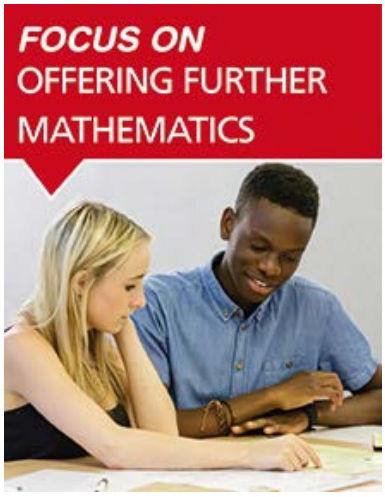


Focus of the Month
January 2018

Offering Further Mathematics

Our focus for this month is on why schools and colleges should offer their students the opportunity to study AS and A level Further Mathematics and the support that the Further Mathematics Support Programme (FMSP) provides to enable you to do this.

Why offer Further Mathematics?

There are many reasons why schools and colleges should offer the option of studying AS and/or A level Further Mathematics to their sixth-form students. The key reasons are:

- Further Mathematics is now a mainstream subject with over 16,000 entries in 2017 and is offered in over two-thirds of schools and colleges offering A levels. AS Further Mathematics is accessible to many students capable of passing A level Mathematics and is not just for the high fliers.

- Further Mathematics helps progression to university and the transition to degree study in highly mathematical and other subjects.

- Further Mathematics supports the study of A level Mathematics, and other A level subjects. There is evidence that "*students who take both maths and further maths achieve substantially higher grades in their maths than comparable students who take maths alone*".

- Further Mathematics not only introduces students to new areas of maths but also develops their reasoning skills and ability to solve problems. Further Mathematics offers a challenging and stimulating option for more able students.

- Offering Further Mathematics will help a school or college retain their higher achieving students who wish to study at top universities. The Russell Group universities refer to Further Mathematics as a "facilitating subject" in their guide to making decisions about post-16 education, Informed Choices. This is because choosing Further Mathematics leaves open a wide range of options for university study.

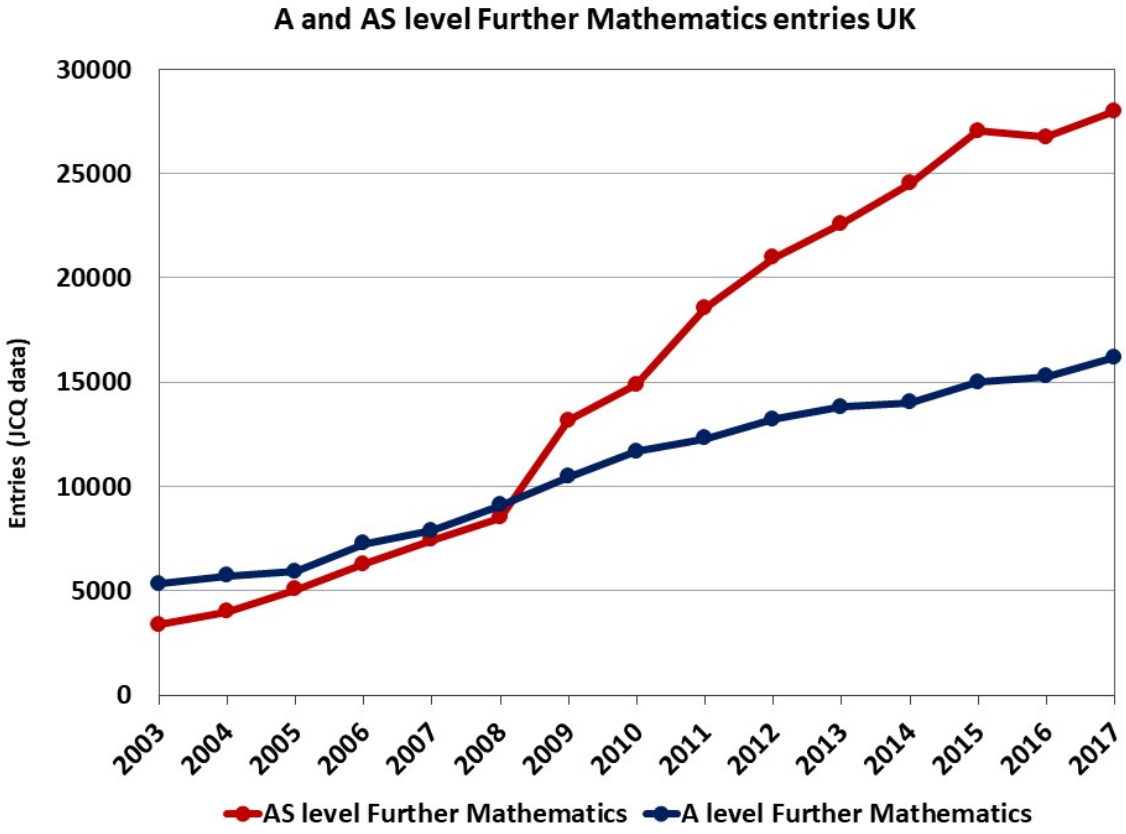
- Further Mathematics raises the profile of maths in a schools or college, and Further Mathematics students are excellent ambassadors for maths and can help support students lower down the school.

