

# maths INSPIRATION

INTERACTIVE MATHS LECTURE SHOWS FOR TEENAGERS



## REPORT Sept 2017 – July 2018

### DIRECTOR'S REPORT

This was an exciting year for Maths Inspiration. About 12,000 teenagers attended our shows in the UK in 2017-18, and we expanded our programme both nationally and internationally. It was a year in which we held our first ever show in Scotland (at the George Square Theatre in Edinburgh), and were specially invited to give shows in Melbourne and New York. In England, we held shows in Milton Keynes, Hull, Derby and Exeter for the first time. We also held shows in twelve of our other regular city locations.

While maintaining our autumn and spring programme for Year 12 students, we expanded our programme for pre-GCSE (Year 9/10/11) students. As usual, the shows for younger audiences were held in smaller theatres, because of the higher level of interactivity that this age group needs.

Our continuing success comes against a background of severe cuts in secondary schools. Many schools booked to come to our shows, only to then have to cancel because of staff shortages. Others found themselves unable to attend because of new policies in which their school has cut back on school trips so that they have time to 'get through the curriculum'. We are only too aware that for many schools, maths GCSE and A Level have become marathons that their students are having to slog their way through. While students may emerge with a good GCSE or A Level grade, they often do so without any real sense of where maths might take them, or how beautiful a subject it can be.

We applaud the professionalism and dedication of maths teachers, and understand it is a frustration for many teachers to be forced to stay in the classroom when they know their students would benefit from seeing the bigger picture. Part of our role is therefore to raise awareness with senior management at schools so that they can see the value in Maths Inspiration as a field trip.

There is a large cohort of schools with a strong tradition of maths enrichment, and many of these come back to our shows year after year. However, we also remain

committed to reaching out to schools that don't have a tradition of going to maths events. Often the only way to attract these schools is by personal contact – in particular through face to face conversations. To this end, we took on a new associate to help us build connections with schools in Yorkshire and Derbyshire. Our hope is to add further associates in other regions, when we find the right people and budgets permit.

We also increased our presence at teacher conferences, hosting stands at the MEI conference in Keele, at Mathsconf in Sheffield, Kettering and Manchester, and at other smaller events run by the Advanced Maths Support Programme and the Maths Hubs. Conversations with maths teachers at these events are extremely helpful, and complement our other mechanisms for getting teacher feedback.

In 2018-19 our priority remains to sustain our core programme of UK shows, and to target more schools that do not have a tradition of field trips. We have been invited by the Museum of Maths in New York to do shows off Broadway, and through this we have forged a relationship with Bank of America, an employer committed to outreach to deprived schools. We are delighted that their UK arm, BoAML, will sponsor our 2018-19 shows in Manchester and Reading.

As always, we are extremely grateful to our national sponsor Admiral Insurance, and to our other supporters (listed on the back of this report) who enable us to keep Maths Inspiration affordable for schools, while improving our shows and developing new speakers.

