The Vale Academy

Sixth Form

A Level

Mathematics

What Are The Entry Requirements?

At least GCSE Grade 6 in Mathematics.

Contents

A Level Mathematics is a comprehensive two-year course covering Pure Mathematics, Statistics, and Mechanics. Building on GCSE Mathematics, it introduces calculus and its practical applications. The course highlights the interconnectedness of mathematical concepts and their application in modelling real-world situations using algebra and other tools. It equips students to interpret data, understand the physical world, and solve problems across various fields including social sciences and business.

A Level Mathematics does not include coursework but emphasizes proof, problem-solving, and modelling. Proficiency in calculator use, including obtaining probability values from statistical distributions, as well as skills in graphing software and spreadsheets, are integral to the course. Successful completion prepares students for further academic pursuits and careers requiring advanced mathematical skills.

How will I be assessed?

Assessment is through three exams at the end of the second year.

What Kind of Person Studies This Course?

Many students enjoy the challenges of the subject. They like its logic and strict arguments and achieve satisfaction through problem solving. The methods used are effective in many ways.

Mathematics has strong links with a wide range of subject areas. Many students are amazed to discover the amount of mathematics required in subjects such as Geography and Social Sciences as well as the more obvious Science connections.

Enrichment

There is an opportunity to take part in the UKMT Senior competition in November. There is also the possibility of supporting in the Mathematics department by working alongside teachers within KS3 and KS4 lessons and helping with gifted and talented activities.

Expectations

You will be expected to have a confident command of algebraic techniques. A transition task has been introduced to address this issue. We expect you to have an interest and enthusiasm for Mathematics in which you commit to regular homework to consolidate ideas met in the classroom. With our smaller class sizes, we are able to offer an environment of mutual respect and the chance to discuss and develop ideas.

Why Study A-Level mathematics?

Universities value Maths and it is a pre-requisite subject for a huge number of degrees. People who have studied Maths or Further Maths have an excellent choice of careers, many of which involve very well-paid professions. Maths and Further Maths are two of the Russell Group universities' 'facilitating' subjects — so-called because choosing them at A-level allows a wide range of options for degree study. Sciences such as Biology, Chemistry and Physics use many mathematical techniques, and subjects such as Geography, Psychology and Sociology are also likely to have components which will be far more easily mastered by those with prior study of Mathematics.

Where Will an A Level in Mathematics Lead Me?

Mathematical and statistical problem solving, data analysis and interpretation skills are all developed through the study of A-level Maths and are considered valuable in a broad range of subject areas. Given that Maths is at the very core of all new technological developments, there are many careers where mathematical skills play a major role include: Air Traffic Control, Architecture, , Engineering, ICT, Meteorology, Operational Research, Optics, as well as Accountancy, Banking and Economics