**MATHEMATICAL ASSOCIATION**

Supporting mathematics in education

# Annual report

The Mathematical Association 2022

# Presidential report

Dr Colin Foster, President 2022/23

It has been a great privilege to be the MA's President for the year 2022-23. I have thoroughly enjoyed my time and the many opportunities that it has provided. I would particularly like to thank Tom Roper, Chair of Council, and Sandi Atkinson, Chief Executive Officer, for all of their help and guidance during the year. I would also especially like to thank the previous President, Dr Chris Pritchard, for his encouragement and especially for his very helpful document providing a guide to what is expected of a President.

I have mainly focused on three things this year: a Presidential blog, other pieces of writing, and some presentations, including the forthcoming Presidential Address.

## 1. Presidential blog

Due to Covid, Dr Chris Pritchard decided to write an essay every month for the MA website. I very much enjoyed reading these, and I decided to take up this idea myself, but in a blog format instead. It was my first time writing a blog, so I had to discover how to set one up, find a host that would enable mathematical typesetting that would look presentable, and establish a subscription service so that people could sign up for alerts when new posts appeared.

The blog was launched at **https://blog.foster77.co.uk/** on the day of the AGM at the end of the 2022 Easter Conference, and I then posted something every other Thursday throughout the year: 26 posts altogether. The complete list is given in Appendix A. I aimed to address issues of potential relevance to all Members, from early years to university, and also to highlight the work of the MA to potential members, since the posts were open access and free for anyone to view.



| Country | % |
|---|---|
| United Kingdom | 52% |
| United States | 15% |
| Canada | 5% |
| Belgium | 4% |
| France | 3% |
| Germany | 3% |
| Australia | 2% |
| India | 2% |
| Netherlands | 2% |
| New Zealand | <1% |
| Spain | <1% |
| Israel | <1% |
| Panama | <1% |
| Russia | <1% |
| Ireland | <1% |
| Hong Kong | <1% |
| South Africa | <1% |
| China | <1% |
| Romania | <1% |
| Other | 8% |

I am very grateful to David Miles for faithfully retweeting each one, and to Sandi Atkinson and Bindu Modi for publicising the blog through MA eNews. I would also like to thank Dr Bill Richardson and Dr Gerry Leversha for advertising the blog in Mathematical Gazette, Dr Chris Pritchard and Professor John Berry for doing so in Mathematics in School, and Ray Huntley and Ems Lord for doing the same in Primary Mathematics – as well as to all of the other Council Members and other Members who have promoted it. At the time of writing (February 2023) there are over 300 subscribers and there have been 21,000 views. The percentage of views by country shown here.

## 2. Other writing

Throughout my Presidential year, I continued to write articles for Mathematics in School and Symmetry Plus. A complete list of the articles published in MA journals during my Presidential year is given in Appendix C, with further articles accepted for publication beyond. This list includes 8 articles in issue 51(5) of Mathematics in School, which was a Special Issue focused on my writing (subtitled "It's a Colin Foster special!"). As usual, my Presidential Address will appear in Mathematical Gazette.

I wrote three 'From the President' pieces for MA News, and would like to thank Dave Pountney for his efficiency in handling these. The first and was an autobiographical piece; the second focused on branch meetings and what might make for an effective session; and the third focused on writing for MA journals. I was delighted to be invited to write a Foreword for Chris Pritchard's book of Presidential Essays, entitled 'Focus on the Visual', which is now published. I also wrote a Foreword for the MA new members' welcome pack.

Beyond the MA, my writing has included academic papers, as well as articles for the Scottish Mathematical Council Journal, an article for Mathematics Teaching (ATM) and my regular column in each issue of Teach Secondary (full details of all of these are available at **https://www.foster77.co.uk/papers.html**).
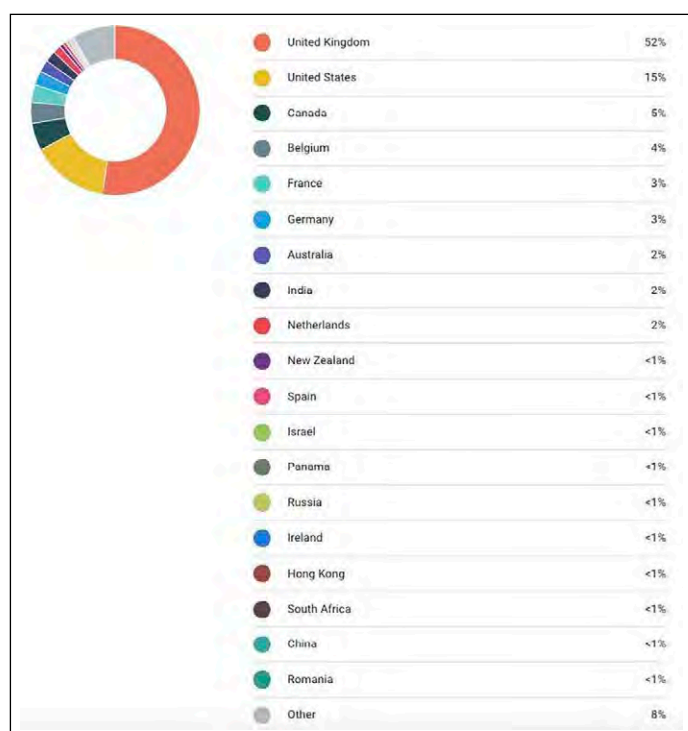
## 3. Presenting

