A-Level Course Information

A-LEVEL MATHS

Qualification: Advanced Level Mathematics
Exam Board: AQA
Subject Leader: Miss C. Reidy

Entry Requirements:

Minimum Entry Requirements:
5 x 5s
4 in English and Maths

Subject Specific Entry Requirements:
7 in GCSE Maths

Why study Maths?

Do you enjoy solving puzzles? If so, Mathematics is the subject for you. At its core, the subject is about patterns and structure. The A-Level Maths aims to further develop your logical-thinking and problem-solving skills, extending your understanding of mathematics. Within the course you will have opportunities to explore the relationship between number sets, uncover the beauties of calculus and its applications, appreciate the links between geometrical and algebraic dependencies as well as play with a centre of gravity.

What can I do with Maths after A-Level?

Mathematics sets strong foundations for a variety of related degrees. The subject has clear links with courses such as Chemistry, Physics, Economics or even Biology and Psychology. Students with qualifications in Advanced Level Mathematics find the skills and knowledge gained from the course useful when pursuing careers in areas such as medicine, engineering, veterinary science, finance, accounting, computing, science, law and marketing. National statistics show that students who took Advanced Level Mathematics ended up earning, on average, 10 per cent more than those of similar ability and background who did not.

Maths Extras

Our focus will always be not only to support you to achieve the best you can in the qualification itself, but also to enrich your learning in the context of mathematical ideas. Mathematics offers you an opportunity to be involved in national competitions, such as the Senior Maths Challenge both individually and in teams. In addition, links with the Royal Institution and Cambridge University will allow you to attend inspiring lectures and events showing mathematics at its best. You will have the opportunity to enjoy exploring mathematics by attending nationally run talks and shows as well as participating in our Sixth Form Mathematics trips.

What will I study?

A-Level Mathematics is divided up into 3 components. Every student will study each of these 3 components over the 2 year course.

1. Pure Mathematics
2. Statistics
3. Mechanics

It is examined by 3 papers which are sat at the end of Year 13. Each paper is 2 hours long, and is out of 100 marks.

Paper 1 – Pure Mathematics only

Paper 2 – This paper is divided into 2 sections, each section is worth 50 marks:
 Section A – Pure Mathematics
 Section B – Mechanics

Paper 3 – This paper is divided into 2 sections, each section is worth 50 marks:
 Section A – Pure Mathematics
 Section B – Statistics

Component 1: Pure Mathematics (66.6% of the A-Level)
Pure mathematics forms the foundation of the course, underpinning both the Statistics and Mechanics components of the course. It is concerned with how to abstract a problem and reason about it in a logical manner. You will learn new techniques that reveal a deeper understanding of the world we live in.

It includes the topics: Proof; Algebra and functions; Coordinate geometry; Sequences and series; Trigonometry; Exponentials and logarithms; Differentiation; Integration; Numerical methods and Vectors.

Component 2: Statistics (16.7% of the A-Level)
Statistics is about how to analyse and interpret data gathered from the real world. Throughout this component of the course you will become familiar with manipulating a large data set using both your calculator and computer software. Manipulating and interpreting data are valuable skills which complement studying many subjects such as Economics, Geography, Psychology and Sociology.

It includes topics: Statistical sampling; Data presentation and interpretation; Probability; Statistical distributions and Statistical hypothesis testing.

Component 3: Mechanics (16.7% of the A-Level)
Mechanics is primarily concerned with how the physical world can be modelled using mathematics. By modelling the real world you can make predictions about what may happen in a given set of circumstances and more deeply understand why particular events occur. This component of the course complements studying all science subjects but in particular Physics.

It includes the topics: Quantities and Units in Mechanics; Kinematics; Forces and Newton's Laws and Moments.
.