

Further Mathematics (AS level)

Subject Lead Mr Birley

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Key topics covered

Autumn Term – Matrices and transformations, inverse matrices, complex numbers, roots of polynomials, sequences and series, vectors and 3D space,

Spring Term – Kinematics, forces and motion, friction, moments and forces, statistical problem solving, discrete random variables, probability distributions.

Summer Term – Work, energy and power, impulse and momentum, centre of mass, dimensional analysis, bivariate data, correlation and regression, chi-squared testing.

Recommended Textbook and/or resources

MEI A Level Further Mathematics Core Year 1 (AS)

MEI A Level Further Mathematics Statistics 4th Edition

MEI A Level Further Mathematics Mechanics 4th Edition

Casio FX-991EX Classwiz Scientific Calculator

All are available on Amazon or can be purchased from the school via scopay.

The school also provides online access to the whole course using the Integral website

<https://integralmaths.org/>

Why Study the Subject/what students Like about it

Further Mathematics extends students' mathematical skills beyond those covered within the A-level Maths course to include exciting branches of maths that will challenge and engage students that have a passion for mathematics. The course develops and extends their range of mathematical skills and techniques in order to solve challenging problems which require them to decide on the best solution strategy. It also teaches them to make deductions and inferences and draw conclusions by using mathematical reasoning, proof and a range of statistical processes. Higher achieving students that wish to study an element of mathematics at university level find the course is an excellent introduction to some of the higher-level skills and techniques that they will encounter at degree level.

Opportunities outside the classroom

Last year several Year 12 Further Maths students delivered paid tuition to Year 11 GCSE pupils in the lower school. The experience gave them an insight into how best to break down problems to ensure that learners can assimilate new information clearly and logically. It also introduced 6th formers to the possibilities of developing their own teaching skills which has had a big impact on their confidence and opened their horizons to possible areas of future employment.

Future progression/career routes

Mathematics leads to a vast range of career options in many different fields such as engineering, computer science, architecture, medicine, finance, business, accounting and teaching.

