



## Wow spelt backwards spells WOW!!

### Project Manager Makhan Singh finds the WOW factor in Maths

I was chatting to a Bollywood Director based in Kerala a few weeks ago (RM as she is known to her friends), exchanging notes about work, life, the universe... and during our conversation she said an interesting thing, "When a script lands on my desk, I immediately know whether it will be a hit or a flop – wow spelt backwards spells wow!"

Not knowing what she meant by this I probed further. "Simply put", she stated, "amazing work always shines through, irrespective of who is doing it, how it is being done or regardless of what outsiders might think or say. The cinema audience always knows great work – and great work instantly gives off the wow factor!"

This conversation made me reflect on the current work of the whole team around the *more maths grads*

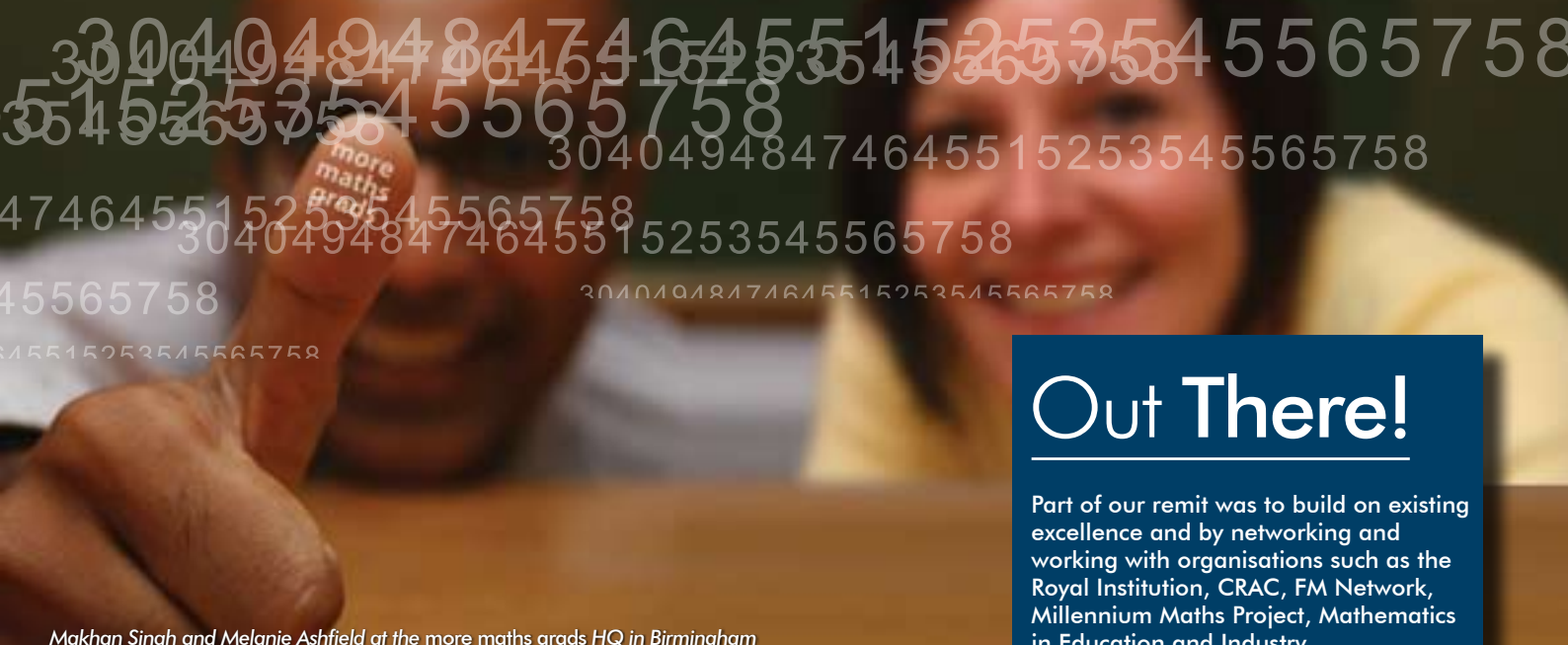
project. Since our last newsletter (thanks for all the great feedback), the four regions have made further gigantic leaps and bounds making some wonderful in-roads into creating great quality teaching resources, maths careers posters, positive community relationships and some excellent number crunching data which will prove to be invaluable in helping to design and shape the future of mathematical degrees. The usual suspects of Farzana, Ewan, Zia, Vivien, Hazel, Ruth, Neil, Mike T & Mike R, have all been passionately plugging away at the project over the past two months. A cocktail of different personalities all bursting with enthusiasm and energy to put the WOW back into maths!

