MATHEMATICAL EDUCATION ON MERSEYSIDE

ORBITER
May 2005

KEEPING MATHS EDUCATION PROFESSIONALS IN TOUCH

Could MEM activities help improve the attainment of your pupils?

With the school year moving into the summer term many pupils are now anxiously preparing for examinations. In this issue we are already celebrating the success of pupils in the Challenge and Senior Challenge Competitions.

Quick Calendar

May:
**Tues 17th
Challenge Prize Giving**

**Tues 24th
Senior Challenge Prize Giving**

June:
**Sat. 11th
Jumping ahead - using bead strings and number
lines (KS1/2): Christine Ingram**

Nov:
**Sat. 19th
Christmas paper magic: linking maths with RE, art and design
(KS1/2); Liz Meenan**

**For further details contact:
LMS Primary Secretary
Wendy Singleton
Tel: 01254 885907
or
w.singleton@tesco.net**

MEM Masterclasses 2005
- 15 years of masterclasses

The fifteenth series of Masterclasses will take place during the Autumn Term. Numbers will be limited to about 70, with at most two pupils representing each school.

The Masterclasses will take place on five alternate Saturdays, 9.45 - 2.30pm, at Liverpool Hope University College (Woolton Road) Liverpool John Moores or The University of Liverpool. the first being Saturday 8th October at The University of Liverpool.

They will take the form of talks, problem sessions, workshops and hands-on computer experience. The sessions are aimed at pupils with an enthusiasm for mathematics. There will be no charge to participants. Light refreshments are served during the sessions, but we ask everyone to bring a packed lunch.

If you wish to nominate two pupils from your school who are at present in Y7 or Y8 then **please use the reply slip on Page 3**. You should consult the pupils concerned to make sure that they are willing, if chosen, to attend all five Saturdays during the Autumn term. Places are strictly limited to two from each school, we try to keep an even balance between boys and girls.

Some places on the Masterclasses will be reserved for Challenge prize winners who wish to take part; feel free to nominate prizewinners or others from your school as you wish.

We shall write to all schools which have applied for places, notifying them of our decisions, by **Friday 8th July**.

For further details please contact Ian Porteous at the usual MEM address or:

porteous@liv.ac.uk

New Roadshow CD
-Vous parlez français?

A new version of the Liverpool Mathematical Society's Funmaths Roadshow CD will shortly be available. Two new `Boxes' 9 and 10 have been added, for use with sixth-formers, the material having been exhaustively trialled during the past six months. Also included are versions of `Boxes' 1 to 8 in Welsh, Scots Gaelic and French! Trials of Boxes 1 and 2 of the French version have already been held in two primary schools in Lancaster, while trials of the Welsh version have been held in schools at St Asaph, Blaenau Ffestiniog and Caernarfon.

The opportunity has been taken to make a small number of changes to the older material, including an addition to the instructions for 106 and a correction to the template for 100 (these will soon be downloadable free from the website).

For further information about the Roadshow and an order-form for the new CD visit the website :
www.maths.liv.ac.uk/lms.html

Alliance & Leicester Challenge 2005
- The winners board

Solutions can be found at:
www.maths.liv.ac.uk/~mem/challenge2005.htm

First Prize
Lucy Drain   Blue Coat CE School, Oldham

Second Prize (with special commendation)
Rosemary Daley   St Hilda's CE HS
Natasha Stevens   St Nicholas Catholic HS, Hartford

Second Prizes
John Chawner   St Nicholas Catholic HS, Hartford
Richard Brindle   Blue Coat CE School, Oldham
Qingyuan Gardner   Formby HS
Emma Forth, Laura Littlewood,   The Grange School
James Nelson, Teddy Wilshaw
Iain Carson, Robert Griffiths   St Gregory's Catholic HS
Emma Wakefield   St Hilda's CE HS
Fehn Chua-Short,   Merchant Taylors' School for Girls

There were entries from 53 schools, a considerable increase from last year.

Mercer Human Resource Consulting
Senior Challenge 2005
- The winners board

Solutions can be found at:
www.maths.liv.ac.uk/~mem/

First Prize
Phil Kingsley   Abbey Gate College, Chester

Second Prize (with special commendation)
Samuel Chawner   St Nicholas Catholic HS, Hartford
Ben Corrin   Calday Grange GS

Second Prizes
Peter Hallen   Westwood HS, Leek
Sophie Handler   Rainhill HS
Sarah Parker   Bolton School (Girls' Division)
Leah Perkins   Christleton HS
Ben Stenhouse   Bishops' Blue Coat CE HS, Chester
Seth Wrigglesworth   Deanery CE HS, Wigan

Entries were received from 36 schools, a considerable increase from last year.

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).

NRICH
- Need more

NRICH is an organisation that looks to get young people involved in enjoying the exploration of mathematical ideas with a view to helping them develop their knowledge and understanding.

The organisation has a huge database of problems available online at varying levels of difficulty:

nrich.maths.org

Liverpool University Maths Club
- Need more challenging maths?