During the year, I have led several events (both online and face to face) for teachers, including an MA webinar in October ('Butterfly effects when designing and adapting tasks'). In my role as Researcher in Residence with the NCETM Origin Maths Hub, I led several events for teachers, and in July I spoke at the West Midlands Maths Hubs Secondary Conference at the University of Wolverhampton. Also in July, I led a face-to-face ATM/MA branch meeting in London entitled 'There are no boring mathematics topics!' In November, I spoke in Manchester at the Coop Academies Trust Head of Mathematics Event on 'What does great mathematics teaching look like?' and I also spoke at an event hosted by the Maths Anxiety Trust in London. In January I spoke at the NCETM 7-11 Coherence Project Work Group Leads conference on 'Coherent Task Design From Years 7 to 11'. I recorded a short video of support as part of the introduction to the Black Heroes of Mathematics Conference in October and I also produced a short video clip for OUP's 'Wonder of Maths'.

I have given research seminars at the Department of Education at the University of Oxford on 'Teaching problem-solving strategies in school mathematics', at the Faculty of Education at the University of Cambridge on 'Designing a coherent school mathematics curriculum', and with Dr Fay Baldry at the University of Nottingham on 'Lesson study in Initial Teacher Education: Maximising gains whilst navigating tensions'. I also gave a seminar in the School of Mathematics at the University of Edinburgh within their 'Teaching' theme and co-led three sessions at the British Society for Research into Learning Mathematics.

Many of these presentations and workshops relate to ongoing work I am leading at Loughborough to produce a fully-resourced, **free mathematics curriculum for schools**, and to my role as one of the Leads in the **Centre for Early Mathematics Learning** I am currently preparing for my Presidential Address in April.

# Chair of Council report

Tom Roper

This is my third and final report to the membership. Below are what for me have been the highlights of 2022 together with the plans in train for 2023 and beyond. In reading the full report from the Chairs of the committees represented on Council you will no doubt choose you own!

The two primary based challenges, the *Primary Mathematics Challenge* (PMC) for years 5 and 6 and the *First Mathematics Challenge* (FMC) for year 3 and 4, have gone from strength to strength. The number of schools and pupils entering the challenges has increased. This has meant considerably more work for the office, a task that they have taken up without any loss of effectiveness elsewhere. Nevertheless, this means that we must look for software that will enable us to manage the challenges and interaction with schools more efficiently. The two challenges are run separately by their respective chairs, Katherine Milner (PMC) and Amanda Moon (FMC), together with the respective teams of volunteers. I am extremely grateful to the two teams for all the work that they have done to develop and sustain the challenges. Council continues to look for sponsorship for the challenges and we very much hope that we will be able secure that sponsorship in 2023.

The Equals team, ably led by Alan Edmiston, have come to fore in 2022. They have continued their series of webinars, begun in the pandemic, and these have continued to attract participants, strengthening the role of The Mathematical Association as a provider of professional development. But this year Alan and his team have gone further and in November held a conference devoted to mathematics and SEND with plenary speakers, Professors Margaret Brown and Steve Chinn. The conference, making a play on the SAS

motto, *"Success across all Settings: Who cares wins!"*, was very successful. The journal, *"Equals – realising potential for all"*, continues to be freely available to all via the website.

We welcomed the return of face-to-face meetings of teachers at conferences and professional development events. Jo Morgan attended such events as the MA representative to ensure that our publications are reaching those teachers attending. Many thanks, as always, go to Jo.

Teaching Committee has been taken in hand by David Miles and is thriving once again, responding to government initiatives and posting under the banner of "We say" on the website. The responses of the Joint Primary Mathematics Group, chaired by Alison Borthwick, to various moves by Ofsted has been particularly impressive.

Finally, for me the biggest highlight of 2022 includes the financial surplus, small though it is, which is the result of three years hard work by all involved in running the MA, Council, other volunteers and the office staff, to get our finances under control; to match our outgoings with our income. We are able to move forward into the future with confidence. My thanks here must go to our Chief Executive Officer, Sandi Atkinson, who has put in place all the proper arrangements for budgeting and financial controls and without whom the surplus would never have happened.

