MATHEMATICS A-LEVEL

The new A-level qualifications in Mathematics and Further Mathematics are rigorous, linear courses examined at the end of the two years for A level. The courses build on the foundations laid down in GCSE Maths, and are particularly designed to extend and stretch students' problem-solving abilities and to gain an appreciation of both the accuracy and relevance of their answers.

Mathematics at A-level builds on and develops the ideas studied for GCSE but also introduces many new concepts. The course develops problem solving skills and analytical capabilities. By the end of the course, there is an expectation that students are able to use their mathematical skills in unfamiliar contexts, and this is absolutely key to universities and apprenticeship providers. A good standard of literacy is therefore also critical.

Good knowledge of algebra and geometry are absolutely crucial for students beginning A Level Mathematics.

Students need a high level of independence and perseverance in order to get the most from the course, as Mathematics can be a very frustrating and lonely activity at times. A high level of support is available online from the awarding body and its partners. This includes examples, notes, video clips, presentations and assessments, as well as digital copies of the course textbooks.

Students also need to have a more specialized calculator for the final exams, in order to deal with the statistical element of the course. These can be purchased from the college or from elsewhere.

The style of teaching and the way in which students learn will be somewhat familiar from the GCSE course. We expect students to take more responsibility for their own understanding and learning. After every lesson students will spend time organizing notes, trying questions and making sure that they do understand the topics fully. It is up to them to seek help from their teachers between lessons if they do not. There will be regular assessments throughout the course, and students will be expected to resit assessments if their scores fall significantly below their targetted grades. Clearly, if this is the case, then additional support will be available to students to help them with their areas of difficulty.

As well as being a subject in its own right, Mathematics is used in many other areas. The Mathematics course will support studies in other advanced courses. Some university courses require an advanced Mathematics qualification.

Course Content	**Topics**
Year 1	Mathematical Modelling, Algebra & Functions, Coordinate Geometry, Sequences & Series, Trigonometry, Differentiation, Integration, Vectors, Statistical Sampling & Distributions, Probability & Hypothesis Testing, Forces, Moments & Kinematics, and Logarithms
A Level Mathematics	The topics above but studied in more depth, and also Numerical Methods and Mechanical Moments

ENTRY REQUIREMENTS

At least a grade 6 on the Higher Tier Mathematics GCSE.

A good work ethic - A-level Mathematics is not something that most students can naturally just "do"

FURTHER MATHEMATICS AS and A LEVEL

Students that are contemplating studying Mathematics or a related subject at University should seriously consider also taking the Further Mathematics AS or A level.

This is an optional addition available to those studying the Mathematics A Level. It is recommended only to the most able students and those wishing to study a Mathematics related degree course in the future. The course can be studied as an AS level (one year only, examined at the end of year 12), or as a full A level over two years.

We can also support those students who need to sit STEP and AEA/MAT/TMUA papers for entry into some universities.

Course Content	**Topics**
AS Further Mathematics	The topics studied in the first year A-level Mathematics course, and also Proof, Complex Numbers, Matrices, and Further Algebra
A Level Further Mathematics	The topics in the A Level Mathematics course, and in the AS Further Mathematics course, and also Further Calculus, Further Vectors, Polar Coordinates, and Hyperbolic Functions. There is also the requirement to study some of the additional content, which is based either on Mechanics, Statistics, Pure Mathematics or Decision Mathematics

ENTRY REQUIREMENTS

At least a grade 7 on the Higher tier Mathematics GCSE **and** also be studying Mathematics A level.
A real passion for maths - studying maths and further maths will mean 8 hours of maths lessons every week, plus independent study!

If you would like more information on the Maths or Further Maths courses, please contact:

Ian Maynard Smith
0116 287 9921 or imaynardsmith@brookvalegroby.com