

## Maths Week Scotland 2018

Maths Week Scotland was created following recommendations from the [Making Maths Count report](#) to raise the profile of maths across Scotland. The first Maths Week Scotland took place in 2017, and 2018 built upon it's success with more events in schools and a continued offering for adults.

Maths Week Scotland 2018 took place 10-16 September with events, activities, resources and support for schools, early years education, colleges, universities, communities and members of the public. A wide range of national and local activity promoted and celebrated the importance, relevance and beauty of maths. Similarly to last year, early years education settings, universities and, in particular, schools have demonstrated innovation, passion and creativity in bringing the aims of Maths Week Scotland to life. Digital challenges and games meant people could participate all across Scotland.

Maths performers, including Ben Sparks, Andrew Jeffrey and Kjartan Poskitt, held shows in schools in Shetland, Orkney, Perth and Kinross, the Highlands and Edinburgh. Meanwhile, the Bletchley Park Team travelled to all secondary schools in Angus to engage young people in the value of maths through codebreaking. Schools hosted a huge variety of their own Maths Week Scotland events and took part in competitions such as the Deputy First Minister's daily maths challenges, *Maths Wi Nae Borders* and Maths Inside. Eight public events across Scotland showcased maths in a range of areas from cancer tumour modelling, to maths and rock music, to solving puzzles

### Schools and Early Years Education

School pupils in every local authority took part in Maths Week activities and events. Teachers opted to attend workshops, host performers or create their own Maths Week Scotland celebrations. The range and creativity was outstanding.

Teachers used inspiration from across the curriculum to introduce maths into all their lessons, from numbers in Spanish to measuring in baking to maths in the Daily Mile. We also saw mathematical creativity with parabolic string art, creative data visualisation, knitting and even maths fancy dress. Outwith the classroom we saw maths trails, maths movie nights and treasure hunts.

Maths Week provided the opportunity for schools to look at maths in different careers, highlighting maths in the NHS, cryptography and forensics amongst others.

Maths Week in schools wasn't just for pupils though, it was an opportunity for parents, carers and family to get involved. Through school sessions with games and puzzles; pupils showcasing their maths learning in the classroom; parents and carers talking to young people about careers and maths as a skill for life; and, home learning with a focus on maths fun we have seen the valuable relationship being home and school being nurtured in incredible ways. Some of our favourite moments were shared on [twitter](#)

## Workshops and Shows

Over 5,000 pupils across Scotland took part in facilitated Maths Week Scotland workshops and shows.

Primary school students were wowed with Murderous Maths by Kjartan Poskitt, whilst Andrew Jeffrey showed secondary students a different side to maths. Both performers were funded by Scottish Government. Ben Sparks, funded by ICMS, visited schools in Edinburgh to show Maths Magic.

Pupils at National Museum of Scotland tackled renewable energy using mathematical and problem-solving skills, through the [Get Energised: Power House programme](#).

Tom Briggs from the Bletchley Park learning outreach team travelled to every secondary school in Angus with a real enigma machine delivering workshops and assemblies on the history and intrigue of code breaking.

Strathclyde Science Scouts from University of Strathclyde visited schools across Glasgow to deliver workshops on herd immunity and coding.

Secondary school students got a taste of university life at Heriot-Watt, Edinburgh, Glasgow and St Andrews Universities and ICMS. They took part in workshops and lectures on topics from social media, to maths and statistics in developing public policy, to solar flares. At University of St Andrews the Special Collections team also provided a glimpse into the history of maths with historical texts from the likes of Galileo and Mary Somerville.

Adult learning practitioners looked at climate using numbers at an event by Learning Links Scotland. Heather Reid and Alison Mclachlan led workshops and ideas sharing on how to include numeracy and STEM.

## Competitions

A range of competitions were open to school pupils including the Deputy First Minister's Daily Challenge, Sumdog Maths Week competition, Mangahigh, *Maths wi nae Borders* and a brand new Maths Inside photo competition.

Maths Inside asked school pupils of all ages to submit photos of maths in the world around them with accompanying text about the maths in the picture. The competition received over 600 entries. Participants took inspiration from all areas of life: views of lakes, pine cones, musical instruments and even their own kitchen scales.

