



Welcome to the fifth issue of our Newsletter.

A word from our CEO



My first year at MathsWorldUK has been very eventful. The latest headline as we go to press is that we have just received a pledge of £1million towards our goal of making the UK's first National Mathematics Discovery Centre (see **STOP PRESS: Simon Norton Legacy** at the end of the newsletter). This pledge means that we are now seriously on our way to achieving our mission. I extend a huge 'Thank You' to all our supporters in helping MathsWorldUK to get to this point.

We have spent the year developing plans for our discovery centre and setting up a touring exhibition as a first step on this path. Our successful funding applications have allowed us to put this exhibition into production. The theme is Problem Solving. We have ordered the majority of our exhibits from Mathematikum, a pioneering mathematics discovery museum in Giessen in Germany. We are now at the stage of recruiting a designer to create the look and feel of the exhibition and also a tour manager. We will make sure that the tour is well publicised so you can get a chance to visit when it is near you. So, watch this space.

As part of outreach activities of MWUK, I gave a number of talks and lectures during the year including:

- Bath University lecture to students on the 'Communicating Mathematics' module
- The W. P. Milne Lecture for Sixth Formers at the University of Leeds
- British Society of History of Mathematics conference
- Royal Institution celebration lecturer
- Schools: St Thomas School, Werneth, Oldham; Heckmondwike Grammar; Hampstead Gardens, Peterborough; Uxbridge College; Gledhow Primary, Leeds; Dixons Academy.

Our other activities are described in the Newsletter.

We will continue to raise awareness and funds for the overall mission. If you have suggestions about whom we should talk to then do let us know. At the same time we will be setting up the touring exhibition as a proof of concept for the centre.

We hope to have all the funds and planning work in place within five years. We aim to make an architecturally and culturally singular attraction which can be accessed by any visitor and through which the real and varied nature of mathematics can be experienced. Wish us luck!

I look forward to leading MWUK for the next year. I hope we continue to grow and that we put together a dynamic development team to take us to the next phase of our work.



Financial Appeal: We are almost there!

Last year MathsWorldUK was offered £125,000 by an American donor on the condition that we match this pound-for-pound within one year. The donor, who is well known to us but wishes to remain anonymous, has very kindly agreed to extend the deadline to the end of 2020. We have now almost reached our target. Since July 2018 we have raised just over £107,000, so we are now just £18,000 short of matching the donor's offer. We appeal to our supporters to help us achieve this final goal. It would take just 18 donations of £1,000, or 36 donations of £500, or whatever number of smaller or larger donations to get us over the finishing line.

We wish to thank all those who have generously given to our cause: to individuals who have become members of MathsWorldUK, or made straight donations; to grant awarding bodies; to charities and other philanthropic institutions who have all supported us over the last twelve months. To all our supporters we say please help us recruit more friends, spread the word about MWUK, find us philanthropic organizations which may wish to form partnerships with us to raise the remaining money we need, or persuade people to leave us a legacy.

Our recent Sponsors and Benefactors

Since the beginning of this year we have received financial support from the following: The Institute of Mathematics and its Applications; The Worshipful Company of Actuaries; The London Mathematical Society; Oppenheimer Funds; The Open University; University of Leeds; University of Edinburgh; Leeds Philosophical and Literary Society; Cambridge Chrysalis Trust; The Association of Information Technology Trust; Thriplow Charitable Trust; Keswick Enterprises Holdings Charitable Trust; and from individual donors.

Schools Video Competition: Maths Miniatures 2019

The theme of this year's competition is 'Mathematics in Sport'. We had 645 registrations from across the UK by the close of the registration period.

It is still early days but 25 videos have already been submitted (from teams of students with a mixture of ages from year 7 to year 13). The submission deadline is not until 22 July and we have more at this stage than at the same time last year.



Our thanks are with Anja Komatar from the UKMT, for all the work on the competition this year. Anja is the volunteering manager and through this competition 38 teachers signed up as new volunteer judges for the early rounds of elimination and 16 of the new UKMT volunteers are also involved. This is in addition to the judges from last year most of whom are happy to judge again.

Following feedback from the judges last year, Anja has set up some training exercises with previous videos. These are to give some guidance and exposure to what videos of different quality look like before the volunteers judge their allotted selection.

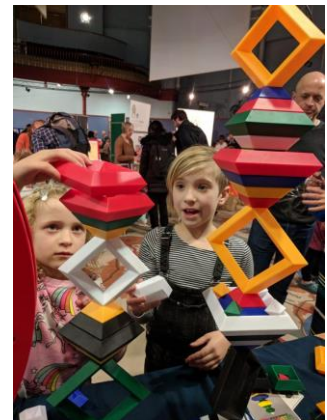
As in previous years, we expect the finalists to be judged by volunteers from across the four collaborating partners (MathsWorldUK, UKMT, University of Leeds, and IMO 2019 Ltd).



