Maths and Further Maths

Qualification Level: GCE Advanced Level
Qualification Duration: 2 years
Exam Board: AQA

Intro

The new A level and AS level Linear Mathematics courses are very different from the old modular course. The AS course will now fully prepare students who wish to gain a broad understanding of the type of mathematics that would support university courses in the social sciences or simply want to demonstrate this high level of mathematical reasoning to universities and employers. Our A level course would be suited to students who wish to study university courses that directly relate to mathematics such as, Mathematics, Computer Science and Physics. The courses are very challenging but certainly prepare students for the mathematics that is required at a university level. We also offer a Further Mathematics AS and A level. This course should only be studied by students who are considering studying at some of top institutions in the country including Oxford, Cambridge, Bristol, Warwick, and Bath. This course is incredibly demanding and will challenge all students who choose to study it.

Year 1 Content Maths

Our AS course includes three objectives (use and apply techniques; reason, interpret and communicate; solve problems within context) spread over two equally weighted examinations (if you choose to sit the AS examination). Many of the topics you will recognise from your mathematics GCSE but some will be new and you will find your GCSE will act as a stepping stone towards these new topics. Topics include proof, geometry, trigonometry and calculus. There are also elements of mechanics, such as kinematics, and statistics such as probability and sampling. Students will have to learn both of these applied disciplines.

Year 2 Content Maths

The full A level course covers similar topics but in far greater depth and breath. Mechanics is now expanded to include topics such as moments and the pure element includes numerical methods. The course is examined over three, two hour papers. The first is all pure, the second is pure and mechanics and the third is pure and statistics. The A level course would be suited to students who wish to study university courses that directly relate to mathematics such as, Mathematics, Computer Science and Physics.

Year 1 and 2 Content Further Maths

The Further Mathematics course does just that, takes the Mathematics course further. You will study some of the same topics in even great depth but also be introduced new topics in pure, mechanics and discrete, including; polar coordinates; hyperbolic functions; dimensional analysis; network flows and game theory. Some of these topics are the foundations of ideas you will find in top Physics, Mathematics and Computer Science courses around the country.

Costs:

Students will be required to purchase textbooks for mathematics and further mathematics, these books currently cost £15 and £23 respectively if purchased through the school. Students will also be required to purchase a calculator with advanced functions, such as a graphical calculator and/or the Casio Classwiz. No method marks will be given in an exam for GCSE methods if the calculator can give the answer. Also, the scientific calculators from GCSE will not perform all of the functions expected for A level.

Career and further study:

Mathematics can be studied in its own right at university or act as a facilitating subject for a number of other courses. Graduates enter a range of careers. Whilst business, finance and retail areas are popular options, mathematicians also have important roles in the manufacturing industries. Mathematics offers the pleasure of problem-solving, the satisfaction of a rigorous argument and the most widely employable non-vocational degree subject. A student's view: 'Maths trains you to work in the abstract, to think creatively and to come up with concrete conclusions.' These transferable skills are much sought-after by employers. Employment prospects are excellent, with high salaries. Below there are a number of websites that we would encourage you to visit to research the use and applications of maths both in terms of undergraduate studies and also future careers, you may be quite surprised!

www.ima.org.uk	www.theorsociety.com
www.m-a.org.uk	www.mathscareers.org.uk
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