

A Level Mathematics Curriculum Intent

A level Mathematics is often thought of as a subject of complicated calculations dealing with highly abstract topics. However, studying it also gives us the power to discover and identify essential practical information used in our day-to-day lives as mathematics underpins virtually all the practical developments in science, IT and economics which have formed our modern world.

Mathematics is a versatile qualification, well-respected by employers and is a “facilitating” subject for entry to higher education; for most science, technology, engineering and mathematics (STEM) degree courses A level Mathematics is a requirement. It is also of great benefit to students studying geography, psychology, economics and business studies.

The reason why so many employers highly value mathematics qualifications is that mathematics students become better at thinking logically and analytically. Through solving problems students develop resilience and are able to think creatively and strategically. The writing of structured solutions, proof and justification of results help to formulate reasoned arguments. And importantly the development of excellent numeracy skills enhances the ability to process and interpret data.

Some exciting careers that could be open to students that have studied A-level mathematics are: architecture, strong mathematical skills are required when it comes to the planning and creation of any building, from homes to skyscrapers; medicine or scientific research, just as maths pairs well with sciences at A-Level, it also facilitates any job in medicine or scientific research; and, games development, maths can even give access to a career in the gaming world, more specifically in the creation and development of new games as maths skills are needed to develop further abilities in programming.

An A level Mathematics course gives students the opportunity to study ‘pure’ topics such as geometry, calculus and trigonometry and to use these ideas within the ‘applied’ topics such as mechanics and statistics. Students need an enthusiasm for problem-solving, and the course suits those with the tenacity to keep going in the hunt for possible solutions to awkward problems. Although mathematics is highly logical, it also requires imagination and determination to work well on your own: working on problems is the surest way to develop the knowledge and intuition required to do well and to develop the discipline needed to clearly communicate the solution.

The 'applied' disciplines of mechanics and statistics require mathematical modelling to make sense of real-life problems. Students will learn how to model real-life situations in mathematical terms, how models are refined and how to identify limitations within this process. Students will be expected to use technology where appropriate; for example, the use of spreadsheets and graphical calculators to support statistical analysis.

An A-level in mathematics really will equip a young person with a variety of skills for the rapidly changing modern technological world in which we live in today.