As my Bollywood director kindly reminded me, "The cinema audience always knows great work." I guess our audience are ultimately the school teachers and pupils that are being directly impacted with our work. Over

200 teachers and 3,000 pupils have engaged in the project since our last newsletter (that's now well over 6,000 pupils and 400 teachers to date), not to mention the new employers who have added their support to the project (Walsh Group, Jaguar, Jonathan Lee Recruitment et al) – it's not surprising that this newsletter has had to become a double bumper edition!

So remember... next time you see quality in anything, just say 'Wow', they'll know what you mean! So as usual, grab yourself a nice cuppa, sit back and enjoy this edition...or as is said in Bollywood...lights, camera...and *moremathsgrads* action!

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## Out There!

Part of our remit was to build on existing excellence and by networking and working with organisations such as the Royal Institution, CRAC, FM Network, Millennium Maths Project, Mathematics in Education and Industry...

turn to page 2 for more..!

Makhan Singh and Melanie Ashfield at the more maths grads HQ in Birmingham

# Regional Roundup

## Out There! ...contd

...National Centre for Excellence in the Teaching of Mathematics, London Engineering Project (as well.... as the five sponsoring partners of the Institute of Mathematics and its Applications, the London Mathematical Society, Maths, Stats & OR Network, HoDoMS and the Royal Statistical Society) – the more maths grads teams are learning and growing as part of the enriching and benchmarking experience.

While reflecting on the project, the Alanis Morissette song *Hand In My Pocket* came to mind, "I'm high but I'm grounded...I'm sane but I'm overwhelmed". I have been very proud of my team. Something that has impressed me over the five months is their willingness to collaborate and listen, as well as their ability to be unafraid to challenge the status quo. They are high on the passion for maths yet remain grounded in hitting the project objectives. We have developed a culture where we don't ask for problems to shrink, but for solutions to arise....overwhelmed with ideas, emails, work, we remain sane throughout the whole journey to date!

### Meet the team!



Farzana Aslam  
Coventry



Ewan Russell  
Coventry



Hazel Kendrick  
Leeds



Vivien Easson  
London



Ruth Holland  
Leeds



Zia Rahman  
London

## East London



Zia Rahman discusses future projects with Walsh Group

gave an engaging talk with active participation on maths and games. The London East region will continue to support the work done by the NRICH team, who are based at the University of Cambridge (<http://nrich.maths.org/public/>), in the coming year.

We are also teaming up with the Ocean Maths Project team. The OMP team have a proven track record of working with local east London schools in various year groups and getting parents to participate in maths workshops. London East will look to work with OMP and evaluate the impact of the practice on parents and learners.

Over the summer, a series of information leaflets will be posted on the website and available for download as posters. The 'What's the point of...?' series will examine applications of maths from trigonometry in Hollywood to quadratic equations in football.

Archimedes is quoted as once saying *'There are things which seem incredible to most people who have not studied mathematics'*

We are surrounded by wonderful buildings and ancient structures but have you ever wondered 'how do they do that?' More maths grads are working with several partners to produce a DVD that can be used in class and is mapped to the GCSE Syllabus that looks at the mathematics of building a building. We have developed an excellent working relationship with Walsh Group, a structural engineering firm, who are helping to produce this mix of interactive games, careers profiles and classroom materials. Watch this space for more news as the project develops.