But what of the future? First, Council has taken to decision to sell the building in London Road which currently houses our HQ. We are working closely with the Ethical

Property Foundation to ensure that, as a charity, we are doing everything correctly, not just legally but ethically as well. There are questions which you will want to ask, the central one being, Why? There are several reasons. First because of the state of our finances in the past we have not been able to invest in the maintenance of the building as we would have liked to be able to do. We have been able to do enough to keep it ticking over but as you will know with your own houses, this is not enough. One has to be pro-active not re-active with property. Second, the costs of renting suitable space are only slightly more than we currently budget for running the property, heating, lighting, essential maintenance, etc.. Third, the building has not been adapted for persons with disability. For example, there is no stair lift, the toilets are all on the first floor and none of them are suitable for use by persons in a wheelchair. Making provision for persons with disability will cost a considerable sum of money, money that we do not have. Fourth, the money released by the sale and invested will provided sufficient income to more than cover the rent of suitable premises with the surplus providing funds to help take the association forward.

We are currently in negotiations with Loughborough University and staff are being consulted on the change to their workplace.

The move brings questions, not least how to deal with the library and archive material currently held at HQ.

Consultations with our librarian, Mike Price, and archivist, Mary Walmsley, on this issue are on-going.

The future also offers the possibility of merger of the five classroom associations, AMET, ATM, MA, NAMA, and NANAMIC. Negotiations between these associations have been on-going for some considerable time and a stage has been reached where essentially the individual associations have to make the decision whether or not to go ahead with the merger. There can be no disguising that this move depends upon the ATM and the MA agreeing to merge. However, the process of negotiating has brought us all much closer together, witness this joint conference. Thus, even if merger fails, I believe that we will be able to work much more collaboratively in the future for the benefit of mathematics education.

In conclusion, I would like to pay tribute to Council for all the work, help and support that they have given over 2022. I would also like to give heartfelt thanks to our office staff, Sandi, Amber, Alice, Bindu, Linda and Sapna. We are very lucky to have such loyal and hard-working staff.

I wish my successor, Ems Lord, a successful and trouble free chairship. The future for the MA is, I believe, very promising and great things are possible. I am sure that Council and HQ staff will continue in the same vein to work with, help and support Ems as she takes on the role of Chair of Council.

# Treasurers report

Sudeep Gokarakonda

Having posted deficits of £99,967 and £31,499 in 2020 and 2021 respectively, the Association has recorded a surplus in 2022.

This progress has been possible because of actions taken in previous years, such as the appointment of an external accountant to provide us with monthly management accounts. In 2022, we requested a tweak to the presentation of these accounts—the inclusion of year-end forecasts as well as year-to-date figures—to help further inform Trustees and better enable them to monitor our finances.

The Primary Maths Challenge and the First Maths Challenge have been very successful. Publications have also performed above expectations, thanks in part to the positive response to *If I Could Tell You One Thing*, released in early 2022.

The finance working group has continued to convene and focus on key issues affecting our finances. A significant decision made this year has been to start the

process of relocating the Association's headquarters. This has involved appointing a property advice charity to carry out due diligence work relating to the disposal of the existing building and the lease of new premises.

Looking ahead, relocation will incur further one-off expenses, such as removals costs and legal fees. It has been agreed that these associated costs will be borne out of reserves.

As in previous years, we have continued to review contracts for the provision of services to seek new suppliers where savings can be made.

We have noted the increases in cost of living and that the current economic situation is likely to have negative effects on membership numbers and recognise the need to mitigate these impacts in 2023 and beyond. We recognise that the long-term future of the Association depends upon its ability to maintain and strengthen its membership base, as well as ensuring that sufficient funding is secured to support its various undertakings.

# Membership report

Jemma Sherwood

The MA and our members have had a busy 2022. We would like to highlight some of our members activities throughout this year:

Professor Nira Chamberlain, MA member and president designate, was not only awarded an OBE in the 2022 New Year's Honours list but has been selected to serve of the Executive Committee of The National Academy for the Mathematical Sciences. This important initiative aims to represent and advocate the mathematical sciences and the people that work within them. We look forward to finding out more as the Committee plan to begin work in 2025.

Mike Askew, past president 2018-19, will feature in 'The Best Writing on Mathematics'; published by Princeton University Press. His piece titled Reasoning as a Mathematical Habit of Mind may be recognised as his presidential address. Available on the **MA website** for those who would like to give it a read!

Members were saddened to learn of the passing of former president Professor Geoffrey Howson (1988). Many friends and colleagues shared their memories with us. We thank everyone for the lovely sentiments that were passed on.

Recruitment of new members remains consistent which shows growing interest in the association, we have worked hard to find ways to retain and engage with you, our existing member base, during these difficult financial times and the cost-of-living crisis. Throughout 2022 we delivered a programme of free webinars, and we were delighted to see over 500 members at these events. Your positive feedback in response to the eclectic mix of topics and subjects on offer has compelled us to continue this into 2023.

