

## Supporting Schools that are setting up Sixth Forms

### Background

The Further Mathematics Support Programme (FMSP) is a DfE funded national programme which works with schools and colleges to promote the study of AS/A level Mathematics and Further Mathematics and aims to support schools and colleges to develop their mathematics provision with a view to ensuring that students have access to Further Mathematics.

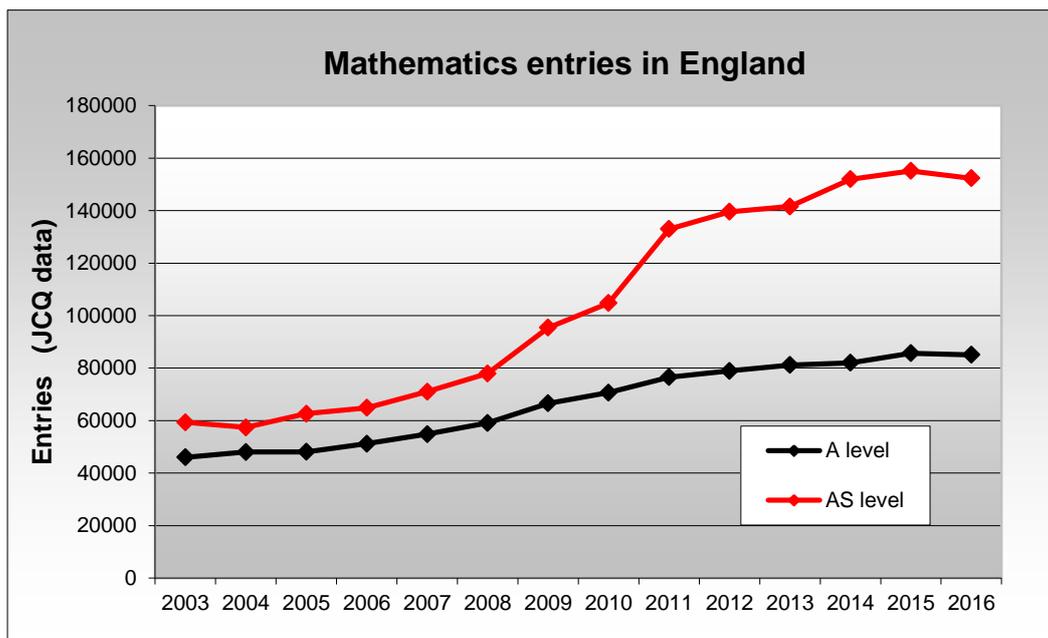
**If you are starting a sixth form and will be offering A level Mathematics for the first time, the FMSP can offer you a great deal of advice and support.**

A level Mathematics is an increasingly popular subject and the number of students taking it has been growing steadily over the past few years.

The number of students taking A level Mathematics in England has risen from 46022 in 2003 to 85068 in 2016, an increase of 85%.

Mathematics has now overtaken English and for a third year is the most popular A level and is now studied by 1 in 3 students.

(Source: JCQ)

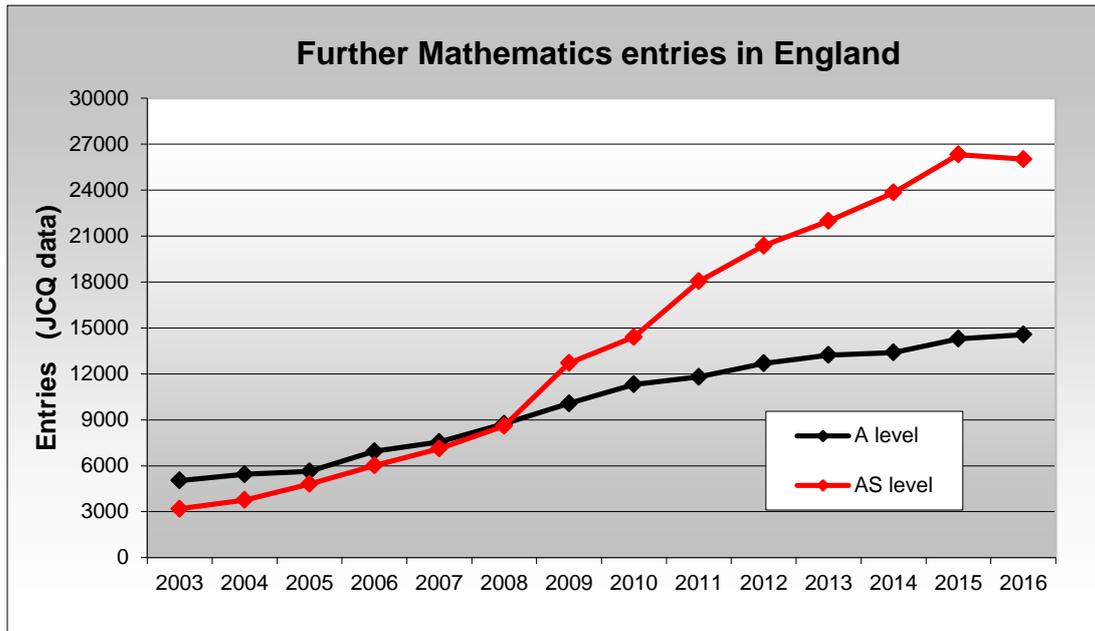


Students who are taking A level Mathematics can take an additional AS or A level in Further Mathematics. Further Mathematics has been one of the fastest growing A levels since 2003 with the numbers of students taking both AS and A level both growing strongly.

The number of students taking AS level Further Mathematics in England has risen from 3189 in 2003 to 26019 in 2016, an increase of 716%.

The number of students taking A level Further Mathematics in England has risen from 5039 in 2003 to 14566 in 2016 which is an increase of 189%.