QMUL hosted a celebration event for the NRICH project in Tower Hamlets which brought together around 80 parents, teachers and of course students. Rob Eastaway from Maths Inspiration was the guest speaker and



Rob Eastaway from Maths Inspiration

And so to finish... yet more connections... *'the pleasure we obtain from music comes from counting, but counting unconsciously. Music is nothing but unconscious arithmetic'* (Leibniz)

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# Yorkshire and Humberside

Over the last six months the *more maths grads* Project has built up many fruitful collaborations in Yorkshire and the Humber with the hope of sharing expertise, ideas and resources. This has led to several exciting new ventures, most notably with the Further Maths Network, NCETM (the national body charged with improving CPD for teachers) and a range of businesses in the region.

With NCETM we have been developing a bank of short video clips showing maths being used in the workplace. It is hoped that this will turn into a mini library of clips which feature different people using maths at GCSE or A-Level within their particular careers.

So far the clips have ranged from costume designers explaining why fractions are important, through to sports engineers using speed-distance-time equations to analyse the effectiveness of tennis rackets. Currently we are excited about going on board the P&O ferry, the *Pride of Hull* to film our next clip and are always on the lookout for more subjects to film. Other collaborations with NCETM include plans to run a joint Teacher Conference in the next academic year.



*Maths in action - video clips!*

In the last issue of the newsletter we highlighted our Maths at Work day for Year 10. This was held in conjunction with the Further Maths Network and involved four workshops specially designed by people working in fields as diverse as construction and medical statistics. We are looking forward to jointly holding two more of these days this summer which will include sessions from our original companies as well as new ones from Coca Cola Enterprises Ltd and Barclays Commercial. Future activities with the Further Maths Network also include days where students will investigate mechanics with practical experiments.

There isn't really space to mention all the different organizations and people we have collaborated with so far, so keep an eye on our website to keep updated with the latest news!

Further Maths Network: [www.fmnetwork.org.uk](http://www.fmnetwork.org.uk)  
NCETM: [www.ncetm.org.uk](http://www.ncetm.org.uk)  
Maths at Work Clips:  
[www.moremathsgrads.org.uk/resources.cfm](http://www.moremathsgrads.org.uk/resources.cfm)

Hazel Kendrick • [h.j.kendrick@leeds.ac.uk](mailto:h.j.kendrick@leeds.ac.uk)  
Ruth Holland • [r.m.holland@leeds.ac.uk](mailto:r.m.holland@leeds.ac.uk)

# West Midlands

We were very excited to host and participate in the "Knex Primary Technology Challenge" Semi final on 29th April and Final on 21st May at Coventry University and Alan Higgs Centre respectively. This event was done in collaboration with Coventry and Warwickshire SETPOINT and received excellent feedback from participating teachers and pupils.

We have invited applications from maths teachers in Coventry and Warwickshire for *more maths grads* teacher excellence fellowships and are looking forward to having experienced local maths teachers onboard with the *more maths grads* team.

Meanwhile the regular work with student ambassadors and coordinators continues in partner schools. This has helped to build up relationships with groups of children and enthuse them in the study of maths.

We have carried out career interviews with interesting professionals now using their maths degrees at The Home Office, TUI Travel and British Airways.

Looking ahead we have SPoC, the Statistical Poster Competition organised in collaboration with the RSS, closing date 16th June. The prize giving event will take place at the end of June at Coventry University.

In July talented and enthusiastic Year 12 students will be looking forward to starting their *more maths grad* - Nuffield Placements at Rolls Royce, Qinetiq, Coventry University, NHS, Unipart Group, Coventry City Council and Women Business Development agency. Watch this space to hear about the experiences of these students!

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*Maths is more than just numbers*

## Curriculum News

### HE Curriculum Theme

It is a fascinating experience hearing our students' and colleagues' thoughts on first year maths provision and the school/university interface. We much appreciate the welcome and helpful cooperation that we have received at other universities. We are in the midst of sifting and analysing information and are looking at the following areas:

### Curriculum

One recurring theme is the mismatch between the perceived "recipe" style of maths A-level and the university requirement for students to select techniques and develop their own analysis. Changes in A-level approach and content require corresponding adaptations to the HE curriculum, particularly the first year. Innovative ways of enhancing students' preparation and engagement are being used and give considerable scope for dissemination and sharing good practice.

