

A Level Further Mathematics



➤ Introduction

A Level Further Mathematics is designed for students who have a real passion for the subject and want to explore mathematics beyond the standard A Level course. This qualification builds upon the foundations of A Level Mathematics and introduces new and powerful areas of abstract thinking and mathematical reasoning.

If you enjoy exploring patterns, solving unfamiliar problems, and understanding how pure mathematics underpins advanced science, technology, and engineering, then this course will challenge and inspire you. Further Mathematics is ideal for students considering university study in maths, physics, or other mathematically-rich subjects.

➤ What will I learn?

Level Further Mathematics broadens and deepens your mathematical knowledge through the study of four pure modules: Further Core 1, Further Core 2, Further Pure 1, and Further Pure 2. You will explore advanced algebraic structures, matrices, complex numbers, and mathematical proof. Topics such as polar coordinates, hyperbolic functions, differential equations, vector geometry, and transformations will significantly expand your problem-solving toolkit.

This course develops your ability to think abstractly and logically, extending the methods and principles you learned in A Level Mathematics. It also strengthens your conceptual fluency in calculus, sequences and series, and coordinate geometry, while introducing new techniques for analysing mathematical models in a formal and elegant way.

The course also includes abstract concepts such as Number theory, Group theory, Combinatorics and basic Linear algebra including cross scalar product and diagonalization of 3 by 3 matrices, reducible differential equations, etc.

Further Mathematics is both intellectually demanding and highly rewarding – offering depth, precision, and insight into the real and theoretical worlds of advanced mathematics.

➤ How will I be assessed?

Component	Type	Duration
Paper 1: Further Core 1 and Core 2 combined	Exam	1 hr 30 mins
Paper 2: Further Core 1 and Core 2 combined	Exam	1 hr 30 mins
Paper 4: Further Pure 2	Exam	1 hr 30 mins
Paper 3: Further Pure 1	Exam	1 hr 30 mins

Key Information:

- All components are **externally assessed** – no coursework.

➤ Opportunities

Further Mathematics offers a deeper and more abstract understanding of the subject and opens doors to the highest levels of academic study. Students often take part in national competitions such as the UKMT Senior Mathematical Challenge and attend lectures and events at universities. This course is highly regarded by top universities.

➤ Other subjects?

Further Mathematics pairs naturally with A Level Mathematics and is also highly complementary to Physics, Chemistry, and Computer Science. It provides a strong advantage in any subject that values logic, precision, and structured problem-solving.

➤ Future Careers

Further Mathematics is one of the most respected and academically rigorous A Levels. It is essential for studying mathematics at many top universities and is highly desirable for courses in physics, engineering, computer science, economics, and data science.

The subject helps develop deep analytical thinking and creativity in problem-solving – qualities sought by universities and employers in technical, academic, and research careers.

➤ Course Information

Course Code -9FMA0

Examination Board - Edexcel