

A-Level Maths

at Hillcrest School



Why choose A-Level Maths?

Mathematics is an excellent choice of A Level subject for many reasons.

As has been recently promoted by our political masters, having good mathematical skills and understanding is vital to be successful, both for an individual, and for our country.

A Level Mathematics develops a student's powers of analysis, problem solving and communication. It helps them to understand the world that they are growing up in.

We study, for instance, how to model exponential growth. This ability to model and predict was a fundamental way of managing and dealing with the Covid pandemic.

A Level Mathematics provides you with skills that are highly regarded and sought after by Universities and future employers.

It is a hugely enjoyable course that builds and strengthens the enjoyment that students have developed over the years of their learning so far.



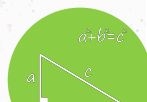
Maths improves employability

Universities value Maths and it is a pre-requisite subject for a huge number of degrees. People who have studied Maths/ 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.

But why study Maths if I don't need it for the degree I hope to study?

Even if you go on to study an arts degree at university, then having A-level Maths on your CV can be a great advantage for your future career. When you apply for a job it will show that you have got a head for numbers which may well also make you stand out from the crowd when applying for jobs in management, business or teaching.



Why study Maths at Hillcrest School?

Outstanding A Level results

In the last 8 years our A Level results have given

- 40% at A* or A grade
- 90% at A* to C grade
- 100% at A* to D grade

Of our A* grade students, one is studying Engineering at Cambridge University, and one is studying Physics at Oxford University.

Small group sizes

In the last 8 years our average group size has been 8 students. This enables teachers to get to know, and work closely and independently with each student, and each student to contribute confidently to the learning in the class.

In many other schools and colleges, the group size can come close to 30 students, and it is much easier for a student to fade into the background.

A close link with the AMSP based at Birmingham University

The AMSP works alongside our teaching team, developing skills and knowledge, and encouraging students.

They provide an on-line Further Mathematics A Level course, which four of our students have followed in recent years. The school supports this course with seminars in school time.

Experienced, dedicated and caring teachers

Our small team of A Level teachers have got to know the students well over their years at Hillcrest and have developed excellent relationships with them. This respectful and trusting relationship gets even stronger over an A Level course, particularly when the group size is reduced.



What do you study at A-Level Maths?

All students taking A Level Mathematics must follow the same curriculum and mathematical content. It is split between Pure Mathematics, Statistics and Mechanics.

Pure Mathematics takes up 2/3 of the course. Much of it is a development of the work done at GCSE level in areas like algebra and trigonometry. It introduces lots of new areas of mathematics too, in particular calculus, logarithms and exponential functions, and mathematical proof.

Statistics takes up 1/6 of the course. Much of this is new and covers things like statistical distributions and hypothesis testing. It forms an outstanding basis for understanding how statistical research is carried out in medicine, commerce and engineering.

Mechanics takes up 1/6 of the course. It follows on from GCSE Physics and is a particular asset for students who are also taking Physics at A Level. It looks at forces and how they control movement, in particular with things flying through the air – i.e. projectiles.