In a recent fruitful meeting with colleagues from the Further Mathematics Network the relationship between maths, further maths and the "eco system" of maths degrees was discussed. An interesting idea that emerged was the development of a "Rough Guide" to maths degrees enabling students to understand better the nature of what is available

### Support

The change from small school groups to large university lectures can be difficult for students. The reduced opportunity for questions while material is being developed leads to a danger of students losing track. Varied support mechanisms are in place to address this and we are seeking in our analysis to identify the common and novel aspects of those that seem to work well.

### Preparatory years

A number of universities now provide preparatory years as an alternative to



Richard and Sue from the FM Network with Mike and Neil at Sheffield Hallam University

A - level for mature students and school leavers with insufficient maths. We intend to build up some guidelines for good practice, and also, possibly, a bank of materials.

## Students in Profile

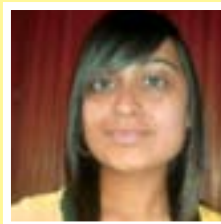
Kiran Chand and Chandni Mistry are Year 12 students at President Kennedy School & Community College in Coventry. These talented young women have been selected by more maths grads to undertake Nuffield Bursary placements in local industry in the coming summer.

During these placements they will work on exciting, original maths projects.

Kiran and Chandni each have a great enthusiasm for the subject and are studying towards A Levels in maths as well as further maths. "I like working towards an answer" says Kiran. Chandni says she appreciates the "variety of different methods which can be learned to tackle a problem." Chandni has been interested in mathematics since Year 5. Kiran had some extra help with maths in earlier years and she persevered because her interest in the subject and its applications kept her motivated. Both young women have achieved exceptional grades in maths.

When it comes to the current A Level syllabus, Chandni likes the Decision Maths module and Kiran prefers the Core Maths material. When asked what they want to do in the future, it is clear that each of these young women have their sights on a very

successful future. "I want to do maths and business administration at university" says Chandni while Kiran already plans to do a masters degree in maths.



Kiran Chand



Chandni Mistry

her family to pursue maths and her family are extremely proud and supportive of her achievements so far.

Being selected to undertake Nuffield projects this summer has been a great boost for both Kiran and Chandni. "I hope the placement will open doors and show me where maths can take me" says Kiran. With a sister already graduating in maths, Stats and Operational Research, Chandni comes from a very mathematical family. Kiran is the first member of

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## The Inspirational Corner

**So what drives you? Makhan Singh discovers how inspiration and determination all add up.**

belief and a true desire to never give up is what helped them achieve their dreams.

Jonathan Lee opened the afternoon with a powerful opening keynote speech, with a special mention in his address about the need to inspire young people in schools to engage with maths and engineering. Speaking to a captivated audience he said, "We need to remind ourselves that the young people in schools today are the future of our country...and we need to ensure they are inspired to take up maths after school."

With some amazing speeches from Michelle Mone and Geoff Thomas of battling against the odds, the closing keynote speaker Simon Weston OBE gave a truly breath-taking account of his life, saying "Look at the bigger picture - don't become so focussed on just one thing that you forget what your end objective is. Don't just focus on the ball; focus on the goal and field around you too." Inspiring stuff for us all!



Simon Weston OBE gives an empowering speech

I had the privilege to see four very inspiring human beings at the recent Jonathan Lee Recruitment 30th Anniversary luncheon.

