

Maths Challenges News

Issue 44 February 2014

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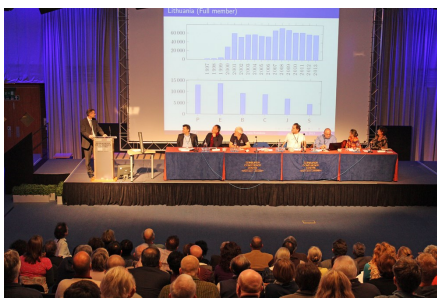
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Mathematical Kangaroo

On the 20 March 2014, over 6 million students worldwide, aged from 5 to 18, will be participating in the six Mathematical Kangaroo competitions, solving around 30 multiple-choice maths questions. This includes students from the UK who will have qualified for the Grey or Pink Kangaroo after taking part in the UKMT's Intermediate Maths Challenge.

But did you know that the questions for these papers were set in Scotland in autumn 2013? Every year representatives from all 57 member countries (from as far away as Colombia, Ghana, and Pakistan) gather at an annual meeting at which problems for the following year are debated, selected, then translated and adapted for each country.



The UKMT hosted the "Association Kangourou sans Frontières" conference for the first time in October 2013, and welcomed over 150 delegates from more than 50 countries to Edinburgh. For many, it was their first time visiting the UK, and although all worked hard throughout the five-day event to finish the six Kangaroo papers, there was time to explore the beautiful city of Edinburgh (in the rain!), watch Colin Wright deliver an entertaining talk on the mathematics of juggling, and



dance the night away with a traditional ceilidh! The Bailie of Edinburgh welcomed everyone to Scotland, and the conference finished with the AKSF annual general meeting. In November 2014 the Kangaroo setting meeting will take place in Puerto Rico.

As well as the Grey and Pink Kangaroo the UKMT also runs the Senior Kangaroo, and we are currently developing a Junior Kangaroo which we hope to launch in 2015. Last year for the first time, the UKMT ran a Summer School for Girls, and selection for this was based on performance in the Pink Kangaroo. All our Kangaroo competitions are follow-on events, so to become involved in these, the first step is to enter our Maths Challenges! Past Kangaroo papers can be downloaded from our website at www.ukmt.org.uk.

Junior Maths Challenge

Challenge your pupils and give them the opportunity to compete against over 280,000 pupils nationwide by entering the Junior Maths Challenge (JMC). Taking place on Thursday 1 May, the JMC is an hour-long multiple-choice paper that encourages pupils to think and tests their problem solving skills. Certificates are awarded to the top performers in Years 7 and 8 in England and Wales, S1 and S2 in Scotland, and Y8 and Y9 in Northern Ireland, and also the top 40% of pupils nationwide. Enter today!

2013 JMC, Q7

After tennis training, Andy collects twice as many balls as Roger and five more than Maria. They collect 35 balls in total. How many balls does Andy collect?

A 20 B 19 C 18 D 16 E 8

UKMT Contact Details

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Diary Dates for 2014

Maths Challenges and Follow-on Rounds 2014

Challenge	Date	Follow-on Round	Date
Intermediate	Thursday 6 February 2014	IMOK (Olympiad and Kangaroo)	Thursday 20 March 2014
Junior	Thursday 1 May 2014	JMO	Thursday 12 June 2014
Senior	Thursday 6 November 2014	BMO1 and Senior Kangaroo	Date to be confirmed

A Word from our Sponsors

OxFORD Asset Management is proud to be a sponsor of the UK Mathematics Trust.

We're a research and investment firm in the heart of Oxford, employing over 65 people. Most of us have degrees in mathematics, computer science, physics, or econometrics from the world's leading universities. Our team includes a number of Olympiad competitors and winners.

Through our research and software groups, we use quantitative, computer-based models to find patterns and anomalies in financial markets to generate a return for our investors, which include institutions such as pensions and university endowments throughout the world. Our models rely on analysing as much data as we can gather. We enjoy tackling difficult problems, and strive to find better solutions.

We're always looking for talented people to join us. A background in finance is not necessary. Contact one of our partners, david.lamper@oxam.com, if you're interested.

OxFORD Asset Management



**Institute
and Faculty
of Actuaries**

A New Year and a new qualification for the IFoA

One of the roles we play when sponsoring the UK Maths Trust is to ensure that we are maintaining relevance to the generations of students coming into the IFoA. We are working to meet our members and potential candidate's needs by launching a new qualification in summer 2014; the Certified Actuarial Analyst. It is a new qualification that will aim to professionalise actuarial support roles in

organisations, enhance potential candidates' CVs whilst they are searching for jobs in a competitive job market, and allow students who are searching for other options besides university the opportunity to gain a professional qualification. We will update you on its progress in the June newsletter.

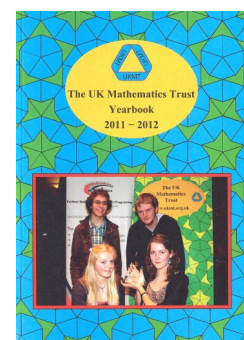
By Barbara Beebe, Head of Member Communications and Brand

Publications Snippets

Did you know that if your school participates in any of our Maths Challenges or team events, they will automatically receive a free copy of our annual Yearbook?

The 2012-13 Yearbook will be sent to schools later this term, and contains all the question papers and solutions from the Maths Challenges, Team Challenges, and all follow-on competitions from the 2012-13 academic year. It also contains a review of the International Mathematical Olympiad and summer schools; information about the UKMT's mentoring schemes; and an overview of all our activities. A very useful addition to any school library or mathematics department!

