Mathematics

Mathematical skills develop clarity of thought, analytical reasoning, and the ability to systematically solve problems. This structured and logical approach is essential not only for solving complex issues but also for effective decision-making and critical thinking in everyday situations. At A Level, students will study both Pure and Applied Mathematics. In Year 12, students study Pure Mathematics, Mechanics, and Statistics. In Year 13, these topics are studied in greater depth.

Pure Mathematics includes Algebra, Calculus, Series, Graphs, Numerical Methods, and Trigonometry. Mechanics is the study of motion and forces. Topics include Modelling, Newton's Laws of Motion, Forces, Kinematics, and Vectors. Statistics is the study of data. Statistics covers Sampling, Data Representation, Probability, Probability Distributions, and Hypothesis Testing. Students with exceptional mathematical abilities may consider the Further Mathematics A-Level course as an added challenge.

This qualification includes three modules: Further Pure, Decision, and Mechanics, and is distinct from A-Level Mathematics. It provides an opportunity to explore advanced mathematical concepts and applications, enhancing preparedness for university-level study in mathematics.

Content of Course

Mathematics - Pure 1 will be studied in Year 12 and Pure 2 will be studied in Year 13, with elements of both Statistics and Mechanics covered alongside each of these modules. The course is weighted as Pure, being 2/3 of the total course with Mechanics and Statistics worth 1/3.

Further Mathematics

Students will study Further Pure 1 in Year 12 and Further Pure 2 in Year 13, complemented by two additional modules in applied mathematics, focusing on Mechanics and Decision. The latter revolves around using algorithms to solve various problems. The course is structured to give equal weight to both Pure and Applied Mathematics, providing a balanced educational experience in mathematical concepts and their applications.

Specific Requirements & Skills Required

- GCSE Mathematics (7 OR 8 for Further Mathematics)
- Strong problem-solving skills are essential
- A determination to master complex concepts
- A commitment to extensive independent study

Progression

Mathematics courses are widely available at universities and are considered one of the most valuable A Level qualifications, respected across various fields. This subject is suitable for degree programs in Social Sciences, Arts, Humanities, and Science, demonstrating its versatility. The skills gained from studying Mathematics make graduates highly sought after by employers, ensuring a steady demand for those with this background.

Further Mathematics is particularly worthwhile for those going on to study Mathematics, Engineering or Physics and related courses at university.