

## The National Picture

Further increases in the numbers of students taking A level Mathematics and Further Mathematics are a real cause for celebration. UK figures for summer 2013 show that:

- AS level Further Mathematics numbers are up from 20954 to 22 601, an increase of 7.9%.
- A level Further Mathematics numbers are up from 13223 to 13 821, an increase of 4.5%.
- AS level Mathematics numbers are up from 148550 to 150 787, an increase of 1.5%.
- A level Mathematics numbers are up from 85714 to 88 060, an increase of 2.7%.

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). However, there is still work to be done. Over 30% of state-funded schools/colleges offering A level Mathematics still do not have any students studying Further Mathematics. A major focus of FMSP work in 2013-14 will be to work with those schools/colleges who are still not offering their students the chance to study Further Mathematics. This will involve providing advice & guidance, CPD, enrichment, maths promotion at KS4 and KS5, as well as tuition in Further Mathematics when required.

The FMSP will be offering various types of Further Mathematics tuition again this year. In addition to face-to-face tuition and live online tuition the FMSP is extending its series of Live Interactive Lectures for FM, see below.

## Professional Development for teachers

The FMSP offers a range of professional development for mathematics teachers including:

- **Live Online Professional Development Courses (LOPD)** aim to help teachers improve their mathematics subject knowledge. These online courses are typically offered twice a year; scheduled in Autumn (Oct – Feb) and Spring (Feb – June). They offer between 5 and 10 hours contact time with an experienced tutor and are delivered to small groups of teachers allowing opportunities for interaction and discussion. Course sessions are scheduled after the school day and are recorded to enable participating teachers to revisit the content at a later date.

For further details and booking information for our **LOPD** courses see:

[www.furthermaths.org.uk/teacher\\_area/rpd.php](http://www.furthermaths.org.uk/teacher_area/rpd.php)

- **Teaching Further Mathematics (TFM)** is an extended course starting in July and running for 14 months. Applications for the next cohort open in February 2014. TFM has the option of Masters accreditation.
- **Teaching Advanced Mathematics (TAM)** is a year-long course, with the option of Masters accreditation, for teachers wanting to develop their teaching skills at A level. Applications for TAM open in spring 2014.

Your local FMSP Area Coordinator will be arranging more professional development events in your area this year. For information about professional development please check the website [www.furthermaths.org.uk/teacher\\_area](http://www.furthermaths.org.uk/teacher_area). If you have any queries regarding the above please contact [cpd@furthermaths.org.uk](mailto:cpd@furthermaths.org.uk).

## Live Interactive Lectures for Further Mathematics students

Our online lectures for Further Mathematics students will commence in October. These are designed to supplement students' independent study and/or teaching, including:

- Up to thirty hours of live online support which includes dedicated lectures and revision time.
- Access to the [Integral](#) extensive and acclaimed online resources. These have specific sections tailored to support self-study and include additional notes, additional exercises, interactive resources, multiple choice tests, exam-style questions and worked solutions.
- A moderated forum specifically for course participants.

**Modules available for 2013-14 include:** FP1, FP2, M1, M2, D1, D2 and S2 in Edexcel/MEI/AQA and OCR  
: FP3 and M3 for Edexcel specification only

Further information and application details can be found at: <http://www.furthermaths.org.uk/lilfm.php>

## Forthcoming Teacher Professional Development Enrichment Events

### Key Stage 4 Extension and Enrichment CPD

This is a two day course for teachers in maintained school giving a chance to try out a wide range of new materials targeted specifically at Higher Tier GCSE students, which have been developed by the FMSP. **Financial support is available to attend for teachers from maintained schools.**

For more details see: [http://www.furthermaths.org.uk/teacher\\_area/ks4eande.php](http://www.furthermaths.org.uk/teacher_area/ks4eande.php)

