GCSE Mathematics
Course code: Edexcel 1MA0

Aims:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Content:

The mathematics curriculum is broken down into six key areas:

1. Number – Structure and calculation, fractions, decimals & percentages, measures & accuracy
2. Algebra -Notation, vocabulary & manipulation, graphs, equations & inequalities, sequences
3. Geometry & Measure – Properties and constructions, mensuration & calculation, vectors
4. Probability
5. Statistics – Collection, representation, and analysis
6. Ratio, Proportion & Rate of Change

Curriculum Map

Year	Curriculum Overview	Assessment
Year 10	The foundations laid in KS3 Maths are extended and key links between topics are visible and embedded. All six topic areas listed above will be covered at all levels in the GCSE 1-9 scale. Number topics will be prominent in the year as well as Ratio, Proportion & Rates of Change	School Assessment Topic Assessments & Mock Exams
Year 11	Topics covered in Y10 are revisited and developed to consolidate and extend. A further emphasis on mathematical techniques that develop the rigour needed for studying maths at a higher level are embedded in topics such as proof, both algebraic and geometric. Algebra skills - including solving equations and manipulating expressions – along with geometrical applications feature heavily across the year	School Assessment Topic Assessments & Mock Exams Final GCSE Assessment 1. Non Calculator Paper 1h 30m 2. Calculator Paper 1h 30m 3. Calculator Paper 1h 30m

Assessment:

Students will sit three, tiered examinations at the end of Year 11, each contributing an equal weighting to the final grade. One non-calculator and two calculator papers assess these objectives:

AO 1: Use and apply standard techniques

● accurately recall facts, terminology and definitions
● use and interpret notation correctly
● accurately carry out routine procedures or set tasks requiring multi-step solutions

AO 2: Reason, interpret and communicate mathematically

● make deductions, inferences and draw conclusions from mathematical information
● construct chains of reasoning to achieve a given result
● interpret and communicate information accurately
● present arguments and proofs
● assess the validity of an argument and critically evaluate a given way of presenting information.

AO 3: Solve problems within mathematics and in other contexts

● translate problems in mathematical or nonmathematical contexts into a process or a series of mathematical processes
● make and use connections between different parts of mathematics
● interpret results in the context of the given problem
● evaluate methods used and results obtained
● evaluate solutions to identify how they may have been affected by assumptions made.

Each paper has a range of question types; some questions will be set in both mathematical and non-mathematical contexts.

Extended Learning:
Extended learning will use a mixture of online and written tasks to consolidate in-lesson learning and provide chance for retrieval practice at regular intervals.

Connection to the JTFS Approach

Whole School Theme	How does *Maths* support this?
STRIPE	STRIPE skills that enable students to behave mathematically to produce a higher standard of written work will be highlighted throughout the course.
STEAM	STEAM contexts and applications to all mathematical topics will be discussed.
Literacy	Tier 3 vocabulary introduced and used throughout all topics with oracy skills developed to embed mathematical reasoning
Numeracy	Numeracy skills present in all lessons
SMSC, British Values and Citizenship	Maths in context will cover areas of finance, National statistics and historical mathematics from different cultures.