths – The second place value after the decimal point
Thousandths – The third place value after the decimal point
Recurring – A decimal where a digit or group of digits repeats forever
Terminating – A decimal that ends
Numerator – The top number in a fraction
Denominator – The bottom number in a fraction
Improper fraction – A fraction where the numerator is greater than the denominator
Mixed number – A whole number and a fraction written together
Equivalent – Fractions that have the same value
Reciprocal – A fraction turned upside down
Index – The number of times a base is multiplied by itself
Indices – The plural of index
Exponent – Another word for index or power
Power – The small number showing repeated multiplication
Base – The number being multiplied
Squared – A number multiplied by itself
Cubed – A number multiplied by itself twice
Standard Form
Power of 10 – A number written as 10 raised to a power
Exponent – The power showing how many times 10 is multiplied
Coefficient – The number between 1 and 10 in standard form

Retrieval practice: Collecting Like Terms (Y8 HT1), Coordinates in Four Quadrants (Y8 HT5), Expanding Single Brackets (Y8 HT1) + Class assessment gaps

	Developing	Good	Strong
YEAR 10 FOUNDATION — AUTUMN 2 Algebra, Equations, Graphs & Inequalities	• Recognition and use of letters to represent unknowns • Substitution into simple expressions • Solution of basic one-step equations • Plotting of coordinates in four quadrants • Emerging understanding of inequalities	• Simplification of algebraic expressions by collecting like terms and expanding single brackets • Solution of one- and two-step linear equations • Substitution into expressions and formulae • Plotting straight-line graphs from tables of values • Recognition of gradient and intercept • Solution of simple linear inequalities, represented correctly on a number line	• Confident manipulation of algebraic expressions by collecting like terms, expanding brackets and factorising simple expressions • Accurate solution of linear equations, including those with the unknown on both sides • Formation and solution of equations from real-life contexts • Accurate plotting of linear graphs, with clear interpretation of gradient and intercept • Correct solution and representation of linear inequalities, including interpretation of solution sets

What you need to know before this half term

- Use the four operations, including with negative numbers
- Understand inverse operations (undoing a calculation)
- Plot coordinates in four quadrants

Career links this half term

Electrical Engineer Technician
Uses algebra and graphs to calculate voltage, current and system performance when installing or maintaining equipment.

Business Analyst (Entry Level / Junior)
Uses algebra and graphs to model business data and predict outcomes such as costs and sales.

Tier 3 - Key Vocab

Variable – A letter used to represent an unknown value
Expression – A mathematical statement without an equals sign
Equation – A statement showing two expressions are equal
Term – A part of an expression separated by + or −
Coefficient – The number multiplied by a variable
Constant – A number without a variable
Like terms – Terms with the same variable and power
Expand – Multiply out brackets
Factorise – Write an expression as a product
Identity – An equation that is true for all values of the variable
Formulae – Rules written using symbols and letters
Inverse operation – The opposite operation used to solve equations
Balance – Keeping both sides of an equation equal
Linear – An equation or graph with a constant rate of change
Solution – The value that makes an equation true
Gradient – How steep a line is
Intercept – Where a line crosses an axis
Axis – The horizontal (x) or vertical (y) line on a graph
Inequality – A statement showing a range of values
Solution set – All values that satisfy an inequality
Number line – A line used to show values in order

Retrieval practice: + Class assessment gaps

	Developing	Good	Strong
YEAR 10 FOUNDATION — SPRING 1 Sequences & Percentages	• Recognises simple number patterns and continues sequences • Generates terms in sequences using term-to-term rules • Understands a percentage as "out of 100" • Calculates percentages of amounts • Begins to interpret percentage change and financial contexts	• Finds nth term rules for linear sequences with support • Recognises common sequences, including Fibonacci-type patterns • Expresses one quantity as a percentage of another • Calculates percentage increase and decrease using familiar methods • Uses multipliers for routine percentage problems	• Generalises number patterns accurately and uses nth term rules to find any term in a sequence • Distinguishes confidently between arithmetic, geometric and quadratic sequences • Solves contextual problems using nth term expressions and explains reasoning clearly • Interprets percentages as multiplicative operators, including the use of multipliers • Solves problems involving percentage increase and decrease, including original value problems • Applies simple and compound interest accurately in financial contexts

What you need to know before this half term

- Solve one-step linear equations
- Multiply and divide by powers of 10
- Use rounding and estimation to check answers

Career links this half term

Payroll Administrator
Uses percentages and number patterns to calculate wages, overtime and deductions accurately each pay period.

Data Analyst-Statistician
focuses on interpreting data to identify trends and patterns.

Tier 3 - Key Vocab

Arithmetic sequence – A sequence where the difference between terms is constant
Geometric sequence – A sequence where each term is multiplied by the same value
Percentage change – The amount a value increases or decreases compared to the original
Multiplier – A number used to calculate percentage change in one step
Compound interest – Interest calculated on the original amount and accumulated interest

Retrieval practice: + Class assessment gaps

	Developing	Good	Strong
YEAR 10 FOUNDATION — SPRING 2 Ratio, Proportion, Perimeter, Circumference & Area	• Recognises ratio notation and compares quantities as a ratio • Calculates perimeter of basic shapes • Finds area of rectangles and triangles using given formulae	• Divides quantities into parts using a given ratio • Solves proportion problems • Calculates perimeter of simple and composite shapes • Finds area of common shapes using formulae • Calculates circumference and area of circles with support	• Divides quantities accurately into given ratios, including when one part or the difference is known • Applies ratio and proportion confidently in real-world contexts such as scaling and conversions • Recognises and explains multiplicative relationships between quantities • Calculates perimeter and area of composite shapes by decomposing effectively • Applies formulae accurately for triangles, parallelograms, trapeziums and circles • Calculates circumference, sector area and arc length, including exact values using π • Finds surface area of pyramids, cones, spheres, frustums and composite solids

What you need to know before this half term

- Secure multiplication and division facts
- Substitute values into expressions

Career links this half term

Catering Manager
Uses ratio and proportion to scale recipes, manage portions and control food costs accurately.

