



# ORBITER

 September 2005

KEEPING MATHS EDUCATION PROFESSIONALS IN TOUCH

**30** MEM Celebrates its Thirtieth Birthday **see page 2**

**MATHEMATICAL EDUCATION ON MERSEYSIDE**  
Registered Charity 517028

**Contact us**

Tel:

0151 794 4066/4050

Web:

[www.maths.liv.ac.uk/~mem](http://www.maths.liv.ac.uk/~mem)

Email:

[orbitereditor@merseymail.com](mailto:orbitereditor@merseymail.com)

Post:

MEM, Department of Mathematical Sciences, University of Liverpool, Peach Street, Liverpool, L69 7ZL

MEM President:

Dr Ian R Porteous

MEM Chairman:

Mr Barry Grantham

MEM Secretary:

Mr Benjamin Margetts

LMS President:

Prof. Peter Giblin

LMS Secretary:

Mr Phil Bamber

Quick Calendar

September:

Sat 24th

Liverpool University Maths Club commences.

Wed 28th

MEM AGM

- All are welcome, Room FML201  
Liverpool Hope University

October:

Wed 19th

GCSE meeting

at half term  
Open Challenge

November:

Sat 12th

Secondary Programme 1  
-follow up to last year's  
taster day

Sat 19th

Primary Programme 1  
-Xmas paper magic

### Liverpool University Maths Club

- Here to get you thinking

The club has now been running successfully for many years and is ideal for pupils of GCSE standard or above, who are keen to take on substantial maths challenges. They need to be able to attend sessions one Saturday morning per month during term time.

This term's sessions begin on the morning of Saturday, 24<sup>th</sup> September, followed by Saturday 29<sup>th</sup> October and 26<sup>th</sup> November. Undergraduates and postgraduates are involved in the club as well as academic staff. Members should arrive between 9.30 and 10.00, with an anticipated finish of 12.30. This is followed by a quality sandwich lunch for everybody including any escorts pupils may have.

The Department will need to know numbers for catering, so it is essential new applicants should contact us using the application form attached ASAP.

Existing members have their membership extended automatically (unless they withdraw or do not attend for a whole term).

More details are available from:  
David Lewis [d.m.lewis@liv.ac.uk](mailto:d.m.lewis@liv.ac.uk)

[www.maths.liv.ac.uk/~mathsclub/](http://www.maths.liv.ac.uk/~mathsclub/)

### Challenge 2005/ Senior Challenge 2005

Full details of the two competitions will be circulated in our January Orbiter. Names of those who will be responsible in each school will be needed quickly, so please consider this in good time.

We welcome the submission of questions (with solutions!). Please contact us at :

[orbitereditor@merseymail.com](mailto:orbitereditor@merseymail.com)

or at the MEM postal address.

Volunteers for the competition committees would also be welcome.

### MEM Masterclasses 2005

- Fully booked

Autumn Masterclasses are back. The sessions are here to challenge and stimulate the minds of budding young Y8 & 9 boys and girls, who are enthusiastic about Maths.

The sessions are fully booked and we cannot accept any more names. All applicants have been notified individually and will receive further details before the end of September. The first session is on Saturday 8<sup>th</sup> October, at the University of Liverpool.

The subsequent four sessions will be fortnightly including Masterclasses at Liverpool John Moores University & Liverpool Hope University.

MEM is pleased to acknowledge generous financial help received during the past 12 months from:

- Barclays Bank
- The Holt Charitable Trust
- W.H.Smith Promotions Ltd
- Liverpool Hope University
- The University of Liverpool
- Liverpool John Moores University



## MERCER

Human Resource Consulting

**Senior Challenge  
1980 – 2003**



**Senior Challenge  
1980 – 2003 on CD  
£10 (p&p included).**

A full set of questions and answers is now available with original Peter Ackerley Cartoons on CD.

To obtain a copy please send a cheque payable to:

**Mathematical Education on Merseyside**

for the attention of: Prof. Peter Giblin at the usual MEM address (see front page).