And finally, our members' voices have been loud and proud throughout 2022. Being a part of the Teaching Committee, or one of its subcommittees, is the best way you as a member, can get your voice heard. The **Teaching Committee** have responded to OFQUALs consultation of designing and developing accessible assessments; written a statement of support for Core Maths qualifications; responded to the Ofsted Aide Memoire, Guidance and Training Materials for a Deep Dive in Mathematics by Ofsted inspectors; and have written a position paper on onscreen assessments in GCSE Mathematics.

# Teaching Committee report

David Miles

Teaching Committee met virtually four times this calendar year including an open meeting at our Annual Conference. Our two subcommittees, the Joint MA/ATM Primary Group and the 11-18 subcommittee, each met termly.

- Our output included:

- Response to the Ofqual consultation on designing and developing accessible assessments

- A statement of support for Core Mathematics

- Advice to the Independent Commission on Assessment in Primary Education

- Response to the Ofsted Aide Memoire, Guidance and Training Materials for a Deep Dive in Mathematics

- Position paper on onscreen assessment in GCSE Mathematics

We are always looking for new members, either for the Committee itself or our subcommittees. We are particularly keen to improve representations from Wales and Northern Ireland. To find out more or to express an interest in volunteering, please email: **tc-chair@m-a.org.uk**

## The purpose of Teaching Committee is:

- to keep under review matters concerning the teaching and learning of mathematics and to address matters of potential future importance.

- to advise the Council on response and representation by the Association to outside bodies on matters which affect the teaching and learning of mathematics.

- to initiate, in collaboration with other Committees of the Association, the dissemination of its findings through publications, conferences, meetings and other appropriate means.

# Conference report

Cherri Moseley

## Mathematical Visions: challenging and inspiring mathematics for all

The conference brought together many people with varying interests in the field of mathematics to deliver an engaging series of keynote and breakout sessions on a range of interesting and inspiring topics, including the evolution of mathematics for the future.

## The conference was opened by Jo Morgan
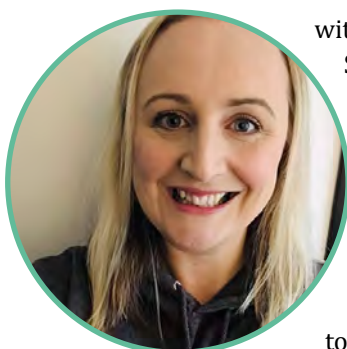
with her keynote address Strength in Numbers. Jo focused on collaboration in maths teaching. She explored a little of the history of The Mathematical Association, moving on to teachers collaborating by working together to adapt to changes to the curriculum, particularly in recent times. Methods of collaboration mentioned included creating and sharing resources and various sources of CPD such as networks, blogs, webinars and the more traditional courses and conferences, as well as in school CPD. As Jo commented, she has 'benefited from the expertise of others' and she shared some of those links with us.

## The second virtual day opened with Professor Anne Watson's Keynote

'What school mathematics can be ... really' Anne focused on the entry into unfamiliar problems. She was interested in how we approached a problem, asking us to consider questions such as, 'What concepts am I reaching for? How do I choose how to start?' Anne suggested that we might: Wonder before acting; Suspect there are simple ways; Seek and recognise patterns and relationships; Relate wholes and parts; Contemplate similarities; Use conceptual knowledge of differences, operations and distributions; Conjecture about possible effects of actions and Maybe want to make up some questions which are like these. Susan Okereke rounded off Day 2 with Numeracy in the UK and the Importance of Maths Teachers. Susan talked about her work to challenge the negative attitudes to maths in society and her aim to make maths more accessible to people who find maths difficult.

## Day 3 was face-to-face in Stratford upon Avon

Opened by Dr Chris Pritchard's Presidential Address, Focus on the visual. Chris informed us that the role of the visual is central to learning mathematics and to teaching mathematics. Visual imagery, whether an external representation or an internal creation of the brain, often guides our attempts to discover, generalise and prove. Chris Smith gave the closing Keynote address, Mathematical (di)visions...and multiplications. This was a real treat. I would not have believed there were so many amazing mathematical songs, nor would I have believed I would hear all the delegates at a maths conference singing enthusiastically, 'Use a ruler, use a ruler,' as the chorus to one memorable song, as we did indeed wave rulers enthusiastically above our heads!
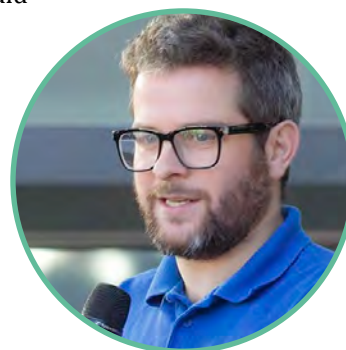
# Editorial Board report

