

From the Chief Executive**A Level**

At the time of the last newsletter, QCDA were holding focus groups to discuss a new and confidential model for AS and A Level Mathematics and Further Mathematics. Once the teachers who attended these meetings thought about the implications of the proposal they were being presented with, they firmly rejected it. The same happened at the Welsh meeting but in that case DCELLS gave out full information in advance. Following this response, the expected wider consultation never took place.

Since then QCDA have come up with two further models. The most recent of these is beguiling in that it would involve only limited change. However, there are good reasons for rejecting this too; it would be an expensive way of doing the job less well. It is possible that there will be an online consultation and, if so, we will be publish a commentary on it. Again, it is a case of "Watch this space".

Taskforce

You will probably have heard that Michael Gove asked Carol Vorderman for advice on what should be done to improve mathematics if the general election produces a change of government. Carol set up a "Taskforce" of four people, together with two researchers and herself and I am one of the four. This is proving to be a very serious piece of work and I am confident that our report and recommendations will provide an important and well thought out routemap for mathematics, independent of who ends up in power.

Carol will be a guest lecturer at this year's MEI conference and so I do hope you will be able to come, hear about the report and contribute to discussions about it.

Roger Porkess

MEI Conference 2010

If you've been to an MEI conference before, you will know that it is enjoyable and useful for your professional development and that you will get lots of ideas that you can use in your teaching. The 2010 conference is at Reading 1-3 July. If all has gone according to plan with the technology, the programme should be online at www.mei.org.uk/2010 along with a booking form, which you can download and fill in.

This year's conference is bigger than ever (we think it's going to be better too). Here are some of the things we have included:

- Ideas and resources for teaching
- Practical activities for applied mathematics
- Ways of engaging weaker students
- Teaching and learning in the new Mathematics GCSEs from September 2010
- Sessions from examiners, including some from other exam boards
- Sessions where you can see some interesting mathematics that you can share with your students
- Sessions where you can enjoy doing some mathematics
- How to give year 11 a taste of A Level

And lots more. We hope to see you there.

Stella Dudzic Programme Leader (Curriculum)

Bernard Murphy Programme Leader (CPD)

ABC Maths

As mentioned in the last newsletter, MEI, along with London South Bank University, are working with colleagues from the University of Ludwigsburg in Germany and the University of Salzburg in Austria on a Comenius-funded project 'Awareness of Big Ideas in the Mathematics Classroom'. The partnership evolved from discussions that took place at the ICME conference in Mexico in 2008.

Whilst building on the successes of the 'Teaching Advanced Mathematics' programme, the collaboration will also influence the TAM course at LSBU in the coming year. The eight TAM university-based study days will each have an emphasis on one of the project's agreed Big Ideas which cover both mathematical and pedagogical concepts. These include:

- Multiple representations
- Inverse processes
- Extending the domain
- Awareness of multiple strategies
- Exploring and extending students' understanding through questioning
- Using misconceptions and errors for learning
- Limits and continuity
- Proof and argumentation

The second week-long meeting of all European partners will take place in London in March to further develop our vision for the project. Details will be given at <http://www.artaround.at/abcmath/>

The project runs until the summer of 2011.

Stop Press

The TAM course is now taking applications for the courses starting this summer. See <http://www.mei.org.uk/tam> to register interest.

A mixture of courses in applied mathematics is now planned. These include 2-day face-to-face courses and 1-day courses followed by support using the on-line classroom. Please remember that it is always possible to arrange for one of us to come to your school or college to provide bespoke CPD courses. Details of all our CPD can be found at <http://www.mei.org.uk/cpd>.

Bernard Murphy

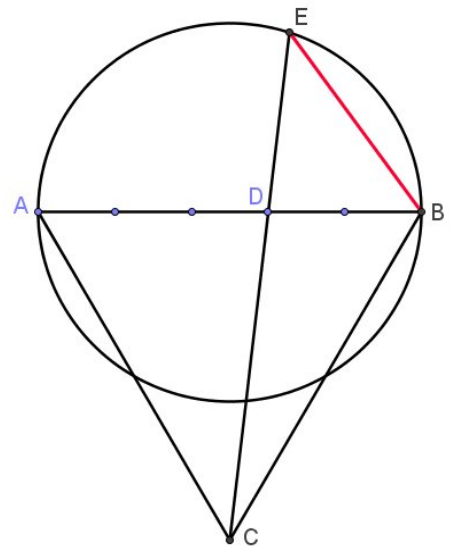
Maths Item of the Month

Have you seen this on our home page www.mei.org.uk?

Here is a technical drawing method for constructing a 'regular' polygon with n sides.