**ATM**

Anybody interested in local Association of Teachers of Mathematics activities or resources is welcome to contact Sue Humphreys at: [suehumphreys@wirral.gov.uk](mailto:suehumphreys@wirral.gov.uk)

Tel: 0151 346 1182

Wirral Professional Development Centre, Acre Lane Education Centre, Bromborough, Wirral, L62 7BZ

**30 Years of MEM  
Part 1 -The Beginnings**

Mathematical Education on Merseyside represents the coming together of groups and individuals sharing an interest in promoting the wider enjoyment of mathematics. The participating groups and individuals are drawn from the University of Liverpool, Liverpool John Moores University, Liverpool Hope University, the Liverpool Mathematical Society and teachers in schools.

It was in the 1970's that the need was recognised for a forum for the exchange of information and for a vehicle for collaboration between the groups as listed. To meet this need, Mathematical Education on Merseyside was established with Professor James Taylor as President and Dr Ian Porteous as Chairman. When at an early stage James Taylor moved elsewhere, Ian Porteous was

elected President and continues in this role at the time of writing, 2005.

**The partnership approach**

Our approach involves a number of partnerships with colleagues from the groups as listed, with undergraduate and postgraduate students, with recent graduates now working elsewhere, with teachers in schools and indeed with school students.

The partnership approach facilitates inputs of expertise and experience not otherwise directly available to any single group. The providers of these inputs are able rightly to share in the satisfaction of the success of the outcomes, many of which will be familiar to regular readers of the Orbiter.

...to be continued

**Can we get in touch?**

Do we have up to date contact details for you?  
Email, phone, fax, address etc

Keep in touch with all the latest news

Contact us at:  
[orbitereditor@merseymail.com](mailto:orbitereditor@merseymail.com)

**Orbiter Online**

The May 2005 edition of the Orbiter is now available online for all in pdf format. The September 2005 edition will be added shortly.

In addition all reply slips and application forms will be accessible in Word format from:

[www.maths.liv.ac.uk/~mem](http://www.maths.liv.ac.uk/~mem)

**Liverpool University Maths Club (September 2005)**



Surname \_\_\_\_\_ First Names \_\_\_\_\_

Year of Study \_\_\_\_\_ Gender **Male / Female** (Please circle)

School or College \_\_\_\_\_

Home Address \_\_\_\_\_

Postcode \_\_\_\_\_

Home Telephone \_\_\_\_\_ Email \_\_\_\_\_

I am keen to be a regular member of the Liverpool University Maths Club.

I expect to stay for the sandwich lunch on 24<sup>th</sup> September **Yes / No** (Please circle)

Signature \_\_\_\_\_

Signature of \_\_\_\_\_

Parent or Guardian \_\_\_\_\_

Please return to Dr David Lewis as soon as possible:

[d.m.lewis@liv.ac.uk](mailto:d.m.lewis@liv.ac.uk)

or

**MEM, Department of Mathematical Sciences,  
University of Liverpool, Peach Street, Liverpool, L69 7ZL.**

**Please circulate the Orbiter to all Maths colleagues in your department**



## FunMaths Roadshow Newsletter

September, 2005

Version 3 of the FunMaths Roadshow of the Liverpool Mathematical Society is now ready on CD, cover price £20. New this year are Boxes 9 and 10, aimed for use with Sixth Forms. All the older material is included, with a few amendments, but also translated into Welsh, Scots Gaelic and French. For an order form, visit

[www.maths.liv.ac.uk/lms/funmaths/](http://www.maths.liv.ac.uk/lms/funmaths/)

As with earlier versions, the expectation is that the baseboards, 25 in each Box, will be printed A3 size on coloured card, and laminated. Templates are provided for accompanying equipment, already sized for use with A3 baseboards.

Sudoku addicts may like to know that 89, Picture Cards, in Box 4, has been restyled as Court Sudoku, for use as an alternative to the original version, but using the same equipment. For a copy, visit the website.

