

Yorkshire and The Humber Regional Newsletter

AUTUMN 2013

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

- **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. If you have any queries regarding the above please contact 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/iilmf.php>

Yorkshire and The Humber Events and Updates

There are many exciting opportunities in the region which you should consider getting involved in.

CPD

Date	Event	Venue
25 th September	AS Core Mathematics (2)	Leeds Trinity University, Horsforth
2 nd October	KS4 Enrichment & Extension Day 1	The Stables, High Melton
14 th October	Statistics 2	STEM Centre University of York
17 th October	KS4 Enrichment & Extension Day 1 (fully booked)	Leeds University
7 th November	Geogebra	Bradford Design Exchange
15 th January	KS4 Enrichment & Extension Day 2	The Stables, High Melton
28 th January	KS4 Enrichment & Extension Day 2 (fully booked)	Leeds University

Enrichment

Date	Event	Venue
23 rd October	Year 11 Taking Maths Further	The Lawns, University of Hull
6 th November	Oxbridge Interview Preparation	James College, University of York
12 th November	Senior Team Maths Challenge	All Saints School, Sheffield
13 th November	Senior Team Maths Challenge	Fulford School, York
19 th November	Senior Team Maths Challenge	Great Hall, Leeds University
20 th November	Senior Team Maths Challenge	Newland School, Hull
11 th December	KS5 Half Day Enrichment Event	University of Huddersfield
Fortnightly, Wed, all year	Year 10 Enrichment classes	University of Sheffield

STEP/MAT classes are planned throughout the region:

For Leeds STEP sessions weekly on Wednesdays at the University of Leeds please contact Jane West. In Sheffield there are STEP and MAT courses at the University of Sheffield. Please contact Dennis Almeida. At York University there is STEP support for students monthly from January – May. Please contact Jean Smith.

KS5 Network Meetings

Date	Event	Venue
23 th Oct	Learning and teaching strategies at KS5	Aston School, Sheffield
tbc	Resources for C2 and C4	Longcroft School, Beverley

Please book your places for these events as soon as possible as they are likely to be very popular.

For further information, please contact:

Area Coordinator	Region	Email
Jean Smith	<i>East Riding of Yorkshire, City of Kingston upon Hull, North East Lincolnshire, North Lincolnshire, North Yorkshire, York.</i>	jeansmith@furthermaths.org.uk
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Previous Events

Continuing Professional Development

A2 Further Pure

The Shay Stadium, Halifax was the setting for a day's course on topics from A2 Further Pure in March. Fourteen teachers attended from schools around the region and were given teaching hints and resources to use. The topics covered were Complex Numbers, Polar Coordinates, Maclaurin Series, Hyperbolic Functions, Inverse Trig Functions and differential Equations.

KS4 Problem Solving

This new KS4 course was offered free as part of University of Hull's Engagement Week. Twelve teachers took the opportunity to attend this free course. The course covered techniques for teaching problem solving skills to KS4 pupils and had lots of lovely resources for teachers to take away. There was time included for discussion of the GCSE syllabus and question design. This was thought to be a very worthwhile course due to the new emphasis on problem solving for GCSE.

KS4 Extension and Enrichment Day 2

This course was the second day of the two day course and was held at the University of York, The Shay Stadium, the University of Leeds and the University of Hull. Up to twenty teachers attended and were given the chance to feedback to others about certain tasks which were used by them in their schools. They discussed how the tasks were used and with which group of pupils and any changes which were made. There was also the chance to try out modelling problems which could be used either as a starter to a lesson or as a full lesson. The longer problems were found to be quite challenging even for the teachers! Teachers were given the chance to bring along their own resources to share with others and were also given useful websites to look at for more resources. There was a session which allowed time for teachers to embed the resources into their schemes of work.

AS Core Mathematics (1)

Teachers who were new to teaching A level Mathematics, or who wanted to develop their subject knowledge and confidence, attended this course, the first of two days being held at Leeds Trinity University at Horsforth. Topics covered included Algebra, Coordinate Geometry, Differentiation and Curve Sketching. Teachers had the opportunity to work on challenging, engaging resources which helped them to develop their thinking and to appreciate the perspective of students. The second day takes place on 25th September and does not require previous attendance at Day 1.

Enrichment

Pop Maths Quiz

We held another Pop Maths Quiz for teams of year 7 / 8 pupils at the University of Leeds in March and seventeen teams took part. This is very like a pub quiz with the questions read out so it tests listening skills as well as Mathematics. The prize winners were:

- 1 North Halifax Grammar School.
- 2 Heckmondwike Grammar School (team 1).
- 3 Heckmondwike Grammar School (team 2).

After a short break for packed lunches (or lunch bought in the Refectory) we had a talk on 'Taxi Cab Geometry' from Tom Roper. This was fascinating and gave us all a different perspective to Geometry.