The club was formed a number of years ago at the request of several pupils who had previously enjoyed MEM masterclasses. The LUMC is ideal for pupils of GCSE standard or above, who are eager to extend their knowledge and take on maths challenges.

We generally meet the last Saturday of each month during term time.

LUMC meets in the Department of Mathematical Sciences at the University of Liverpool, usually for a full morning.

The first session of the new academic year will be:

24th September 2005

We do not charge anything for pupils to attend.

More details and application forms are available from:
David Lewis
d.m.lewis@liv.ac.uk

www.maths.liv.ac.uk/~mathsclub/

ATM

Anybody interested in local Association of Teachers of Mathematics activities or resources is welcome to contact Sue Humphreys at:

suehumphreys@wirral.gov.uk

Tel: 0151 346 1182

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

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

Please circulate the Orbiter to all Maths colleagues in your department

Masterclasses 2005 Reply Slip

Please return Dr Ian Porteous as soon as possible:

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

Alternatively email the information below to: porteous@liv.ac.uk

A) **I wish to nominate the following two pupils for the 2005. I have consulted them and they have expressed an interest and willingness to attend all five sessions. In the Autumn term they will be in Y8 or Y9.**

1. Surname _____ **First Names** _____

Gender   **Male / Female**   **(Please circle)**   **Year (Autumn 2004)** _____

2. Surname _____ **First Names** _____

Gender   **Male / Female**   **(Please circle)**   **Year (Autumn 2004)** _____

Name of teacher _____ **Email** _____@_____

Name of school _____

Address of school _____

_____**Post Code**_____

Telephone _____ **LEA** _____

B) **I am willing to help with workshops at the masterclasses:**

Name of teacher _____ **Email** _____@_____

Name of school _____

Address of school _____

_____**Post Code**_____

PROBLEM SOLVING JOURNAL FOR SECONDARY STUDENTS
- By Tony Gardiner

Competitions, clubs and roadshows all contribute to the tapestry of extra-curricular provision. But some students appreciate chewing over problems in their own time as part of a larger "problem solving community". That is what the new "Problem solving journal" (PSJ) seeks to provide.

Such journals have been part of the national scene in other countries for a long time; but the idea has yet to take root in the UK. Each issue of PSJ is a simple 12 page A5 booklet, containing problems on two levels of difficulty and for three separate age groups (Junior, Intermediate and Senior, as for the multiple choice UK challenges). The aim is to encourage students to submit their own solutions to these mildly demanding problems, which are then marked and returned via their teachers before the next issue appears. Each issue contains the names of as many successful solvers as there is room to acknowledge - along with full solution to all problems from the previous issue.
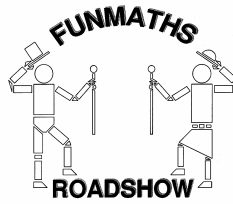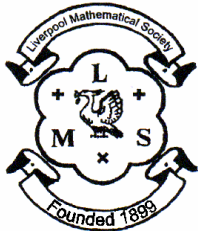
The simpler E-type problems make students think, but require answers only. In contrast, H-type problems require

"full written solutions", and provide an opportunity for those with a mathematical bent to learn the difficult art of constructing and presenting such solutions. Beginners should start with the E-type problems and move on to the H-type problems as and when they choose.

Each issue should arrive in schools 2-3 weeks before the end of term, and the deadline for the submission of solutions is 2-3 weeks after the beginning of the following term.

Subscriptions are accepted in multiples of 5 only. All subscribers pay a basic annual administration charge of £15, plus £5 for each set of 5 copies (three issues). Thus a subscription (i) for 5 copies per term costs £15 + £5 = £20 per annum, and (ii) for 25 copies per term costs £15 + £25 = £40 per annum. Current circulation is around 4500 copies per issue in 260 schools, but we would like this to increase substantially over the next few years.

Any school which would like to receive a sample copy of Issue 005 - together with a subscription form for the School Year 2005/6 should send an A5 stamped self-addressed envelope to "PSJ Sample Request, School of Mathematics, University of Birmingham, Birmingham B15 2TT"

Order Form

Please send the FunMaths Roadshow CD to:

Name	
Address	
Town	
Post Code	
Telephone	
Email	

The CD consists of 250 puzzles arranged in 10 'boxes' of 25 puzzles, with answers, templates and other supporting information. Boxes 1 & 2 are aimed at Upper Primary/Lower Secondary, Boxes 3 & 4 Lower Secondary, Boxes 5 & 6 Mid Secondary, Boxes 7 & 8 Upper Secondary/Lower Sixth, and Boxes 9 and 10 (new in 2005) Lower & Upper Sixth. Included now are Welsh, Scots Gaelic and French versions of Boxes 1 to 8!	
Individual CDs are supplied in a plastic jewel case with printed inserts, at £10.00 each, inclusive of post & packing.	Number of CDs at £10.00 each
Bulk packs of 10 CDs are supplied in paper sleeves, not jewel cases, with printed instructions, at £50.00 per pack, including post & packing.	Number of packs at £50.00 per pack
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 College, Hope Park, Liverpool, L16 9JD**

<u>Tel:</u> 0151 291 3612   <u>Fax:</u> 0151 291 3163   email: granthb@hope.ac.uk

LMS Pop Maths Quiz
- It gets bigger and better in 2005

Following the success of last years inaugural quiz, LMS decided to repeat the venture with a similar format on Saturday 5th March 2005 at John Moores University. 76 students and 8 teachers made it for the morning, from 9 different schools and college, forming 18 teams. This was more than double the attendance at the first ever Pop Maths Quiz on Merseyside in 2004! The teams spent an hour and a half trying to solve some 16 challenging maths puzzles in a lively, competitive team format. Following a light hearted look through the solutions, prize money of nearly £300 was handed out to the winning teams.