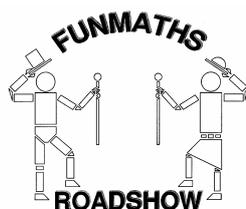
The Roadshow has been taken by the LMS to venues across the country, including a two-week visit in March 2005 to ten schools in Belfast, sponsored by SETPOINT Northern Ireland. The new material was on display both at BCME 6 at the University of Warwick just after Easter 2005, then again at the BMC/BAMC at the University of Liverpool a week later. In June, Lancashire CC, in partnership with SETPOINT Lancashire, held a very lively day of Mathematics at Turf Moor Stadium, Burnley, and the Roadshow was an essential part of that. As a matter of routine, we now have a puzzle corner at Anfield whenever SETPOINT Greater Merseyside hold an event there, and the activities used, namely 20, 44, 70, and 94, we now refer to as the 'Anfield Four'. We frequently add them to whatever else we might be using, as very popular extras. Trials of the Welsh version took place this spring in several schools in North Wales. Trials of the French version are just starting, though an excellent beginning was made last February at two Primary Schools in Lancaster with all-ability Year 5 children. The Schools Specialisms Trust is taking a keen interest. The Roadshow is also being actively promoted by the Royal Institution of Great Britain, for use in Masterclasses, both Primary and Secondary.

During August, a Liverpool A-level student, supported by a Nuffield Bursary, wrote a very perceptive critique of Boxes 9 and 10, and it is hoped that we will be able to post this also on the website. As an appendix, he has produced a very useful index, by topic, to all 250 activities of the Roadshow.

The Liverpool Mathematical Society recently heard that it is entitled to use the 08Logo, advertising Liverpool's status as Capital of Culture in 2008, when promoting the Roadshow, and this we shall be doing.

Ian Porteous

porteous@liv.ac.uk



Liverpool Mathematical Society

FunMaths Roadshow Version 3



## Order Form

Please provide the following details where relevant for payments and delivery:

Date of this order	
Your reference no.	
Name	
School/College/other	
Address	
Address	
Town	
Post Code	
County	
Telephone	
Email	
<p><b>Version 3 of the Roadshow CD</b> consists of <b>250 activities</b> arranged in 10 'boxes' of 25 activities, with answers, templates and other supporting information. Boxes 1 &amp; 2 are aimed at <b>Upper Primary/Lower Secondary</b>, Boxes 3 &amp; 4 <b>Lower Secondary</b>, Boxes 5 &amp; 6 <b>Mid Secondary</b>, Boxes 7 &amp; 8 <b>Upper Secondary/Lower Sixth</b>, and Boxes 9 and 10 (new in 2005) <b>Lower &amp; Upper Sixth</b>. Included now are <b>Welsh, Scots Gaelic and French versions</b> of Boxes 1 to 8!</p>	
<p><b>Individual CDs</b> are supplied in a plastic jewel case at <b>£20 each</b>, including post &amp; packing.</p>	<p>Number of CDs at <b>£20 each</b></p>
<p><b>Bulk packs of 10 CDs</b> are supplied in paper sleeves, not jewel cases, at <b>£100 per pack</b>, including post &amp; packing.</p>	<p>Number of packs of 10 CDs at <b>£100 per pack</b></p>
Total value of order:-	

Cheques should be made payable to **Liverpool Mathematical Society**

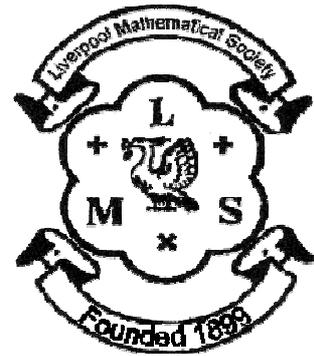
Orders and payments should be sent to:

**FUNMATHS ROADSHOW, Barry Grantham, Mathematics,  
Liverpool Hope University, Hope Park, Liverpool, L16 9JD**

tel: 0151 291 3612 fax: 0151 291 3163 email: [granthb@hope.ac.uk](mailto:granthb@hope.ac.uk)

