



# London Further Mathematics Newsletter

**Number 10**  
**Spring Term 2013**

## CPD Days

**Teaching D1 for the 1<sup>st</sup> time**

Friday 14<sup>th</sup> June

Kingston University

**Teaching FP1 for the 1<sup>st</sup> time**

Tuesday 25<sup>th</sup> June

Kingston University

**Teaching FP2 for the 1<sup>st</sup> time**

Tuesday 2<sup>nd</sup> July

UCL

**An Introduction to STEP**

Monday 8<sup>th</sup> July

UCL

**Interesting Ways to teach M1**

Tuesday 9<sup>th</sup> July

Kingston College

**Teaching FP3 for the 1<sup>st</sup> time**

Thursday 11<sup>th</sup> July

Imperial College London

## Revision Days

**Statistics 1/Statistics 2**

Friday 12<sup>th</sup> April

Kingston University

**Mechanics 1/Mechanics 2**

Saturday 4<sup>th</sup> May

Imperial College London

**Core 2**

Saturday 8<sup>th</sup> May

QMUL

**Further Pure 2**

Wednesday 29<sup>th</sup> May

UCL

**Further Pure 3**

Friday 31<sup>st</sup> May

UCL

**Core 4**

Saturday 8<sup>th</sup> June

UCL

See back page for  
contact details

## News from the Network

Throughout the current academic year the FMSP has been active in many areas of work – from tuition, to CPD, to enrichment, with a particular focus on those schools that are yet to offer their students the chance to study Further Mathematics.

### Your new team for London!

With increased funding, our number of Area Coordinators covering England has grown from 20 to 30. For contact details of your local AC, see the back page or <http://www.furthermaths.org.uk>.



*left to right:*

*Alan, Luciano, Francis,*

*Gill, Jenny, Alison*

### Extended Professional Development Courses

The FMSP provides a range of professional development courses, such as for STEP, Further Maths modules and for Key Stage 4. It also has an extensive programme of **online professional development**; for more details see [http://www.furthermaths.org.uk/teacher\\_area/rpd.php](http://www.furthermaths.org.uk/teacher_area/rpd.php).

There are also extended courses that are now taking applications:

**Teaching Further Mathematics** enables participants to study the content of Further Mathematics from a teaching and learning perspective. The course starts in July and applications are now being taken. For more information see [http://www.furthermaths.org.uk/teacher\\_area/tfm.php](http://www.furthermaths.org.uk/teacher_area/tfm.php).

**Teaching Advanced Mathematics** is designed to give teachers the skills and confidence to teach A level Mathematics effectively, focussing on subject knowledge and pedagogy. The Masters-credited course fees are £600 but schools and colleges of participants are entitled to receive £1200 in March 2014, in recognition of the support they provide to enable one of their teachers to take the course. For more information please see [www.mei.org.uk/tam](http://www.mei.org.uk/tam).



# Extension and Enrichment at KS4

In February we ran two days for teachers on how to stretch and challenge A/A\* GCSE students.

Here are some ideas that we discussed:

## GCSE Problem Solving Materials

A series of 20 problems, together with solutions and prompts for students, is available to download at [http://www.furthermaths.org.uk/teacher\\_area/gcseproblemsolving.php](http://www.furthermaths.org.uk/teacher_area/gcseproblemsolving.php):

**Further Mathematics Support**  
Let Maths take you Further...

Students Teachers Resources Regions About Us

### GCSE Problem Solving

**20 Problems for GCSE Students**

This page contains links to materials produced by the Further Mathematics Support Programme that are designed to help teachers develop their students' problem solving abilities.

	Problem 1	Student Prompts	Solution
$27 \times 147$	Problem 2	Student Prompts	Solution
If A is divided by B the result is $2/3$ . If B is divided by C the result is $4/7$ . What is the result if A is divided by C?	Problem 3	Student Prompts	Solution
	Problem 4	Student Prompts	Solution
	Problem 5	Student Prompts	Solution

**Accessing additional materials**

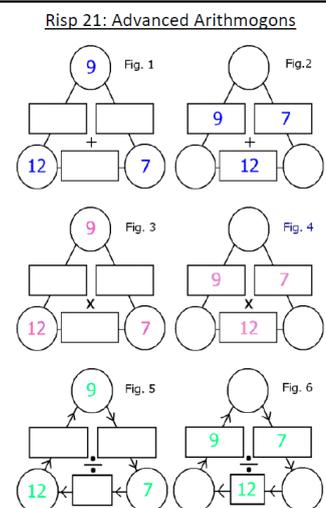
Additional problems and worked solutions are available to all schools who register with the Further Mathematics Support Programme. Registration with the FMSP is free and will also give you access to information about local events which could be useful for your students.

Schools and colleges can submit an online request to register with their local Centre: [Online registration request](#).

## RISPs and NRICH

The activities at <http://www.risps.co.uk/> were written for A level students but many are suitable for use with high-achieving GCSE students. The arithmogons, pictured, are tougher than they first appear!