*Maths wi nae Borders* returned this year and received 168 classroom entries. Over a million questions were answered by 78,000 pupils on Sumdog. Winners of both competitions were gathered at [special events](#) with John Swinney, Deputy First Minister, to recognise their success.

BBC Learning created videos with Scotland's Teacher of the Year 2018, Chris Smith, and some of his pupils at Grange Academy, to accompany the Deputy First Minister's Daily Maths Challenges.

## Events

Public events included family puzzle days, talks from mathematicians and an afternoon of game theory.

Talks showcased the breadth and usefulness of maths. Mark Chaplain's (University of St Andrews) talk on modelling cancer tumours, and how maths can help doctors offer individualised treatment plans. Chris Budd discussed how we hold data within our genes. Dr Mark Lewney explored how maths, physics and music can help solve problems of the universe.

Families got hands on with solving puzzles at University of Edinburgh's Maths Circle +.

For the board game fans, Glasgow British Science Association hosted an event in Geek Retreat. Attendees played games with friends and used game theory to figure out the strategies required to win.

Scottish Government Ministers supported Maths Week Scotland by attending a range of events and meetings across the country and using social media to highlight activity.

## Digital

The [Maths Week Scotland 2018](#) webpage featured online teaching resources, links to external providers and promotion of Maths Week Scotland events and competitions available. The webpage received over 10,000 views throughout September.

## Social Media

There was high social media engagement on twitter from schools and events using the #MathsWeekScot and @MathsScot. The account earned 133,200 impressions over a 28-day period during and in the build up to Maths Week.

Highlights from twitter can be found [here](#).

The Deputy First Minister's Daily Challenges were posted on the [Maths Week Scotland blog](#) in addition to posts promoting upcoming events and highlighting activities from the day.

## Small Grants Fund

A small grants fund was new for 2018, provided and administered by the Scottish Government Curriculum Unit, the Glasgow Mathematical Journal Trust and Edinburgh

Mathematical Society. The fund was open for community groups, schools or event hosts to apply for funding to attend, host or take part in Maths Week Scotland events.

A total of £16,000 was granted to groups for projects such as maths libraries, workshops and competitions. Projects which received funding are outlined at the end of this document.

## Contributors

There were many contributors to Maths Week Scotland 2018 who hosted events, competitions, provided resources and worked to make Maths Week Scotland a success.

Across Scotland the hard work of teachers to create events, host performers and workshops and engage their class in the competitions and challenges was incredible.

International Centre for Mathematical Science  
Edinburgh Mathematical Society  
Glasgow Mathematical Journal Trust  
Scottish Mathematical Council  
British Science Association Glasgow Branch  
National Museums Scotland  
BBC Learning  
Institute and Faculty of Actuaries  
Bletchley Park Education Outreach  
University of Edinburgh  
University of Glasgow  
Heriot Watt University  
University of Strathclyde  
Strathclyde Science Scouts  
Glasgow Centre for Population Health  
University of West of Scotland  
Edinburgh Napier University

University of St Andrews  
Health Services Research Unit  
Sumdog  
Mangahigh  
Izak 9  
Twinkl  
Dr Andrew Wilson  
Chris Smith  
Lauren McIntyre  
Ben Sparks  
Kjartan Poskitt  
Andrew Jeffrey  
Dr Mark Lewney  
Prof. Mark Chaplain  
Prof. Chris Budd  
Heather Reid  
Learning Links

## What Next?

Maths Week Scotland will be back in 2019! Check back to the [webpage](http://www.nms.ac.uk/maths) [www.nms.ac.uk/maths](http://www.nms.ac.uk/maths) for dates and details over the coming months.

If you have a great idea for Maths Week 2019, want to be involved or to know more? Email [k.oldfield@nms.ac.uk](mailto:k.oldfield@nms.ac.uk)

## Maths Week Scotland Small Grants Fund 2018 – Summary of Events and Initiatives Funded

A very welcome new feature of Maths Week Scotland 2018 was the introduction of a small grants fund to promote innovation and participation during the Week. The initiative was a financial and administrative partnership between the Scottish Government Curriculum Unit, the Edinburgh Mathematical Society and the Glasgow Mathematical Journal Trust. The Maths Week Scotland 2018 fund allocated a total of £16,000 to nurseries, schools, universities and science clubs. An outline of the events and initiatives that were successful in their bid for funding is set out below.