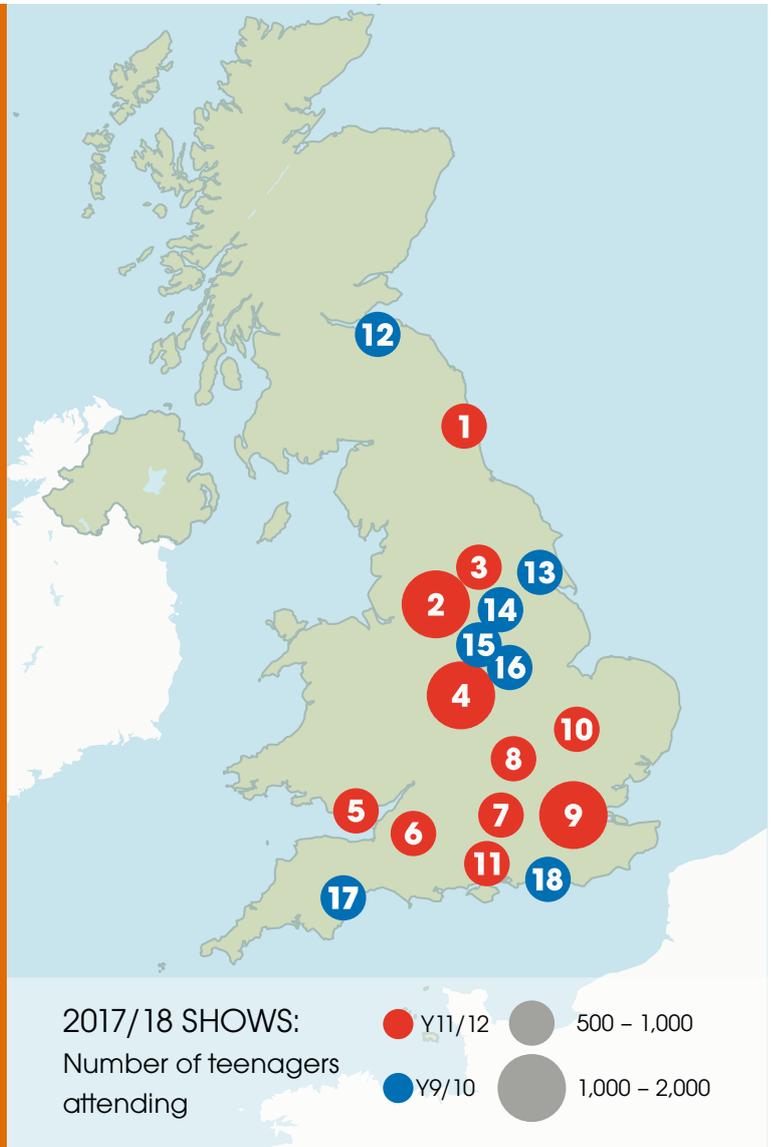
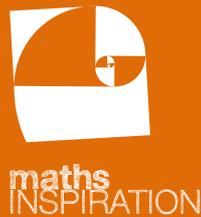
**Rob Eastaway, September 2018**



**Thank you for everything that you and your team do in not only inspiring the students but their teachers as well.**

Teacher, Amery Hill School, Hampshire

Maths Inspiration is a national programme of interactive maths lecture shows for teenagers. We give 14–17 year olds a chance to experience the UK's most inspiring maths speakers live in theatres, presenting mathematics in the context of exciting, real world-applications. Our geographical spread of venues means that every school in England and Wales is within reach of one of our shows. We aim to increase the number of teenagers who go on to study mathematical subjects to A Level and beyond.



Below is a list of the venues we used in 2017/18. Note that we only use theatres that will offer special rates for educational events, as value for money is a priority in keeping our costs down.

### Year 11/12 shows

| City            | Venue                  | Total attendance |
|-----------------|------------------------|------------------|
| 1 Newcastle     | The Northern Stage     | 650              |
| 2 Manchester    | RNCM Concert Hall      | 1,300            |
| 3 Leeds         | City Varieties Theatre | 850              |
| 4 Birmingham    | New Alexandra Theatre  | 1,100            |
| 5 Cardiff       | Dora Stoutzker Hall    | 550              |
| 6 Bath          | The Forum              | 850              |
| 7 Reading       | The Hexagon Theatre    | 850              |
| 8 Milton Keynes | Milton Keynes Theatre  | 650              |
| 9 London        | Piccadilly Theatre     | 1,000            |
| 10 Cambridge    | West Road Concert Hall | 900              |
| 11 Winchester   | St Swithun's Theatre   | 550              |
| <b>Total</b>    |                        | <b>9,250</b>     |

### Year 9/10 shows (Playing for Real)

| City         | Venue                 | Total attendance |
|--------------|-----------------------|------------------|
| 12 Edinburgh | George Square Theatre | 600              |
| 13 Hull      | Hull Truck Theatre    | 350              |
| 14 Sheffield | Crucible Theatre      | 350              |
| 15 Derby     | Derby Theatre         | 300              |
| 16 Leicester | The Curve Theatre     | 400              |
| 17 Exeter    | Northcott Theatre     | 300              |
| 18 Brighton  | Sallis Benney Theatre | 200              |
| <b>Total</b> |                       | <b>2,500</b>     |

Photographs: Ben Sparks

 I thought the whole show was awesome, and really funny too.  
Year 12 student, QEH School, Hexham

## PLAYING FOR REAL

Since 2013, we have been putting on summer term shows for pre-GCSE students, targeted particularly at priority state schools in need of a boost in mathematics. The 13-15 year old age group requires a higher level of interactivity than our senior shows if they are to be fully engaged. We have found that one of the most effective ways to do this is through games. All six of our Year 9/10 shows this year were built around interactive games. Entitled *Playing for Real*, these highly engaging shows are an introduction to the maths behind risk, decision-making and money. Because the audiences are smaller, these shows are particularly dependent on sponsorship if they are to be viable. The Advanced Maths Support Programme (formerly FMSP) have been vital partners in this programme.