Around two-thirds of state funded schools and colleges now offer Further Mathematics as part of their A level provision.



If you are starting a sixth form we strongly recommend that you start AS/A level Further Mathematics alongside A level Mathematics from the start or that you have a well-developed strategy for introducing Further Mathematics. The FMSP can work with you to achieve this.

## Who should study Further Mathematics?

Further Mathematics is not just for the most able students. Many students can benefit from studying an AS level in FM, particularly if they are hoping for a career in STEM subjects (Science, Technology, Engineering and Mathematics) and there is evidence that studying FM can improve their results in standard A level Maths.

Many universities now encourage students to study Further Mathematics, some actually require Further Mathematics to get onto a Maths degree. However, it's not just for maths degrees, those hoping to study subjects such as Physics, Engineering and Economics will also benefit from having at least an AS in FM.

## What can the FMSP do to help?

The FMSP has regional Area Coordinators spread across England. Part of their role is to offer help and guidance to schools in their region. Your local Area Coordinator would be happy to have a meeting with you and your staff about setting up Mathematics and will be able to help you with planning for both A level and Further Mathematics.

These Area Coordinators arrange the CPD and enrichment events around the country and offer advice and guidance on post 16 mathematics to all the schools and colleges in their region. Contact details for your local Area Coordinator and a list of all the events taking part in your area can be found on our website: [www.furthermaths.org.uk](http://www.furthermaths.org.uk).

On this site you will also find information, advice and resources and will have the opportunity to register with the FMSP. Registration is free and schools and colleges that register with the FMSP receive free staff access the **Integral** Online Resources which support the teaching of A level Mathematics and Further Mathematics across five specifications: MEI, AQA, Edexcel, OCR and WJEC. Resources are also available for AQA Level 2 Certificate in FM, OCR Additional Mathematics, STEP and AEA.

## Professional development

The FMSP can provide a range of CPD in all aspects of A level Mathematics and Further Mathematics for your staff.

- There are frequent one day courses on topics such as 'Introduction to Statistics', 'Engaging ways to teach AS Core' and 'Teaching A level using ICT'.
- If there isn't a suitable course nearby we also have an extensive programme of live, online professional development. See <http://www.furthermaths.org.uk/lopd> for details.
- 'Teaching Advanced Mathematics' is a year-long course for teachers wishing to develop their own subject knowledge and classroom practice in teaching A level Mathematics. See <http://www.furthermaths.org.uk/tam> for details
- For those who are confident with A level teaching and wishing to develop their skills to enable them to teach Further Mathematics there is the 'Teaching Further Mathematics' course, see <http://www.furthermaths.org.uk/tfm> .
- 'Teaching Mechanics' is a two part course for those wishing to develop their subject knowledge and classroom practice in this application. TM1 covers the compulsory mechanics in the new A levels while TM2 covers the Further Mathematics content. See <http://www.furthermaths.org.uk/teaching-mechanics> .
- There is also the opportunity to study a similar course for 'Teaching Statistics'. TS1 includes all the new material for the 2017 A levels (e.g. working with Large Data Sets) and TS2 covers the statistics that appears in Further Mathematics. See <http://www.furthermaths.org.uk/teaching-statistics> .

*TAM, TFM, TM & TS are all available in masters versions which enable teachers to combine their study of mathematics with study of education at university level and to gain a Postgraduate Certificate in Education, which is one third of a masters degree in Education.*

The FMSP also offers CPD for teachers wishing to support students doing STEP (sixth term examination papers) and AEA (advanced extension award). These two courses are aimed at giving the most able students an opportunity to extend their problem-solving skills by tackling questions with greater depth and variety. Some universities include either STEP or AEA as an entry requirement for Mathematics degree courses.

In addition for those teaching KS4 there are CPD programmes for 'Enrichment & Extension', 'Problem Solving for GCSE' and support for the AQA L2 Certificate in Further Maths.

## Promoting Mathematics

In order to choose maths in the sixth form, GCSE students need to be aware of the advantages and opportunities that having an A level in Mathematics brings and, most importantly, they need to be enthusiastic about studying. The FMSP runs a programme of enrichment days for KS4 students which offers them the chance to see aspects of maths that they do not meet at GCSE, many of which can form part of A level study.

These events typically include a chance to see the links between maths and other subjects and to hear about possible careers that are open to students who have taken mathematics at A level and beyond. Many of these days are held at local universities, giving students the chance to visit a university. These events are fully funded and are free of charge to groups from state-funded school and colleges.

FMSP Area Coordinators can help you promote mathematics by running KS4 enrichment lessons and A Level Maths and Further Maths taster lessons in your own school or college.

### Supporting students

If needed, the FMSP can initially help with tuition of students. There are several tuition models, often used in combination:

- Tutors visit students in their schools or colleges
- Students attend lessons organised by their local FMSP Area Coordinators at a local university, or at a local school or college
- Online tuition

Your local Area Coordinator will help you decide which of these approaches will suit your current needs best and how your department can move forward towards teaching more of the course with your own staff.

The FMSP also offers live online support courses in AS and A2 Further Mathematics for students which are designed to supplement teaching and students' independent study.

There is a full programme of online revision each summer and many areas also hold face to face revision days for particular modules. Details can be found via our website:

<http://www.furthermaths.org.uk/>

The FMSP is managed by Mathematics in Education and Industry (MEI) who have produced the following page giving advice to schools teaching A level for the first time:

[http://www.mei.org.uk/files/pdf/info\\_for\\_schools\\_starting\\_sixth\\_forms.pdf](http://www.mei.org.uk/files/pdf/info_for_schools_starting_sixth_forms.pdf)

MEI is an independent charity committed to improving mathematics education and is also an independent UK curriculum development body.

<http://www.mei.org.uk/>