

MATHEMATICS

EXAM BOARD: EDEXCEL

EXAMS X 3 PAPERS

100%

Why study Mathematics?

Mathematics touches more aspects of modern living than ever before – communications, media, and financial management as well as the more traditional computer and physical sciences, engineering, technology and business related subjects. Mathematics gives future employers, universities or colleges clear evidence of highly valued numeracy and problem-solving skills irrespective of the actual role/course being considered.

Here at Stratford upon Avon school, we have a diverse collection of staff, from all different backgrounds. Some studied maths or related subjects at degree level, bringing that passion for the subject straight into the classroom. Some have many years experience in a variety of industrial, commercial and public sector organisations. What we have in common is a strong desire to support all our students. We run a trip to Warwick university for a maths event each year, have high proportions of students who choose to enter the UKMT Senior Maths challenge, and offer well-attended extra support sessions for our KS5 students.

An A-Level in Mathematics in conjunction with other subjects ensures the widest possible range of future careers – many amongst the most lucrative as well as the most interesting and rewarding.

Indeed, many such careers have yet to be defined and are still waiting for the technology to catch up and it is mathematics that makes this possible!

Subject Specification Outline:

Pure Mathematics
Paper 1 - 120mins
Paper 2 - 120mins
Combined to make (67%)

Applied Mathematics -
Statistics & Mechanics
120mins (33%)

This is the basic mathematics – the rules, formulae and techniques. These rules are widely found across many diverse applications, whether deep within the code of a smartphone app or whether being used to analyse trials of new vaccines or to ensure the performance of a new car engine.

Probability, complex risk problems and larger sets of data. The handling of very large data sets (medical trials for new vaccines, census data, on-line surveys) is currently one of the fastest growing applications of mathematics and hence careers.

Pure content will include: proof, algebra and functions, coordinate geometry in the (x, y) plane, sequences and series, trigonometry, exponentials and logarithms, differentiation, integration, numerical methods, vectors.

Mechanics is the mathematics behind how things work in the real world and is closely linked with physics. All engineering disciplines have their origins in physics – with their mathematics elements catered for by mechanics.

Statistics content will include: statistical sampling, data presentation and interpretation, probability, statistical distributions, statistical hypothesis testing. Mechanics content will include: quantities and units in mechanics, kinematics, forces and Newton's laws, moments.

Progress Assessment:

- Ongoing half-termly assessment
- End of year 12 examination
- Full mocks in December of Year 13
- Regular in-class exam questions with teacher feedback

Self-Study Requirements:

Each taught hour will require a minimum of an additional two hours of self-study.

Progression Pathways:

Mathematics is a 'facilitating subject' offering evidence of numeracy and problem-solving skills and a key partner for Physics. A-Level Mathematics supports a wide range of university level mathematics courses and also supports an even wider range of science, engineering, economics, business studies, computer science courses (and indeed may be an essential requirement for certain courses/universities). It also supports a wide range of A-Level entry specialist and general management careers (e.g. accountancy, engineering and retail based companies).

Our students beyond Stratford:

Dylan (2025 Mathematics)
Aerospace Engineering, Sheffield Hallam

Tom (2025 Mathematics)
Mechatronic and Robotic Engineering, University of Sheffield

Will (2025 Mathematics)
Level 7 Accountancy Apprenticeship Cooper Parry