Draw an equilateral triangle ABC and a circle with diameter AB . Use the standard construction to find point D on AB such that $BD:BA$ is $2:n$. (The case $n=5$ is shown) Join C to D and extend this line to cut the circumference of the circle at E . BE is one side of the n -sided 'regular' polygon inscribed in the circle. The other sides can be swept out using compasses set at radius BE .

- Show that the method is not exact
- Explain why it is a good approximation for small values of n .
- Investigate the method for large values of n .



Industry

On Friday 5 February I attended an exciting event at Thales UK in Bristol. Three people from Thales explained how they use mathematics as part of their jobs. Five local teachers also took part in the event.

MEI is working with West of England Education Business Partnership (EBP) and the local STEMPOINT, Graphic Science, to explore some of the mathematics that is used in the workplace. STEM ambassadors from Thales hosted the event, and explained in detail how they use mathematics in part of their work.

We heard about ways in which a long-term project can have its costs significantly influenced by compound inflation effects, about the logistical and mechanical decisions involved in selecting engines for an aircraft carrier, and about techniques used to measure fuel reserves in a ship where the fuel is stored in multiple tanks of various irregular shapes.

For MEI, the purpose is to learn about contexts in the workplace in which significant mathematics is used. I am hoping to use the insights gained from the work to enhance MEI's online learning resources.

Richard Browne Programme Leader (Industry)

The Further Mathematics Support Programme

Senior Team Mathematics Challenge

The big event since the last newsletter has been the final of the FMSP/UKMT Senior Team Mathematics Challenge (STMC), held at the Camden Centre in London. 70 teams took part in the final, which was the culmination of a national competition involving over 900 schools and colleges in heats across the country. The English heats are organised mainly by the FMSP and this year's competition involved 51 heats across the nation. The STMC is a competition for teams of four students from years 11, 12 and 13, with a maximum of 2 year 13 students. This is only the third year of the competition, but it has already grown from fewer than 300 teams to 900. Next year we hope to reach 1000. The final was a tremendous occasion, with 280 young mathematicians enthusiastically engaged in solving mathematics problems for over 3 hours.

Professor Marcus du Sautoy was there to present the prizes.

Please see <http://www.furthermaths.org.uk/stmchallenge.php> for details, including questions and solutions from previous years; these are an excellent enrichment resource for mathematically able students.

If your school or college didn't enter this academic year, do consider taking part next year. Feedback from students and teachers at the heats and the final was very positive. The events have an inspiring atmosphere and really engage the students with problem solving.

Enrichment at Key Stage 4

With funding from the Clothworkers' Foundation, the FMSP is running a series of enrichment events across England, aimed at Key stage 4 students. Most of the events will take place in June/July and September. See the FMSP website for details.

CPD

The FMSP provides CPD for AS/A Level Maths/Further Maths, or for mathematics within the level 3 Engineering diploma. An innovative part of our provision is the Live Online Professional Development options, which you can attend from your desk at home! These courses have received excellent feedback from teachers. There is also funding available from the NCETM for teacher support networks and teacher projects aimed at Further Mathematics teachers. Please see the FMSP website for details, or contact Sue de Pomerai. (suedepomerai@furthermaths.org.uk)

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Rarely Cover

There is concern that the 'rarely cover' policy, introduced into schools this year, is having a negative effect on the ability of teachers to engage in CPD, or to take students out of school for enrichment activities. The DCSF has asked for examples of where this has happened, to help them to understand the scale of the problem. If you have been affected by this, please let me know.

Charlie Stripp (charlie.stripp@mei.org.uk)

Programme Leader (The Further Mathematics Support Programme) www.furthermaths.org.uk

Reduced rate subscription to the online resources

We are offering reduced-rate subscriptions to the online resources website for the second half of this academic year. These subscriptions will run until 30th September 2010 and offer a saving of 40% on the full annual subscription.

The basic rate for access to the online resources is reduced to £144.

This includes:

- All A Level Mathematics and Further Mathematics modules
- FSMQ Additional Mathematics
- Usernames for all teachers, with access to the Teachers' Resources for each module
- The student record system
- 10 student usernames
- MEI membership

The price for centres needing more student usernames is as follows:

Student usernames	Annual cost (£)	Reduced rate (£)
*10	240	144
20	260	156
35	290	174
50	320	192
75	390	234
100	450	270
125	510	306
150	570	342
175	630	378
200	690	414

*Basic subscription including MEI membership.

Centres with more than 200 students can purchase additional student usernames at a cost of £36 per batch of 50 students usernames. e.g. Access for up to 350 students would cost £522.

MEI Online Resources Survey

With the redevelopment of the MEI Online Resources site we would like to invite users to complete a short survey to feedback their thoughts on the site. Please see the announcement at: www.mei.org.uk/orsurvey

Stephen Lee Web Manager