

Mathematics Curriculum Overview – Topics Covered (Years 7–11)

Year 7 – Building Secure Foundations

- Place value, rounding and estimation
- The four operations and directed number (including negatives)
 - Fractions and arithmetic with fractions
 - Algebraic Manipulation
 - Coordinates and the Cartesian plane
 - Perimeter and area
 - Ratio and proportional reasoning
 - Transformations

Focus: developing fluency in core number skills, introducing algebraic thinking and building confidence in geometry and proportional reasoning.

Year 8 – Developing Fluency and Reasoning

- Estimation
- Sequences and linear relationships
- Solving linear equations and inequalities
- Percentages and proportional reasoning
- Statistical analysis and interpreting data
 - Perimeter, Area and Volume
 - Polygons and angle reasoning
 - Constructions

Focus: strengthening algebraic fluency, linking algebra to graphs and geometry, and applying mathematics to a wider range of problems.

Year 9 – Bridging to GCSE Mathematics

- Pythagoras' theorem
- Similarity and Congruence
 - Probability
- Non-linear relationships
 - Proportion
 - Trigonometry
- Expressions and formulae
- Standard form and indices
- Graphical representations (linear and non-linear)

- Circles and quadratic factorisation (with appropriate depth and challenge)

Focus: increasing abstraction, precision and problem-solving, while preparing students for the demands of GCSE Mathematics.

Years 10–11 – GCSE Mathematics (Foundation and Higher)

Foundation Pathway

- Number Skills – Powers, Indices, Roots, Surds and Standard Form
 - Ratio and Proportion - Percentages
 - Sequences
- Algebraic expressions including quadratics, solving simultaneous equations and graphs
 - 2D/3D shapes involving circles
 - Compound measures
 - Transformations
 - Similarity and trigonometry
 - Probability and statistics
- Geometric Reasoning including vectors
- Construction, Loci and Bearings
- Structured problem-solving and exam preparation

Higher Pathway

- Advanced algebra and algebraic reasoning – Algebraic Fractions, Inequalities, Proof and Functions
 - Quadratic, reciprocal and exponential graphs
 - Iterative formulae and recurrence relations
 - Non-linear graphs and their transformations
 - Trigonometry, vectors and circle geometry
 - Proof, reasoning and multi-step problem-solving

Focus: developing fluency, reasoning and application appropriate to each pathway, with increasing independence and confidence.

Spring Term, Year 11 – Consolidation and Examination Preparation

- Revisiting key topics across all areas of mathematics
 - Strengthening recall and procedural fluency
 - Targeted exam practice and refinement of technique
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Overall Curriculum Journey

Across Years 7–11, students progress from secure numerical foundations to confident algebraic reasoning and problem-solving, developing the mathematical fluency, resilience and analytical skills needed for GCSE success and future pathways.