Ed Southall

I have very much enjoyed my first year in post as Editor in Chief of the Mathematical Association. Bill Richardson has been an incredibly useful mentor and helped me get up and running quickly. The editors of each publication have once again worked tirelessly to ensure that we continue to produce strong issues with high quality content for our readers and for that I thank each of them. Work is progressing in developing a digital archive of all of our articles and the number of submissions we have received for The Gazette and Mathematics in School is testimony to our continuing popularity amongst teachers and mathematics enthusiasts alike. We have seen some particularly strong editions going to print this year including a Mathematics In School volume edited by our President, Colin Foster which included a number of excellent articles by Colin himself. I am sure you will agree he has been an outstanding President and ambassador of the work we do. I look forward to future contributions from Colin and his colleagues at the Loughborough University Mathematics Education Network (LUMEN) in future. Further to this, I'm sure you will share my excitement about Tuya Sa now contributing problems for Student Problem Corner in the Gazette, and Dr Vicky Neale accepting nomination to become President of the Mathematical Association in 2024. In another excellent development this year, we have seen the popular publication Equals go from strength to strength and Alan Edmiston launched an incredibly successful Equals Conference which I have no doubt will become a regular and established feature of our offering for years to come. It's clear that the work being done there is in demand and is a particularly unique offering from the Mathematical Association that helps broaden our recognition and impact in education.

This year we have also said goodbye to Peter Ransom as editor of Symmetry Plus. On behalf of all our members I would like to thank him for his years of service. It has been wonderful to see Symmetry Plus continue to thrive under his stewardship and we're incredibly fortunate to have his successor Oliver Saunders working with us in the role moving forward.

Next year promises to bring even more successes and exciting developments. I continue to look forward to reading new articles from teachers, educators and maths enthusiasts alike as our journals and publications go from strength to strength.

## Mathematical Visions
### challenging and inspiring mathematics for all
#### Annual Conference 12th - 14th April 2022

# Challenges reports

Katherine Milner / Amanda Moon

## First Mathematics Challenge (FMC)

The FMC continues to grow, reaching over 26 000 pupils. The number of participating schools rose from 314 in 2021 to 570 in 2022, an increase of 81%.

The Challenge took place between 20th June and the 8th July 2022, and once again the feedback was overwhelmingly positive. Some of the comments include:

- A great paper that really made our children think - they all enjoyed the challenges.

- It was challenging and my more able loved them as it was more into logical thinking.

Which padlock will Professor Code open by following the clues below?
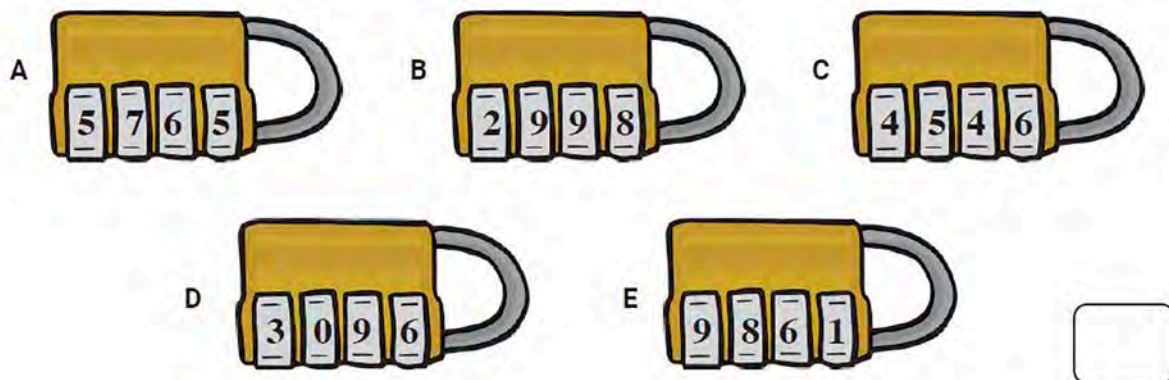
Read the individual digits from left to right.

The sum of the first digit and the last digit is 10.

The third digit is a multiple of 3.

The second digit is greater than the third digit.

Most of the digits are odd.



- 'Really like the padlock question' from many children. They even wished that there were more questions!

- We asked if any of the teachers taking part in the Challenge would like to become part of the FMC team. We had a massive response, and our team has now grown to nearly 20! The FMC team review all the feedback received from previous years, create the

questions, and set the paper ready for the Challenge in the summer term. They will look towards the future of this Challenge and respond to the enquiries for more supporting materials to go alongside the FMC. Feedback has mentioned that an audio function would be a useful addition, so we move towards making this accessible for all.

## The Primary Mathematics Challenge (PMC)

The PMC took place over a two-week period 8th- 19th November, allowing our schools taking part online plenty of time to get involved.

The 2022 Primary Maths Challenge paper was a fantastic paper targeted at the right level, the results we received reflected this and there has been a huge intake for the Bonus Round in 2023.

We saw an increase of participation in 2022 of 327 schools, which has been in part due to our partnership with Dr Simon Singh and his organisation, Parallel.