Year 8 Enrichment

This enrichment event for Hull 11-16 schools was a joint event with Hull University's PGCE department. Pupils enjoyed the Fun Maths session using resources from Liverpool Mathematical Society offered by the FMSP and also the workshop 'SMARTY8' offered by Dr. Keith Porteous of Hull University. Sixty pupils and their teachers attended.

Other Events

The FMSP has also run small enrichment events within schools or offered advice and resources so that teachers can run these events.

Taking Maths Further!

Leeds

Sixty KS4 school students attended an Enrichment day at the University of Leeds, also in March. They participated in workshops on How to Keep Secrets, Maths of Music, Fun Maths and Möbius Strips. There was a quiz over lunchtime and we all came together at the end for a session on 'From Google to Gaming' by Richard Lissaman.

York

One hundred and twenty students and their teachers attended an Enrichment day at the University of York. They participated in workshops on 'Keeping Secrets', 'Maths of Music', 'Fun Maths', 'Computer Graphics and Decisions' and 'Game Shows and Scams'. There was a lunchtime quiz with prizes for the best 3 entries and a final lecture 'Maths' Greatest Unsolved Puzzles' by Katie Steckles.

Huddersfield

Eighty five students from year 10 arrived at the University of Huddersfield ready for a day of Mathematics. They took part in workshops on Fun Maths, How to keep Secrets, Mathematics of Animal Location and Game Shows and Scams. After the lunchtime quiz Colin Wright gave a talk on Mathematics and Juggling which the students thoroughly enjoyed.

Half Term Challenge and Celebration Evening

Over four hundred students from twenty nine schools entered the Half Term Challenge competition. The students who produced the best results were invited to attend a Celebration Evening with their families to claim their prize. Here they were shown sets of transitive dice and the connection between them and Rock, Paper, Scissors, Lizard, Spock!

Year 12 Mechanics Problem Solving

We held a problem Solving day at the University of Leeds where students completed some work on Friction and then went on to model Felix Baumgartner's record sky dive. Apparently this record has now been beaten by a teddy bear!

Year 10 Team Competition

There were several heats throughout the region and we ran a final at the National Railway Museum with our North East colleagues.

The *Halifax* heat was at Halifax High School and the top two teams were:

- 1 Clitheroe Royal Grammar School
- 2 The Crossley Heath School.
- 3 The Crossley Heath School

The *Hull* heat was at Wyke College and the top three teams were:

- 1 Pockington School
- 2 Caistor Grammar
- 3 Beverley Grammar

The *York* heat was at Bootham School and the top teams were:

- 1 Bootham School
- 2 Fulford School
- 3 Ripon School

The *Leeds* heat was at Lawnswood School and the top 3 teams were:

- 1 Horsforth School
- 2 Tadcaster Grammar
- 3 Grammar School at Leeds

The *Grimsby* heat was at Ormiston Academy and the top three teams were:

- 1 Humberston Academy
- 2 Robert Pattinson Academy Team B
- 3 Robert Pattinson Team A and St James School (joint)

The **winners** of the final were Fulford School with Bootham School second and Clitheroe third. Well done to all the teams who took part and many thanks to all schools who helped us make this a success by hosting the events or by entering teams.

Photos from Year 10 Competition



KS5 Network meetings

Hull and East Riding

The summer term meeting was held on 17th June at Archbishop Sentamu Academy. We were able to discuss how schools were organising their schemes of work to allow for the changes in the A level examinations. Schools also shared ideas for record keeping and testing. Teachers attending the meetings would like these to continue into next year as they find the time discussing ideas with teachers in other schools and the sharing of resources and ideas valuable.

Calderdale

We met on April 24th at The Crossley Heath School and Stella Dudzic shared some ideas for Practical Statistics for S1. It was an interesting session which had us tying bits of string together amongst other activities.

We then met on June 26th at Rastrick High School where Sue De Pomerai led a session on some ways of introducing some Decision topics from D1.

Bradford

A very enthusiastic group met on July 11th at Samuel Lister Academy. We looked at the changes that would need to be made to the schemes of work with the demise of the January Modules and practised some Active Resources for A2 Functions.

Kirklees

The first meeting was on July 18th at Batley Girls' High School. We shared some practical resources for teaching AS Maths. This was a small group because of the time of year but we expect more to join us for the next session which will be arranged soon.

Leeds

Mathematics subject leaders attending the Leeds Subject Leader Development Meeting on 26th June at the City of Leeds School looked at the implications of the changes that they were facing at A level, and the opportunity that this provided to develop their A level provision. The potential for a KS5 network was discussed and fifteen schools indicated that they would be keen to take part in this. A date and venue for the first Leeds KS5 network meeting will be arranged in the very near future.