

# Fluency, Reasoning & Problem Solving in the Secondary Mathematics Curriculum

Wednesday 1st November 2017

Stamford Court, Oadby Campus, Manor Road, Leicester LE2 2LH

**Registration from 8.50am: Conference Starts at 9:15am: Conference closes at 3.45pm**

This conference is designed for mathematics teachers, subject leaders and other interested colleagues from Secondary schools across the East Midlands South Maths Hub. Delegates will be offered a choice of 2 breakout sessions on topics related to the conference theme, and there will be key note inputs on the following:

## Mastery Myth Busting and the Role of Reasoning & Problem Solving

— Dr Helen Drury —

Dr Helen Drury is a pioneer of the Mastery Approach. She founded 'Mathematics Mastery' in 2011 and is executive director of this partnership programme. She is author of 'Mastering mathematics' published by OUP.

Previously she was Director of Mathematics for Ark Schools where she led and developed the introduction of the mastery curriculum, which later became the Mathematics Mastery Programme. She was one of four members of the drafting group for the 2014 national curriculum for mathematics.

Helen taught maths and studied mathematics education in diverse inner city comprehensives. She carried out research with Oxford University and the Open University. She has a PhD in mathematics education.

## Why is Problem Solving and Mathematical Reasoning Important?

— Dr Dave Hewitt —

Dr Dave Hewitt is Director of Mathematics PGCE at Loughborough University. Following 11 years of teaching, including 5 years as head of faculty, he became a lecturer at Birmingham University, where he was senior lecturer in mathematics education for 24 years. In 2014 he moved to Loughborough to set up the new PGCE mathematics course. He also works on the MSc in Education and has PhD students.

His areas of research include the design and use of technology in teaching and learning mathematics, and the teaching and learning of number and algebra in schools.

## The Importance of Fluency and Reasoning as the Twin Bedrocks of Problem Solving

— Andrew Jeffrey —

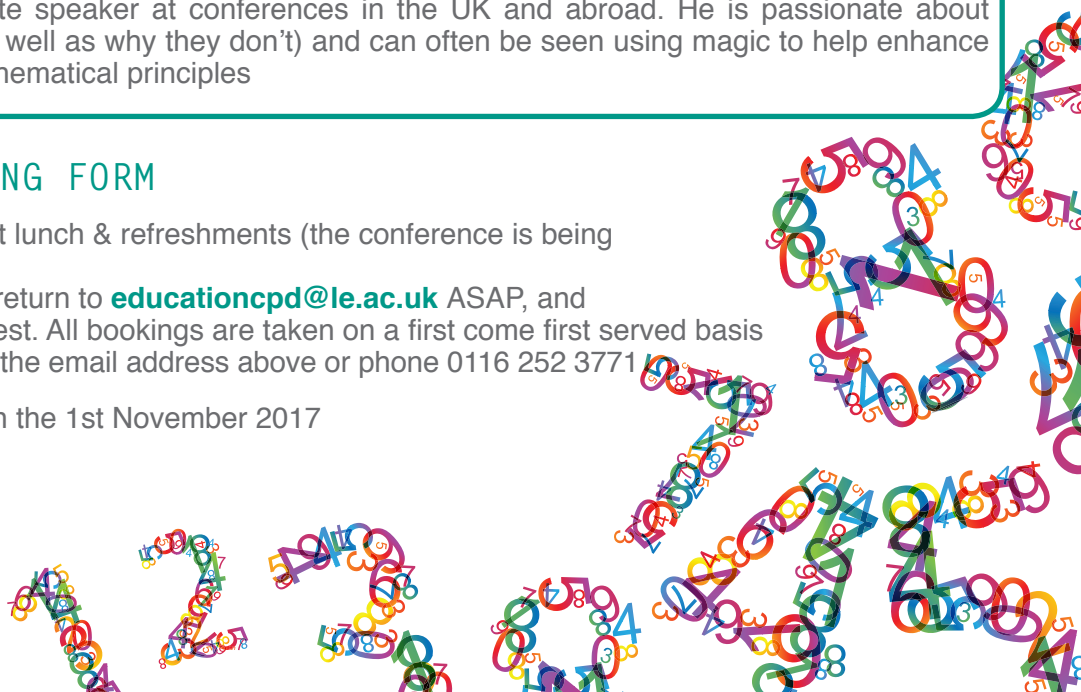
Andrew Jeffrey was a teacher for 20 years and set up Magic Message Ltd in 2007. Andrew now travels the world offering consultancy services to schools seeking to improve and enrich the teaching and learning of mathematics. He is the author of several books for teachers, including the best-selling 'Always, Sometimes, Never', and is a regular keynote speaker at conferences in the UK and abroad. He is passionate about children and how they learn (as well as why they don't) and can often be seen using magic to help enhance children's understanding of mathematical principles

