



**Spring 2015
East Midlands
Regional
NEWSLETTER**

Promoting Participation

Increasing participation in AS and A level Mathematics and Further Mathematics is a key priority for the FMSP. The Maths Hubs are also focusing on strategies to tackle this issue with support from the FMSP. In 2012-13, of the students taking A levels, 26% took A level Mathematics (36% for boys and 18% for girls). For Further Mathematics the proportions are much lower at 3.8% of the students taking A levels (6.5% for boys and 1.8% for girls).

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The FMSP has a well-deserved reputation for providing high quality professional development and resources to enhance the teaching of mathematics at A level. However, we are aware that the nurturing of student interest and positive attitudes to the learning of mathematics begins at a younger age. Over recent years the FMSP has broadened the range of support it provides for teachers of GCSE Mathematics and increased the number of enrichment activities which promote the continued study of mathematics to AS and A level.

The new Mathematics GCSE includes challenging assessment objectives, placing greater emphasis on reasoning, problem-solving and modelling. There is additional content to stretch students of all abilities and the content of the higher tier should provide students with a strong foundation to progress on to A level study. Exposing KS4 students to more challenging mathematical ideas and techniques helps build the confidence to take Mathematics to A level. This is particularly important in encouraging girls to opt for maths.

Over the past three years, the FMSP has been promoting the development of mathematical problem-solving skills through our CPD courses, competitions and teaching resources.

Free resources for developing problem-solving in KS4 are available on the FMSP website:

www.furthermaths.org.uk/gcse.

In February and March the FMSP has organised over 70 Maths Feasts. These half-day enrichment events are for teams of year 10 students, tackling stimulating and interesting mathematical challenges. The materials from this and previous years' competitions are available on the FMSP website:

www.furthermaths.org.uk/y10tmc-materials.

The FMSP KS4 Extension and Enrichment courses have so far provided professional development for over 900 teachers. These two-day courses combine the development of pedagogy and discussions of key issues. From May 2015 a new programme of one-day CPD courses will focus on the new Higher Tier content of GCSE Mathematics, encouraging participants to look at ways to make links between GCSE and A level Mathematics in order to encourage progression. For more details: www.furthermaths.org.uk/gcse-higher

Kevin Lord, FMSP Programme Leader

Regional Events and Updates

Professional Development

KEY STAGE 4 EXTENSION AND ENRICHMENT AT TUXFORD

Day 1 gave the teachers chance to try out a range of FMSP resources and to discuss some of the big issues in maths teaching including the revision of GCSE. There was time to reflect on classroom practice and to plan to try something different. Before day 2 the teachers trialed some resources and tried some different approaches. During day 2 teachers shared their feedback from their tasks and considered mathematical modelling, proof and problem solving.



EXTENSION AND ENRICHMENT AT LEICESTER

This year Leicestershire hosted another successful Enrichment and Extension CPD course at New College Leicester where there were 14 participants from schools through the EM1 area. Teachers worked in small groups on activities suitable for GCSE A/A* pupils and got hands on experience with the type of problem solving extension material available. The feedback at the second day of the event, from teachers who had chosen and tried an activity from the resources provided on day 1, indicated students had engaged with the activities and teachers were able to see learning taking place.



YEAR 12 PROBLEM SOLVING AND YEAR 13 STEP & AEA

Year 12 Problem solving and Year 13 STEP AEA and MAT preparation are very much in the front of our minds, so in addition to the extensive enrichment programme we are providing for students, we realised that teachers might also benefit from similar training. On July 22nd we ran a course for Supporting your Students in years 12 and 13. The 14 teachers completed some quite rigorous problem solving exercises which they thoroughly enjoyed and took away lots of electronic materials for use back in school.



Regional Events and Updates

Enrichment for Students

FMSP/UKMT SENIOR MATHS CHALLENGE

In Nottingham there were 20 keen school/college teams that took part. The competition was close with several high scoring teams. After battling hard Bilborough College emerged at the winners with Oakham School in second place and St. Mary's RC High School third.

In Derby 15 schools and colleges took part and after a tremendous effort Anthony Gell School emerged as the winners and were awarded the Rolls-Royce cup. Landau Forte got second place and Littleover Community School were third.

This year's UKMT competition was entered by more teams than we had ever had before.



This competition, with its problem solving style questions continues to grow in popularity with both schools and students.



Above: Anthony Gell School who won the UKMT Senior Team Maths Challenge in November.

PROBLEM SOLVING FOR SIXTH FORMERS

This event at Nottingham University was aimed at students and teachers and looks at problem solving skills in sixth form mathematics courses. Around 90 students and teachers attended the event which included four sessions which focussed on different aspects of problem solving. Richard Lissaman introduced the day with The Problem Solving Mind-set, Christine Watson delivered a Masterclass on Proof, another session was on Writing and Communicating Maths and finally students worked alongside their teachers in the Fun Maths Roadshow.

SUSPENSE

Suspense was a great event, attended by 120 students from year 10 who had fun with activities ranging from bridge building to creating 'strong' 3D shapes with Geomags.; An entertaining Keynote speech was given by Professor Tyrer on Bras to Bridges. The students had a University tour with Undergraduate students and saw some of what University might offer.



Other News and Events

Upcoming Events

KEY STAGE 5 PROBLEM SOLVING

A 10 week course has been held at the University of Lincoln for Year 12 students wishing to enhance their problem solving skills. Guest speakers have included a lecturer from the university Mathematics department.

MATHEMATICS ADMISSIONS TEST PREPARATION

This Course was an intensive one-day preparation event for the Mathematics Admissions Test and was delivered by David Hulme, a highly experienced A- Level teacher and presenter of such material.

The course concentrated on testing the *depth of mathematical understanding* rather than a breadth of knowledge.

Around 20 students from local schools and colleges attended.

CPD FOR TEACHERS

25th March University of Nottingham
Practical Activities in Mechanics
(contact Kathryn Brierley)

22nd April The Priory Academy LSST
An Introduction to Geogebra
(contact Alan Barker)

1st July University of Nottingham
Teaching Further Pure Maths 1
(contact Kathryn Brierley)

ENRICHMENT FOR STUDENTS

1st May Franklin College
A/A* Revision for GCSE Students
(contact Alan Barker)

19th June Loughborough University
Rollercoaster
(contact Nicki Timson)

19th June University of Nottingham
Maths at Work
(contact Kathryn Brierley)

2nd July Northampton Univeristy
Maths at Work
(contact Nicki Timson)

8th July University of Lincoln
Maths at Work Conference
(contact Alan Barker)

15th July Franklin College
Key Stage 4 Enrichment Event
(contact Alan Barker)



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East Midlands Events page:

For teachers:
www.furthermaths.org.uk/EM_CPDP

For students:
www.furthermaths.org.uk/EM_enrichment