# LMS Programme

## 2005/06



All events held at either University of Liverpool (UOL),  
Liverpool Hope University (LH) or  
Liverpool John Moore's University (LJM)

### Continuing Professional Development for teachers in the North West

In 2005/06, following 2 extremely successful Taster Days, LMS will run a series of CPD events. These will provide opportunities for teachers in the North West to share ideas and resources in areas on the leading edge of developments in the teaching and learning of mathematics. Experts from across the region will deliver hands-on sessions providing resources and strategies for immediate use in the classroom.

Each Saturday costs £50 per person, with additional delegates from the same school £25 per head. Fill in the form attached or contact **Phil Bamber** for more details / to reserve a place.

### Primary Programme

**Saturday 19<sup>th</sup> November 2005** – UOL 9.30am – 1.00pm

*'Christmas Paper Magic : linking maths with RE, art and design'* (KS1/KS2) Liz Meenan

**Saturday 21<sup>st</sup> January 2006** – UOL 9.30am – 1.00pm

*'Revitalise your oral and mental starter'* (KS1/KS2) Rachel Tomlinson

**Saturday 11<sup>th</sup> March 2006** – UOL 9.30am – 1.00pm

*'Early mathematical development'* (F/KS1) Vicki Foy

### Secondary/Sixth Form Programme

**Saturday 12<sup>th</sup> November 2005** – LH 9.30am – 1.00pm

*'Developing mathematical thinking and teaching without a textbook'* Sue Cronin/Sue Harkness

**Saturday 28<sup>th</sup> January** – LH 9.30am – 1.00pm

*'Dynamic Geometry Software in the Classroom'* Phil Bamber

**Saturday 25<sup>th</sup> March 2006** – LH 9.30am – 1.00pm

*'Pure Maths Applied'* Colin Wright

### October 2005: Open Challenge

This competition is a great opportunity for anyone under the age of 18 to win a slice of nearly £1000 of prize money! 'Trafalgar' is the theme for the 2005 Open Challenge – with each of the 6 questions having a nautical feel. Students will take the questions home over the October half term and all entries must be returned to LMS by their class teacher by Friday November 4<sup>th</sup>. If you know secondary or sixth form students who would be interested in taking part, fill in the LMS reply slip attached.

# **IMPORTANT DATES FOR EARLY 2006!**

**GRESHAM IN THE NORTH - Professor Robin Wilson @ Liverpool Hope University**

**Monday 6<sup>th</sup> February** - 5.00pm – 6.30pm  
*'Stamping through mathematics'*

This widely-acclaimed illustrated lecture covers the entire history of mathematics in one hour (!), with around two hundred postage stamps featuring the mathematics and mathematicians involved.

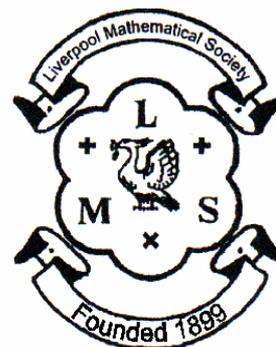
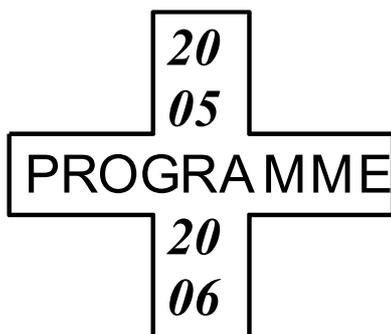
**Tuesday 7<sup>th</sup> February** - 1.00pm – 2.00pm  
*'Lewis Carroll in Numberland'*

Although mainly remembered for his 'Alice' books, Charles Dodgson (Lewis Carroll) was an Oxford mathematician. What mathematics did he do? How good a mathematician was he? We answer these questions with reference to his geometry, algebra, logic and mathematical puzzles.

