



A Level - Maths

Overview:

A Level Mathematics gives you the opportunity to study topics such as geometry, calculus and trigonometry (pure mathematics) and to use these ideas within the 'applied' topics such as mechanics and statistics. Mechanics is strongly linked to physics and builds on ideas of motion and forces to work out how and why objects move. Statistics allows us to make sense of the complex and variable world around us via analytical methods in order to draw reliable conclusions from 'sets' of information.

Pure mathematics, which develops algebraic and geometrical reasoning, underpins the other disciplines. The work you do in and out of class will develop your ability to produce well-reasoned answers to extended questions. Although Maths is highly logical, it also requires imagination and determination to work well on your own.

You need an enthusiasm for problem-solving, a willingness to try a variety of approaches and the tenacity to keep going in the hunt for possible solutions to awkward problems. Then you need to be disciplined in showing how you arrived at the problem's answer. Working on problems is the surest way to develop the knowledge and intuition required to do well.

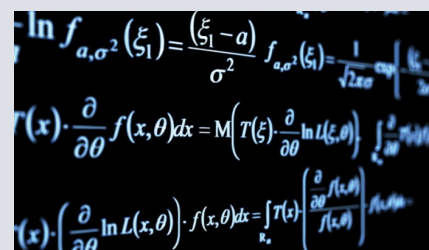
You will also study aspects of 'applied Maths': the disciplines of mechanics and statistics which require mathematical modelling to make sense of real-life problems. You will learn how to model real-life situations in mathematical terms, how models are refined and how to identify limitations within this process. You will be expected to use technology where appropriate; for example, the use of spreadsheets and graphical calculators to support statistical analysis. In addition, strong skills in algebraic manipulation are vital.

Course Progression

Mathematics is a highly respected A level and supports progression to a wide range of degree courses and careers. All science-based degrees require good Maths skills, and so too do Engineering and many Computing and Economics-based and Social Science degrees.

A level Mathematics is a requirement for certain degree courses, such as Engineering, Physics, Statistics, and often Economics. Although not a requirement, A level Mathematics is a typical subject taken by students on courses as wide ranging as Architecture, Law and Psychology.

You can gain a variety of different skills from Maths including problem solving, data analysis, attention to detail and communication skills.



Course Leader

Mrs Streater

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Exam Board



Entry Requirements

You must secure at least a grade 7 at GCSE anyone with grade 6 will sit an entrance test before being admitted on the course.



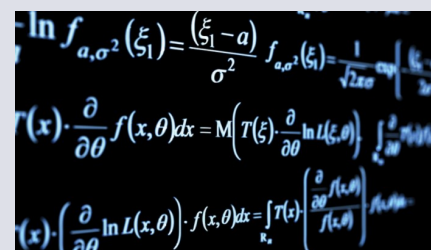


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Assessment Information

Year 2 A level Mathematics

<p>Paper 1: Pure Mathematics 1 Written examination: 2 hours 33.33% of the qualification 100 marks</p>	<p>AS level pure mathematics content – the same content as AS Paper 1 but tested at A level demand</p>
<p>Paper 2: Pure Mathematics 2 Written examination: 2 hours 33.33% of the qualification 100 marks</p>	<p>Content overview</p> <ul style="list-style-type: none"> • Topic 1 – Proof • Topic 2 – Algebra and functions • Topic 3 – Coordinate geometry in the (x,y) plane • Topic 4 – Sequences and series • Topic 5 – Trigonometry • Topic 6 – Differentiation • Topic 7 – Integration • Topic 8 – Numerical methods
<p>Paper 3: Statistics and Mechanics Written examination: 2 hours 33.33% of the qualification 100 marks</p>	<p>Content overview</p> <p>Section A: Statistics</p> <ul style="list-style-type: none"> • Topic 1 – Statistical sampling • Topic 2 – Data presentation and interpretation • Topic 3 – Probability • Topic 4 – Statistical distributions • Topic 5 – Statistical hypothesis testing <p>Section B: Mechanics</p> <ul style="list-style-type: none"> • Topic 6 – Quantities and units in mechanics • Topic 7 – Kinematics • Topic 8 – Forces and Newton's laws • Topic 9 – Moments



A Level Maths is NOT an easy option – it does require a lot of self-motivation, determination and self-study. We recommend that you do a minimum of 5 hours work outside the classroom each week. You will need to 'love a challenge' and be willing to accept that question has 'gone wrong' – and be prepared to have another attempt (and another and maybe even another).

