

ANNUAL REPORT 2019–2020



PRESIDENT'S REPORT

Dear Colleagues

Please may I begin by sharing my sincere wishes that you, your family, colleagues and friends are keeping well at this very difficult time. Many members will have lost someone they cared about or know someone who is either currently unwell, or who is being shielded due to their extremely vulnerable status, we wish them well. We are all facing huge changes to our lives, but it is in the hope that we are doing a greater good for others. Only time will let us know the extent that we have been successful.

With the schools closed, and many parents finding themselves appointed as home educators for their offspring for the foreseeable future, families are understandably seeking online support for the teaching and learning of mathematics. In many ways, we're in a much better position to cope now than before the internet age, and there are some excellent 'good news' stories coming out of the crisis. Although 'the nation's PE teacher' may have grabbed the tabloid headlines, online mathematics support has never been busier. As Director of NRICH, I can report from my own recent experiences that our website welcomed an astonishing 1.25 million visits during the first week of the closures and the huge surge in numbers shows no sign of abating. Clearly there is a massive audience needing mathematical teaching and learning support right now, but judging their value is much more difficult for nonspecialists. At national level, the NCETM has published its 'Support for parents and carers helping children with mathematics' and the DfE has uploaded a list of online mathematics education providers. I'm sure we'll hear more about these initiatives in the coming weeks and months.

This rapid change in the way we temporarily teach and learn mathematics poses questions for our mathematical community. Our current situation is unprecedented, but it may not prove to be unique;



further shutdowns may be required to address later 'peaks' in virus numbers in the coming months. Having weathered the initial shutdown and the challenges that it posed, perhaps now is the time to begin reflecting on our responses, make plans for future possible closures as well as embrace the opportunities offered by home learning for the teaching and learning of mathematics?

At national level, a key ambition must be ensuring that every school-aged child can access high speed internet away from school. Before the shut down, I spoke with a group of Y7 students about online mathematics homework activities and they raised internet access as a major concern. Some students often rely on schoolbased homework clubs for online access. When the club was unavailable, one student described completing his homework on a mobile phone in their local corner shop because it offered free wi-fi. Students who rely on school-based homework clubs are among the hardest hit during the closures. Nevertheless, even if families do have a laptop, computer and printer available for home learning, bandwidth problems may cause issues when children attempt to access online activities when adults are also home working.

Addressing hardware issues and internet access are key concerns. We must also reflect on the content of the online provision being offered during the lockdown. Nurturing future mathematicians within the home in the longer term must surely go beyond acquiring procedural knowledge? Surely, it must share the moments of awe and wonder that inspired us to become mathematicians? Certain behaviours that are so important in our daily lives, including developing resilience and working collaboratively, can be very effectively modelled at the home both during the shutdown and beyond, but the mathematics community needs to explore ways that we can offer suitable support for families working mathematically. In the most recent MA News, I shared an update on the Solving Together project which sought to bring families together to solve mathematical problems, using engaging interactivities and video support materials modelling ways to maximise the potential of the resources in the home. This project focused on Y7 students and there is the potential for expanding it to other age groups. Meanwhile, the lockdown has thrown the spotlight on other innovations from beyond mathematics education, such as the joy that collaborating through virtual choirs and concerts can bring to those confined at home. For many mathematics educators, we are only just beginning to realise the potential of online collaboration but there are promising initiatives such as the support being offered by Talking Mathematics in Public. Increasing our attention on ways to increase collaboration through student webinars may prove a useful longer-term strategy.

There are other opportunities too. We could explore ways to support students to develop their mathematical confidence away from the classroom, a place where they may feel much more willing to 'have a go' without the peer pressure many students report experiencing at school. Perhaps we can also begin to address parental anxieties about mathematics through the way we support their children? Our classrooms and lecture theatres may be empty right now, but there are exciting opportunities ahead if we choose to embrace them.