**Thursday 16<sup>th</sup> March** - UOL 5.00pm – 6.30pm  
*'Mathematics, Magic and the Electric Guitar'* Dr David Acheson

In his lecture, Dr Acheson will ask what is so special about the number 1089. He will also investigate the connection between mathematics and the electric guitar, and ask if mathematics can explain the legendary Indian Rope Trick. These questions will be considered in an informal look at SURPRISES in mathematics, and will be accompanied by live demonstrations and computer experiments. The lecture will last about an hour, and will be followed by a question-and-answer session for those who are able to stay.

**Thursday 18<sup>th</sup> May** - UOL 5.00pm – 6.30pm  
LMS Presidential Address Colin Wright



### EVENT 1: GCSE MEETING

Wednesday 19th October 5.30 - 8.00 pm

Liverpool University £30 per school

AQA/Edexcel Chief Examiners provide the latest information on the new specification for Sept. 06 and review the 2005 papers.

To secure a place on EVENT 1 or for more information on any part of the 05/06 LMS Programme, contact LMS Secretary Phil Bamber on

 [bamberp@hope.ac.uk](mailto:bamberp@hope.ac.uk)

 0151 291 3490



or fill in the attached reply slip

### EVENT 2: OPEN CHALLENGE

This October, Secondary schools across the North West will compete in this maths competition for senior pupils under the age of 18.

### SECONDARY PROGRAMME 1

Saturday 12th November 9.30 am - 1.00 pm

Liverpool Hope University £50 each/£25 each additional colleague

Developing mathematical thinking and teaching without a textbook.

Follow up to last year's successful taster day

### PRIMARY PROGRAMME 1

Saturday 19th November 9.30 am - 1.00 pm

Liverpool University £50 each/£25 each additional colleague

Christmas paper magic: linking maths with RE, art and design.

Building on the popular 04/05 CPD programme

### EVENT 3: SIXTH FORM POP MATHS QUIZ

Saturday 4th March 10.00 am - 2.00 pm

Liverpool John Moores University FREE!

Teams compete in this Pub style team Quiz - maths problems replace alcohol.

3rd annual quiz

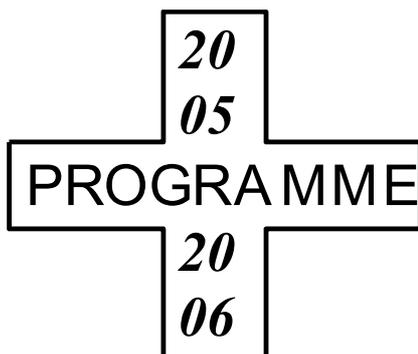


**STOP PRESS!! GRESHAM IN THE NORTH 2006**

**Professor Robin Wilson @ LIVERPOOL HOPE UNIVERSITY**

**Monday 6<sup>th</sup> February - 5.00pm - 6.30pm *Stamping through mathematics***

**Tuesday 7<sup>th</sup> February - 1.00pm - 2.00pm *Lewis Carroll in Numberland***



To secure your place on Event 1 or if you would like to find out more about the LMS programme for 2005-06 please take time to answer the following questions and send to **Phil Bamber, Liverpool Hope University College, Hope Park, Liverpool, L16 9JD** or send your request for information to Phil Bamber  [bamberp@hope.ac.uk](mailto:bamberp@hope.ac.uk)  0151 291 3490

This form can also be accessed via the LMS website [www.maths.liv.ac.uk/lms.html](http://www.maths.liv.ac.uk/lms.html)

Name \_\_\_\_\_ School/College/Univ Dept. \_\_\_\_\_

Tel. No. \_\_\_\_\_ E mail \_\_\_\_\_

Address for correspondence \_\_\_\_\_

\_\_\_\_\_ Postcode \_\_\_\_\_

**EVENT 1: 19th October 2005 GCSE MEETING**

AQA  EDEXCEL  OCR

Please tick the exam board meeting which you would like to attend and return before Friday October 14th. Please either enclose a cheque for £30 payable to Liverpool Mathematical Society or the name and address of the relevant person for us to invoice.