In November, the government announced extra funding for maths, including £600 for every additional student taking A level Mathematics, Further Mathematics or Core Maths. In addition, the funding uplift for students following a large programme of study, such as 4 A level subjects, will be available for students who achieve at least a grade C in Further Mathematics rather than having to get a grade B or better. Further details of how this funding will be provided is yet to be released by the DfE, but you can see the original announcement in section 5.8 of the Autumn Budget statement 2017.

There are further pages on the FMSP website, Why offer Further Mathematics and Making the case for Further Mathematics, where you will find resources and information to help you make the case for offering A level Further Mathematics. This includes information for senior leaders, as well as a presentation and handouts for students and parents.

Further Mathematics participation and provision

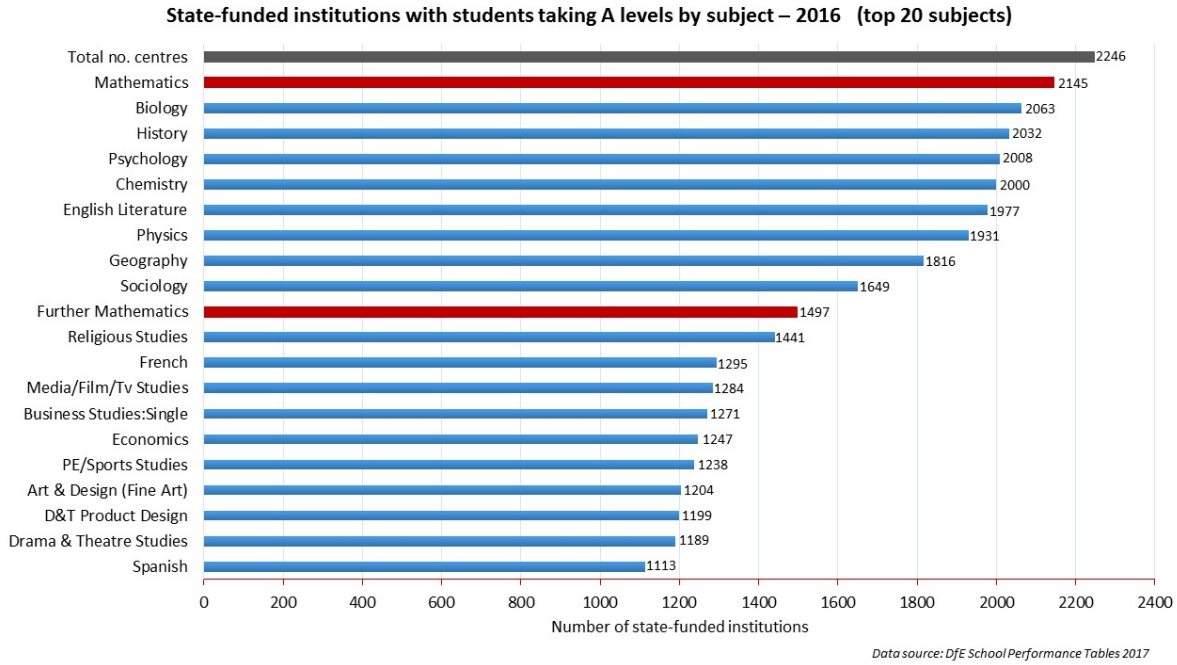
The number of students taking A level Further Mathematics has increased each year for 14 years. Entries for AS Further Mathematics have risen even more dramatically over this period.