Although we may not have been able to congregate at our annual conference this year, the MA is continuing to explore ways to support members at this difficult time and beyond. It may not be 'business as usual' right now but, as our community continues to embrace the challenges that we face, the crisis also presents opportunities too. As I step down as MA President, I'd like to thank everyone who contributes towards the work of the MA and for your support over the past year. It has been a real honour to be President, thank you all. I'm sure you'll join me in welcoming Hannah Fry to the role as President in the coming year.

> Dr Ems Lord (President 2019–2020)

CHAIR'S REPORT FROM COUNCIL

This is my fifth and final report as Chair of Council for the Annual Report, which, as normal, is based on my report for the AGM. It has been a strange year due to the coronavirus situation and writing this report in April, who knows where we will be when the Annual Report appears on the website. I wish to start by thanking all those who teach, or have taught, our young people mathematics. At times it is not an easy job, presenting many challenges, but it is varied, interesting and has a massive positive impact on people's lives, though they don't always see it at the time. These past few months we have seen examinations being cancelled and materials being put on-line for pupils and students to access at home, not to mention the dedicated teachers who are still in school with the young people who need to attend. Thank you for all you do.

It has been a busy year but one which I have enjoyed immensely and I treasure the support of my colleagues, without whom The Mathematical Association would not flourish.

Council met four times since the last AGM, in June, September, December and March. In between those times Standing Committee met three times to deal with any unexpected business, or items that Council delegated to them.

The MA continues to work with the other classroom facing organisations. Currently we still don't know what the future holds. Our joint conference with NANAMIC this year at Wyboston Lakes, Bedfordshire on Exploration and Insights in Mathematical Education had to be cancelled due to the national lockdown on all gatherings. This is why we could not hold our AGM physically. The Government has issued guidelines, which gave us the flexibility to hold a vote electronically. Since our staff are working from home, a postal vote could not be offered and I did not wish to postpone the AGM for an undetermined time as I did not think we would get the necessary quorum of people physically present at a different location on a specific day just to hold an AGM. We needed to vote in all our officers and some new Members without Office, else we would not have had a functioning Council when the existing officers' terms of office finished. Fortunately, that seems to have gone well with 108 members voting and both proposals being carried.

The various committees are a vital part of the MA. Reports on their activities can be found in this Annual Report. At the end of 2018 we introduced monthly direct debits for subscriptions so that members do not have to pay their subscription in one lump in January. This has proved popular with many.

We had no suggestions last year for anyone to become an Honorary Member. At the March 2016 Council meeting it was agreed that we have a procedure for appointing Honorary Members and so once again I have great pleasure in asking members for written proposals that include a case made for their suggestion, to be received by 15th May so that Council can consider and make its decision at the June Council meeting. An "Honorary Member" is 'any person who has made a distinguished contribution to mathematical education or who have provided outstanding service to the Association'. So, suggestions are welcomed at any time, but will be considered each June.

There are a few changes to Council this year. Five members are stepped down at the AGM: myself as Chair, Jim Simons as Chair of Teaching Committee, Cordelia Myers and Owen Toller as Members without Office (MwO) and Mike Askew. Mike Askew left us as his three-year term as President Designate, President and Immediate Past President are now complete. Julia Brown (Chair of Membership and Council member with responsibility for HQ) resigned at the end of December to move overseas. We are most grateful for all they have done. At December Council we appointed Bobby Seagull as MwO to replace a vacancy left by a resigning MwO. Tom Roper is now the Chair of Council. Ems Lord becomes our Immediate past President and is succeeded as President by Hannah Fry. We welcomed Chris Pritchard as our President Designate, Paul Harris as Secretary, Drew Foster as Chair of Teaching Committee and Nick Wilson, Stella Dudzic and Steve Abbott (a Past President) as MwOs.

We had celebrations for two of our long-serving staff this year. Linda Medhurst (Finance Officer) was presented with an engraved vase at a lunch at HQ to mark her 25 years of service. Our Senior Administrator, Marcia Murray, retired at the end of December after serving our Association faithfully for over 20 years. We honoured her with a celebratory lunch and gifts after December Council and wish her well in her retirement.