The creation of a new maths library of books, games and puzzles at Victoria Primary School in Falkirk. Primary 7s ambassadors will support younger pupils in accessing the materials and the PTA will assist with the running of it to engage home learning.

Lairdsland Primary School in East Dunbartonshire ran a series of maths workshops supported with games and materials.

St Rose of Lima Primary School in Glasgow held family sessions involving maths roadshows, maths art circles, a maths trail and puzzles and competitions.

The Glasgow Branch of the British Science Association held a Geek Retreat on Sunday 16 September focused on maths and board games for all ages.

Craigroyston Community High School in Edinburgh ran a problem-solving initiative between their s1 pupils and 3 of the p7 years from their cluster primary schools.

Hillview Nursery in Stirling launched an approach to engage and enable parents and carers to learn maths with their children as part of everyday routines.

Todholm Primary School in Paisley had outdoor numeracy workshops, maths challenges with baking, K'Next and Lego learning and visits to local businesses.

Firrhill High School in Edinburgh were provided with funds for prizes for their whole-school maths competition.

Aileymill Primary School and St Bridget's Primary School had K'Next Generation workshops in the school.

The West Partnership pan-authority event for senior pupils was provided with funding to support pupil travel to the venue.

A contribution was provided towards the Maths Inside photography challenge created by the University of Glasgow to promote images of the maths around us.

St Charles Primary School in Glasgow held a Pirates of the Conundrum workshop for the whole school.

Wellgreen Nursery in Stirling received resources for a maths and digital initiative to promote computational thinking and problem-solving skills in young children.

Brae High School in Shetland held parental numeracy evening classes, treasure hunts, numeracy games and a school challenge.

Carnock Primary School in Fife received funding to support their parent event for maths featuring Numicon resources.

Stobhill Primary School in West Lothian held a parental engagement in maths-focused week supported by funding.

Towerbank Primary School in Edinburgh had Izak9 numeracy workshops for all p6 pupils as well as *Towerbank Maths Paths* in the place of maths homework intended to provide activities, games and challenges to take part in at home.

St Modans High School in Stirling held a Mathematics of codes and code-breaking session with an external speaker and an original WWII Enigma machine.

Gleniffer High School in Paisley had escape rooms, a 'Mega Relay' and s5 and 6 Maths Champions to engage with the rest of the school in creative ways.

Strathblane Primary School in Stirling held a series of CSI/Forensics lessons with children working in teams to carry out fingerprinting, footwear impressions, chromatography, fibre samples, hair samples, data handling (creating spreadsheets and graphs), taking measurements, mapping and scale as well as work within fractions, decimals and percentages.

A contribution was provided towards [Maths Week at Work](#): a series of videos for secondary schools

This series of videos was produced by the University of Edinburgh. The project is aimed at showing the breadth and applicability of Mathematics to our teenagers. The series consists of five episodes, so that teachers can show one episode per day to their classrooms during Maths Week. In each of the episodes a maths graduate explains how Maths is used in their job, and mentions some of the challenges they faced while studying Maths. Then they challenge the public with a puzzle related to their job, and, in the end, they present a solution to the puzzle.

The Maths graduates appearing in the videos work in a variety of sectors, from education to videogame programming, from transport planning to the actuarial sector. This gives an idea of the wide applicability of Mathematics.

# Maths Week Scotland 2018

## Schools



Schools in every Local Authority took part, as well as early learning centres, universities, families and local business across the country

## Pupils

Maths Week Scotland events reached over 5,000 primary and secondary school pupils through performers, workshops and events



## #MathsWeekScot

Schools and events shared their involvement through #MathsWeekScot and @MathsScot



## Events and Competitions

Hundreds of people attended eight public events held across Scotland for families and adults.



Thousands of pupils entered competitions, including over 600 entries to a brand new photo competition