Parallel is a series of maths sessions that are open to children aged 10 +, from anywhere in the world, and completely free!  Through Parallel, teachers were invited to take part in the PMC if pupils from their school took part in the maths circles, at no cost to the school. We were very pleased to welcome 54 schools and 2500 pupils from many different countries that we have not had contact with before.  Nearly 65000 pupils from just over 1600 schools took the Challenge in November. We were pleased to invite those who scored 20 and above to take part in the Bonus Round in February 2023. The favourite questions from the November paper included:



Mrs Cox has an apple orchard and enjoys sorting out her apples. She can either put all her apples into bags of 4 with no apples left over, or she can put all her apples into bags of 5, with no apples left over. Which of the following could be the number of apples she has?

A 88    B 92    C 108    D 112    E 120

My maths teacher Addum Kwickly has 18 socks (9 pairs of socks). He puts on clean socks every three days. How many days can he wear these socks before he has to wash them all?

A 12    B 18    C 21    D 27    E 36

The rectangle ABCD measures 14 x 7cm. There are two identical sized circles which just touch the sides of the rectangle and the other circle. There is a diagonal BD.

What is the total area of the shaded part in the diagram?

# Publications report

Jill Trinder

The Committee continued to focus on generating publications that are high-quality, that reflect the appetite of MA members and the mathematics community generally, and that will sell well.

Ed Southall's brainchild-book 'If I could tell you one thing' continues to sell well and Chris Pritchard's book 'Experiencing Mathematics through Investigations' has sold steadily. As they have done for some time, the Primary Maths Challenge books generate a good deal of interest and sell consistently well.

Where appropriate, new publications are sold as a bundle of hard copy along with a pdf electronic copy and, for a slightly reduced price, books can be purchased as a pdf-only. From early Autumn 2022, eBook functionality had been established and all top sellers were able to be made available as eBooks as well as hard copy. Recently, a polite notice was added to the website shop stating that eBooks are non-refundable.

Book launches have continued to incorporate the use of social media and online platforms to reach a wider audience, for example via webinars and Twitter. Conferences once more provide a valuable promotional platform, hosting authors of 'If I could tell you one thing' at the 2022 Annual Conference, allowing them to discuss their chapters and answer any questions the viewers had.

David Miles' follow-up to Ed Southall's book, the title of which will be 'If I Could tell you another thing', is currently being typeset and publication is anticipated around Easter 2023. Jill is liaising with Ray Huntley on the possibility of a new Primary focused book.

The Publications Committee remains keen to continue to offer new and high-quality books whilst remaining open to alternative options for the development of resources allowing us flexibility to keep costs to a minimum whilst also not sacrificing our access to potential publications.

# Equals Conference

Alan Edmiston

All of the presentations given on the 25th November will be collated into a conference proceedings publication. This will be distributed amongst all conference delegates by Easter. If you were not present at the conference and would like a copy, we will make this available to our members.

***Success across all settings***. I did not use the term success to describe the conference lightly. The term can be used in many ways to articulate what took place at Parliament Hill School on the 25th November 2022. Literally it was a success for we planned for 100 delegates and far more that that turned up, in fact we sold out of tickets. The last two conferences I have tried to run did not take place due to poor numbers. The success of this event in large part is due to the support of the Maths Association and I must thank Alice and Bindu for all their hard work dealing with all the administration in the run up and on the day.

It was also a success as a result of the:

- Strength of the presenters, the knowledge they were able to share regarding SEND within mathematics;

- Generosity of the staff at Parliament Hill School who could not have been more helpful;

- Way the day was able to showcase the SEND work supporting by the NCETM and taking place in many Hubs across England;

- Fact that the conference took place at the right time and reflected the growing mood that good teaching for SEND should be to be viewed as good teaching, for all.

With regard to this last point, I can assure you that we at Equals will continue to do all that we can to help you aspire to the best teaching you can for all your learners regardless of setting.

# Branches report

Cindy Hamill

Cambridge, Greater Manchester Liverpool, and Yorkshire have had meetings this year and these have been advertised on the MA website, others are planning one or two meetings during the coming year. Some meetings are still by Zoom since a suitable venue for some is hard to find with all the new regulations post Covid others are face to face.

The volunteers who organise meetings for their local branches deserve many thanks for all the work they do in arranging the smooth running of these events whether they are online or in person. Thanks also goes to those at MA HQ who update the Branches sections of the MA website very quickly and efficiently, the eNews, which goes out to recipients monthly as well as MA News, of which there are three editions, containing branch news during the year.

The Branches committee agreed it would be good to offer a branches' bursary for the 2022 MA conference online for two days and in Stratford for one day. Rebecca Thomas, currently studying for an MA in Maths Education at UCL, was forthcoming and her article of the experience was in MA News as well as on the MA website.

Branches Committee had its half yearly meeting in October by Zoom and it was good to have members representing about half the branches present.