Finally, I have now completed my term of office as Chair. It is a great privilege and honour to work with all the MA members and mathematics teachers in one way or another. It was time consuming but has been both enjoyable and, at times, challenging. My sincere thanks to all members of Council as well as members of all the committees and subcommittees who give up a great deal of their own time preparing for, travelling to and attending meetings and generally furthering the aims of the Association. I should also like to thank Sandi Atkinson, who became our Executive Officer in January when Marcia Murray retired and her staff (in alphabetical order: Alice, Carol, Charnjit and Linda) at HQ for all their support and hard work behind the scenes. Our membership owes them a great debt of gratitude. I wish my successor and friend Tom Roper all the very best as he takes on the role of Chair of Council. The force (F = MA) is strong in him and you all.

> Peter Ransom MBE FIMA Chair of Council (2015–20)

BRANCHES COMMITTEE

The Branches Committee met for a day (Branches Day) in October 2019 at HQ. Reports were received from committee officers and appointments were made to officer roles for the year April 2020 to April 2021. Reappointed were Rob Smith (Vice-Chair), Paul Harris (Secretary), Cindy Hamill (Treasurer), David Myers (Youth Activities Officer) and me as Chair. Discussion then centred on MA membership with reference to branches. It was proposed that packs of MA resources should be made available to display at events. The proposal of a branches' committee bursary for a place at the 2020 annual conference was discussed and approved. Organisers then gave accounts of their recent events and outlined their upcoming events. The one-hour meeting of the committee arranged to take place at the end of the annual conference in April did not take place due to the cancellation of the conference.

There continues to be a tremendous amount of work done by the organisers of local branches. They do this

work on a voluntary basis and devote much of their time to ensuring that events happen and run smoothly. It would be a great pity if their work was not given as much publicity as possible. So, we have once again placed great importance on the regular updating of the Branches sections of the MA website, MA News and the e-newsletter throughout the year. Indeed, the MA website serves as the unique reference point for details of all events. There were issues about the ordering and archiving of events during the latter stages of 2019, but these have largely been resolved. All editions of MA News throughout the year have contained details of events and also more general reports and photographs. Indeed, each of the three editions during the year have contained on average five pages of news. Branch events are advertised in the e-newsletter which is emailed to members at the end of each month. Twitter messages about upcoming events have also been sent out.

There are currently twelve local branches. These are Birmingham, Cambridge, East Midlands, Exeter, Gloucester, Liverpool, London, Manchester, Meridian (based in Reading), Sheffield, Sussex and Yorkshire. This is a modest increase from eleven this time last year. However Gloucester continues to be inactive. Eight of these branches are run jointly with the ATM. These locations give a good geographical spread across England. It is a great credit to the local organisers that a total of 33 branch events were organised to take place during the year from the end of April 2019 to the end of April 2020. This is an increase of seven events compared to the same period last year. This equates to an increase of 26.9%. However, due to the pandemic two of these events were cancelled and one event was presented online. Fewer events were organised during the Summer Term of 2019 partly due to both organisers and delegates preparing for public examinations. Organisers are also preparing their programmes for the following academic year during this period. During the year it was pleasing that the Greater Manchester ATM Branch joined up with us. However, proposed new branches in Surrey (Guildford) and Glasgow failed to come to fruition.

This committee continues to try and encourage branch members to attend the annual conference at Easter. This year branches were once again invited to nominate members who had never been to an annual conference before to apply for a bursary to cover the cost of one full residential place. The bursary was awarded but the conference was cancelled. It is hoped that this initiative can be repeated again next year. In summary the main focus this year has once again been on giving as much support as possible to existing branches. Updating of all matters on the MA website etc. was really important in terms of giving as much additional publicity as possible to branches and their events. As stated before, the figure of 33 events during the year is an impressive increase (26.9%) on the 26 events organised in the same period of the previous year.

