



The National Picture

The FMSP has nearly completed two years of its current contract and plans have been recently submitted to the DfE for 2016-17. The last two years have seen the FMSP widen its support for mathematics, including an extensive programme of enrichment and CPD events and a wide range of information and guidance relating to the teaching and learning of A level Mathematics and Further Mathematics.

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In the last two years over 30 000 students in Years 9, 10 and 11 have taken part in enrichment events and competitions organised by the FMSP. These events and all the associated teaching resources produced by the FMSP are part of our strategy to promote positive attitudes to studying mathematics. Over 5 500 teachers have participated in professional development provided by the FMSP. These courses, ranging from one-day events, regular online classes, through to year-long blended learning courses, have helped to improve teacher confidence, subject knowledge and pedagogy in GCSE and A level Mathematics. The FMSP continues to develop support for the teaching of problem-solving, making use of technology and subject leadership. I recommend looking at the **regional events pages** to see what is being offered near you for both students and teachers.

You may have already attended an FMSP **Network Meeting** to discuss the new Mathematics A levels. Area Coordinators have already run over 20 meetings providing information and opportunities for teachers to discuss the implications of the changes. In the Autumn term 2016, the FMSP will be providing one-day courses to help prepare teachers for the introduction of the new A levels in Mathematics and

Further Mathematics which will be free to all state-funded schools/colleges. Details of these will be available during the summer term.

New pages have been added to the FMSP website about the changes which provide details of the support provided by the FMSP and others. The webpage will be developed throughout year as information becomes available and the specifications and specimen assessments are published in the summer.



There is a wealth of information and resources on the FMSP website, Integral and other websites and we know that some teachers are not aware of everything available. Since October we have been collating information and resources into a monthly focus document. So far we have focused on themes including Promoting Mathematics at Sixth Form Opening Evenings, Key Stage 4 Mathematics and STEP/AEA/MAT support. The Focus for March is Revision. Look out for the link on our home page or for recent focuses go to: furthermaths.org.uk/focus.

Kevin Lord, Programme Leader.

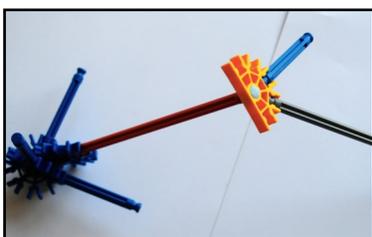
Regional Events and Updates

Professional Development

A-level Active! 1-day course

In March we ran the “A-level Active!” CPD course in North Nottinghamshire at Tuxford Academy. Seven bright-eyed and enthusiastic teachers attended this event to share the best practice of teaching A-level maths in a hands-on, interactive and engaging way. The use of mini-whiteboards, K-nex, thermometers and cups of tea enabled us to test out some fun activities for the classroom covering the topics of Vectors, Trigonometry and Differential Equations.

With a whole bank of resources covering 13 topics in the AS/A-level syllabus we have more than enough material to run this course again. If you would be interested in finding out more, please contact your local Area Coordinator.



Key Stage 4 Network Meetings

In Nottingham, the George Spencer Academy (in conjunction with the Maths Hubs initiative) hosted an afternoon KS4 Network Meeting to discuss the issues around teaching the new GCSE specification. 12 local teachers attended the event to share good teaching practice and to collate resources based on the problem solving aspects of mathematics.



An additional meeting will be held on the 5th July to help teachers plan for 2016/17 and to prepare for the exam assessment. If you would like further information please contact Ria Symonds riasymonds@furthermaths.org.uk.

Teachers in the region had opportunity to attend the MathHUBS Network, the local 16-19 lead organiser is Niall Bruce of Beauchamp College Oadby. This is a joint hub, also covering the Northampton Region and we had a productive afternoon meeting, attended by 12 staff from a wide range of establishments. CPD was provided by Casio calculators, who gave us an insight into the use of Graphics Calculators, which will be useful when ‘the use of technology’ becomes an objective in the new A Level 2017 syllabus. The FMSP gave an update on the progress and changes to these specifications, and Niall showed a tracking

and delivery system, Ed-Ted, which certainly grabbed teachers attention. Don't forget to look on the FMSP site for events from Year 8 to 13.

Use of Large Data Sets in A-Level Statistics

7 delegates attended a professional development session at the University of Lincoln to discuss how large data sets could be used in the teaching of S1 and S2 modules. This included use of technology like Excel and Geogebra.

Although directly relevant to the current specifications, there was also consideration given to what statistics might look like post 2017. We are expecting an emphasis on large (possibly pre-released) data sets, use of technology and real-world applications, all of which were covered in the session.

A-Level Changes

There have been a number of events in various parts of Lincolnshire to discuss the changes that will take place to the A-Level specifications from 2017. These have been useful and lively discussions amongst teachers. When the actual specifications are released, we will follow up on these events. In the meantime, if you have any queries about these changes, please contact your area co-ordinator.

STEP Training

We have run a session at the University of Lincoln for teachers interested in delivering STEP tuition for their students. This will be followed up shortly with some sessions for students.

GCSE Extension and Enrichment

The Priory Academy kindly hosted a two day course looking at extension and enrichment topics for GCSE students. This was attended by teachers from all over the area and covered many areas of mathematics accessible to GCSE students and how they could be delivered. The emphasis was very much on problem solving skills and how they could be developed.

Regional Events and Updates

Key Stage 4 Enrichment for Students

UKMT Senior Team Maths Challenge

This year the East Midlands hosted 5 regional heats including Nottingham, Derby, Lincoln, Loughborough and Leicester.

Well done to all our regional finalists who attended the grand final on the 2nd February at the Royal Horticultural Halls, London.