Source: JCQ

There were over 16,000 entries in 2017, making it as popular as subjects such as politics and drama/expressive arts. A level Further Mathematics is now a mainstream subject.

The majority of schools and colleges now offer A level Further Mathematics. In 2016, over 70% of state-funded schools and colleges which had students studying A level Mathematics also had students taking A level Further Mathematics. Compared with other A level subjects A level Further Mathematics is the 10th most commonly offered subject in state-funded institutions. See chart below.



Data source: DfE School Performance Tables 2017

Progression to university study

Studying Further Mathematics is excellent preparation for university study, especially for any maths-related subject such as Engineering, Science, Computing or Technology, as well as Mathematics itself. Many universities now encourage students to take Further Mathematics qualifications to improve their mathematical preparation for degree courses. Some leading universities also specify Further Mathematics as an entry requirement for certain courses. More information on university courses and their entry requirements is available on our website.

Several reports have highlighted the benefits of studying Further Mathematics for students progressing to degree study. Links to two recent papers are below.

- Further Mathematics and the transition between school and university mathematics, Lyakhova, S & Neate, A (2017)

- Undergraduate Mathematics students' views of their pre-university mathematical preparation, Darlington, E. and Bowyer, J. (2017).

Further Mathematics as an additional AS or 4th A level subject

Further Mathematics is often taken as a 4th A level subject. Many schools and colleges now have a standard offer of three A level subjects for most students. In such cases it is important to retain the option of taking Mathematics and Further Mathematics as two A levels from a four A level programme. This is a manageable programme for students

who enjoy maths and are considering studying a maths-related degree. It will ensure they are able to access maths degrees at all universities and is likely to have a positive impact on their A level Mathematics grade. There is a funding uplift for students following a large A level programme of 4 or more subjects.

It is also useful to provide access to AS level Further Mathematics for many students. This can be studied in a single year or over two years. Students who take up AS Further Mathematics in year 13 after performing well in the first year of A level Mathematics will find this a particularly useful qualification. AS level Further Mathematics is usually taken alongside A level Mathematics and, as such, is unique as an A level that extends the study of another A level.

FMSP support for offering Further Mathematics

Even if you have small numbers of students, it is possible to offer Further Mathematics in a cost effective way with the support of the FMSP.

The FMSP has a lot of experience of working with schools and colleges to help them set up and establish Further Mathematics provision. The strategies that have been used are summarised on our website. There are a number of useful case studies of schools/colleges that have worked with the FMSP to develop Further Mathematics which give a helpful insight into strategies that have worked.
There is a range of support that the FMSP offers schools and colleges to enable them to provide AS and A level Further Mathematics, including

- Resources for teaching Further Mathematics - schools/colleges that register with the FMSP receive free access to online teaching resources for Further Mathematics.

- The online resources now include FM videos for students – short video lectures that introduce the key ideas of topics in Further Mathematics.

- The FMSP is also able to support schools/colleges with tuition for Further Mathematics.

- The FMSP provides continuing professional development for Further Mathematics teachers, including four one-day FM conferences in February and March 2018.

Promoting Further Mathematics

The FMSP supports schools and colleges to promote the uptake of Further Mathematics, providing information to GCSE students and raising awareness about the benefits of studying both A level Mathematics and Further Mathematics.

The FMSP has produced a leaflet and presentation to help promote A level Mathematics and Further Mathematics. There are also links to videos that can inform students of the advantages of studying maths. Contact the FMSP admin team admin@furthermaths.org.uk to order copies of the leaflets.

In addition to providing resources, the FMSP organises enrichment events for students which aim to inspire and inform them of the opportunities open to them through studying maths at A level.