

From the Chief Executive**On-line surveys**

At the time of writing we are conducting two on-line surveys, each with a deadline of 16th May. In January, C1 candidate numbers were up by 10% to 15% for all four A Level specifications. We really hope that this represents an increase in student numbers but do not want to be heralding a false dawn. So we are carrying out a survey to help us understand what is actually going on. The address for those who have not already responded is <http://www.mei.org.uk/curriculum/c1numberssurvey.php>, and thank you to those who have done so. This survey is not restricted to those doing the MEI specification; the wider the participation the better. If student numbers are rising, policy makers know about it now rather than in a year and a half's time when A Level numbers are reported. So this survey could be very important.

The other current survey is for those teachers (about 100 of them) who have completed the TAM course. The responses are most encouraging. The response rate is about 60% (and rising), and the comments are all positive, carrying a clear message that doing TAM has brought huge benefits, and not only to the teachers themselves and their students but also to their colleagues. We will be publishing a report on this survey but, meanwhile, anyone who is thinking about TAM should be in no doubt about the value of doing it.

The two current surveys follow an earlier one in which teachers and students gave their views about the on-line resources. Clearly it is now possible to gather information and opinions much more efficiently, and we hope this will result in your having a greater say in important decisions.

Roger Porkess
Chief Executive

Continuing Professional Development**Teaching Advanced Mathematics (TAM) and Teaching Further Mathematics (TFM)**

Applications are now invited for places on our two major CPD courses commencing in the summer. For details please see the MEI website.

We are currently inviting teachers who completed the TAM course in recent years to tell us their thoughts on the course and how it prepared them for teaching at A level. Here are just a few excerpts:

The TAM course has had a positive effect on my teaching at all ability levels, not just post 16. It improved my subject knowledge and updated my teaching skills. I have also regained the enthusiasm for teaching that I had when I started out over a decade ago. It benefited me, my colleagues (as I share resources and ideas with them) and the students I teach.

The TAM course gave me the confidence and preparation I needed to get into A Level teaching and I haven't looked back... I now feel too that I can teach myself a concept/topic and deliver a good lesson on it... After being quite nervous at first, I have loved it and feel a real sense of achievement.

It really helped my standard of teaching and my confidence and was really intellectually stimulating. Thanks!

This course made me feel clever again!

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2-day introductory courses

The programme of 2-day introductory courses in Mechanics, Statistics, Decision Mathematics and FP1 continues and Manchester dates have recently been added.

Introduction to Decision Mathematics: Friday 6 June and Tuesday 15 July

Introduction to Mechanics: Wednesday 7 May and Thursday 12 June

Introduction to Statistics: Monday 16 June and Friday 11 July

If your school or college would like to host an additional course, in these modules or another aspect of A level Mathematics tailored to your needs, then please get in touch.

Bernard Murphy

CPD Programme Leader

MEI Conference 2008 – what’s in it for you?

Feedback from the 2007 conference was overwhelmingly positive, attracting many comments like:

“I haven’t been to an MEI conference for a few years but they are a great way of gathering new inspirational ideas for the classroom and to share with colleagues.”

“Lovely ideas and encouragement, which definitely will help the students.”

“Lots of information well presented. Infectious enthusiasm.”

You can find session handouts for last year’s conference at <http://www.mei.org.uk/cpd/conference.shtml> but it’s not the same as being there. Not only is the conference an opportunity to talk to examiners, pick up lots of teaching ideas, meet other teachers and MEI staff, but it’s fun too.

In addition to sessions similar to those that were popular last year like ‘Big Ideas’ and ‘Six Gems’ (but often based on new material), we will also be running a series of sessions on supporting and engaging weaker AS students.

It’s not all about A Level. There are sessions about GCSE, KS3 and developments in mathematics education generally as well as the opportunity to have a go at some recreational mathematics.

Would you like to be involved in presenting a session? If so, there are two sessions: “Ideas that worked for us” and “Snippets from the History of Mathematics”, in which teachers are invited to talk for 5 to 10 minutes about something that interests them. It could be an idea or activity that you’ve found useful in the classroom or simply something that appeals to you. Please do volunteer; these would be very enjoyable sessions.

Booking forms and programmes have gone out to schools and colleges and are on the MEI website. Get in touch with Bernard or Stella if you have any questions.

We look forward to seeing you there.

Bernard Murphy and Stella Dudzic

Transition GCSE to A Level

In September, the first cohort of students who have taken the two-tier Mathematics GCSE will be starting AS Level. The content of the national core for A Level Mathematics was written on the assumption that students taking A Level would have covered the content of Intermediate Tier GCSE so students who have taken Foundation tier will have some gaps in their knowledge. There are a number of specific statements about Assumed Knowledge in the 2004 MEI A Level specification that relate to content that is not in Foundation Tier of two-tier GCSE; these are listed in the table below.

C1	C1a8 * Be able to solve linear simultaneous equations in two unknowns (by elimination and substitution).
C2	C2t1 * Know how to solve right-angled triangles using trigonometry.
S1	S1p6 * Be aware of the concept of random sampling. S1D7 * Know how to display and interpret data on a box and whisker plot. S1D12 Know how to find quartiles* and interquartile range*.

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Students taking AS Mathematics from a background of Foundation Tier GCSE will need to be taught this content.

There will also be some students who entered Higher Tier and have not covered all the Higher Tier content; they may not be familiar with some of the harder topics and may need support, especially with algebra.

