

Title **Mathematics**

For more information, please consult:
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Examination Board: AQA

Qualification: GCSE Mathematics 8300

Tiers: Foundation and Higher

Grades: Foundation Grades 1 to 5, Higher Grades 4 to 9

Introduction: Mathematics is for everyone. It is a diverse, engaging and essential, equipping students with the right skills to reach their future destination, whatever they may be. The course is a diverse mix of mathematical skills and engaging problem solving activities that is accessible to students at different levels.

The course builds upon the topics taught at Key Stage 3, developing further more complex mathematical concepts such as functions, trigonometry, statistical techniques and proportionality and their applications.

To ensure that students are fully prepared for their examinations, students will have opportunity to practice skills and application of the course content as part of the 5 a day programme, which runs from Year 9 to Year 11. Also all students will have 3 formal midterm assessments each year to assess their progress. Finally in year 11 two of these assessments will be pre public examinations that are in the same style and format as their GCSE and marked using the examination board criteria and grade boundaries.

It is strongly advised that students have their own scientific calculator for independent study.

What will I study each year?

Y9

Foundation & Higher Key Topics

Number; Prime Numbers, Factors, Multiples and Rounding
Algebra; Equations, Inequalities, Co-ordinates, Linear graphs and Sequences

Ratio and Proportion; Fractions, Decimal and Percentages

Geometry and Measures; Angles, Bearings, Area and Perimeter

Statistics; Data collection and Scatter graphs

Y10

Foundation Key Topics

Number; Indices and Standard Form
Algebra; Equations, Graphs, Simultaneous Equations
Ratio and Proportion; Ratio and Proportion problem solving
Geometry and Measures; Area, Perimeter, Volume, Congruence,
Pythagoras theorem, Transformations, Trigonometry and Vectors
Statistics; Statistical Measures
Probability; Probability of one or two events, Listing Outcomes

Additional Higher Key Topics

Number; Surds
Algebra; Rearranging Formulae, drawing linear and quadratic graphs
simultaneously
Geometry and Measures; Sine and Cosine rules, Vectors and Proof

Y11

Foundation Key Topics

Algebra; Quadratics Equations and Quadratic Graphs
Ratio and Proportion; Growth and Decay, Direct and Indirect
Proportion
Geometry and Measures; Constructions and Loci

Additional Higher Key Topics

Algebra; Transformation of Functions, Graphical Inequalities,
Algebraic Fractions, Numerical Solutions of Equations, Equations of
Circles, Kinematics and Area under a Curve
Ratio and Proportion; Constant of Proportionality, Gradients and
Rates of Change
Geometry and Measures; Circle Theorems

How will my work be assessed?

There will be three examinations at the end of year 11; each paper is one and a half hours long. Of the three papers only two allow the use of a calculator.

Why study Mathematics?

As a subject in itself it is a creative, logical and philosophical subject. Be inspired by current Mathematicians, Marcus du Sautoy has recently published a new book 'how to count to infinity', Ben Sparks and his work on fractals.

As a subject it supports other subjects, in particular the sciences, engineering design technology, geography and ICT.

It is important to gain at least a grade 4 to go on to further study.

Extra-curriculum activities

Each year students have the opportunity to participate in the UK Maths trust intermediate challenge, we also run maths master class days and university trips for some students.

What would this subject enable me to do when I finish school?

All career paths will be enhanced with a good Mathematics GCSE grade.

How parents or other members of the public can find out more about the curriculum your subject is following:

Contact the Mathematics department and speak to your child's current teacher.

Contact Miss M Woolley, Head of Mathematics Department

<http://www.aqa.org.uk/subjects/mathematics/gcse/mathematics-8300>