> Keith Cadman (Chair of Branches)

CONFERENCE 2020

The 2020 MA Conference was due to be a joint one with NANAMIC. It was to be held at Wyboston Lakes, Bedfordshire, on 14th–16th April. Our theme was Exploration and Insights in Mathematical Education and we had a range of exciting plenaries and workshops planned. Instead, April saw us all in the middle of an international lockdown in response to the Covid-19 pandemic.

We were trying out a new type of venue, a conference centre rather than a university and a new programme, but these will all have to wait for future times. A cancelled conference brings its own issues. Since we could not hold our AGM physically, we had to consider other alternatives. We did not want to postpone the AGM for an indefinite period because we wanted to have a fully functioning Council both during and after the crisis. We needed to vote in all our officers and some new Members without Office so that business could continue as much as was practical. With staff working from home, we were unable to offer a postal vote. Thankfully, the Government issued guidelines which gave us the flexibility to hold an electronic vote. Members had from Tuesday 7th to Tuesday 14th to vote electronically. Thank you to those of you who did so that the business of the Association could continue.

Thank you to all our plenary speakers and workshop leaders and to the staff at HQ who would have ensured that everything ran smoothly. We will contact you again when we begin to work on the 2021 conference. This will be our 150th Anniversary year, so it just has to be something special. Put the date and place in your diary now: 8th–10th April in Stratford-upon-Avon.

Join us there for a wealth of wonderful speakers and workshops as well as all the normal conference extras and a face to face AGM. The Presidential Address will be from our current President, Dr Hannah Fry. When Hannah was announced as the MA president for 2020–2021, her name was followed by the words, 'Mathematician, science presenter and all round badass'. Enough said – see you there!

> Cherri Moseley (Chair of Conference)

PROFESSIONAL DEVELOPMENT COMMITTEE

The Professional Development committee met formally three times in the year 2019–2020, each time at the British library, and during half term. Not all schools have the same half term so we fixed dates so that our full time teaching members could attend.

This has been a particularly difficult year for our events, and a number had to be cancelled due to low numbers applying.

The Stirling event took place on 5th October. The numbers were lower than usual due to an event organised by La Salle the previous weekend. This was disappointing for us as our event had been advertised widely for nearly a year. Some workshops were cancelled due to speakers' sickness. It was, however, a successful event with keynote speaker Andrew Jeffrey being well received.

Our primary one day event in High Wycombe was set up with Ems Lord as the keynote speaker and some excellent workshop leaders, but take-up was so low we were forced to cancel, much to our regret. We had attempted to set up several events around the country (York, Exeter) following a similar model, and all of them were undersubscribed and cancelled, despite great leaders and speakers.

We were forced to discuss the viability of such events and how to encourage attendance. We do believe there is an appetite for PD events held on a Saturday. It allows teachers to attend without needing to ask schools to cover classes, but it does put the onus on the teacher, many of whom are already stretched for time. Also, the cost is restrictive, especially where school budgets don't allow them to fund the events. Maths Hubs and the Advanced Maths Support Programme can offer free, and sometimes funded events which are of high quality, but they are restricted to following the government's agenda. LaSalle also put on "MathsConf" events that are well attended, but focussed on their "Complete Maths" resources. These are subsidised, and cost only £30. We did try to reduce costs as much as possible, but in order to attract people we need to have a much more robust advertising structure.

For 2020–2021 we have planned the Stirling event for 5th September, and we are hoping that this will be able to take place as a virtual event.

We have had a tentative look at web-based PD, which obviously in the current climate is gaining popularity. At the moment we prefer to plan face to face sessions as there are other organisations that specialise in online learning, but we are looking to gain some more knowledge on it in the future.

In our February meeting we discussed the possibility of creating some resources for the web page. There are many excellent collections of resources on the internet, including Jo Morgan's Resourceaholic, which we don't want to replicate. We decided we could produce some resources linked closely to the articles in recent MA publications, starting with "Maths in Schools". These could enable teachers to replicate the authors' experiences with their own classes, using the same classroom materials. This is ongoing and will hopefully appear on the website in the near future.