Schools and colleges may wish to consider using Foundations of Advanced Mathematics (FAM) alongside AS Mathematics to support students in revising and developing the skills they need. We are now putting FAM papers on the MEI website; you can use them with your students even if you are not entering them for the FAM examination. We will also put sections of 10 questions from FAM papers in the online resources. Students will be able to enter their answers online and receive full written solutions. You will be able to see how they have done on each section. We hope to have the first sections online by the end of the summer term.

Dr Robert Hunt, Deputy Director of the Isaac Newton Institute for Mathematical Sciences and a Fellow of Christ's College, University of Cambridge, says this about FAM:

“As well as containing lots of fascinating and fun maths, the Foundations of Advanced Mathematics exam is great for helping students to brush up their mathematical skills and deepen their understanding before going on to higher level exams. It's especially useful for students who want to go on to study subjects that require strong numeracy skills, for instance biology, engineering, economics or business studies.”

Stella Dudzic
Programme Leader (Curriculum)

Hymn to Polyhedra

(to a reasonably well-known Welsh tune)

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| <p>1. I would like a great icosahedron,
And a large truncated cube.
Give to me a snub dodecahedron,
Or a great stellated one.
Polyhedra, polyhedra,
V plus F is E plus 2 (E plus 2),
V plus F is E plus 2.</p> <p>2. There are only five Platonic solids,
Regular as Euclid saw.
Thanks to Kepler and to Poincot,
We have now an extra four.
Polyhedra, polyhedra,
V plus F is E plus 2 (E plus 2),
V plus F is E plus 2.</p> | <p>3. Compounds too abound in number,
Heptahedra come to stay.
Uniform and some stellated,
All are worthy of display.
Polyhedra, polyhedra,
V plus F is E plus 2 (E plus 2),
V plus F is E plus 2.</p> <p style="text-align: right;"><i>Godfrey Jackson, October 1997</i></p> |
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This was performed for only the second time at the joint ATM/MA conference; the words are reproduced here by kind permission of the author, a retired teacher.

Godfrey Jackson says *“Many, many years ago I came across a copy of "Polyhedron Models" by Magnus Wenninger. I was of course familiar with Cundy & Rollett. I have always been fascinated by polyhedra and, with Wenninger's book available, resolved to make a decent collection. Making the Platonics, Archimedean and Kepler-Poincot models was relatively easy, though time-consuming. When I started on the uniform polyhedra, I soon realised that the task would prove more difficult than I envisaged. Though I was pleased with the models I did make, particularly the great icosahedron and the compound of five cubes in a dodecahedron, I eventually gave up, and donated the collection to the MGS Maths Department, where they remain on display to this day. In October 1997, I composed the "Hymn to Polyhedra" as a response to some trivial discussion in the Maths Staff Room.”*

The Further Mathematics Network

Increasing demand for Further Mathematics from universities

The increases in Further Mathematics entries are now starting to influence universities' attitudes towards Further Mathematics. Many universities are now responding positively to the increased supply of students with Further Mathematics qualifications, recognising that these students are better prepared to cope with the mathematical content of degrees in maths-rich subjects. Positive statements about Further Mathematics in university prospectuses increase demand for Further Mathematics among students and so fuel further increases in Further Mathematics entries. See <http://www.fmnetwork.org.uk/universities.php> for details of the growing list of universities that are actively encouraging students to study Further Mathematics. Please ensure that your school/college is meeting this demand by offering AS/A level Further Mathematics, either directly, or through your local FMN Centre.

AS FM in year 13

If you don't already do so, please consider offering AS FM to students starting year 13. This can really boost students' UCAS applications, improve their standard A level Mathematics grade and improve their preparation for maths-rich degree courses.

CPD

The MEI certificated professional development programme for teachers of A level Mathematics, Teaching Further Mathematics (TFM), is currently taking applications.

For further details see: www.mei.org.uk/cpd/tfm.shtml

The FM Network is now offering a range of PD courses using an online, interactive programme called Elluminate. Elluminate allows a tutor and delegates to communicate live on-line using audio, handwriting on a shared virtual whiteboard and instant messaging via the internet. Elluminate is a well established web-based package which is easy to use and has features that make it ideal for live mathematics tutoring.

Groups of around six teachers work with a tutor for roughly ten hours focussing on the mathematical content of an AS/A level Mathematics/Further Mathematics module.

In the Autumn term there will be a range of remote PD courses. For more information about Elluminate and the courses that will be available see: www.fmnetwork.org.uk/cpd.php or contact Sue de Pomerai.

New FMN newsletter

The latest FMN Newsletter has just been published. Please download it via www.fmnetwork.org.uk.

Please don't hesitate to contact us for support and/or advice on any issues related to Further Mathematics.

Charlie Stripp

Further Mathematics Network Programme Leader

A Level Mathematics as a discriminator for non-mathematical degrees

We know that some universities use A Level Mathematics when making offers for subjects such as Law or History. If you have specific examples of A Level Mathematics being an advantage for students who want to study non – mathematical degrees, please email me – we are trying to get a fuller picture.

Stella Dudzic

Programme Leader (Curriculum)

C1 Personal Tutor

Until the end of June, Hodder Education are offering C1 Personal Tutor at a discounted price of £100 + VAT (normal price £315 + VAT). For details of C1 Personal Tutor see http://www.hoddereducation.co.uk/Title/9780340913222/MEI_AS_Pure_Mathematics_Personal_Tutor_C1.htm

Email the MEI office if you are interested in this offer.

Stella Dudzic