Edexcel A Level Mathematics & Further Mathematics

Why study Mathematics at A Level?

GCE Mathematics/ Further Mathematics enables students to study a broader range of concepts to a greater depth. They will develop and extend their range of skills and techniques, using them in more complex, structured problems. Mathematics is one of the most highly sought-after A Levels, and possibly the best 'facilitating' subject. It would be useful for anyone who wants to go into any of the following fields: mathematics, science, engineering, computer science, economics, business, accounting, management, medicine, dentistry, technology.

Further Mathematics is essential or highly recommended for anyone wanting to study Mathematics, Physics or Engineering at a top university. The level of mathematical demand in these subjects is so high that anyone who has not done Further Mathematics would be at a significant disadvantage from the very start of their course. Further Mathematics may also be useful to Computer Science and Economics students.

What are the entry requirements?

Grade 7* in Maths
Grade 7 for Further Maths.
(Students with a grade 7 must also pass the GNSA Mathematics entry test).

What will I study?

The new A-Level Mathematics involves a combination of Pure Maths, Statistics and Mechanics. Students will cover topics such as transformation of graphs, differentiation, integration, sequences & series, statistics, equations of motion, statistical modelling, probability and regression.

In Further Mathematics, Core Pure Mathematics 1 and 2 are compulsory modules that cover pure Mathematics content that doesn't fit into the Pure section of the A Level Mathematics, but is nevertheless fundamental to modern Mathematics, Physics and Engineering. For example, you will learn about Complex Numbers and Matrices. On the other hand, certain aspects of the Pure Mathematics curriculum are further extended, such as Vectors and especially Calculus (integration and differentiation).
The course also requires two optional units to be chosen. At GNSA, we teach four options modules, Decision, Further Mechanics, Further Statistics, and Further Pure 1. Students will select which two of the option areas of Further Mathematics that they will be studying over the two years.

Are you ready to unlock the mysteries of the universe and tackle real-world challenges? A Level Mathematics is your ticket to an exhilarating journey where you'll explore the elegance of numbers, the beauty of graphs, and the power of logic! Imagine calculating the trajectory of a rocket, predicting outcomes with probability, or ensuring the safety of structures like bridges through mathematical principles. This course doesn't just deepen your understanding of mathematics; it equips you with critical thinking and problem-solving skills that are invaluable in today's world. Whether you dream of becoming an engineer, scientist, or data analyst, A Level Mathematics is the foundation that will elevate your ambitions. Dive in and discover how mathematics can change the way you see the world!

'It is not enough to have a good mind The main thing is to use it well.' ~ Rene Descartes

How will my work be assessed?

- **Year 12:** Pure, Mechanics and Statistics
- **Year 13:** Pure, Mechanics and Statistics

The course is divided into three parts. The largest is Pure Mathematics, which *covers* two of the three papers you will be examined on at the end of Year 13. In this part of the course, you will extend some familiar topics

such as Trigonometry and Functions, while learning completely new ones such as Calculus. The other two parts are Statistics and Mechanics, which *cover* the content for the third paper.

The specification is Pearson Edexcel Level 3 Advanced GCE in Mathematics (9MA0). All external exams will be sat at the end of Year 13. Calculators are allowed in all exams and a formula sheet will be provided.

Paper 1	Pure Mathematics	100 marks	Duration: 2 hours
Paper 2	Pure Mathematics	100 marks	Duration: 2 hours
Paper 3	Statistics and Mechanics	100 marks	Duration: 2 hours

Further Maths:

Paper 1: Core Pure Mathematics (25% of total **A** Level)

Paper 2: Core Pure Mathematics (25% of total **A** Level)

Paper 3: Decision/Further Statistics/Further Mechanics/Further Pure 1 (25% of total **A** Level)

Paper 4: Decision/Further Statistics/Further Mechanics/Further Pure 1 (25% of total A Level)