There is now a curriculum mapping document on the NRICH site at <http://nrich.maths.org/8517> for Key Stages 3 and 4, making it easy to find a stretching problem on a particular topic. Most of these have detailed notes suggesting how they can be integrated into lessons.





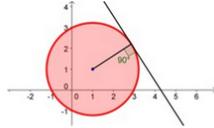
# Extension and Enrichment at KS4

## AQA Level 2 Certificate in Further Mathematics

### AQA Level 2 Further Mathematics

Introduction and overview

- 1 Number and algebra
- 2 Further algebra
- 3 Coordinate geometry
- 4 Geometry I
- 5 Geometry II
- 6 Calculus
- 7 Matrices



#### Geometry I 1: Shapes and angles

Before you start...

- You should know simple angle facts, including the sum of the angles on a straight line is  $180^\circ$ , the sum of the angles round a point is  $360^\circ$ , and the sum of the angles in a triangle is  $180^\circ$ .

- Section overview
- Notes and examples
- Crucial points
- Exercise
- Exercise solutions

Interactive resources

- Angles in parallel and intersecting lines
- Angles in circles

Section test

- Multiple choice section test questions
- Geometry I 1 section test

This qualification is aimed at students who are expected to achieve an A or A\* at GCSE and who are likely to progress to A level Mathematics.

It assesses skills such as algebraic reasoning and problem solving and schools in London which used it last year said their students were much better prepared for AS level Mathematics as a result. For more details, see <http://web.aqa.org.uk/qual/igcse/maths.php>.

### FREE resources!

If you are registered with us then you will have access to the Integral resources at <http://integralmaths.org>. We are pleased to announce that, via sponsorship from AQA, subscription to online resources for AQA Level 2 Certificate in Further Mathematics is free for centres for the calendar year 2013 – this includes up to 200 student passwords.

For information about this, see our FMSP news page at [http://www.furthermaths.org.uk/fm\\_news.php](http://www.furthermaths.org.uk/fm_news.php).

## Other good sources of extension material

### Mathematics Assessment Project

You are probably familiar with the work of Malcolm Swan through the excellent Standards Unit materials. He is currently part of the team working on the MAP and their materials are freely available at <http://map.mathshell.org.uk/materials/index.php>.

The “classroom challenges” are designed to reveal and develop students’ understanding, as well as encouraging problem solving and they include detailed notes for teachers about using these in the classroom.

### London Gifted and Talented

The London G&T materials at <http://www.londongt.org/> are designed to stretch your brightest students and are particularly aimed at KS4.



Algebraic cross-number puzzle

1	2			3	
4			5		
	6				7
8			9		
		10			
11				12	

- |               |  |              |
|---------------|--|--------------|
| <b>Across</b> |  | <b>Down</b>  |
| 1. $x^2$      | 10. $\left(\frac{2x}{3}\right)^2 + 45$ | 1. $x$       |
| 3. $x + y$    | 11. $y^2$                              | 2. $y^2$     |
| 4. $2x$       | 12. $2x + 2y$                          | 3. $2x + 10$ |



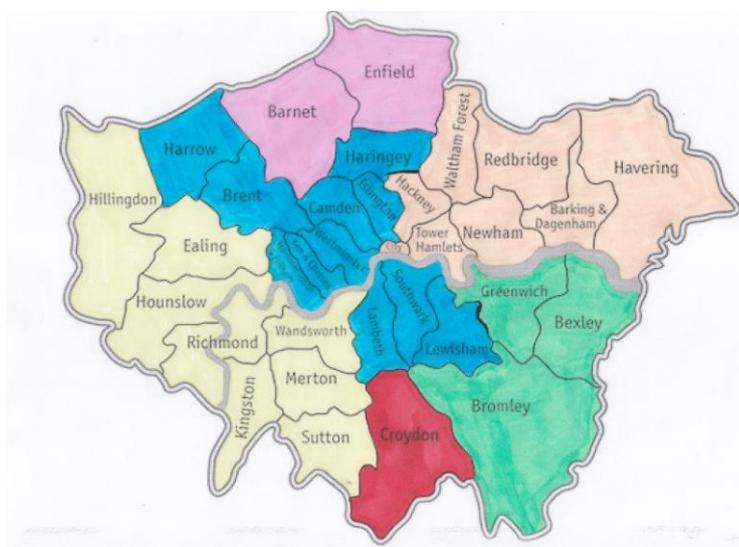
## The London Further Maths Support Programme Team – contact us

All schools and colleges registered with us will continue to receive this newsletter and will be invited to events. If you are not registered then please register online at [www.furthermaths.org.uk/register.php](http://www.furthermaths.org.uk/register.php) – it only takes a couple of minutes (we promise!!!) and it will not only put you on our mailing list but registering will also give you free access to A Level Maths and Further Maths materials at <http://integralmaths.org/>.

If you would like to book places at our **revision days**, please contact [londonevents@furthermaths.org.uk](mailto:londonevents@furthermaths.org.uk).

### Some changes to the London team

Following funding increases there are now six Area Coordinators working in London. If you want any help with A Level Mathematics or Further Mathematics, please contact the Area Coordinator responsible for your borough:



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