In response to Council's recommendations, we have withdrawn from the NCETM's standard holders' platform for the following reasons; we prefer to maintain our independence from the government funded body; the advertising of our events brought in no participants and the cost involved brought little in the way of reward for us.

> *Sue Southward* (Chair of Professional Development Committee)

PUBLICATIONS COMMITTEE

The year has been one of consolidation following a change of Chair and some new members as detailed in the previous report. Since then, Luke Rolls has left the Committee, and after Jenny Field was approached, her colleague Jill Trinder (Greenwich University) has joined.

There is currently an approach being considered to two further additions, both of whom are serving primary school teachers.

Items which have been added to the catalogue

TITLE	AUTHOR(S)
GCSE Higher Revision Cards	Mary Ledwick, Ray Huntley
Challenge Your Pupils 4	PMC Committee
Hooked on Mathematics	Jenni Back
A-level Pure Mathematics	David Miles

Other pending items

Comic Sections Plus (Des MacHale) Work has been done but some finishing is still needed.

Primary Problem Cards (MAHQ) These have halted due to other work pressures at HQ.

GCSE Foundation Revision Cards (second edition) (Mary Ledwick, Ray Huntley) Work is nearly completed and it is expected these can be ready for the summer of 2020.

Maths and Sport (Chris Pritchard and Tom Roper) Still in the pipeline with ideas being collated by the authors.

Student Problems (Mathematical Association) Bill Richardson now working on this collection of Gazette problems.

New Ideas

A Measure of Fulfilment (Chris Pritchard) Developing material on surface areas of monumental buildings, eg pyramids, spires of churches.

Conclusion

This report covers my first year as Chair. It has been a steep learning curve in some respects, but I am grateful to the other members of the Committee and to the HQ staff for their support.

Ray Huntley (Chair of Publications)

EDITORIAL BOARD

This is my third report since taking over at the 2017 AGM. It has been a satisfying year but there will always be challenges. A long-term member of the MiS, Helen Morris, stepped down and has, sadly passed away.

The MA produces a range of journals for different audiences and with some variation in frequencies. It is appropriate to give a brief outline of each as follows:

The Mathematical Gazette, three issues of 192 pages, audience senior pupils and above, Editor Gerry Leversha.

Mathematics in School, five issues of 40 or 48 pages, for teachers of pupils aged 11 to 18, Editors John Berry; Chris Pritchard.

Primary Mathematics, three issues of 32 to 48 pages, for teachers of pupils in the primary sector, Editors Cherri Moseley; Ems Lord; Ray Huntley.

Equals Online, three pdf issues of around 24 pages, for teachers working with special needs pupils, Editor Alan Edmiston.

SYMmetryPlus, Three issues of 20 pages, for active young at heart mathematicians, Editor Peter Ransom.

Mathematical Pie, three issues of 8 pages, for those interested in mathematical byways, Editors Wil Ransome, Erick Gooding.

MA News, three issues of 12 or 16 pages, for MA members, Editor Dave Pountney.

Each of the Editors is supported by a Production Team and Sub-editors as follows:

Mathematical Gazette: Owen Toller; Nick Lord; Stan Dolan; Tom Roper; Colin Davis; Michael Fox; Adam McBride; Graham Howlett; Bill Richardson.

Mathematics in School: Grant McLeod; Tina Webb.

Primary Mathematics: Tina Webb.

Equals Online: Pete Jarrett, Kirsty Behan, Nicky White and Louise Needham.

Symmetryplus: Oli Saunders.

It is very pleasing to be able to report that all editions came out on time.

In addition to the work of those already mentioned, Janet Powell continues as the MAAdvertising Manager. In the current financial climate, it is proving harder to sell space in journals, but Janet manages to produce a steady income.

As well as being able to say that, overall, processes were smooth, it is good to report some innovations. As flagged up last year, for Equals, we have introduced page-turning software and plan to extend it to Primary Mathematics as well. The intention of placing Mathematics in School in the Members Area of the MA website has still to be implemented but it is getting closer.