Construction Operative / Site Technician
Uses perimeter and area to measure spaces accurately and estimate materials needed on construction sites.

Tier 3 - Key Vocab

Ratio – A way of comparing quantities using multiplication
Proportion – An equality between two ratios
Multiplicative relationship – A relationship where quantities are linked by multiplication
Composite shape – A shape made from two or more simple shapes
Sector – A part of a circle bounded by two radii and an arc
Surface area – The total area of all faces of a 3D shape

Retrieval practice: Angles in Parallel Lines (Y9 HT6), Pie Charts (Y9 HT2), Surface Area of 3D Shapes (Y9 HT5) + Class assessment gaps

	Developing	Good	Strong
YEAR 10 FOUNDATION — Summer 1 Angle and Probability	• Calculates unknown angles using angle facts at a point, on a line and vertically opposite • Identifies angle types and measures angles accurately with a protractor • Uses scale diagrams • Understands probability on a scale from 0 to 1 • Lists simple outcomes but struggles with combined events	• Uses alternate and corresponding angle rules correctly • Finds interior angles of regular polygons using given formulae • Interprets scale diagrams and simple bearings accurately • Writes probabilities as fractions, decimals or percentages • Lists outcomes systematically using tables or tree diagrams • Applies probability rules correctly in routine contexts • Constructs and analyses complete sample spaces for combined events	• Accurately deduces unknown angles using angle facts and parallel-line relationships • Derives and applies angle sums for triangles and polygons with clear reasoning • Interprets and solves problems involving scale factors and bearings precisely • Applies addition and multiplication rules correctly for mutually exclusive and independent events • Distinguishes clearly between theoretical and experimental probability and evaluates results

What you need to know before this half term

- How to measure angles accurately using a protractor
- Key angle facts, including angles on a straight line, around a point and vertically opposite angles
- How to work confidently with fractions, decimals and percentages
- How to interpret simple ratios
- Understanding that probability values lie between 0 and 1

Career links this half term

Architect
Uses geometry, spatial reasoning and logical deduction to design buildings, work out angles and proportions, and create plans that make sense in real space.

Risk Analyst (Financial / Business Risk)
Uses statistics, probability and logical reasoning to assess and predict risk in investments, companies and economic decisions.

Tier 3 - Key Vocab

Corresponding angles – Angles in matching positions when a line crosses parallel lines
Alternate angles – Angles on opposite sides of a transversal between parallel lines
Co-interior angles – Angles inside parallel lines that add to 180°
Scale factor – The multiplier used to enlarge or reduce a shape
Bearing – A direction measured clockwise from north, written as a three-figure angle
Mutually exclusive – Events that cannot happen at the same time
Independent events – Events where one does not affect the probability of the other
Sample space – A complete list of all possible outcomes

Retrieval practice: Venn Diagrams and Probability (Y9 HT3), Metric Conversion (Y7 HT6), Decimal Calculations (4 Ops) (Y7 HT1-3) + Class assessment gaps

	Developing	Good	Strong
YEAR 10 FOUNDATION — Summer 2 Pythagoras and Trigonometry	• Recognises right-angled triangles • Identifies the hypotenuse • Understands that trigonometry links angles and side lengths • Select the correct ratio (SOHCAHTOA)	• Substitutes known values into Pythagoras' formula accurately • Calculates missing sides using square roots • Uses sine, cosine or tangent correctly in routine problems • Uses a calculator accurately to find unknown angles	• Applies Pythagoras' Theorem confidently to calculate unknown lengths in 2D contexts • Rearranges the formula accurately to find any unknown side • Identifies the hypotenuse correctly in complex diagrams • Uses inverse trigonometry accurately to calculate unknown angles • Applies exact trigonometric values for special angles

What you need to know before this half term

- Recognition of right-angled triangles and identification of the hypotenuse
- Recall of square numbers and how to find square roots
- Ability to rearrange and substitute in simple formulae
- Secure use of a scientific calculator, including square root and inverse functions

Career links this half term

Surveyor (Land / Engineering Surveyor)
Uses Pythagoras and trigonometry to calculate distances and heights that cannot be measured directly, such as across land or between buildings.

Pilot (Commercial or Military)
Uses trigonometry to calculate distances, angles and heights when navigating aircraft and planning safe flight paths.

Tier 3 - Key Vocab

Hypotenuse – The longest side of a right-angled triangle, opposite the right angle
Right-angled triangle – A triangle containing one 90° angle
Pythagoras' Theorem – A rule linking the three sides of a right-angled triangle
Trigonometric ratio – A ratio (sine, cosine or tangent) linking angles and side lengths
Inverse trigonometry – Using a calculator to find an angle from a trigonometric ratio
Exact value – A value written without rounding, often involving roots