Additional copies and previous Yearbooks can be purchased at www.ukmt.org.uk.



UKMT Volunteers' Meeting

We were delighted to host a meeting (with a problem setting focus) for our volunteers in London at the end of November. Seventy-five volunteers attended, and it was great to be able to personally thank our long-standing volunteers, and welcome some new faces.

The UKMT Chairman, Professor Frances Kirwan, welcomed the volunteers before they settled in to problem setting workshops looking at setting questions for the Maths Challenges, Olympiad questions, Team Challenge Crossnumbers, and international problems! The day finished with a brief talk by UKMT Director, Rachel Greenhalgh, about some of our new activities and giving thanks to all those who freely give up their time to help. We could not run the breadth and depth of our activities without the input from our volunteers and we are grateful to all.

If you would like to find out more about volunteering for UKMT, please contact us at enquiry@ukmt.org.uk. We are particularly looking for people to help run Senior Team events, run or host Mathematical Circles, and assist with problem setting or checking.



UKMT Summer Schools

The nights are long and the days are cold, and summer seems such a long time ago! In 2013 it was all change for our programme of summer schools. Thanks to funding from the DfE we were able to run an additional two Summer Schools in Oxford last August. We also received generous funding from several Oxford colleges (Balliol, Christ Church and Somerville) to enable us to run a brand new Summer School for Girls. In addition to this, our two National Mathematics Summer Schools moved from their usual venue in Birmingham to Woodhouse Grove School, Bradford.



Department
for Education



The five Summer Schools followed a similar format, with an ice-breaker session upon arrival to help all students settle in, then over the following five days, a mix of lectures, workshops and group sessions on topics as diverse as Combinatorics, Catalan Numbers, Inequalities and Geometry, along with a varied social scene including a mathematical extravaganza!

Around 40 students aged 14 to 16 attended each summer school, along with senior students to help out. These students were selected on the basis of their performance in the IMC follow-on competitions. A fabulous time was had by all, and many long lasting friendships formed. The students were asked

what they would say to anyone invited to a UKMT Summer School in future years:

"It's going to be an amazing five days of your life. The time flies, so enjoy every moment of maths there"

"Definitely go and make the most of the experience; it's really enjoyable to meet up and talk to people who share a similar interest in and/or affinity with Maths, as well as learn some new, varied and interesting areas of Maths".



Dame Frances Kirwan



We were thrilled with the news that the UKMT Chairman, Professor Frances Kirwan FRS, was recognised in the recent New Year Honours. The notes on her award read "Professor Kirwan, Professor of Mathematics at Oxford University, is one of the UK's leading mathematicians. She is outstanding not only for the significance of her research in algebraic geometry but also for her contribution to the mathematical life of the UK and to the worldwide mathematical community. She is Chair of the UK Mathematics Trust, a body concerned with raising the quality of secondary mathematics education, and has served as the Convenor for European Women in Mathematics."

Congratulations to Frances, and we look forward to hearing all about her trip to the Palace!

Primary Team Maths Resources

The 2014 set of Primary Team Maths Resources (PTMR) are now available. These free resources enable secondary schools to organise and host local team maths events for their feeder primary schools. Schools may also choose to use the materials in other ways, such as for an end of term activity for their 11-13 year old pupils across the ability range. The resources contain more materials than would be needed for one competition, so schools can choose the most appropriate activities for them. Some of the rounds will be familiar to those who participate in UKMT team events.

To obtain a set of these materials, please contact us by email only to enquiry@ukmt.org.uk. Sample material can be found at www.tmc.ukmt.org.uk.

2012 Group Round, Q6

Mrs Straw bought buns for her class.
If everyone in the class had 2 buns each there would be 10 left over.
If everyone had 3 buns each there would be 15 buns short.
How many pupils are there in Mrs Straw's class?

2013 Relay Round, Q B13

Every week granny puts her change into a pot. At the end of the month she spills it out onto the table and counts up how much she has saved. Last month she had 23 two pence coins, 14 pennies and eight 5p pieces. How much has she saved?

UKMT Teacher Meetings

Look out for upcoming information about the UKMT Teacher Meetings in the summer term. These meetings aim to contribute to the continuing professional development of mathematics teachers, provide materials to use in the classroom, and allow time for networking. We plan to run events this year in Brighton, Bristol, Edinburgh, Leicester, London (Greenwich), and Manchester.

Annual Student Poster Competition



Can your students design a poster as good as last year's winner pictured here? Entries are accepted from individual pupils or teams of pupils.

The winning poster will be reproduced professionally and sent to all schools with the September 2014 Newsletter.

The poster must:

- Be on A2 paper in portrait orientation (not landscape)
- Include the words "UKMT Maths Challenges 2014-15"
- Include the dates: Senior Challenge -Thursday 6th November 2014
Intermediate Challenge -Thursday 5th February 2015
Junior Challenge -Thursday 30th April 2015

Traditionally, posters have been based on challenge questions although there is no requirement to do so. Previous challenge questions can be found on our website at www.ukmt.org.uk. It does not need to include our logo or that of our sponsor, but these will be added to the winning poster. We regret we are unable to accept electronic entries and we cannot return posters.

Winner of Sudoku 43:
William Motson, The Crypt School,
Gloucester

Entrants should write their name, age and school (legibly!) on the back of the poster, but they should not be identifiable from the front. The winning names will be published, and the judges' decision will be final.

Please send entries by the closing date of Friday 25 April 2014 to:
Poster competition, UKMT, School of Maths Satellite, University of Leeds, Leeds LS2 9JT

NAME.....AGE.....

SCHOOL ADDRESS.....

.....POSTCODE.....