## DELEGATE RATE/BOOKING FORM

£40 per delegate, including buffet lunch & refreshments (the conference is being subsidised by the maths hub).

Booking form attached – please return to [educationcpd@le.ac.uk](mailto:educationcpd@le.ac.uk) ASAP, and by Friday 13th October at the latest. All bookings are taken on a first come first served basis. For any enquiries please contact the email address above or phone 0116 252 3771.

We look forward to seeing you on the 1st November 2017



# Fluency, Reasoning & Problem Solving in the Secondary Mathematics Curriculum

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Schools are welcome to book for up to two delegates to attend, please complete a separate form for each delegate. Further details of breakout/workshop sessions will follow along with a full programme for the day.

## Delegate Details:

Title:  Forename:  Surname:

Email Address:  Contact Number:

## School Details:

School Name:

Address:

Office/Bursar Email:  Phone Number

Special Requirements - Please list any special requirements including dietary

## Terms & Conditions

- Please apply ASAP but by Friday 13th October 2017 at the latest. All bookings taken on a first come first served basis.
- For applications after this date call 0116 2523771 to confirm availability.
- All applications received will be acknowledged by email. Delegates will be asked to select workshop choices at a later date and will be sent a programme for the day.
- The delegate rate is £40
- Invoices will be issued ahead of the event day by email, and payment should be made on receipt of invoice.
- Cancellations or non-attendance will result in a full charge.

Please send your completed form via email to:  
[educationcpd@le.ac.uk](mailto:educationcpd@le.ac.uk)

If you have any questions please call 0116 2523771

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8.50-9.15am	Arrival and registration
9.15-9.25am	Introduction by Chris Shore
9.25-10.25am	<b>Keynote 1: Dr Helen Drury</b> Mastery Myth Busting and the Role of Reasoning & Problem Solving
10.25-10.40am	Refreshments
10.40-11.30am	Break out session/workshop 1
11.40-12.40pm	<b>Keynote 2: Dr Dave Hewitt</b> Why is Problem Solving and Mathematical Reasoning Important?
12.40-1.30pm	Lunch*
1.30-2.20pm	Break out session/workshop 2
2.30-3.30pm	<b>Keynote 3: Andrew Jeffrey</b> The Importance of Fluency and Reasoning as the Twin Bedrocks of Problem Solving
3.30-3.45pm	Plenary
3.45pm	Conference closes
3.45-4.00pm	Refreshments, networking and viewing exhibitors' displays

\*a buffet lunch will be provided for all delegates

## BREAKOUT SESSIONS/WORKSHOPS

On receipt of your application to attend the conference, you will be asked to choose two sessions from the nine choices below, and to identify one or two reserves.

### 1 Using Our Existing Good Practice To Develop Teaching For Mastery In The Classroom

This session will focus on linking the 5 main ideas of Mastery teaching with good teaching practice that is already taking place.

**Victoria Osborne:** Assistant Curriculum lead for mathematics at Manor School Sports College, Nr Wellingborough, and is a Secondary Teaching for Mastery Specialist. She currently teaches years 7 -11

