

## POST 16 SUBJECT OVERVIEW

### Post 16 Subject Overview

A-level mathematics is an exciting but demanding course. This qualification requires students to demonstrate the overarching knowledge and skills contained in problem solving, modelling, language and proof. These must be applied, along with associated mathematical thinking and understanding, across the whole of the detailed content.

**Name of Subject** - GCE Mathematics

### Which Examination Specification is Studied for this Course?

AQA A level Mathematics 7357

The Ofqual qualification accreditation number (QAN) is 603/1164/2.

[AQA Specification](#)

### Why should I study this course?

Maths teaches you to think logically and systematically to solve problems (not just maths problems). When you solve a maths problem, you have to define your terms and the assumptions you're making. This methodical approach is transferable, for instance, to the kind of research you might do if you are taking your studies further to university, embarking on an apprenticeship or entering the workforce.

Being able to tackle a complex question and break down your thinking into logical steps is the essence of solving a maths problem – and of constructing a logical argument in answer to a question.

In the workplace, the ability to work systematically and logically to devise plans and execute projects is often highly valued. Whilst studying Maths A-Level isn't the only way to develop these skills, it provides a solid and demonstrable foundation.

In short, Maths teaches you to structure your thinking – and this may serve you well in many things you may wish to do in the future in terms of work or study. In an increasingly data-driven world, many companies value numerical competence in order to interpret graphs and data. Many graduate jobs which are open to applicants from all degree backgrounds require candidates to score well in a numerical skills or numerical reasoning test. Studying A-Level Maths will give you the confidence and practice to succeed in these tests. Aside from the applications in work and study described above, a firm grasp of mathematics is helpful in everyday life for things like interpreting graphs and statistics in news reports and managing personal finances.

### Who is suitable to study this course?

Any student with a passion for developing their knowledge whilst deepening their understanding in mathematics. Students must be committed to their studies as this course requires dedication and a strong work ethic.

### What GCSE Qualifications Support the Study of this Course?

GCSE mathematics, GCSE Statistics, GCSE Physics, Level 2 Further Mathematics Certificate

### What are the Qualification Requirements for this Course?

Grade 7 or above at GCSE mathematics

### How is the Course Delivered?

This course usually has two teachers teaching the syllabus for 5 hours per week. We expect students to complete a minimum of 5 hours of independent learning that takes form through their multiple homeworks they receive each week. The use of the google classroom is essential to communicating to students ensuring their overall experience is a positive one. This can include sharing lesson slides, recordings, homework and feedback to students.

Subject Overview		
Half Term	Year 12 (Year 1)	Year 13 (Year 2)
Autumn 1	Algebra and Functions Coordinate Geometry Trigonometry Differentiation	Further Differentiation Further Integration Functions and Transformations Trigonometry
Autumn 2	Differentiation Integration Exponentials and Logarithms Trigonometry Vectors	Trigonometry Numerical Methods Parametric Equations Differential Equations Trigonometry

		Partial Fractions and Integration Kinematics in Two Dimensions
<b>Spring 1</b>	Exponentials and Logarithms Statistical Sampling Data Presentation and Interpretation Vectors Kinematics in One Dimension	Differential Equations Further Probability Statistical Distribution Kinematics in Two Dimensions Equilibrium and Resolving
<b>Spring 2</b>	Probability and Distribution Statistical Hypothesis Testing Kinematics in One Dimension Forces and Newton's Law	Statistical Distribution Further Statistical Hypothesis Testing Statics and Dynamics Moments
<b>Summer 1</b>	Binomial Expansion Forces and Newton's Law  *Revision of year 12 content to prepare for mock examination*  A level: Functions and Transformations	Revision of all A level content and Exam Preparation
<b>Summer 2</b>	A level: Functions and Transformations Binomial Series and Sequences Trigonometry and Circular Measure	

### How is the Course Assessed?

The course is externally assessed through three 2 hour papers sat at the end of year 2. These papers cover all topics covered across the 2 year course with paper 1 being solely pure content. Paper 2 is pure and mechanics content with paper 3 being pure and statistics content. Each paper is out of 100 marks

and contributes to equal weighting towards the final grade. There are a mixture of questions from one mark multiple choice to short and long answer questions.

Your progress will be monitored through Praising Stars assessment completed in the classroom every half term along with mock examinations that take place strategically throughout the year.

### **What is our Recommended Subject Reading list to Support your Study?**

There are some excellent resources to bridge the gap between GCSE and A level mathematics. One of the best is the Hegarty Maths website. If your school has a subscription you can access the transition tasks and videos provided there.

Failing that, one of the best resources is A Head Start to A level Mathematics by CGP.

A particularly good YouTube channel is ExamSolutions who provides many solutions to questions, tutorials on topics and live streams for students to work along with.