1. Number Systems and Numerical Reasoning

- Integers, fractions, decimals, and percentages as a connected number system
- Rational numbers and operations, including multi-step calculations
- Powers, exponents, square roots, and introductory irrational numbers
- Standard form/scientific notation for very large and very small quantities
- Absolute value, intervals, and number-line reasoning
- Order of operations and efficient calculation strategies
- Estimation, approximation, rounding, bounds, and reasonableness checks
- Factors, multiples, primes, GCF, LCM, and divisibility in problem solving
- Scientific contexts involving measurement, scale, data, and change

2. Ratio, Proportion, Rates, and Percentages

- Ratios as part–part and part–whole comparisons
- Equivalent ratios, simplifying ratios, and ratio tables
- Unit rates and compound units such as speed, density, flow rate, and cost per unit
- Direct proportion using tables, graphs, and equations at an introductory level
- Scale factors, maps, models, and scale drawings
- Percentage of a quantity
- Percentage increase, decrease, and percentage change
- Multi-step percentage applications: discount, tax, mark-up, simple interest, concentration, and efficiency where appropriate
- Proportional reasoning in science, design, and everyday contexts

3. Algebraic Expressions, Equations, and Inequalities

- Algebraic notation and variables
- Writing expressions from verbal, numerical, and contextual descriptions
- Evaluating expressions by substitution
- Simplifying expressions using distributive property and collecting like terms
- Expanding simple expressions and introductory factorising where appropriate
- One-step, two-step, and multi-step linear equations
- Equations from real STEM contexts
- Linear inequalities and number-line representation
- Equality, equivalence, and valid algebraic steps
- Checking solutions and interpreting answers in context

4. Functions, Graphs, and Coordinate Modelling

- Coordinate plane and plotting points in all quadrants where appropriate
- Tables, graphs, equations, and rules for relationships
- Input-output tables and function-machine thinking
- Linear patterns and rate of change
- Gradient/slope as a rate in context
- Intercepts as starting values or fixed quantities in context
- Interpreting equations such as $y = mx + b$ at an age-appropriate level
- Comparing relationships from tables, graphs, equations, and words
- Graphing and interpreting simple inequalities where appropriate

- Introductory quadratic patterns and graphs where appropriate
- Trend interpretation in scientific data

5. Geometry, Transformations, and Mensuration

- Angle relationships involving lines, triangles, quadrilaterals, and polygons
- Parallel and perpendicular lines
- Properties and classification of 2D shapes and 3D solids
- Congruence and similarity at an introductory level
- Transformations: reflection, translation, rotation, and enlargement
- Scale factor effects on length, area, and volume at an introductory level
- Perimeter and area of common and composite shapes
- Surface area and volume of prisms and cylinders where appropriate
- Circle measures: circumference and area at an introductory level
- Nets and spatial visualisation
- Coordinate geometry at an introductory level
- Geometric reasoning in practical design, construction, and modelling contexts

6. Pythagoras and Introductory Right-Triangle Reasoning

- Right triangles and geometric relationships
- Pythagorean theorem: concept and applications
- Distance on coordinate grids using Pythagorean reasoning
- Problem solving with right triangles in practical contexts
- Introductory trigonometric ratios where appropriate: sine, cosine, and tangent
- Angle of elevation/depression at an introductory level where appropriate
- Choosing appropriate methods for right-triangle problems

7. Data, Statistics, and Probability

- Data collection, sampling, and fair testing
- Bias, data quality, and representativeness at an introductory level
- Organising data in tables, frequency tables, and structured displays
- Bar charts, line graphs, histograms, box plots, and scatter plots at an age-appropriate level
- Measures of centre: mean, median, and mode
- Measures of spread: range and introductory variability
- Comparing distributions and identifying outliers
- Interpreting claims from data and evidence
- Probability of simple events
- Introductory compound probability with simple independent events
- Experimental vs theoretical probability

8. Math Modelling, Problem Solving, and Financial Literacy

- Multi-step problem solving and strategy selection
- Modelling with equations, tables, diagrams, graphs, and calculations
- Estimation, approximation, bounds, and reasonableness checks
- Constraints and optimisation at an introductory level: cost, time, materials, space, and efficiency

- Interpreting outputs and limitations of simple models
- Financial math: budgets, discounts, tax, mark-up, unit price, and simple interest at an introductory level
- Comparing solutions and evaluating methods
- Clear mathematical communication using units, diagrams, steps, and short justifications