Due to its popularity, this year we increased teams who could attend the East Midlands regional heats including a new venue at University of Northampton's Avenue campus, where we hosted 15 teams in the lovely surroundings of Newton Building's Great Hall. The winners, shown below, were presented with prizes and their invitation to the London Final, by Mel Starkings.



The winners of the Loughborough heat were Loughborough Grammar School. The Dean of the School of Science thanked all the students for attending the event. Congratulations also to Nottingham High school and Oakham school who were joint winners of the Nottingham heat.

Maths Feast

The Maths Feasts have proven very popular once again amongst schools and students. This exciting competition for students in Year 10 tests mathematical, communication and teamwork skills.

If you were unable to attend the Maths Feast this year then please contact your local Area Coordinator (AC) who can help you run your own event using the same resources.

Enrichment visits

As well as attending events in and around the East Midlands, 120 Year 10 students attended a very well received pre-Christmas Suspense event. The day included a university tour and several mathematics workshops that took them beyond the curriculum to extend and deepen their understanding and to introduce them to the Applied Mathematics they might meet at A Level. We also pulled crackers at lunchtime! Prizes were presented to teams for originality, problems solving, team work and a special prize for a team who travelled all the way from Hartlepool!



As well as attending events in and around the East Midlands, your local AC's are more than happy to offer a range of engaging enrichment talks which can be delivered in your school. Talks range from career-based 30 minute sessions to 1 hour enrichment interactive workshops. These can be tailored for students in Years 9 -12.

Schools that have benefited from such visits this year include; Ellis Guilford School, Nottingham Girls High School, Ockbrook School and Anthony Gell School.

If you would like to find out more and arrange a talk in your school then please contact your local AC.

Regional Events and Updates

Key Stage 5 Enrichment for Students

MAT Preparation day

In October, students who would be taking the MAT in November were given the opportunity to prepare for this challenging test at the University of Nottingham. David Hulme, originally a teacher from New College Nottingham, took the students through a series of sessions to help develop their problem solving and mathematical competency.

Well done to Natalie Carter from the Ecclesbourne School, who secured an offer from Oxford University after attending this event.

6th Form Problem Solving Conference

Following the success of last years event, the University of Nottingham hosted a 1-day event for Year 12 students and their teachers to help develop their problem solving skills in Mathematics.

The day comprised of a number of interactive sessions which looked at some hands-on applications of maths and also some more advanced STEP -Level mathematical challenges.

Well done to all the students who took part from the following schools: Arnold Hill academy, the Deepings School, Havelock Academy, John Port School, Lady Manners School, Leicester Grammar School, Leicester High School, National Academy and Tuxford Academy.

Key Stage 5 Problem Solving

19 Year 12 students from various schools and colleges, have been attending a short programme of seminars aimed at developing their problem solving skills. Topics covered have included Algebra, Combinatorics and Geometry. All of the sessions cover material beyond the A-Level specification and are designed to encourage students to develop resilience in dealing with problem solving scenarios.

STEP Open Evening

In the Autumn term the University of Nottingham held a STEP Open evening for local students/teachers, as an opportunity to find out more about the exams and how they may prepare for them.

This was well attended with many students already signing up for our STEP Preparation sessions in April/May. There is still time to book onto this course in readiness for the Examinations in June, please see details overleaf.



In addition to the various events hosted by the FMSP, students can access support in preparing for STEP/AEA/MAT examinations from the FMSP website: www.furthermaths.org.uk/step-aea-mat. Included on this page are:

- key information and a factsheet about the three types of examination;
- details of the MEI online support for STEP, AEA and the MAT;
- details of regional key stage 5 problem solving events;

Practice materials, including some for students to tackle in groups and previous Senior Team Mathematics Challenge past materials are freely available from:

www.furthermaths.org.uk/a-level-problem-solving.

Other News and Events

Upcoming Events

STEP Preparation Sessions

This course will be of interest to any students who will be taking the STEP or AEA exams in the summer term. The course is designed to introduce students to deeper mathematical problem-solving skills over a series of **four twilight workshops** (to be held at the University of Nottingham).

20th April, 4th May, 11th May, 18th May (3-6pm)

Contact Ria Symonds to book your place.

FP3 CPD day for teachers

We invite any teachers who would like to gain some CPD in FP3 topics to book onto this course which will be hosted at the Minster School, Southwell, on the 26th April 2016.

We expect to cover topics such as Vectors, Multi-Variable Calculus, Markov Chains and Differential Geometry.

To book onto this course please use the following form: <http://goo.gl/forms/BU5QQg1HPx>

Magic of Mechanics

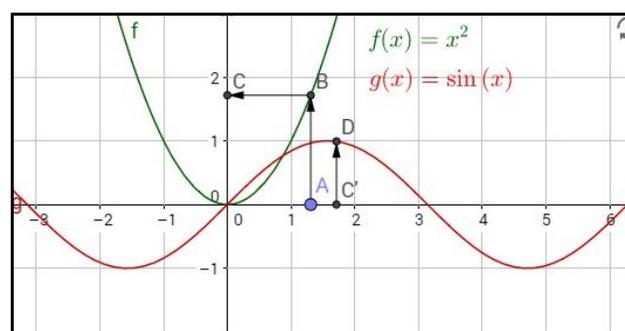
On 17th May, Ted Graham will present a 'Magic of Mechanics' day for Year 10 and 11 students at the University of Lincoln. This is an enrichment event for those who may have an interest in studying Mathematics at A-Level – particularly those who may go into Engineering at a later date.

For more information, please contact Alan Barker

Geogebra Training

There will be a professional development session on Geogebra on 11th April at Bishop Grosseteste University.

For more details contact Alan Barker.



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East Midlands Event Pages

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www.furthermaths.org.uk/EM_enrichment