Subsidies to Branches were mentioned at the committee meeting in October and it was noted that several branches have very healthy balances so do not need a subsidy at the present time. Any new branches that need financial support to get established are encouraged to apply.

Branches committee decided to advertise for someone to report on youth activities within the network of Branches and the MA on a twice-yearly basis, April and October. A notice was placed in December's e news and will also be in the January edition of e news and MA News.

# Library report

Michael Price

## Donations, Duplicates and Cataloguing:

Cataloguing by the University has continued slowly and is close to completion for the outstanding donation of Dr AEL Davis. A very generous donation of 150 new titles for the MA has been personally delivered to MA HQ by Stephen Abbott. Additionally, he has given the MA a manuscript book on geometry, circa 1860. This book will join two other manuscript books for addition to the John Hersee collection at MA HQ: a splendid 1792 naval cadet's reference book, acquired from John Halsey with generous financial assistance from Peter Ransom, and a gift from Frank Knowles of a manuscript book on mensuration dated 1815. Cathy Watson, daughter of FR (Joe) Watson, has donated 13 new titles to complete the MA Library's holding of Keele Mathematical Education Publications, plus 9 other new titles. In addition, Robert Carmichael has added 44 maths teaching resource titles.

Duplicate management is ongoing via donations to the LOROS charity and Bill Richardson, plus offerings to the Warwick Conference in 2023; recycling is a last resort.

## Advertising:

Twitter posts have gone out for Bertrand Russell (born 18 May 1872) and Mary Somerville (died 29 November 1872).

## Service Level Agreement:

The 5-year agreement for the Library between the MA and the University of Leicester has been renewed for 2022-2027.

## Exchange Periodicals:

There are now only 16 exchange periodicals for the Gazette still being received at MA HQ. They are all advanced mathematical research journals, bar the ATM's Mathematics Teaching. Given the increasingly pressing need to reduce storage space and the worldwide shift to digitised copy, it is proposed to terminate all the MA's print journal exchanges, bar Mathematics Teaching.

# The Mathematical Association

## (Registration number: 05729264)
## Balance Sheet as at 31 December 2022

| | Note | 2022 £ | 2021 £ |
|---|---|---|---|
| **Fixed assets** | | | |
| Tangible assets | 10 | 385,770 | 392,489 |
| **Current assets** | | | |
| Stocks | 12 | 23,155 | 18,333 |
| Debtors | 13 | 40,664 | 44,052 |
| Cash at bank and in hand | | 100,485 | 102,607 |
| | | 164,304 | 164,992 |
| **Creditors: Amounts falling due within one year** | 14 | (60,404) | (53,839) |
| **Net current assets** | | 103,900 | 111,153 |
| **Total assets less current liabilities** | | 489,670 | 503,642 |
| **Creditors: Amounts falling due after more than one year** | 15 | (30,338) | (40,000) |
| **Net assets** | | 459,332 | 463,642 |
| **Funds of the charity:** | | | |
| **Restricted income funds** | | | |
| Restricted funds | 18 | 6,500 | 6,500 |
| **Unrestricted income funds** | | | |
| Unrestricted funds | | 452,832 | 457,142 |
| **Total funds** | 18 | 459,332 | 463,642 |

For the financial year ending 31 December 2022 the charity was entitled to exemption from audit under section 477 of the Companies Act 2006 relating to small companies.

Directors' responsibilities:

- The members have not required the charity to obtain an audit of its accounts for the year in question in accordance with section 476; and

- The directors acknowledge their responsibilities for complying with the requirements of the Act with respect to accounting records and the preparation of accounts.

These financial statements have been prepared in accordance with the special provisions relating to companies subject to the small companies regime within Part 15 of the Companies Act 2006.

The financial statements on pages 8 to 24 were approved by the trustees, and authorised for issue on 4 March 2023 and signed on their behalf by:

....
Sudeep Gokarakonda
Trustee

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# Appendix A

Complete List of Presidential Blogposts 2022-2023

Foster, C. (2022, April 14). Intro-ducing and outro-ducing methods [Blog post].
https://blog.foster77.co.uk/2022/04/intro-ducing-and-outro-ducing-methods.html

Foster, C. (2022, April 28). Tangible contexts for mathematics [Blog post].
https://blog.foster77.co.uk/2022/04/tangible-contexts-for-mathematics.html

Foster, C. (2022, May 12). Learning times tables efficiently [Blog post].
https://blog.foster77.co.uk/2022/05/learning-times-tables-efficiently.html

Foster, C. (2022, May 26). Are two cars better than one? [Blog post].
https://blog.foster77.co.uk/2022/05/are-two-cars-better-than-one.html

Foster, C. (2022, June 9). Motivation for measurement. [Blog post].
https://blog.foster77.co.uk/2022/06/motivation-for-measurement.html

