

## Mathematics A-level

Exam board: Pearson Edexcel

### Where do I start?

You must meet the minimum entry requirements of Wootton Park VI. Additionally, for this subject you must have obtained at least **Grade 7** at GCSE Maths.

### Mathematics – about the subject:

Mathematics is the skill of being able to spot patterns and problem solve to find solutions. It requires clear thinking and the development of specific ideas into generalised solutions. Mathematics underpins virtually all of the practical developments in science, IT and economics, which have helped to shape the world around us.

The course is made up of the Pure Mathematics element, which supports your understanding of the “applied” topics (Mechanics and Statistics). The study of the Pure elements gives you the opportunity to explore areas such as algebra, calculus and trigonometry.

Mechanics is the study of how forces and motion affect how and why objects move. The study of Statistics allows us to develop our analytical skills, by allowing us to draw conclusion and make sense of the complex and variable world around us from ‘sets’ of information.

### Why study Mathematics?

Learners study Mathematics at A-level because they want to:

- Further their understanding of mathematical processes learnt at GCSE.
- Explore the connections between different elements of mathematics, including applied elements.
- Develop an awareness of the relevance of mathematics in the working world and to situations in society.
- Learn how to better communicate their ideas in a logical manner which enables a decision to be made with a clear mathematical rationale behind it.
- Be able to generalise problems mathematically, which will provide solutions to many different contexts.
- Have the ability to construct mathematical proofs.
- Use their mathematical skills and techniques to solve challenging problems that require them to decide on the solution strategy.
- Represent situations mathematically and understand the relationship between problems



in context and mathematical models that may be applied to solve them.

- Draw diagrams and sketch graphs to help explore mathematical situations and interpret solutions.
- Pursue a career that involves logical thinking, planning and conjecturing.

### What type of learner chooses Mathematics?

The A-level Mathematics Course provides an excellent preparation for further study whilst supporting the learning of A-level Mathematics for those who are keen to take on the challenge. A learner must achieve grade 7 in IGCSE/GCSE Mathematics to be eligible.

### What are the career/higher education prospects?

Here are some examples of where the study of Mathematics can take you in your career: Actuary, Business analyst, Software engineer, Technology analyst, Information engineer, Speech technology researcher, Maths teacher...

Mathematics complements almost any subject and can also be useful in working in: accounting, medicine, engineering, forensic pathology, finance, business, consultancy, teaching, IT, games development, scientific research, programming, the civil service, design, construction and astrophysics to name a few.

### What co-curricular opportunities are there within this subject?

Learners will have the opportunity to take part in the Senior UKMT Mathematics challenges as well as other group challenges throughout the year, as well as potentially supporting other learners across the school. A range of STEM activities and clubs will also run.

### How will I be assessed?

The A-Level will be assessed in the following ways:

There will be three papers in total. Each paper will be a two hour exam, all of equal weighting of a third each. Two papers will be based on the Pure Mathematics elements, whilst the third paper will assess the applied elements (Mechanics and Statistics).