1st prize: Liverpool University Maths Club
2nd prizes: Birkenhead High School, Sir John Deane College, King George V College, Southport.
Consolation prizes: Sir John Deane College, Knutsford High School.

Well done to the winners and all those who took part who helped to make it a really enjoyable morning. One teacher commented "I had to persuade them to put together a team and come along this year, that won't be a problem again – they've had a great time!"

LMS is looking for a Sponsor for this event so it could be that the prize money is even more next year! If your school wasn't entered this year, why not organize a team for next year's event to challenge the best? Details will be published in the September edition of the Orbiter.

LMS Secondary Taster Day
- Declared a success!

Following on from the success of the LMS Primary Taster Day held in 2003, LMS hosted a Secondary Taster Day, which was held at Liverpool Hope University College on Saturday 27th November and was attended by nearly 100 secondary mathematics teachers from across the north west.

Key note talks were given by Simon Singh (author of 'The Code Book', 'Fermat's Last Theorem' and more recently 'Big Bang') on 'Risk , Probability, Chance and Gambling' and Geoff Wake from Manchester University on 'Dynamic Geometry Software – visualizing an enriched curriculum'

Eight workshops were then led by members of the maths team at Liverpool Hope, local LEA advisors and local Advanced Skills teachers on the latest developments in learning and teaching mathematics.

The feedback from delegates confirmed that the day was an outstanding success. Comments were made such as:

"Really enjoyed the day; challenged, fed and inspired in all aspects"

"The free resources are excellent and it was good to talk to other maths teachers"

"All the lectures/workshops were interesting – lots of new ideas and activities for the classroom"

"Brilliant day throughout! Learned loads!"

"It should have been for the full weekend. I would have liked to go to every session"

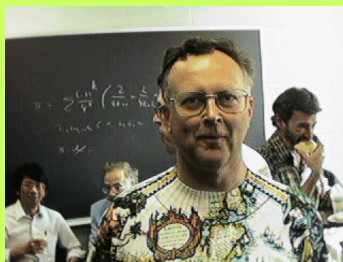*"You should do another one very soon"*

Gresham in the North

On April 13th/14th 2005 Liverpool Mathematical Society is delighted to host 2 free public talks given by Gresham Professor of Geometry, and son of Harold Wilson, Robin Wilson. These will take place at Liverpool Hope University College.

Weds April 13th 5.00pm Arrival and snack buffet.

5.30 pm – 7.00 pm **"Keep taking the tablets"**

A whistle stop tour of the early history of mathematics taking in elements from Babylonia, Egypt, China and India.

Thurs April 14th 12.30pm Arrival and snack buffet.

1.00 pm – 2.00 pm **"How to win a million dollars"**

A look at the some of the mathematics behind the Riemann Hypothesis, which concerns the distribution of prime numbers and why a proof has been so elusive.

For more information, or to reserve places, please contact LMS Secretary Phil Bamber

bamberp@hope.ac.uk   0151 291 3490

2005 LIVERPOOL MATHEMATICALSOCIETY

PRESIDENTIAL LECTURE

Professor Peter Giblin, University of Liverpool

"Geometry past and present"

A description of ways in which old ideas in geometry have come to play a major role in modern applications, for examplein computer vision.

No special knowledge of geometry, either past or present, will be assumed!

Thursday April 28th   5.00pm – 6.15pm
University of Liverpool
Mathematics and Oceanography Building Room 027

For more information, please contact LMS Secretary Phil Bamber

bamberp@hope.ac.uk   0151 291 3490

Open Challenge 2004
- Prize-giving event

On a snowy evening in February prize winners, entrants and parents came to Liverpool university to celebrate Open Challenge '04. Here they participated in the Fun Maths Road-show and tried their hand at a computer quiz and a prob-lems trail.

The highlight of the evening was a presentation about the solutions given by Tony Carter, one of the question setters. Following this, the prize-giving ceremony took place. The lecture theatre was packed, reflecting the pleasing increase in the number of entries this year.

The main prize-winners were:

Individual Competition
FIRST
Andrew Rossall, Deyes High School

SECOND
Mary Fortune, Birchwood Community High School

THIRD
Philip Morrell, The Grange School

Team Competition
FIRST
King George V College

SECOND
Knutsford High School , Runshaw College, Stanley High School

THIRD
Calday Grange Grammar School

Altogether 15 individuals and 11 teams were awarded prizes with a further 13 individuals and 3 teams receiving certificates.