



A-LEVEL MATHS

This course aims to develop an understanding of Mathematics and mathematical processes commonly used in the scientific, technological and financial worlds. This includes interpreting, explaining and evaluating the results of mathematical arguments in a range of situations and to communicating this information clearly and logically.

KEY FEATURES

- Develop reasoning, logic and ability to perform mathematical proof.
- Use mathematical skills in problem solving
- Represent real life situations via mathematical modelling
- Read and comprehend mathematical argument
- Use technology effectively in particular mathematical graphing tools and spreadsheets

HAVE YOU EVER WONDERED...

- How architects create amazing buildings?
- How we predict profits or financial impacts of strategies?
- How quickly water becomes contaminated?

Study A-level
Maths to find out
the answers

WHAT'S INCLUDED



PAPER 1: PURE MATHS

- Proof by deduction, proof by exhaustion and disproof by counter example
- Algebra and functions
- Coordinate geometry in the plane
- Sequences and series
- Trigonometry
- Exponentials and logarithms
- Differentiation
- Integration
- Vectors

PAPER 2: STATISTICS

- Statistical sampling
- Data presentation and interpretation
- Probability
- Statistical distributions
- Statistical hypothesis testing
- Quantities and units in mechanics
- Kinematics
- Forces and Newton's laws

Maths A-Level develops excellent problem solving skills.

Students learn how to think logically and analytically, enabling them to make complex problems, break them down into a series of smaller steps, solve each one in turn then assemble these answers to solve the original problem.

These skills are highly valued by employers and are key building blocks to many other subjects.

How will you be assessed?

- Three 2 hour written examinations
- Two papers that may cover any of the Pure Mathematics content.
- One paper on Statistics and Mechanics.
- Opportunity to demonstrate your knowledge of both theory and practical skills through the examinations.

Pure Mathematics

Pure Mathematics extends ideas introduced at GCSE such as calculus and trigonometry, setting them in their proper context. We also introduce new concepts such as integration and differential equations. You will start to see how all the different branches of Mathematics link together and are used to solve increasingly complex problems.

Statistics

In Statistics we study methods of analysing and statistical testing. This knowledge will be particularly useful in Economics, Psychology, biology, Chemistry and Geography.

Mechanics

In Mechanics we apply mathematical ideas to the study of forces, Newtonian Laws of Motion and vectors. Mechanics is the ideal partner for Physics because many topics overlap but it also complements the other sciences.

ARE YOU?

- A methodical and inquisitive person?
- Wanting to work in the finance industry?
- Interested in how to predict environmental change?
- Interested in the space and the cosmos?
- Detail oriented?
- Studying sciences or Business?
- An investigative problem solver?

Benefits

Studying Mathematics trains you to reason clearly, logically and accurately, all of which are vital skills in today's world. You will learn to express yourself clearly and concisely and to fully understand the theory behind techniques.

The mathematical skills you learn in A-level Mathematics are of great benefit in other subjects such as chemistry, biology and business studies.

Consistency is crucial and your success will show you to be organised, committed and determined.

Employability Skills and Career Opportunities

The reason why so many employers highly value mathematics qualifications is mathematics students become better at thinking logically and analytically.

Through solving problems you develop resilience and are able to think creatively and strategically. The writing of structured solutions, proof and justification of results help you to formulate reasoned arguments. And importantly you will have excellent numeracy skills and the ability to process and interpret data.

Specific job roles include actuary, business analyst, software engineer, technology analyst, information engineer, speech technology researcher, and maths teacher. Jobs in the mathematical sciences - that is, careers that studying maths at university prepares you for directly - tend to be very well paid.