Title	Description	Venue	Date	Enquiries to
Two-day Key Stage 4 Extension and Enrichment CPD course	Course focusing on developing problem solving skills and providing extension and enrichment for Key Stage 4 students working towards the Higher Tier GCSE	University of Wolverhampton	Day 1 - 8 <sup>th</sup> Oct	Tamara Nevill <a href="mailto:tamaranevill@furthermaths.org.uk">tamaranevill@furthermaths.org.uk</a>
Two-day Key Stage 4 Extension and Enrichment CPD course	Course focusing on developing problem solving skills and providing extension and enrichment for Key Stage 4 students working towards the Higher Tier GCSE	University of Warwick	Day 1 - 11 <sup>th</sup> Nov	Heather Knowles <a href="mailto:heatherknowles@furthermaths.org.uk">heatherknowles@furthermaths.org.uk</a>
Two-day Key Stage 4 Extension and Enrichment CPD course	Course focusing on developing problem solving skills and providing extension and enrichment for Key Stage 4 students working towards the Higher Tier GCSE	Keele University	Day 1 - 13 <sup>th</sup> Nov	Richard Stakes <a href="mailto:richardstakes@furthermaths.org.uk">richardstakes@furthermaths.org.uk</a>

### Other Teacher Professional Development Events

Title	Description	Venue	Date	Enquiries to
The AQA Level 2 Certificate in Further Mathematics	Advice and support for teachers looking to deliver the new AQA Level 2 Certificate in Further Mathematics to enhance and extend KS4 mathematics.	University of Birmingham	25 <sup>th</sup> September	Martyn Quigley <a href="mailto:martynquigley@furthermaths.org.uk">martynquigley@furthermaths.org.uk</a>
STEP and Problem Solving at Key Stage 5	Suitable for teachers who are looking to support their students to prepare for STEP mathematics examinations or who are looking to introduce students to deeper problem solving at KS5.	Keele University	6 <sup>th</sup> November	Richard Stakes <a href="mailto:richardstakes@furthermaths.org.uk">richardstakes@furthermaths.org.uk</a>
Teaching Core Maths 2	Advice and support with teaching the Core Mathematics 2 module	Telford Conference Centre	19 <sup>th</sup> November	Richard Stakes <a href="mailto:richardstakes@furthermaths.org.uk">richardstakes@furthermaths.org.uk</a>
Maths and Beyond	Maths and Science Workshops and a Keynote Lecture aimed at KS4 and KS5 students	University of Warwick	March 2014 details to be announced	Heather Knowles <a href="mailto:heatherknowles@furthermaths.org.uk">heatherknowles@furthermaths.org.uk</a>
Introducing deeper mathematical problem-solving during year 12	For teachers who are looking to use deeper problem-solving materials alongside the regular curriculum during year 12.	University of Wolverhampton	January 2014 Details to be announced	Tamara Nevill <a href="mailto:tamaranevill@furthermaths.org.uk">tamaranevill@furthermaths.org.uk</a>

## Forthcoming Student Maths Enrichment Events

### The FMSP and UKMT Senior Team Mathematics Challenge

The FMSP is once again working with the United Kingdom Mathematics Trust to run the national Senior Team Maths Challenge. This is a team competition for students in years 11, 12 and 13 testing mathematical, communication and teamwork skills. Heats will run all over the country during November 2013, with the winners of each heat invited to a national final in London on 4<sup>th</sup> February 2014. Local heats are listed below. For more information please visit our website.

Title	Description	Venue	Date	Enquiries to
Wolverhampton Heat	Team maths competition for year 11, 12 and 13 students	Wolverhampton University, City Campus	11 <sup>th</sup> November	See FMSP website for an application form
Coventry Heat	Team maths competition for year 11, 12 and 13 students	University of Warwick	14 <sup>th</sup> November	See FMSP website for an application form
Stafford Heat	Team maths competition for year 11, 12 and 13 students	Kingston Centre, Stafford	18 <sup>th</sup> November	See FMSP website for an application form
Solihull Heat	Team maths competition for year 11, 12 and 13 students	Solihull Sixth Form College	20 <sup>th</sup> November	See FMSP website for an application form
Keele Heat	Team maths competition for year 11, 12 and 13 students	Keele University	27 <sup>th</sup> November	See FMSP website for an application form

### Other Student Maths Enrichment Events

These events are designed to give students the opportunity to explore the 'bigger picture' in mathematics. Each event consists of a series of activities, workshops or interactive lectures extending the mathematical experience of students and demonstrating the relevance of mathematics in the real world.