So, I wish to close with heartfelt thanks to all the editors and their teams for all the hard work done in the past year (and for all they will do in the months ahead). Should you have any comments or questions about our journals do please e-mail me on <u>editor-in-chief@</u> <u>ma.org.uk</u> or write to me care of MA headquarters.

> Bill Richardson (Editor-in-Chief)

PRIMARY MATHEMATICS CHALLENGE

November 2019 marked the 20th anniversary of the Primary Mathematics Challenge and we were delighted that 1436 schools took part, although disappointed that this was fewer than last year (1614).

To mark the 20th anniversary, the problem setting team made a conscious effort to make the paper more accessible to those taking part, aiming to include some 'easier' questions as part of the multiple choice section, whilst still including more challenging questions towards the end of the paper. Feedback from schools suggests that this was achieved and was reflected in the results:

Mark Range	0–5	6–10	11–15	16–20	21–25
% of pupils	3	2	50	40	6

Feedback noted how interesting, entertaining, relevant and imaginative the questions were. Many schools commented on the usefulness of the 'Answers and Notes' in further developing the ideas featured in the questions during maths lessons. Other schools stated how they had used past PMC questions from the website within maths lessons to develop problem solving and reasoning. Thank you to all members of the problem setting team and especially to Alex Voice who played such a crucial role in producing the paper.

We awarded 699 bronze, 672 silver and 196 gold awards and invited 2483 pupils who had scored 21 or more in the November paper to take part in the February Bonus Round.

From the February 2020 Bonus Round OMR sheets which were received in time to be entered into the results, the distribution is shown here:

Mark Range	0–5	6–10	11–15	16–20	21–25
% of pupils	1	8	41	41	9

This year also saw the publication of the fourth 'Challenge Your Pupils' book, a compilation of multiple choice problems to be used by teachers to interest and motivate children.

We are always seeking to recruit new members of the problem setting team so if you feel that this is something you would like to be involved in, please don't hesitate to get in touch.

Thank you to all of the MAHQ team for their hard work and support with the PMC.

Katherine Milner (Chair of PMC Management Team)

LIBRARY ANNUAL REPORT 2019–2020

Wittgenstein Archive of Francis Skinner

The publisher Springer has announced the forthcoming publication in June 2020 of a complete edition of the MA's Wittgenstein papers from the 1930s, edited by Arthur Gibson and Niamh O'Mahoney, and titled *Ludwig Wittgenstein: Dictating Philosophy To Francis Skinner – The Wittgenstein-Skinner Papers*. This will be the culmination of Gibson's ten-year project on these historic papers.

Book conservation and Cataloguing

Restoration work by Charles Nosworthy, at a cost of £450, has been focused on eight fragile books on the

open shelves, two books from the John Hersee Room collection, and, from Special Collections, a boxed but too fragile to display copy of J L Cowley's 18th century *Appendix to Euclid.*

COPAC (Consortium of Public Access Catalogues) has been taken over by Jisc's (formerly Joint Information Systems Committee) Library Hub Discover, including the University of Leicester and MA library catalogues, alongside over a hundred other libraries.

Mary Walmsley has updated the spreadsheet listing for all the books in the John Hersee Room, now extended to 350 titles.

Cataloguing of major book donations since 2018, from Howard Fay and Rachel Gibbons is now close to completion, but is currently affected by the pandemic.

Donations

June Smedley has donated three 1840s manuscript exercise books, accompanied by biographical details and mathematical notes in two articles, with contributions from John Denniss and Peter Ransom. This small archive collection is held in Special Collections, alongside the large John Hersee manuscripts collection.

A donation from the private periodical collection of the late Andrew Jobbings was received via his brother David Jobbings, including two new titles for the MA's periodical collection: the *Bulletin of the American Mathematical Society* and the *College Mathematics Journal*.

Research Links and Advertising

Jisc and the publisher Wiley are undertaking a major digitisation project focused principally on nineteenthcentury science and mathematics, particularly involving the British Association for the Advancement of Science. The MA's library and archives are also being considered as a component for digitisation, including archival records, the manuscript collections and around seventy rare books and serials.

