

United Kingdom
Mathematics Trust

UK Mathematics Trust News

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New website launched – online competition entry available now!

After years in the making, we are delighted to have launched our new website.

The site—still at ukmt.org.uk—is designed to make taking part in our competitions and activities as easy as possible for schools and teachers.

In the first three months after the site was launched, almost 5000 teachers, students and members of the public signed up. Our small team based in the UKMT office have done an amazing job of helping the process to go as smoothly as possible.

Teachers can now make entries to the **Team and Senior Team Maths Challenge Regional Finals** and have immediate confirmation of their place. A handy map (see the screenshot below) allows teachers to identify the Regional Final events closest to their school.

So far we have received over 100,000 entries to the forthcoming **Senior Mathematical Challenge** through the new site, and entries for the **Junior and Intermediate Mathematical Challenges** are flooding in (see page 4 for competition dates).

As well as allowing efficient entry to our competitions and activities, the new site makes accessing past competition materials more straightforward for teachers and students.

Did you know, for example, that we have **extended solutions and investigations** following each Mathematical Challenge? In these downloadable resources, we suggest related questions for students to think about so that they can explore more deeply the mathematical concepts involved.

Sign up for free at ukmt.org.uk to enter competitions and access results online.

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The Team Maths Challenge page at ukmt.org.uk

Why volunteer with the UKMT?



The varied and flexible volunteering roles with the UKMT provide excellent professional development, explains mathematics teacher and volunteer Catherine Ramsay.

The life of a teacher is a busy one, and one that is full of opportunities to become even busier. You might wonder, then, why I would recommend volunteering with the UKMT.

In the last four years as a volunteer I have found that the experiences have been well worth it, for a variety of reasons.

Volunteering with the UKMT is a flexible commitment. There are roles to fit every sort of workload and expertise. I came on board as a marker for the Olympiads, but since then I have run Mathematical Circles, led sessions at Summer Schools and helped set and check problems. Volunteers can help run Team Challenges, represent the organisation at conferences, and can mentor students as they tackle challenging and interesting problems.

It means that when you volunteer with the UKMT you get to help in a manner that suits you, as well as getting the opportunity to experience a wide range of activities.

With that range comes valuable professional development. As a marker and setter, the challenge of marking Olympiad questions at different levels has given me insight into how students think and what value lies in their mathematical thinking. It has made me more rigorous and creative in the classroom. There are also opportunities to work with students, as a speaker or helper at events which take place all around the UK. The format and content of these events are

excellent opportunities to develop your teaching skills, and the feedback from the students is incredibly rewarding. UKMT resources are wide ranging and high quality, and my experience using these materials at events has helped me use them effectively in my own classroom in a range of formats to suit a range of students.

Most valuable are the relationships you can form as a UKMT volunteer. Volunteers form a network of maths teachers and other professionals around the country, all brought together by a love of maths education. The opportunity to talk and share ideas with other volunteers has been one of my favourite experiences, and has benefited me professionally in innumerable ways.

Catherine Ramsay is Head of Mathematics at Hutchesons' Grammar School in Glasgow.

Find out more about how to get involved and see current volunteering opportunities at ukmt.org.uk/volunteering

Changes at UKMT HQ

We say a fond farewell to **Rachel Greenhalgh** who, for the past eight years, has led the UKMT as our Executive Director. On Rachel's watch, the organization has extended its reach and broadened its activities with the introduction of Mathematical Circles, Maths Miniatures and the Mathematical Olympiad for Girls.

Our trustees are pleased to report that they have appointed **Hannah Telfer** as our new Executive Director. Hannah brings her

experience of delivering exceptional customer service and will lead the team based at the University of Leeds.

Our congratulations go to **Anja Komatar** who will move on in November to an exciting position elsewhere at the University of Leeds.

We are pleased to welcome **Emma Pilkington** to the team as our new Volunteering Manager from mid November.

Beverley Detoef has left us after many years of distinguished

service and we wish her the very best for her future.

We will welcome **Kit Richardson** to our team as an Administrator from late November.

There will be ongoing staffing changes as Hannah reconsiders how best to structure the team.

Find out more about the UKMT and see a full up-to-date staff list at ukmt.org.uk/what-we-do

The 60th International Mathematical Olympiad

Congratulations to the UK team of Mathematical Olympians, each of whom was awarded a medal at last summer's competition in Bath.

This year was the third time that the prestigious competition took place in the UK, after London (1979) and Glasgow (2002).

The team's performance meant the UK finished in 20th place, out of 112 participating teams.

Our congratulations go to the team of six students:

Alex Darby *Sutton Grammar School for Boys* — Bronze Medal;

Liam Hill *Gosforth Academy* — Gold Medal;

Tom Hillman *St Albans School* — Silver Medal;

George Mears *George Abbot School* — Bronze Medal;

Benedict Randall Shaw *Westminster School* — Bronze Medal;

Aron Thomas *Dame Alice Owen's School* — Silver Medal.

The chosen six were accompanied by the Team Leader, Dr Dominic Yeo (University of Oxford) and Deputy Team Leader, Dr Freddie Illingworth (University of Cambridge).

The team's hard work preparing for the competition certainly paid off.