The successful entrepreneur Michelle Mone (also panellist on BBC's The Apprentice: You're Fired!), former England footballer Geoff Thomas, Simon Weston OBE and the man himself, Jonathan Lee, all gave their accounts of their life stories – sharing that hard work, determination, self



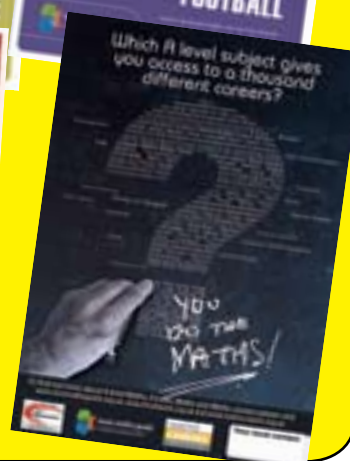
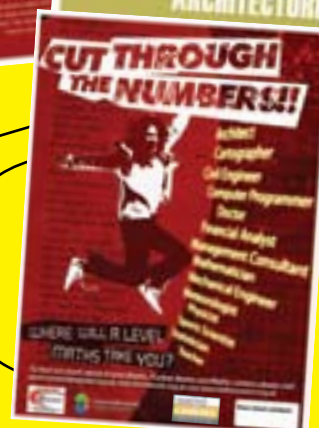
Inspiring with smiles and words - Makhan meets Jonathan Lee and Simon Weston OBE

**more  
maths  
grads**

a new way of  
seeing maths!

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visit [www.mathscareers.org.uk](http://www.mathscareers.org.uk)





## The Millenium Maths Project

On his recent travels in the land of the bicycle, Makhan met up with the Millenium Maths Project (MMP) team in Cambridge to discuss ways in which to benchmark from their vast experiences and to get MMP involved as a partner in the project. So who are MMP then?

The MMP is a maths education initiative for ages 5 to 19 and the general public, based at the University of Cambridge but active nationally and internationally. The MMP was launched in 1999 as a partnership between the Faculties of Mathematics and Education at Cambridge, bringing together a number of existing activities, which have now developed and extended. MMP has the aim to support maths education and promote the development of mathematical skills and understanding, particularly through enrichment and extension activities beyond the school curriculum.

Broader goals are to help people of all ages and abilities share in the excitement of maths and understand the enormous range and importance of its applications and its vital contribution to shaping the everyday world.

Find out more: [www.mmp.maths.org](http://www.mmp.maths.org)



The MMP team of Julia, Marianne and Jenny

## MATHS PUZZLER!

**Rob Eastaway, author and Director of Maths Inspiration, gets us into maths and puzzles!**

This month, the newspapers were filled once again with stories about the shortage of graduates with mathematical qualifications. A report by the Reform group called for more puzzles in the classroom. Why? Partly because many people find puzzles more engaging than more routine maths questions, but also because puzzles teach a very important skill, that of problem solving when you aren't told what technique to use.



*Three friends, Tyrone, Beth and Amitabh, love to share ice cream. When Tyrone and Beth share a tub of ice cream, they finish it in four minutes. When Tyrone and Amitabh share a tub of ice cream, they eat it in three minutes. And when Beth and Amitabh get together, they need only two minutes to empty the tub.*

*Today, Tyrone, Beth and Amitabh are going to share a tub of ice cream. How long will it take them to eat it?*

No tricks here - and make the usual unrealistic assumptions about people always eating at a constant rate.

Answers by email (or postcard!) to Melanie Ashfield:  
[m.ashfield@bham.ac.uk](mailto:m.ashfield@bham.ac.uk) - **WIN A £10 GIFT VOUCHER!**

Rob Eastaway's new book 'How Many Socks Make a Pair?' will be published in August. For details of next year's Maths Inspiration lectures see [www.mathsinspiration.com](http://www.mathsinspiration.com)

## Diary Dates

more maths grads  
multiplying opportunities

Diary Dates  
june - july 2008

### 24 June

- Maths at Work Day for Year 10, Leeds University

### 26 June

- Stall and workshop at Careers fair: Science, HE and beyond, for school careers advisers, Manchester

### 1 July

- Maths at Work Day for Year 12, Leeds University
- Maths at Work Day for Year 12, Leeds University

### 4 July

- MMG session at the MEI Conference

### 8 July

- Mechanics Day for Year 10- Leeds University

### 10 July

- Mechanics Day for Year 12- Leeds University

### 14 July

- Mathematics masterclass for Yr12 students at Coventry University

### 16 July

- MMG Annual Round up at Advisory Board meeting



For more information about the more maths grads project or for general enquiries please contact:  
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