Curriculum Overview

Curriculum Area: Mathematics Year: 11

Autumn 1: Ratio, Geometry and Proof

Pupils begin Year 11 by revisiting ratio, proportion and scaling, applying proportional reasoning to complex and multi-step problems. They calculate area and volume of a variety of shapes, including circles, sectors and 3-D solids, and apply these to compound and contextual problems.

Work on similarity and congruence deepens geometric reasoning, with pupils using formal proofs to justify relationships. They also explore sequences and develop algebraic reasoning through inductive and deductive proof, strengthening their ability to generalise and explain mathematical patterns.

Autumn 2: Standard Form, Circles and Sets

Pupils apply their number and algebra skills to work with standard form, performing calculations and interpreting scientific and real-world data. They extend knowledge of circles, using formulae for circumference, area and arcs with increasing precision.

Work on set notation and Venn diagrams introduces pupils to formal logical reasoning and probability representation. Higher-attaining pupils also explore vectors, linking geometric movement to algebraic form. This term develops fluency, reasoning and problem-solving across number, algebra and geometry.

Spring 1: Functions, Graphs and Algebraic Fluency

Pupils extend their understanding of functions and graphs, recognising key features and transformations of linear, quadratic and reciprocal functions. They form and rearrange equations and formulae, applying these to geometry, ratio and measure contexts.

Work on rates connects algebra and proportion, with pupils solving problems involving speed, density and pressure. This term reinforces flexible algebraic reasoning and prepares pupils for the abstract and applied demands of higher-level GCSE content.

Spring 2: Geometry, Trigonometry and Transformations

Pupils explore bearings and angle reasoning, applying trigonometric ratios and Pythagoras' theorem to a wide range of problems, including those involving elevation and navigation. They construct and interpret accurate diagrams using loci and standard geometric constructions.

Work on transformations brings together reflection, rotation, translation and enlargement, enabling pupils to describe and represent movement algebraically and geometrically. This half-term consolidates reasoning and spatial understanding, with an emphasis on clarity of explanation and method.

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Summer: Consolidation and Examination Preparation

In the summer term, pupils review and consolidate key areas across number, algebra, geometry, and statistics in preparation for their GCSE examinations. They refine problem-solving strategies, practise applying knowledge under timed conditions, and focus on communication of reasoning and justification.

This final stage ensures pupils approach their exams with confidence, fluency and a secure grasp of the interconnections across mathematics, ready to transition successfully to post-16 study or training.

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Spring 2: Revision & Communication

Transforming & Constructing: Extend learning from Key Stage 3, focusing on transformations and constructions, connecting them to symmetry and properties of shapes. Emphasize describing and performing transformations, with higher-tier pupils exploring graph transformations using trigonometric graphs. Explore both positive and negative scale factors for enlargements, and describe changes using combinations of rotations, reflections, and translations.

Listing & Describing: Another revision block, focusing on organization for exams. Cover probability and other aspects of Data Handling, including comparing distributions and scatter diagrams. Higher-tier pupils explore the product rule for counting and revise plans and elevations.

Show that: A block designed to be flexible, highlighting gaps in knowledge and encouraging clear communication of mathematical ideas. Emphasize explaining algebraic expressions and supporting arguments with algebra and proofs.

Internal Assessment

Class work is assessed during the lesson. Pupils self-assess their work in green pen, ensuring that misconceptions are captured, and progress is continuous. Teachers circulate the room, facilitate discussions, and use mini whiteboards and directed questions to assess progress and re-shape the learning where misconceptions occur.
The GCSE course is taught in units. Each curriculum unit is followed by an assessment. This demonstrates retention of core knowledge and the ability to apply this to exam questions.
All pupils will sit two sets of formal mock exams in December and March which will replicate full GCSE papers.
These are used to identify gaps in core knowledge and topics that require further study before the final GCSE exams.

Exam Board/Exam Paper Requirements/% Weighting
Key dates (mocks and final exams

We study the Edexcel GCSE Mathematics (9-1) course at either Higher or Foundation Tier. Course code is 1MA1.

All final examinations are taken at the end of year 11.
The exam consists of 3 papers (90 minutes each) which all have equal weighting (33.3%) and combine to give a GCSE grade.
Paper 1H is a non-calculator paper and papers 2H and 3H are calculator.

Any part of the specification can be tested on any paper.

Helpful resources/revision guides/websites/exam preparation
Helpful resources/revision guides/websites/exam preparation
The best research consistently shows that success in GCSE Mathematics is built on what students do outside the classroom as well as during lessons. While high-quality teaching provides the foundation, independent practice and regular retrieval of knowledge are required for exam success. The most successful students develop a consistent routine of study throughout year 10 and 11, rather than relying on last minute revision.
Revision guides are available to purchase from school, and pupils should use this to work through one topic at a time by

- Reviewing the key methods and worked examples
- Completing practice questions without looking at the answers.
- Marking their work carefully.
- Recording mistakes and revisiting them regularly.

There are excellent free online resources available, including MathsGenie, CorbettMaths and Dr Frost Maths. The most effective strategies involve the deliberate practice of focusing revision and practice on weaker topics and using past paper questions available widely on the sites above to practice. Watching videos alone is not sufficient.