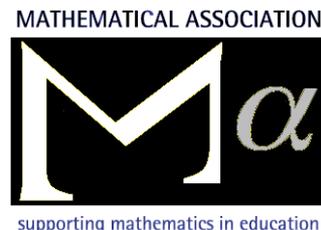


The Mathematical Association Secondary Education Mathematics Conference

Saturday 3rd September 2016
Pathfoot Building, Stirling University



PROGRAMME

09:00-09:30	Registration and Coffee
09:40-10:20	Keynote Address: Jennie Golding
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
15:10	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 by email (email address required). Fees are non-returnable.

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

Marcia Murray (2016 Stirling Conference)
The Mathematical Association
259 London Road
Leicester LE2 3BE
Tel 0116 2210013

An application form is enclosed.

PROGRAMME

OPENING SESSION

Keynote Speaker:

Dr Jennie Golding
MA President 2016-17

Learning from young mathematicians

One of the great joys of teaching mathematics is what one can learn from those one 'teaches'. Join me in exploring some intriguing, humbling and sometimes wacky lessons from my own students. What are the wider implications for us as teachers? How and why should we develop and nurture classrooms which are genuine mathematical communities for both students and teachers?

Jennie is, according to friends, a 'maths ed junkie'. Most of her career has been spent in secondary classrooms in England, but she has taught young people age 3 upwards, and worked with teachers in four continents, producing teacher support materials for a variety of school contexts. She recently moved to Higher Education, where she works in teacher initial and continuing education in greater London and several developing countries, does and supervises education research, and continues working to influence mathematics education policy.

For programme updates visit: www.m-a.org.uk

Workshops/Talks/Discussion Groups

A) SSLN (Numeracy) 2015 Results and resources available from Education Scotland

Lorna Harvey

This seminar will provide details of the results of the SSLN (Numeracy) 2015, highlighting the key messages from P4, P7 and S2 results. Analysis will focus on S2 results over all surveys (2011, 2013 and 2015.) Online resources available from Education Scotland and the National Mathematics Development Group will also be highlighted- this includes recently published support for National Qualifications- a suite of support created by teachers from across Scotland in response to results from the 2015 exams.

B) Algebraic reasoning: what does it sound like?

Helen Martin and Andrew Gallacher

Alongside multiplicative reasoning, another pivotal hurdle to pupils participating in mathematics post-16 is that of algebraic reasoning. One of the themes that emerges from the project is the predominance of one particular approach ie algebra as generalised arithmetic with a focus on manipulating symbolic notation. So what other approaches are there and is it possible to blend these approaches? This session is a chance to watch and listen to some 11 - 13 year olds making sense of various algebraic structure problems. What do we recognise as 'algebraic reasoning'?

C) Encouraging Creativity in Secondary Mathematics Classrooms

Alison Kiddle

The NRICH team have developed a new website, *Wild Maths*, which focuses on creativity. In this workshop, Alison will share some problems from *Wild Maths* and NRICH, and discuss how they can be used in the classroom to engage students and develop their mathematical thinking skills.

D) Taxi-cab geometry

Tom Roper

We measure distances in our world by virtue of the theorem of Pythagoras. The theorem provides what we call a metric. But if we change the way we measure, if we change the metric, do we change the appearance of things? This workshop explores the way the world looks using the taxi-cab metric. All that is required is some squared paper (provided) and a pencil. The mathematics involved can be tackled at several levels, the workshop has been given to groups ranging from year 10's in English schools to an OU summer school, and provides ample opportunity for further exploration.

E) Developing Partnerships for Professional Learning in Mathematics.

Andrew Gallacher

I am working with a number of Local Authorities that our student teachers are placed with, looking at their initiatives for early numeracy, and developing online CPD materials for students to work on. As well as developing a national picture of the different projects it will also ensure that students are conversant in the conceptual understanding and mathematical development of pupils. It will also help students in school placement and then the authorities can use the materials for their own NQTs. The project is unfunded and its growing in scale but manageable.

F) Using SOLAR's E-Assessments for Lifeskills Mathematics & Numeracy Units

Monica Kirson

This workshop will highlight 'the good, the bad and the ugly' in using E-Assessments to monitor and track progress within the Lifeskills Mathematics courses and in the Numeracy Units. This workshop will focus on how SOLAR Assessments were used with 4th Year National 4 Lifeskills Mathematics courses, and also, to complete Numeracy National 5 Unit Assessments with 3rd Year classes who are aspiring to National 5 Mathematics.

G) Creating Rich Tasks (part II)

Helen Martin

During this session we will be exploring some more examples of redesigning common questions to create rich tasks involving multiple representations, learner generated examples and solution methods based on the work of Susan Wall, Malcolm Swan and Anne Watson.

H) Further Rigour and Recreation

Clive Chambers

Another new collection of items which you can use in the classroom - including Conway's Game of Life, p in the Pyramids and Continued Fractions, biLLies and further Euler extravagancies. As always there will be some rigour but not too much to hinder the enjoyment of just doing mathematics.

I) Using the Singapore Bar in High Schools

Andrew Jeffrey

Having paid two recent visits to Singapore to sort the hype from the good stuff, Andrew will demonstrate how their students are taught to bar model to solve increasingly complex problems, such as ratio, percentage change, simultaneous equations and more. This will be an active participatory session and not a lecture; come prepared to model.

Please note: for Health and Safety reasons this session will not take place in the actual bar, sorry.

J) Fractions that ADD to 1

George Connell

The basis of this workshop is creating symmetric patterns, using triangles in a hexagon. By employing different colours we can create a myriad of patterns which support an introduction to fractions that add to 1.

K) An Approximate Countdown

Chris Smith

My almost-integer countdown will provide a collection of 10 geeky Mathematical items (including algorithms, resources, puzzles, experiments, tricks, factoids and events).

Leave with ideas, renewed enthusiasm and a smile to take back to your own classroom.

Note: Some of the content covered in this workshop will overlap with my presentation from the SMC Conference in March 2016.

L) Geometrical Gems

Rachael Horsman

During the session we'll work through some lovely problems in geometry that lend themselves well to the late primary and secondary classroom. Ways to introduce and develop geometrical thinking and put knowledge into use. Lots of practical ideas, ways to engage your imagination, historical and cultural links and joining parts of the curriculum you may not have joined before.

M) 2016 AH Maths: Spot the Difference

Phil Moon

Phil Moon is the Principal Assessor for AH maths and will share his experience of the new, CfE, qualification. Some hints for those delivering the course and further insight into the creation, marking and QA processes at this level.

Continued overleaf

N) A hands-on approach to higher

Stuart Welsh and Douglas MacGregor

In this session we will share the methods and resources we are developing as we attempt to better involve learners and to bring the Higher course to life. We will explain how we are using technology, investigative approaches, group work and context based discovery to uncover the rich and interconnected nature of many of the topics in the course. There will be plenty of hands-on opportunities and all of the resources will be available to take away.

O) More Ideas for Teaching Area

Chris Pritchard

Following the recent publication of my book on the subject, *A Square Peg in a Round Hole*, the search for further ideas on teaching area goes on. Learn where the quest has reached and tackle some original problems for N4 to Higher. The book is published by the MA and there will be copies available to purchase.

P) Squares

Adam McBride

A selection of things related to squares in one way or another, presented by an old square.

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For your record

Your choices	1	2	3	4	5	6
Workshop/Talks/Discussion Group						

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/jsp/index.jsp?lnk=910>