Aoife Hunt (right) uses two volunteers to demonstrate aspects of crowd movement.

### VIEW FROM A SPEAKER: AOIFE HUNT

“ When teenagers are asked what sort of career maths can lead to, I don't think many of them imagine a job like mine. I am a consultant for a company called Movement Strategies. I specialise in modelling the movement of pedestrians, which can mean anything from the evacuation of a high-rise building to the flow of the crowd at Wimbledon or at a big music festival. Our work helps to improve peoples' safety and ensure a great crowd experience at major sport and music events.

When Maths Inspiration heard about what we do, they saw that this is an application of maths that would appeal to teenagers. They approached me to ask if I'd be interested in becoming a speaker. I'd done talks for adults before, but never for large audiences of teenagers, and I really wasn't sure if I'd have the necessary stagecraft. I needn't have worried: I had help with ideas for an MI talk, had an MI speaker watch me at a trial event, and I was given detailed feedback on how to fine-tune my content to bring in relevant school maths topics. Since then I have had plenty of coaching from the MI team on ways to improve the presentation.

I performed at the two Maths Inspiration shows in Newcastle in January 2018, and am lined up for Birmingham and Winchester later in the year. I'm passionate about engaging young people in STEM subjects, and thrilled to have become involved with Maths Inspiration. ”



Matt Parker on the Curious stage.

### MORE CURIOUS

In 2016-17 we partnered with the National Theatre to do special shows themed around the maths in the book and theatre production of the award-winning *The Curious Incident of the Dog of the Night-time*. Following the success of our maths shows, we were invited to repeat our shows in Australia, as part of the world-wide tour of the play. We performed shows at the Melbourne Arts Centre in February 2018, and at the Roslyn Packer Theatre in Sydney in July 2018.

## SHOW PRICES/SPONSORS AND PARTNERS

We work hard to keep our ticket prices low and to make our shows accessible to everyone in the target age groups. This year, over 85% of our audience came from state schools.

We do this by attracting sponsors and partners who subsidise the cost of the shows. We would like to thank all of our sponsors and supporters (listed below) for helping us to promote maths to the next generation.

| Sponsor/grant funder/supporter      | Involvement with Maths Inspiration  |
|-------------------------------------|---|
| Admiral Insurance                   | National sponsor, and exclusive sponsor of our Cardiff shows. Admiral have supported us since we started, and have enabled us to expand our programme nationally. |
| Advanced Maths Support Programme    | Delivery partner of our Year 9/10 summer shows, enabling us to offer free seats to students from target schools.  |
| Trinity College Cambridge           | A grant to enable us to make all teacher and PGCE seats free.   |
| Institution of Structural Engineers | Grant funder, at least two shows feature structural engineering speakers.   |
| Newcastle University                | Supporter of the Newcastle show.  |
| Sheffield Hallam University         | Supported our Sheffield show.   |
| NFT Distribution                    | Sponsor of the Nottingham show.   |
| The National Theatre                | Partner in delivering our <i>Curious Coincidence</i> shows.   |
| The UK Maths Trust                  | Support us in the promotion of our Leeds shows.   |

We are keen to work with new partners and sponsors. If you would like to find out more about this opportunity, contact Jill Walsh at [jill@mathsinspiration.com](mailto:jill@mathsinspiration.com)

## THE TEACHERS ADVISORY PANEL

The views and feedback from teachers play a vital role in planning our shows. Our teacher panel is now well established and has attracted a variety of ten experienced maths teachers from around the country, teaching at sixth form colleges, local authority run comprehensives, independent fee-paying schools, free schools, single-sex schools and academies. All panel members volunteer their time and in return their school is awarded ten free tickets for any MI show they attend.

We contact the panel when we want to test ideas or to get feedback on practical issues or problem solve. We'd like to give a special thanks to our panel members who take the time to share their insights and ideas with us. It gives us a better understanding of what's happening in the classroom and helps to ensure that Maths Inspiration keeps up with current trends. A full list of current panel members is available on the website.



Rob Eastaway looks for volunteers at Exeter Northcott Theatre.



**Maths Inspiration shows give my students ideas for how maths is relevant in careers they have never considered before.**

Teacher Advisory Panel member