



# A-Level Mathematics – Further (Pearson Edexcel)

For most Science, Technology, Engineering and Mathematics (STEM) degree courses an A-Level Mathematics is a requirement and AS or A-Level Further Mathematics is often a preferred subject. Anyone applying to study a degree in a STEM subject should consider taking Further Mathematics to at least AS level as the additional content helps ensure a successful progression to University. AS Further Mathematics is accessible to most A-Level Mathematics students. Having A-Level Further Mathematics on your University application will make you stand out.

Further Mathematics can be studied as a fourth A-Level option, alongside A-Level Mathematics and two further subject options.

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## Qualities and qualifications needed

Students studying Mathematics will need:

- A grade 8 or above at GCSE Mathematics.
- Very strong algebra skills from GCSE study.
- Resilience and problem solving skills.
- A willingness to put in the required study time beyond attending the classroom lessons.

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## How will the course be assessed?



**Each chapter of work is formally assessed using professionally produced assessment materials.**

Assessments last 60 minutes and improvement work is undertaken after each round of assessment.

Students can expect to have one assessment per strand (Pure, Mechanic and Decision) each term.

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## Course content

The A-Level course is split into three main strands each with several associated topics. The strands and main topics are:

### Pure Mathematics

In this area you will study topics such as complex numbers, matrices, further calculus and differential equations, hyperbolic functions and rigorous mathematical proof.

### Mechanics

Topics include momentum, circular motion, centre of mass and moments.

### Decision Mathematics

Discrete Mathematics: The module includes graphs, networks and linear programming as well as zero sum games and binary operations.



## Examinations

At SRPA we follow the Edexcel syllabus and scheme of work for A-Level Further Mathematics. Examination is by four 1 hour 30 minutes examinations at the end of year 13. Course content in the examination is split as follows:



### Paper 1

Core Pure Mathematics – 1 hour 30 minutes



### Paper 2

Core Pure Mathematics – 1 hour 30 minutes



### Paper 3

Further Mechanics 1 – 1 hour 30 minutes



### Paper 4

Decision Mathematics 1 – 1 hour 30 minutes

Students sit formal mocks at the end of year 12 provided by the Edexcel examination board.

## Methods of teaching and learning

Students have nine hours per fortnight of taught lessons and due to the high demand of the course will be expected to complete pre-reading and home study tasks each week.

Teaching of Mathematics to this level requires experienced and knowledgeable teaching staff and here at SRPA we are delighted to have a department with specific specialisms in each strand of study.



This is a calm, happy and caring Academy.  
Pupils flourish as a result of the good quality of education and the opportunities open to them.

RP6<sup>TH</sup> student