

A level students continue to flock to ‘most demanding’ qualifications

Further increases in the number of students taking A level Mathematics and Further Mathematics are a real cause for celebration and demonstrate a continued appetite among sixth formers to take the most demanding qualifications.

A May 2012 Ofqual report, comparing the standard of international qualifications, stated that ‘A level Further Mathematics was the broadest and the deepest qualification reviewed.’

The report, ‘International Comparisons in Senior Secondary Assessment’, looked at international qualifications which are comparable to A levels from a wide range of countries including: Hong Kong, China, Korea, Australia, New Zealand, France, the Netherlands, Finland, Denmark, Norway, Ireland, the USA, Canada and the UK.

It stated that some of the mathematics included in A level Mathematics and Further Mathematics was amongst the ‘most demanding’ considered in the study.

Given this, it is particularly remarkable that, thanks largely to the efforts of Mathematics in Education and Industry (MEI) an independent educational charity, A level Further Mathematics has been one of the fastest growing mainstream A level subjects in the UK over the past five years.

Less than a decade ago A level Further Mathematics was generally only available to students educated in the independent sector, or in the best performing state schools and colleges. This meant that many students educated in the state sector were seriously disadvantaged when applying for prestigious degree courses at leading universities.

MEI’s government-funded Further Mathematics Support Programme has revolutionised access to Further Mathematics. The figures speak for themselves. Since 2005, when the FMSP started, the number of students in England taking A level Further Mathematics has more than doubled, from 5627 to 13 821, and the proportion of state-funded schools and colleges with students taking A level Further Mathematics has increased from less than 40% to over 65%.

Further Mathematics is increasingly becoming a requirement for many prestigious courses at leading universities. Many employers look favourably on Further Mathematics as it shows clear skills of problem solving, analysis and logic, providing a good base for a range of careers including business and finance, insurance, accountancy, engineering, and information and communication technology.

Compared with 2012:

- A level Mathematics numbers are up from 85 714 to 88 060, an increase of 2.7%.
- A level Further Mathematics numbers are up from 13 223 to 13 821, an increase of 4.5%.

Since 2003 A level Mathematics level numbers have increased by 74% (from 50 602) and AS Mathematics numbers have increased by 136% (from 63 841).

Increases at AS level are also strong, suggesting continued increases at A level next year.

- AS level Mathematics numbers are up from 148 550 to 150 787, an increase of 1.5%.
- AS level Further Mathematics numbers are up from 20 954 to 22 601, an increase of 7.9%.

Since 2003 A level Further Mathematics numbers have increased by 160% (from 5 315) and AS Further Mathematics numbers have increased by 570% (from 3 371).

David Youdan, Executive Director of the Institute of Mathematics and its Applications, said

"The growth in the numbers of students taking A level Mathematics and Further Mathematics is a real success story. More young people are better equipped to study a wide range of mathematics-rich subjects at university because they have taken Further Mathematics. MEI, through the Further Mathematics Support Programme, should be very proud of its work with schools to help achieve this."

Mathew Harrison, Director of Engineering and Education at the Royal Academy of Engineering, said

"There has been a lot of attention focussed on post-16 mathematics in the last year and MEI has responded to the challenge of seeing all young people continue with mathematics up to the age of 18. It is reassuring to note that amongst all this new effort they have maintained a focus on Further Mathematics and have been rewarded with yet another increase in the number of successful candidates this year".

Peter Main, Director of Education and Science at the Institute of Physics, said,

"I am very pleased to see once again the rise in the numbers of people achieving A-levels in Mathematics and Further Mathematics. Together with Physics, these subjects provide an excellent route into a very wide range of important careers in science and engineering. In Further Mathematics particularly, the Further Mathematics Support Programme is to be congratulated on its role in increasing these numbers."

Charlie Stripp, Chief Executive of MEI, said:

“It's fantastic news that the numbers of young people choosing to study for A levels in Mathematics and Further Mathematics continue to increase. Studying for these A levels develops mathematical thinking skills and techniques that are vital for university study and employment in the sciences, technology, engineering and finance, helping Britain to compete in a knowledge-based global economy.

Further Mathematics is one of the world's most demanding pre-university mathematics qualifications, and is an entry requirement for many mathematics-rich courses at our leading universities.

The work of the FMSP has been vital in bringing about this increased participation, by promoting the importance of higher level mathematical study to school pupils studying for their GCSEs, giving access to extensive teaching and learning resources, and providing specialised training for mathematics teachers. This has enabled many more state schools and colleges to offer Further Mathematics, giving many more students the opportunity to take it. However, there is still much more work to be done. Around 15% of A level Mathematics students educated in the state sector also take A level Further Mathematics. In the independent sector the figure is over 23%.”

Notes for editors:

1. Mathematics in Education and Industry (MEI) (www.mei.org.uk) is an independent charity that is committed to improving mathematics education for all.
2. MEI is a major provider of professional development for mathematics teachers and leads the secondary strand of the National Centre for Excellence in the Teaching of Mathematics (NCETM).
3. The Further Mathematics Support Programme (www.furthermaths.org.uk) is a government-funded initiative, supported by the Department for Education and is managed by MEI. It follows on from the very successful 'Further Mathematics Network' initiative, which was set up following a successful 5 year pilot project that was developed by MEI and funded by the Gatsby Charitable Foundation.
4. The Further Mathematics Support Programme involves schools, colleges and universities working together collaboratively to widen opportunities for students. It uses a blended learning strategy that employs intensive tutorial input alongside independent study, supported by extensive, purpose-written, online resources. This model is proving very successful and, suitably adapted, could be used by other high-value shortage subjects such as physics and modern languages.
5. Further Mathematics reinforces the content of the standard AS/A level Mathematics and introduces students to important topics such as complex numbers and matrices, which are vital for many mathematics-related degrees.

6. For more information, please contact Sue Owen on 01225 716493 or by email at sue.owen@mei.org.uk

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7. For detailed background information on the Further Mathematics Support Programme and Mathematics in Education and Industry (MEI), please see www.furthermaths.org.uk and www.mei.org.uk