Sources in the MA library and archives have assisted an American research project on A N Whitehead, and David Acheson on two images for his forthcoming book on geometry. Publicity for the library on Twitter (managed ably by Alice Hall) has included George Fisher's 300-yearold **Arithmetick** from the Hersee book collection; editions of Euclid's geometry by John Playfair on the 200th anniversary of his death; and 100th birthdays for Raymond Smullyan, including his titles on mathematical recreations, and Magnus Wenninger, celebrated for his books on polyhedra.

Two group visits to the library, including Special Collections, were arranged over the summer: members of the MA Teaching Committee and the East Midlands MA/ATM Branch; and a trio of MA members comprising Jo Morgan, Ed Southall and Tom Bennison; a flurry of tweets followed these visits.

Website Developments

The pages on the MA website for the library have been updated and edited with the assistance of Linda Medhurst and Alice Hall. In particular, the policy for managing the offer of donations has been made explicit and clear in a section on 'Library growth and donations'.

The University Special Collections has adopted a new system for the cataloguing of its archive collections, including the three MA collections: the John Hersee manuscripts, the June Smedley manuscripts, and the Wittgenstein archive. This work is ongoing

Mike Price (Librarian, Chair of Library Committee)

TEACHING COMMITTEE

2019 was a somewhat turbulent year for Teaching Committee. Mel Muldoney stepped aside from the chair, and I took over temporarily. Fortunately, Mel remains a member and is able to support us with her undoubted wisdom. Several other people have retired from the committee, but by the year's end we had recruited six new members, largely due to some sterling networking by our secretary, Rob Smith. Discretion prevents me from asking their ages, and the GDPR would prevent me from telling you even if I had, but the committee is now a good deal younger than it was a year ago!

The core business of TC is responding, on behalf of members, to consultations about proposals that that would impact mathematical education from Government, Ofqual, Ofsted, indeed any public body. There were none in 2019, but as I write, 2020 is beginning to look like a busy year.

At the open meeting at conference in 2019, the key topic that was exercising people was teacher wellbeing. We spent some time trying to work out what we, as a subject association, could actually do about that. We decided to focus on marking and feedback policies, as something that can cause a lot for stress to maths teachers, particularly where the policy is meant to cover all subjects which, for maths teachers, often means a lot of work for no educational gain. We hope that having a model policy endorsed by the MA might be a way to help schools come up with maths-appropriate policies that could help reduce teacher stress.

We had planned to have a draft model policy available for a discussion at the open meeting at conference 2020. That part of the plan needs redrafting.

Jim Simons (Chair of Teaching Committee)

MEMBERSHIP COMMITTEE

First, I must pay tribute to the work that Julia Brown did as Chair of Membership. Julia left us early in the New Year to go to the United States with her husband but much of the work below gained its initial impetus and implementation from the work that Julia and her small group undertook. We hope that Julia is enjoying her new life in the US and that we will see her again soon.

Second, I must explain why there remains a vacancy on Council for Chair of Membership. I took over as acting Chair of Membership from Julia but in the meantime we have appointed Sandi Atkinson as our new Executive Officer. Sandi has extensive knowledge of membership organisations and recruitment and retention of members. Therefore, Council has agreed that for the time being Sandi and I will continue to work together on improving our membership and the service and benefits that we offer to our members. As a membership organisation it is our members that give us our voice, that enable the MA to speak for them as a whole. Without our members we have no voice and we must be ever mindful of that.

And now on to the report itself; the website is currently being up-dated to accommodate the new membership

offer and this piece of work may well have been completed by the time you read this report. We have seen an increase in those taking up the membership only option to take advantage of discounts elsewhere such as the annual conference. This is being monitored closely and we will be keeping in contact with those individuals to encourage them to remain members after such events have taken place.

