

WILLIAM BROOKES SIXTH FORM

MATHEMATICS & FURTHER MATHEMATICS

Advanced Level Subject Guide
Exam Board: Pearson Edexcel



WHY STUDY MATHEMATICS AT THIS LEVEL?

- It is challenging, interesting and rewarding for those who enjoy the subject.
- It will support work in courses at 'A' Level in a range of subjects, especially the Sciences, IT, Psychology and PE.
- Many Higher Educational courses and vocational courses value advanced Mathematics level as an important qualification.
- Further study in Mathematics is very highly valued by employers.

COURSE OVERVIEW

You will build on some algebra work met at GCSE but also meet new concepts in pure maths and applied maths (statistics, mechanics).

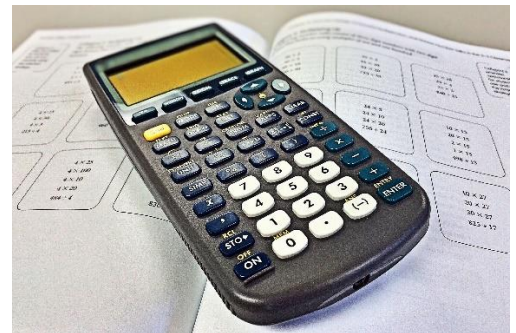
You will be expected to:

- Use mathematical skills and knowledge to solve problems.
- Use mathematical arguments to show an understanding of proof.
- Simplify real-life situations so that you can use mathematics to show what is happening and what might happen in different circumstances.

ENTRY REQUIREMENTS

It is essential to have studied for GCSE Higher Tier and gained at least a grade '6'.

"A student who would enjoy studying Maths at A-Level is one with a keen interest in problem solving, learning mathematical techniques that can be applied to real-life situations and how to show their solutions in a concise way. They will have good algebraic skills which will allow them to manipulate expressions readily. Statistics is used readily in many other subjects, e.g. biology, geography, psychology; Mechanics is essential for physicists and engineers."



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OUTLINE OF EXAMINATIONS – TWO YEAR COURSE

The A level Mathematics course is a linear qualification. Linear means that students will sit all their exams at the end of the course.

The exam is made up of 3 equally weighted papers which have the following content.

| Paper 1 (2 Hour paper) | Paper 2 (2 hour paper) | Paper 3 (2 hour paper) |
|-----------------------------|-----------------------------------|--|
| Proof | Any content from paper 1 | Any content from paper 1 |
| Algebra and functions | Vectors | Statistical Sampling |
| Coordinate geometry | Quantities and units in mechanics | Data representation and interpretation |
| Sequences and series | Kinematics | Probability |
| Trigonometry | Forces and Newton's laws | Statistical distributions |
| Exponentials and Logarithms | Moments | Statistical hypothesis testing |
| Differentiation | | |
| Integration | | |
| Numerical methods | | |

The papers will be made up of mix of question styles, from short, single-mark questions to multi-step problems.

