

A Level Maths

Why study Maths at A Level?

Maths is an interesting and rewarding course that broadens the mathematical skills you learnt at GCSE.

You'll be introduced to exciting new areas of pure mathematics and explore new applications of mathematics such as statistics and mechanics. The knowledge and skills you gain are transferable to other subjects and are valued in almost every employment sector; this will give you a competitive advantage in a world where there is a national shortage of young people entering training and employment with mathematical qualifications.

What will I study?

Pure Maths has a real focus on developing your algebraic skills. Alongside this you will study: coordinate geometry; trigonometry; differentiation; integration and vectors.

Statistics involves: probability, bivariate data (taking scatter graphs further) and an introduction to the binomial, geometric and normal distributions.

Mechanics will see you apply some of the pure maths skills to problems involving particle motion.

Assessment

100% examined.

Paper 1: Any of the pure content can be tested.

Paper 2: Any of the pure content can be tested as well as all the statistics.

Paper 3: Any of the pure content can be tested as well as all the mechanics.

Study trips, visits and events

You are encouraged to enter the UK Senior Maths Challenge run by the United Kingdom Mathematics Trust. We regularly see our students' achieving Bronze, Silver and Gold certificates and progress even further in the competition. There are 'training camps' run after school before the competition to help prepare!

For the first time this year we have also entered the international contest – *Who Wants to Be A Mathematician* - ultimately competing for the top prize of £10,000 in the grand final in Colorado.

You will have the chance to attend a *Maths Inspiration* event at the Bristol Hippodrome. You will experience the UK's most inspiring maths speakers live presenting mathematics in the context of exciting, real-world applications.

You can also travel to London to hear from a team of mathematicians, engineers, statisticians, architects, code-breakers and data scientists to see *Maths in Action*.

Subject entry requirements

Grade 6 in Maths.

A Level Further Maths

Why study Further Maths at A Level?

Further Maths is studied in addition to A Level Maths. It is a challenging qualification which both extends and deepens your knowledge beyond the A Level Maths course.

It is designed to stretch and challenge able mathematicians and prepare you for university courses in mathematics and related quantitative and scientific subjects.

What will I study?

Further Maths promotes deeper mathematical thinking, developing all the algebraic skills developed in Maths A level.

You will be introduced to interesting new areas of pure mathematics such as complex numbers, matrices and hyperbolic functions. You will also study statistics in greater depth including the poisson distribution and chi squared tests. We also explore more advanced mechanics including the motion in a circle and work, energy and power.

Assessment

100% examined.

Paper 1: Any of the pure content can be tested.

Paper 2: Any of the pure content can be tested as well as all the statistics.

Paper 3: Any of the pure content can be tested as well as all the mechanics.

Study trips, visits and events

In addition to the A Level Maths trips the *Advanced Maths Support* programme run weekly sessions at Bath University to support students studying for STEP, MAT or TMUA papers – well-established mathematics examinations designed to test candidates on questions that are similar in style to undergraduate mathematics.

Universities sometimes ask students to take these papers as part of their offer.

Subject entry requirements

Grade 7 in Maths.

Level 3 Core Maths

Why study Core Maths at A Level?

If you want to extend your study of mathematics beyond GCSE but are not looking to study a full A Level in mathematics, then Core Maths is for you!

The emphasis in this course is in the application that maths has to real life, and it will also help you with maths in your other subjects such as psychology, geography and the sciences. Lessons will promote the use of ICT in the form of laptops, ipads and calculators to enhance your study of mathematics and develop your analytical thinking and quantitative reasoning.

What will I study?

Financial maths includes: loans; credit cards; mortgages; saving and investments; tax and National Insurance and students loans.

Statistics builds on the skills developed at GCSE such as: averages; scatter diagrams and histograms. The normal distribution is also introduced.

Fermi estimation is where you learn how to use estimation skills to answer questions such as "How much water do all the households in the UK use in a year?"

Critical analysis teaches you how to criticise the mathematical presentation of others and find flaws in their arguments. Should you believe everything written in the newspapers?

Assessment

100% examined.

Paper 1: Fermi estimation, financial maths and some statistics topics.

Paper 2: Critical analysis and the remainder of the statistics topics.

Study trips, visits and events

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You can also travel to London to hear from a team of mathematicians, engineers, statisticians, architects, code-breakers and data scientists to see *Maths in Action*.

Subject entry requirements

Grade 4 in Maths.