

**O) The Root of the Problem: A Brief History of Equation Solving**

*Alison Ramage*

The classical problem of solving a polynomial equation of degree  $n$  has substantially influenced the development of mathematics throughout the centuries and still has several important applications in the present day.

**Q) The unusual UKMT challenges**

*Bill Richardson*

UKMT makes use of Kangaroo question papers in a follow-on round for IMC candidates. This is a chance to engage with some questions and discuss the papers from March 2009.

**R) More collaborative tasks**

*Penny Macleod, Lynne Wilson and Fiona Harcourt*

We will demonstrate a selection of tasks for different ages, stages and abilities. There will be an opportunity to see and try a number of tasks, with suggestions of how they might easily be run and incorporated into the classroom practice to enhance the curriculum by engaging pupils and encouraging understanding.

**S) Active approaches to teaching and learning**

*Viv Brown and Fiona Allan (NANAMIC)*

This session will offer participants the opportunity to experience some of the activities from the NCEETM's 'Improving Learning in Mathematics', a programme designed to transform teaching, training and learning. This is an extensive resource, which is full of strategies, approaches and materials to engage and challenge learners. The activities encourage learners to discuss and explain their ideas and to work collaboratively to share their results.

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For your record

Your choices	1	2	3	4	5	6
Activity						

**MA Bookstall**

A stall will be available for delegates to see the wide range of material which is produced. It will be an opportunity to buy at special conference rates and also for non-members to join.

**Come prepared!**

Preview at: <http://www.m-a.org.uk/resources/publications/>

**The Mathematical Association  
Secondary Education Mathematics  
Conference**

**Saturday 19th September 2009**  
Pathfoot Building, Stirling University



**PROGRAMME**

09:00-09:30	Registration and Coffee
09:40-10:20	Keynote Address: <b>Adam McBride</b>
10:30-11:20	Talks/Workshops/Discussion Groups 1
11:25-12:15	Talks/Workshops/Discussion Groups 2
12:15-13:15	Lunch
13:20-14:10	Talks/Workshops/Discussion Groups 3
14:15-15:05	Talks/Workshops/Discussion Groups 4
15:15	Depart: Tea and Coffee available

**IMPORTANT INFORMATION FOR APPLICANTS**

*No invoices will be sent – so please do not ask*

Receipt of the conference fee will book your place, and confirmation will be sent.

Fees are non-returnable.

Cheques should be made payable to **The Mathematical Association** and sent to:-

Marcia Murray (2009 Stirling Conference)  
The Mathematical Association  
259 London Road  
Leicester LE2 3BE  
Tel 0116 2210013

An application form is enclosed.

**PROGRAMME**

**OPENING SESSION**

**Keynote Speaker:**  
**Adam McBride**  
*(The University of Strathclyde)*

**Mathematical Challenges**

As teachers of Mathematics we constantly face a wide variety of challenges. For example, how do we

- arouse and maintain the interest of students in Mathematics
- develop determination and perseverance in students so that they are willing
- and able to tackle hard problems ( which have known solutions ! )
- enable the most gifted students to realise their full potential ?

I shall offer a few thoughts based on my own experiences over many years.

## Workshops/Talks/Discussion Groups

### A) Curriculum for Excellence

This session will address issues relating to the Curriculum for Excellence.  
*A member of HMIE*

### B) Using Cooperative Learning in the Secondary School Mathematics Classroom

*Ian Cassels, Monica Kinson*  
In this workshop participants will have the opportunity to experience some ideas for teaching mathematics using cooperative learning techniques. The workshop will select ideas from a range of Cooperative Learning activities and demonstrate how some of these ideas may be used as starters, part of a main lesson and as a plenary in maths classes.

### C) Curriculum for Excellence – an update

*The maths-numeracy team at LTS*  
What are the implications for maths teachers and classroom practice?  
What are the implications for my classroom practice?  
Where will I find emerging practice to build upon?

### D) Games are more than fillers

*Lynne McClure*  
Come and share some games which promote mathematical thinking whilst consolidating mathematical knowledge and skills. Appropriate for all S1-2 pupils including the highly able.

### E) NRICHing Mathematics – Enrich your mathematics curriculum through Problem Solving in S1

*Liz Woodham*  
During this practical workshop, participants will be engaging with activities taken from the NRICH website ([www.nrICH.maths.org.uk](http://www.nrICH.maths.org.uk)), which are designed to enrich mathematical experience and promote mathematical thinking. By considering the nature of mathematical problem solving and teacher strategies that support it, we will discuss ways of developing the problem-solving skills of *all* pupils.

### F) Supporting students towards success in their Standard Grade Examinations

*Mary Kay*  
The talk will include: areas of the course which have become particularly successful, together with methods which have supported these successes; less successful areas, together with suggestions for improvement; reference will be made to the last diet of exams and the ongoing difficulties facing students.

### G) Increasing proof and rigour in Higher Mathematics

*Clive Chambers and Jim Reid*  
This session will provide an opportunity to listen to the thoughts of two senior members of the Higher Maths team and engage in discussions of the way ahead.

### H) Higher Still notes: Resources for Higher Maths

*George Kinnear, Steven O'Hagan*  
An overview of the free Maths resources available from [www.HSN.uk.net](http://www.HSN.uk.net), plus information about teaching resources from HSN extra.

### I) Improving attainment at Intermediate 2 level

*Brian Logan & Pam Ruddock*  
This session will cover aspects of content and marking, feedback on common errors in recent examinations with a view to informing teaching, and advice on submitting successful appeals.

### J) Advanced higher – Raising attainment

*Christine Curran*  
Ideas to motivate and raise attainment in Advanced Higher, including the organisation of order of teaching topics – little changes can make a big difference.

### K) Advanced Higher Mathematics 2009

*Bill Richardson*  
How was AH maths for you in 2009? A chance to discuss the paper and consider where marks were gained and where marks were lost.

### L) Prickly Problems, Smooth Solutions

*Simon Johnson*  
Many mathematical problems provide the ideal 'desert island' diversion. Here is an opportunity to consider a range of problems with particularly appealing solutions, and the chance to consider what lies at the heart of good mathematical thinking.

### M) Using Promethean to enhance the teaching of mathematics

*Paul Smith*  
Teaching maths is not an easy task at the best of times; with so many learners holding negative views on the subject, differing abilities, learning styles and levels of motivation – engaging students can be a real challenge.  
Interactive technologies are transforming the way that maths is being taught, this presentation aims to show you how simple it is to use an interactive whiteboard, and how handheld Learner Response Devices can dramatically improve student participation in an everyday maths lesson.

### N) NUMBERS

*Ian Anderson*  
At school we meet all sorts of numbers – integers, fractions (rationals), irrationals, decimals, factors, primes, zero, pi, etc... In this session we will look at what's important and interesting about them, along with some historical remarks and a puzzle or two.

*Continued overleaf*