**EVENT 2: October Half Term 2005 OPEN CHALLENGE**

Please send me more information about open Challenge.  
 PLEASE NOTE: Heads of Maths will automatically receive 5 copies at the end of September.

**19/11/05, 21/1/06, 11/3/06**

Please send more information about the PRIMARY PROGRAMME 05/06

**12/11/05, 28/1/06, 21/3/06**

Please send more information about the SECONDARY PROGRAMME 05/06

**EVENT 3: 4th March 2006**

Please send me more information about the SIXTH FORM POP MATHS QUIZ

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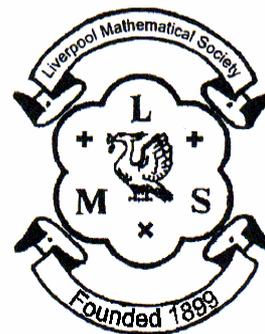
I would like to keep fully up to date with the latest LMS news and events and become a member of  
 Liverpool Mathematical Society.

Please enclose a cheque payable to Liverpool Mathematical Society for £3

# Liverpool Mathematical Society

## Secondary Programme

During the 2005 - 6 school year we are offering a series of 3 meetings each with a different theme. All will take place on Saturday mornings between 9.30am and 1.15pm at:



Mathematics Education  
Liverpool Hope University  
Hope Park  
Liverpool  
L16 9JD



### Themes:

Saturday 12<sup>th</sup> November 2005

Developing mathematical thinking and teaching without a textbook  
Sue Cronin & Sue Harkness  
**Closing date for applications 21<sup>st</sup> October**

Saturday 28<sup>th</sup> January 2006

Dynamic Geometry Software in the Secondary Classroom  
Phil Bamber  
**Closing date for applications 16<sup>th</sup> December**

Saturday 25<sup>th</sup> March 2006

Pure Maths Applied  
Colin Wright  
**Closing date for applications 19<sup>th</sup> February**

### Programme

9.30am *Arrival, registration and coffee*  
10.00am **Session 1**  
11.15am *Break*  
11.45am **Session 2**  
1.00pm *Close*

### Fee

**£50 per person**

Each additional delegate from same school:

**£25 per person**

(Refreshments included - coffee on arrival and at break)

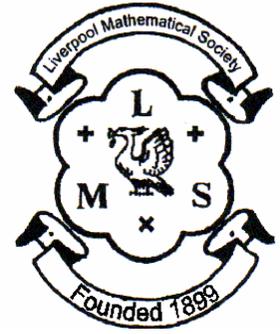
- Payment is by cheque with application or by invoice to your school to be paid before the event.
  - Refund will only be made for cancellations received before the closing date. Cancellations after that date will be charged in full.
  - Invoices and/or confirmations of bookings will be sent to you on receipt of application.
- Places are limited so please complete and return the appropriate application form(s) as soon as possible to:

**Phil Bamber, Liverpool Hope University, Hope Park, Liverpool, L16 9JD**



# LIVERPOOL MATHEMATICAL SOCIETY

(INCORPORATING THE LIVERPOOL BRANCH OF THE MATHEMATICAL ASSOCIATION)



## JOYCE HATTON MEMORIAL BURSARIES

The Society invites applications from Mathematics teachers and pupils for support to assist with mathematical activities such as events in schools or the local community, attending conferences or any other ideas that have a mathematical basis. Please use the form below initially to give some idea of what you want the support for. You will then be contacted for further details. The Society is expecting to be able to give bursaries from £50 up to £500 depending on the circumstances.

Name of applicant \_\_\_\_\_

School (name, address and tel. no. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ Postcode \_\_\_\_\_

Outline of reason for request. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_.

Please return to:

Phil Bamber, Liverpool Hope University, Hope Park, Liverpool, L16 9JD

 [bamberp@hope.ac.uk](mailto:bamberp@hope.ac.uk)  0151 291 3490  Fax 0151 291 3163