Foster, C. (2022, June 23). Lines of not-very-good fit. [Blog post].
https://blog.foster77.co.uk/2022/06/lines-of-not-very-good-fit.html

Foster, C. (2022, July 7). A football on the roof. [Blog post].
https://blog.foster77.co.uk/2022/07/a-football-on-roof.html

Foster, C. (2022, July 21). Making rounding interesting. [Blog post].
https://blog.foster77.co.uk/2022/07/making-rounding-interesting.html

Foster, C. (2022, August 4). Misremembering Goldbach's conjecture. [Blog post].
https://blog.foster77.co.uk/2022/08/misremembering-goldbachs-conjecture.html

Foster, C. (2022, August 18). The Differentiator. [Blog post].
https://blog.foster77.co.uk/2022/08/the-differentiator.html

Foster, C. (2022, September 1). Interactive introductions. [Blog post].
https://blog.foster77.co.uk/2022/09/interactive-introductions.html

Foster, C. (2022, September 15). Always simplify your answer. [Blog post].
https://blog.foster77.co.uk/2022/09/always-simplify-your-answer.html

Foster, C. (2022, September 29). Tasks that can't fail. [Blog post].
https://blog.foster77.co.uk/2022/09/tasks-that-cant-fail.html

Foster, C. (2022, October 13). How open should a question be? [Blog post].
https://blog.foster77.co.uk/2022/10/how-open-should-question-be.html

Foster, C. (2022, October 27). Butterfly effects when adapting tasks. [Blog post].
https://blog.foster77.co.uk/2022/10/butterfly-effects-when-adapting-tasks.html

Foster, C. (2022, November 10). Is area more difficult than volume? [Blog post].
https://blog.foster77.co.uk/2022/11/is-area-more-difficult-than-volume.html

Foster, C. (2022, November 24). Fractions as factors. [Blog post].
https://blog.foster77.co.uk/2022/10/fractions-as-factors.html

Foster, C. (2022, December 8). Dividing into thirds [Blog post].
https://blog.foster77.co.uk/2022/12/dividing-into-thirds.html

Foster, C. (2022, December 22). Mixing the dimensions in models of number. [Blog post].
https://blog.foster77.co.uk/2022/12/mixing-dimensions-in-models-of-number.html

Foster, C. (2023, January 5). Proportionality [Blog post].
https://blog.foster77.co.uk/2023/01/proportionality.html

Foster, C. (2023, January 19). Is zero really a number? [Blog post].
https://blog.foster77.co.uk/2023/01/is-zero-really-number.html

Foster, C. (2023, February 2). Non-expository video clips. [Blog post].
https://blog.foster77.co.uk/2023/02/non-expository-video-clips.html

Foster, C. (2023, February 16). Don't forget the units? [Blog post].

Foster, C. (2023, March 2). Are probabilities and inequalities approximate? [Blog post].

Foster, C. (2023, March 16). Crocodiles and inequality signs. [Blog post].

Foster, C. (2023, March 30). Teaching specific strategies for problem solving. [Blog post].

# Appendix C

Complete List of Articles Published in MA Journals 2022-2023

Foster, C. (2022). Giving everything a twist. *Mathematics in School*, 51(1), 24–25.

Foster, C. (2022). Getting multiplication the right way round. *Mathematics in School*, 51(2), 16–17.

Foster, C. (2022). Methods that are just mental clutter. *Mathematics in School*, 51(2), 20–22.

Foster, C. (2022). Choosing the best proofs. *Mathematics in School*, 51(3), 2–7.

Foster, C. (2022). Crossing out. *Mathematics in School*, 51(4), 6–7.

Foster, C., & Francome, T. (2022). Diagrams not drawn accurately. *Mathematics in School*, 51(4), 20–22.

Foster, C. (2022). Starting with completing the square. *Mathematics in School*, 51(5), 2–5.

Foster, C. (2022). The directionality of the equals sign. *Mathematics in School*, 51(5), 6–7.

Foster, C. (2022). Connecting things up coherently. *Mathematics in School*, 51(5), 8–11.

Foster, C. (2022). Are words sometimes better than formulae? *Mathematics in School,* 51(5), 12–14.

Foster, C., Francome, T., Hewitt, D., & Shore, C. (2022). What is a fraction? *Mathematics in School,* 51(5), 25–27.

Foster, C. (2022). Thinking hard about easy content: Odd and even functions. *Mathematics in School*, 51(5), 28–29.

Foster, C. (2022). The floor and ceiling functions. *Mathematics in School*, 51(5), 30–31.

Foster, C. (2022). Making sense of proof by contradiction. *Mathematics in School,* 51(5), 32–35.

Foster, C. (2022). Factor puzzles. *Symmetry Plus,* 79, 4–5.

Foster, C. (2023). Abolish degrees! *Mathematics in School*, 52(2).

# Association Articles and Regulations

These documents can be viewed at: **https://www.m-a.org.uk/articles-and-regulations**

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