Title	Description	Venue	Date	Enquiries to
More 2 Maths	The day will consist of two talks and a Mathematical activity. Prof Alan Davies will talk about Rainbows: the myth, the magic and the mathematics and Dr David Bedford's talk is entitled, tales of Ants, Bricks and Infinity	University of Wolverhampton – Telford Campus	19 <sup>th</sup> September 2013	<b>Richard Stakes</b> <a href="mailto:richardstakes@furthermaths.org.uk">richardstakes@furthermaths.org.uk</a>
More 2 Maths	Speakers include Colin Wright, the Juggling Mathematician and James Grime with his World War 2 Enigma Machine. An optional tour of the Keele University Campus is also available.	Keele University	24 <sup>th</sup> September 2013	<b>Richard Stakes</b> <a href="mailto:richardstakes@furthermaths.org.uk">richardstakes@furthermaths.org.uk</a>
Maths and Beyond	Maths and Science Workshops and a Keynote Lecture aimed at KS4 and KS5 students	University of Warwick	March 2014 details to be announced	<b>Heather Knowles</b> <a href="mailto:heatherknowles@furthermaths.org.uk">heatherknowles@furthermaths.org.uk</a>

## Activities in the last summer term

The FMSP organised a variety of events for both teachers and students in the West Midlands region. If you have requests for a particular CPD event then please contact your local Area Coordinator.

### CPD

Two CPD courses covering problem-solving in GCSE mathematics took place in the summer term at the Telford Conference Centre and at the University of Warwick.

These proved to be very popular. There is a possibility that another event like this can be organised so please contact your local Area Coordinator if you are interested in this event.

Further CPD events were held at Keele University and The University of Warwick. These were:

- Teaching D1
- Geogebra for Beginners
- Teaching FP1
- Statistics –fresh ideas for the classroom S1 and S2

These proved popular and informative for all those who attended.

A teacher network event, on 3 July, attended by over 20 teachers, was privileged to have Stella Dudzic, MEI Programme Leader for Curriculum, give a presentation on 'Changes in Curriculum and Assessment, pre and post 16'.

Summer term events at Birmingham University were:

- The second day of KS4 E&E first round was held on June 25.
- A teachers' CPD day on Further Pure 1 led by Richard Lissaman was held on June 21.

### Student Enrichment

At Keele an enrichment event on 26 June 2013 for year 11 and 12 students was attended by over 100 students from 9 schools and colleges. The students and teachers were educated and entertained by talks from Dr Katie Steckles about 'Maths in the Simpsons', from Dr David Bedford on 'Tales of Ants, Bricks and Infinity' and from Dr Colin Wright who helped us 'Getting Lost in 2000 Dimensions'.

In July, enrichment events for GCSE students were held in Wolverhampton and Walsall. Both events were very popular with over 100 students attending each event. Those attending were entertained by talks from Adam Boddison about 'Maths in the Media' or Nabeil Maflahi who looked at 'Maths in Computer Games'. Students also took part in a range of interactive workshops including Iterations & Chaos, The Monty Hall Problem and Practical Mechanics.

The **Year 12 Problem-Solving Conference** held at The University of Warwick in July proved to be a great success. 100 students and teachers attended workshops on Proof, 'Writing and Presenting Solutions' and had an introduction to the STEP and AEA papers that some will ultimately sit. This day was offered on two days and proved so popular that a third day will be run in September.