



Taking Maths Further

The number of students taking Mathematics and Further Mathematics has reached an all-time high this year and today's A level results are a real cause for celebration.

Since 2003, the number of pupils sitting Further Mathematics has increased by 131% (from 5315 to 12 287), as this is now a subject requirement for many prestigious courses at leading Universities. Mathematics (including Statistics) is embedded in a large majority of University courses including the Sciences, Technology, Engineering and Finance.

People with qualifications in Mathematics are highly regarded in the work place and are likely to earn more money. And at a time when our economy needs more qualified young people to pursue careers in technological areas, it is good to know the country's future employees are rising to the challenge.

These increases are the result of the efforts of many people and organisations. However, major credit belongs to MEI's initiative in setting up a programme to rescue Further Mathematics and the wisdom of successive governments in supporting it.

Compared with 2010 A level Mathematics numbers are up from 77 001 to 82 995, an increase of 7.8%.

Compared with 2010 A level Further Mathematics numbers are up from 11 682 to 12 287, an increase of 5.2%.

Increases in certifications in AS level Mathematics and Further Mathematics are also strong, suggesting continued increases at A level next year. However, AS re-certifications make these figures hard to interpret.

Compared with 2010 AS level Mathematics numbers are up from 112 847 to 141 392, an increase of 25.3%.

Compared with 2010 AS level Further Mathematics numbers are up from 14 884 to 18 555, an increase of 24.7%.

Since 2003 AS Further Mathematics certifications have increased from 3 371 to 18 555, an increase of 450%.

Charlie Stripp, MEI Chief Executive (MEI manages the Further Mathematics Support Programme) said:

"The continued increases in Further Mathematics numbers are a real cause for celebration. The large majority (over 60%) of state-funded schools and colleges offering A level Mathematics now also have students taking A level Further Mathematics, up from less

than 40% six years ago. This means that more young people from less privileged backgrounds are able to study Further Mathematics, which boosts their chances of earning places at prestigious universities to study for degrees in subjects such as engineering, sciences and mathematics, all of which are vital to our economy.

The work of the FMSP has been key to bringing about these increases, enabling schools, colleges and universities to work together to promote the importance of mathematics to young people, providing specialised professional development to enable more teachers to teach Further Mathematics and enabling more students to access tuition in Further Mathematics.”

Michael Gove, Secretary of State for Education, said,

“I am particularly pleased about the rise in numbers doing Maths and Further Maths A Level, and the Further Maths Support Programme has done a brilliant job in helping more people access a great Maths education.”

Professor Sir Peter Knight, incoming-President of the Institute of Physics, said,

"A proper understanding of maths underpins success in physics and a wide range of the sciences. It's very promising to see a significant increase in the number of young people successfully continuing mathematical studies after the age of 16 by taking mathematics and further mathematics A levels."

Jon Prichard, Chief Executive officer of the Engineering Council said

“The Further Mathematics Support Programme has played a major role not only in increasing numbers successfully undertaking Further Mathematics but in raising achievement in Mathematics generally. This provides the young people concerned with a far wider range of opportunities for further study, especially but not only in engineering and technology.”

Chris Budd, Professor of Applied Mathematics at the University of Bath and Professor of Mathematics at the Royal Institution of Great Britain welcomed the increase in numbers of Mathematics and Further Mathematics students:

"I greatly welcome the increase in numbers of students doing A level Maths and Further Maths. Maths is essential for many aspects of 21st century life and is at the heart of the science and technology of the future.

Students doing A level maths are in great demand by future employers for their mathematical knowledge and problem solving skills. It is terrific that the FMSP has given increased access to Further Maths for a much wider section of the UK community. It's vital that every school/college offers its students the chance to do Further Maths as well as Maths and engages with the FMSP to achieve this."

Rebecca Hindle, aged 18, who attended Bishop Ullathorne School in Coventry and who studied Further Mathematics via tuition arranged by the Further Mathematics Support Programme said:

“The Further Maths Support Programme has been a great aid to me throughout my A levels in both Maths and Further Maths. Not only do universities usually prefer students taking very

mathematical courses to have studied Further Maths, they also recognise and highly regard the independent-learning aspect of the Further Maths Support Programme, making you a strong applicant for their courses.”

Rebecca has provided a full case study of tuition via the Further Mathematics Support Programme which is included in an appendix to this release. Rebecca is available for interview on Thursday 18th August, her contact details can be obtained via Janice Richards (contact details below).

Notes for Editors

1. Mathematics in Education and Industry (MEI), an independent charity that supports mathematics education (www.mei.org.uk)
2. 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.
3. 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.
4. 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.
5. For more information, please contact Janice Richards on 01225 774777 or by email at: janice.richards@mei.org.uk

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Appendix: Further Mathematics Support Programme, Student Case Study: Rebecca Hindle

“The Further Maths Support Programme has been a great aid to me throughout my A levels in both Maths and Further Maths. I wanted to take Further Maths as an A level, but since my school were unable to offer it they organised for me to do it through The Further Maths Support Programme. Initially, I was worried that the course may be too demanding for me, but the support the programme provided for me made the course accessible and interesting, as well as challenging. Some of the topics I have particularly enjoyed have been Complex numbers and Polar Co-ordinates, as well as the statistics modules I covered which I hope to investigate in further depth at University.



Upon starting the course, I was given access to the online resources provided by the programme, which can be found on the website. These interactive resources were specific to the books I was using; testing and extending its contents. The resources provide detailed answers to the questions in the book by both showing and explaining the work involved, they give alternative explanations and examples of those given in the book, and they offer tests which enable to you check your understanding of the material. I found these tools to be extremely helpful in my revision periods, as well as throughout the year when they helped

with homework. Furthermore, they provide all past papers and answer schemes for your exam, making gathering revision tools much easier, and they also provide revision packs for courses I was taking in my other Maths A Level.

Closer to the exams, online revision sessions are also provided in which a tutor gives an online tutorial which you participate in from your own computer. You are able to ask specific questions to the tutors, as well as watch them work through exam questions. This is a great resource since it gives you the opportunity to hear the theory or explanation in a different way. Often in maths, a topic can seem extremely difficult until someone explains it in a way which you can understand. The Further Maths Support Network gives you the opportunity to discuss these topics with a wider range of teachers, allowing you to fully explore and understand the topic, while still providing the stability of a regular teacher each week. Not only this, but it allows you to speak to like-minded students about things such as university courses. Not many of my friends wanted to take mathematical subjects at university, so being able to speak to students who were in a similar situation to me was comforting and helped me make decisions about university that I may otherwise have struggled with.

Finally, the Further Mathematics Support Programme has provided me with an ability to work and learn independently; a skill that is vital at university, and one that many students struggle with. It wasn't until I took Further Maths that I truly understood what it means to learn independently, but I certainly feel now that I am more prepared for a university style of teaching. I have developed the ability to self-motivate and have learned how to approach challenging questions in a practical, persistent, and successful manner. Furthermore, not only do universities usually prefer students taking very mathematical courses to have a Further Maths A level, they also recognise and highly regard the independence aspect of the Further Maths Support Programme, making you a strong applicant for their courses."