Participation in Mathematics and Science Fairs

During the year we have attended and exhibited at a number of science and mathematics festivals, reaching thousands of people of all ages. The most recent were at Leeds, 'Eureka' in Halifax and the Greenwich Maths Time Festival at the University of Greenwich. Still to come is the Festival at Bradford at the end of July.

The photographs below capture the spirit of the MWUK contribution to these festivals. And of course they also capture the enjoyment of the visitors.





The Mirror Pillar



Katie Steckles and Matt Parker with the Mirror Pillar
<http://www.mirror-pillar.co.uk/>

We have now taken ownership of the Mirror Pillar and took it, as part of the Scottish Maths week, to Glasgow Central Station and to Edinburgh.



A Special Promotional Event in the City of London

On Thursday 21st March 2019, we held an informal promotional evening at the Innovation Warehouse in Smithfield, London.

The purpose of the event was to bring MathsWorldUK to the attention of people and institutions in the City of London, especially in the financial sector. The event was publicised in the newsletter of 'Culture Mile', a liaison organization representing the major cultural institutions of the City of London Corporation (the Barbican, The Museum of London, The London Symphony Orchestra and The Guildhall School of Music and Drama).

The evening involved food, drink and chat and an opportunity to explore puzzles, games and some MWUK equipment. Our CEO, Katie Chicot, welcomed the visitors and gave a short introduction about MWUK and its vision of setting up the first interactive 'National Museum' of Mathematics in the UK. Then two speakers, Rob Eastaway and Tom Crawford, each gave very enjoyable and informative talks on some aspect of mathematics. Rob's talk used very simple mathematics to great effect; Tom talked about the mathematics of football.



MWUK bore the main expenses for the evening, but we had the venue free of charge thanks to Ami Shpiro, the Co-Founder and Managing Director of the Innovation Warehouse, and Carluccio's of Smithfield provided some delicious confectionary.

Positive outcomes of the event were:

- a chance to reward friends of MathsWorldUK with a fun evening;
- making initial contacts with the livery companies: Engineering, Scientific Instruments, Joiners and Educators, and strengthening our relationship with the Actuaries;
- an introduction to the Stephen Hawking Foundation;
- recruiting new friends to MathsWorldUK.

We hope to run similar events in the future.

Our thanks are due to all those who helped make the evening a great success and especially to



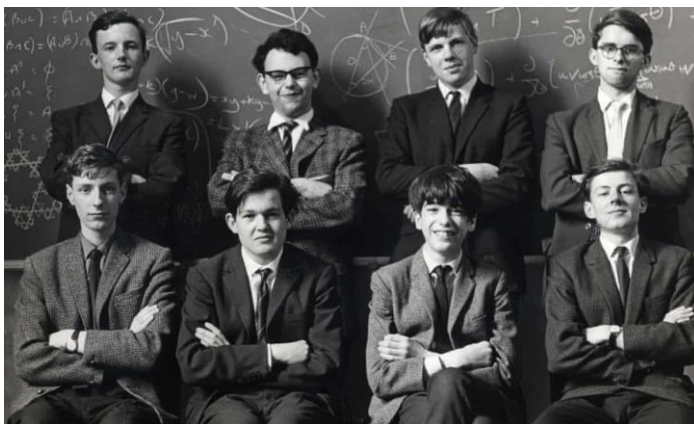


Possible sites for MWUK

We are currently in fruitful discussions with the Royal Armouries Museum in Leeds and with Invest Newcastle about exploring possible sites for the National Museum when it finally comes into being. For both towns, Leeds and Newcastle, we will be exploring the feasibility of siting MWUK in one of these northern centres of population. Although discussions are in their early stages at present, there is much good will to come out with a successful outcome in each city.

STOP PRESS: Simon Norton Legacy

Simon Norton (front row, 3rd from the left in the photograph), who died in February aged 66, was a child prodigy in mathematics. He represented Britain at the International Mathematical Olympiads three times in the 1960s, scoring the top grade each time, once with 100%, another time with 99%, and winning a special prize for the elegance of his solutions.



He did his PhD under John Conway in Cambridge and with John Conway he produced the seminal Atlas of Finite Groups.

Simon became the world expert on the Monster Group and its connection to Modular Functions and with John Conway coined the term Monstrous Moonshine. "I can explain what Monstrous Moonshine is in one sentence," said Simon. "It is the voice of God."

Simon was fascinated by the huge number of symmetries associated with the Monster Group. This group has order of roughly 8×10^{53} , that is the number of elements in the set that defines the group.

The Legacy left by Simon Norton is administered by his brother, Michael Norton, and a group of Trustees. The trust has pledged £1million to MathsWorldUK and has also offered to be involved in the final thrust towards establishing the physical interactive museum of mathematics that is our ultimate goal. This is a windfall for which we cannot thank Michael Norton enough.