Curriculum Overview

Curriculum Area: Mathematics Year: 11

Autumn Term:

Autumn 1: Graphs

Gradients and Lines: Pupils study straight line graphs, focusing on equations of lines in various contexts. They interpret gradients, use the formula y=mx + c and explore perpendicular lines, including simultaneous equations.

Non-linear Graphs: Explores quadratic, cubic, and reciprocal graphs. Pupils interpret these graphs and apply algebraic methods to understand their properties, including turning points and the equation of a circle's tangent.

Using Graphs: Covers conversion graphs and real-life graphs involving speed, distance, and time. Higher tier pupils calculate gradients of curves, area under curves, and solve problems using kinematic principles.

Autumn 2: Algebra

Expanding and Factorising: Focus on expanding single brackets and moving to quadratics. This is a key area to revisit area and Pythagoras' theorem. Pupils learn to factorise quadratic expressions and solve quadratic equations.

Changing the Subject: Consolidate understanding of changing the subject of equations. Begin with solving equations and inequalities, then move to rearranging formulas. The block includes both familiar and unfamiliar formulas, with an emphasis on substitution.

Functions: Introduce formal function notation, building on quadratic functions and graphs. Revisit trigonometric functions from Year 10. Pupils interpret simple expressions as functions, solve simultaneous equations, and apply Pythagoras' Theorem and trigonometric ratios.

Spring Term:

Spring 1: Reasoning

Multiplicative Reasoning: Focus on developing multiplicative reasoning in various contexts, from simple scale factors to complex equations involving direct and inverse proportion. Review ratio problems and link inverse proportion with formulas for pressure and density.

Geometric Reasoning: Consolidate knowledge of angles and geometric reasoning to solve problems. Higher tier pupils revise four circle theorems from Year 10 and learn the remaining theorems. Revisit vectors and key topics like Pythagoras' theorem and trigonometry.

Algebraic Reasoning: Focus on more complex algebraic reasoning. Develop understanding of sequences and rules to make inferences. Higher tier pupils move towards formal algebraic proof, solving complex equations, and inequalities in more than one variable.

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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

The best way to revise maths is to do maths. Further practice outside of lesson time is vital for success. Pupils should work through questions/examples from their exercise books, attempt practice GCSE questions and watch the SPARC tutorial videos, pausing and going back when they need to.
Along with being given a personal SPARX login, pupils can purchase CGP 9-1 maths revision guides at the start of the year at a reduced price of £3.30 through Parent pay (rrp £5.95).
Revision lists are produced for formal assessments and include links to mathswatch tutorial videos.
Pupils are required to have their own scientific calculator (Casio). These are widely available and are also available to purchase through parent pay.
Recommended websites include:
Mathsgenie/onmaths/Corrbettmaths/BBC bite size/YouTube.
There is also an array of excellent support materials on the Edexcel website, such as exam specifications and past papers.