



# Richard Challoner School

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## Further Mathematics A level FAQs

### Why is studying A Level Further Mathematics useful?

Further mathematics will introduce you to new mathematics topics and concepts that are not covered in the mathematics A level. These concepts are very important for many mathematics intensive degrees and students have said that having already studied them at school has really helped the start of their mathematics/science/engineering type degrees. Studying Further Mathematics is one of the few options for taking 4 A levels. What skills will I need to be able to do A Level Further Mathematics? You need at least a grade 8 at GCSE mathematics and have generally good mathematics skills, especially algebraic skills.

### With grade 6 at GCSE what sort of grade am I likely to achieve?

You will only be able to take Further Mathematics A level if you achieve an 8 or 9 at GCSE Mathematics.

### What is the workload like?

The workload is high, but students generally find that studying Mathematics and Further Mathematics is less work than studying 2 independent A levels. This is because Further Mathematics complements A level Mathematics. By doing Further Mathematics, your mathematics skills will develop more quickly and deeply, which will help you do even better in your A level Mathematics studies.

### What topics will I study?

You will study the following modules: Core Pure Mathematics 1 and 2; Further Mechanics and Decision.

**Core Pure Mathematics** (1/2 of the content): Complex Numbers, Series, Matrices, Proof by Induction, 3D Vectors, Further Differentiation and Integration, Differential Equations

**Further Mechanics** (1/4 of the content): Momentum and Impulse; Work, Energy and Power; Elastic Strings and Springs; Elastic Collisions and 1D and 2D.

***“Doing ordinary things extraordinarily well” – The Venerable Richard Challoner***

**Decision** (1/4 of the content): Algorithms, Networks, Graphs, Route Inspection, Travelling Salesman problem, Linear Programming, Simplex algorithm, Critical Path analysis.

### **Which exam board do you use?**

EdExcel

### **How will it be assessed?**

The A Level will be assessed at the end of your course (at the end of the second year) and is 100% exam with no coursework. You will sit 4 papers, each with 75 marks and worth 25% of the qualification. The exams will assess everything that you have learnt in Core Pure Mathematics (2 papers), Further Mechanics and Decision and will be graded from A\* to E.

### **Will not taking A Level Physics be a disadvantage?**

The general consensus is that studying mechanics as part of the Mathematics course will help you with Physics but the Physics course won't help much with Mechanics. While you will need to understand some physical concepts, in Mathematics the focus is more on the applications of Pure Mathematics to Physics questions. So, you don't need to worry if your classmates are studying physics and you are not.

### **I am thinking of taking Further Mathematics, will two Mathematics A levels limit my choices at university?**

Many top universities require Further Mathematics for study of a Mathematics Degree and strongly encourage it for Mathematics intensive degrees. Some Universities only look at Further Mathematics as a 4th option and it may be possible to study AS Further Mathematics only, in year 12. Medical students in the past have been recommended not to study Further Mathematics as a 3rd A level. We strongly recommend researching specific courses at [www.ucas.com](http://www.ucas.com) and individual university websites.