### 2 Mystery Myth Busting And The Role Of Reasoning And Problem Solving

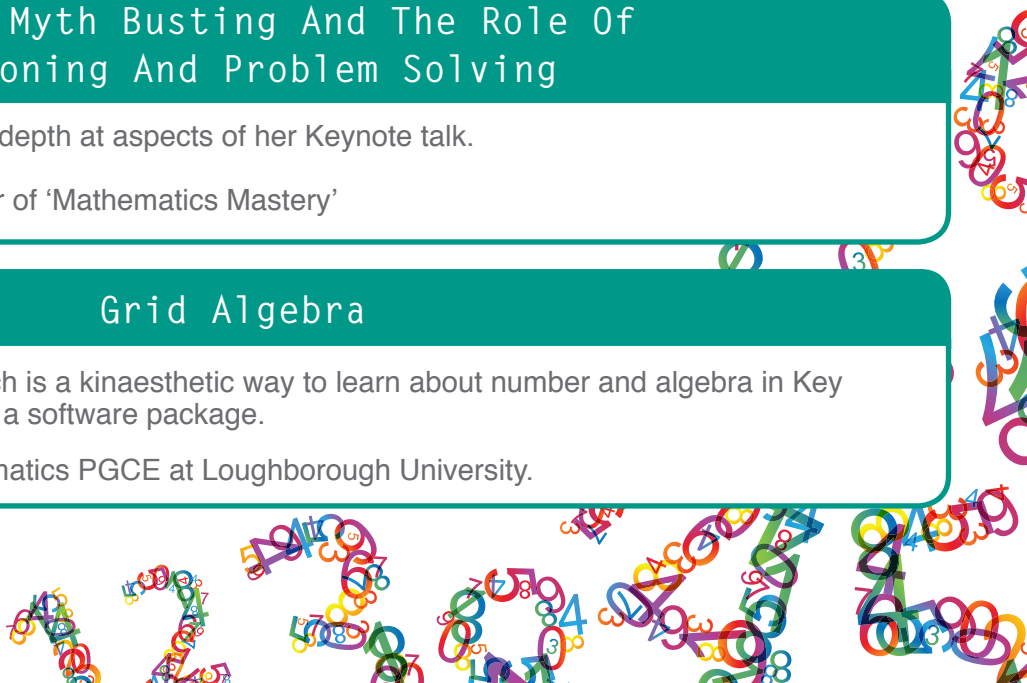
A breakout session looking in more depth at aspects of her Keynote talk.

**Dr. Helen Drury:** Executive Director of 'Mathematics Mastery'

### 3 Grid Algebra

An exploration of Grid Algebra, which is a kinaesthetic way to learn about number and algebra in Key stages 3 and 4, involving the use of a software package.

**Dr Dave Hewitt:** Director of Mathematics PGCE at Loughborough University.



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## 4 Reasoning In The New Curriculum & Preparing For The New GCSE

This workshop will look at the practical implementation of reasoning in the new curriculum and how to prepare students for the challenges of the new GCSE.

**Rob Tait:** Assistant Director (Maths Hubs) National Centre for Excellence in the Teaching of Mathematics

## 5 Developing a KS3 Curriculum Based on Mastery Principles: Exploring the Challenges

This session will consider the transition from key stage 2 to 3 and the challenges of designing a secondary curriculum modelled on the principles of the teaching for mastery approach.

**Tim Dolan:** Head of Mathematics at The Market Bosworth School, Leicestershire.

## 6 Expanding and Factorising Quadratics Using Algebra Discs

A kinaesthetic and visual approach to understanding the process of expanding and factorising quadratics, for younger or lower-attaining mathematicians, based on Jerome Bruner's CPA approach to learning and as used in Singapore schools.

**Lee Overy:** Mathematics Teacher at English Martyrs Catholic School Leicester

## 7 Conceptualising Mathematics

This Workshop will explore the use of concrete and pictorial representations to help pupils reach a deeper understanding of abstract concepts, in particular working with directed number, equations and fractions.

**Peter Mattock:** Director of Maths at Brockington College, Enderby, Leicestershire and Secondary Teaching for Mastery Specialist

## 8 Core Maths

Core Maths is a new post-16 qualification for students who are not studying A-level Maths. It has been strongly endorsed by Universities and Employers. It helps to bridge the gap between GCSE and subjects with a mathematical content and to prepare students for future life through the study of financial maths. This workshop will introduce the course and discuss the planning and delivery of the scheme of work. Gill has been involved in the delivery of Core Maths as an Early Developer at Beauchamp College, where the first cohort of Core Maths students successfully completed their exams in 2017.

**Gill Owen:** Teacher of mathematics at Beauchamp College Oadby Leicestershire

## 9 Understanding the Large Data Set in the new A Level

This workshop will consider the requirements of teaching with the large data set in the new A Level Mathematics. It will be suitable for all exam boards.

**Chris Shore:** An experienced Teacher of Mathematics and helps lead Maths across the Lionheart Academy Trust. He is Maths Lead for the East Midlands South Maths Hub.