Dominic Yeo said: "The lack of exciting travel for this 'home IMO' clearly had no effect on the enthusiasm of the 2019 UK team, as well as the reserves who missed out on a place in the six, to push themselves through harder and harder problems as the year progressed. It was therefore particularly pleasing that all the British students solved at least one of the 'medium' problems Q2 and Q5 at the IMO in



The UK team at the opening ceremony of the 60th International Mathematical Olympiad

Bath, and as a result, we earned a full set of medals, including a gold medal for Liam Hill, who produced an interesting solution to the hardest Q6 using complex numbers. Four of the team are now off to university, and we wish them all the best for their future progress in mathematics and beyond!"

Ahead of the exams—which took place 16-17 July—team leaders arrived armed with candidate problems and began the work of selecting just six problems to make up the two 4.5-hour exam papers.

They were later joined by the 621 participants and accompanying team leaders from 112 countries, who descended on Bath ahead of the opening ceremony.

After nine hours of exams split over two days, the participants enjoyed excursions to various tourist attractions, including Stonehenge in Wiltshire, while the team leaders went about marking the contestants' attempts at the problems.

The event was rounded off with a closing ceremony where the highest-scoring contestants were awarded their medals. The festivities that followed gave participants the opportunity to say their goodbyes to new-found friends from across the globe.

A view from inside IMO 2019

The UKMT is proud to have supported the 60th International Mathematical Olympiad, held in Bath, as a Parent Organization.

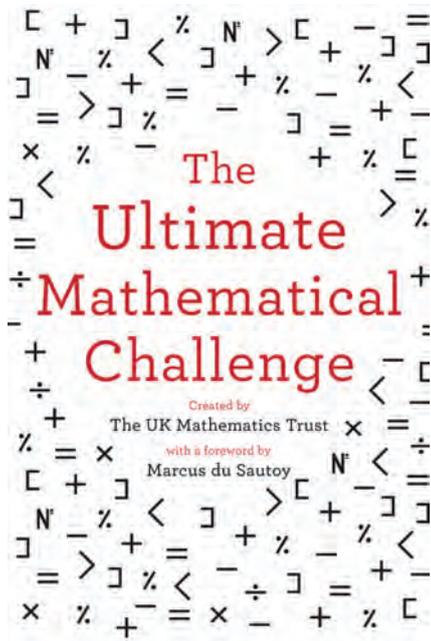
The IMO Director, Ceri Fiddes, recounts her memories of the competition:

"IMO 2019 started for me in 2014. Over the next five years the scale of the project caused a few sleepless nights. May and June 2019 were busy ensuring that volunteers (200 of them) were in place and trained and that the final details were arranged.

"The actual competition itself, which took place in July, is a bit of a blur for me now as we were so busy making sure that everything went to plan. However, our main aims were to ensure a smooth and well-run competition, and make participating a pleasurable and memorable experience for the contestants. I am pleased to say that we succeeded with both aims, and I am massively grateful to the army of volunteers that made that possible."

See www.imo-official.org for more information about the International Mathematical Olympiad and to access past problems and results.

Are you looking for The Ultimate Mathematical Challenge?



Are you in the market for a perfect festive gift for an enthusiastic problem solver? Then look no further than our best-selling puzzle book *The Ultimate Mathematical Challenge*.

Published by HarperCollins—and available on Amazon and in all good bookshops—this book contains a wide range of intriguing and challenging puzzles for you to tackle alone or with others.

With hundreds of problems specially chosen from our catalogue of competitions, and most requiring no more than numerical knowledge, logical thinking and native wit, these problems will test and stretch readers' problem-solving skills to their limits while raising awareness of our competitions and activities.

The book contains problems inspired by our Primary Team Maths Resources, the Junior, Intermediate and Senior Mathematical

Challenges, the Team and Senior Team Maths Challenges and each of our Mathematical Olympiads, up to and including the British Mathematical Olympiad Round 2.

As Marcus du Sautoy—Simonyi Professor for the Public Understanding of Science at the University of Oxford—says in the foreword to the book:

"I got hooked on the amazing buzz you get when you've struggled to crack a challenging puzzle and then suddenly you see a clever way to unlock the enigma. Be warned: cracking puzzles releases a very addictive drug."

The Ultimate Mathematical Challenge is available on Amazon and in all good bookshops.

See ukmt.org.uk/shop for more information about our other publications.

Issue 60 Prize Sudoku winner

Congratulations to T. Castle from Amersham School, Buckinghamshire, who wins a UKMT Megaminx!

Look out for the next Prize Sudoku in a future issue of this newsletter.

Diary dates for 2019–20

Mathematical Challenges and follow-on rounds

Senior

Thursday 7 November

Senior Kangaroo

Friday 29 November

British Mathematical Olympiad Round 1

Friday 29 November

British Mathematical Olympiad Round 2

Thursday 30 January

Other events

Senior Team Maths Challenge

Regional Finals

November–December

Intermediate

Thursday 6 February

Grey and Pink Kangaroos

Thursday 19 March

Cayley, Hamilton and Maclaurin Olympiads

Thursday 19 March

Team Maths Challenge

Regional Finals

February–April

Junior

Thursday 30 April

Junior Kangaroo

Tuesday 9 June

Junior Mathematical Olympiad

Tuesday 9 June

Mathematical Olympiad for Girls

Early October 2020