We are also increasing the number and availability of resources within the members' area of the website. The developments here should help to increase the benefits of membership and assist with recruitment. To help us to find out what members want and value, we are in the process of developing a member satisfaction survey to be issued shortly. Input is being sought from a small group of members before we go out with it across our wider membership. The results of the survey will form the basis of a recruitment and retention campaign and will also incorporate ideas previously shared with Council. We will be looking to encourage those who have opted for the membership only category to upgrade and subscribe to the journals.

There is much that we feel can be done to develop our offering to institutional members, be they primary or secondary schools as individual institutions or aggregations of schools such as Multi Academy Trusts. Over the course of this year we will be working on developing this particular aspect of our membership offering as well as that for personal members.

In light of the recent changes and to give them a chance to 'bed-in' we are pleased to announce that we are freezing the current membership fees for 2021, our 150th year.

Tom Roper (Acting Chair of Membership)

PUBLICITY & MEDIA REPORT

Twitter Account

The Mathematical Association continues to thrive on Twitter, thanks to the excellent work of David Miles. The Twitter account (@Mathematical_A) recently passed 25,700 followers – a 29% increase over the previous year. It continues to be a well-respected source of information and advice for maths teachers on Twitter.

eNews

In May 2019 we started using the marketing tool MailChimp to produce and distribute our monthly eNews. I have found the process of producing eNews to be much improved using this new online tool, and have now taken on sole responsibility for this role. The launch of the modernised format of eNews was well received by subscribers. New monthly content has been added – resources and puzzles provided by myself and Ed Southall respectively. It is now very easy to subscribe to start receiving eNews. The number of subscribers has increased by over 60% since last May.

MailChimp presents lots of opportunities for marketing that we should start to utilise over the coming year, to ensure we are making the most of our subscription.

Bookstand

Bookstand sales at conferences have been very good in the last year, with takings of over £400 at each of the two events attended in March alone. Contributing factors include excellent promotional material, a range of high-quality publications to sell, and a careful choice of events at which to run bookstands. We have avoided running bookstands at smaller events, particularly those that charge an exhibitor fee. Some of the most lucrative events have included the La Salle conferences, where I have been assisted in running the bookstand by new MA member David Faram. I am very grateful to David for his help at these events. I am also grateful to members of Council who have volunteered their time to run the bookstands at other events this year, and to Alice at Head Office for setting up an online form with which to request bookstand materials – this will help us to optimise sales and streamline processes going forward.

Conference Publicity

Along with David Miles on the Twitter account, I worked hard to promote Conference this year. In October I wrote a blog post encouraging people to attend, which was read by over 2200 teachers. Over a period of months, David and I, along with Council members Ed Southall and Bobby Seagull, spent a lot of time promoting the event on social media. We managed to attract a large number of delegates. The programme, the length of the event, the pricing, and the speakers, were all factors that contributed to this being an easy event to market. The ideas we have used this year will be easily transferable to next year's conference. One thing we have struggled to attract delegates for is our smaller CPD events. How best to publicise these events is something to review going forward.

As always, I would like to thank the team at Head Office for all they do to support publicity and media.

Jo Morgan (Chair of Publicity and Media)

UNITED KINGDOM MATHEMATICS TRUST (UKMT)

The academic year started well for the individual Challenges, but the Covid-19 outbreak has played havoc with the Junior Maths Challenge. The JMC, which was due to take place on 30th April, has been postponed indefinitely along with the closing date for UK entries as schools have been naturally reticent about entering. The specific figures for entries this year, for those who like to know details, are as follows: Senior Challenge 105,670 (from 2144 schools), Intermediate Challenge 265,700 (from 3122 schools) and, so far, Junior Challenge 228,500 (from 2758 schools). The first two do represent a slight fall from the previous year's figures as school budgets squeeze while the final one is, unsurprisingly, well down on last year's figures but it is to be hoped that if schools do return and the JMC does get a chance to run, more will enter.

For students who perform well in the Challenges, the follow-up competitions provide an extra opportunity to solve mathematical problems from the Junior Kangaroo and the Junior Maths Olympiad for Years 7 and 8 (and below) through the three papers that make up the Intermediate Olympiad Group and the Grey and Pink Kangaroos for Year 9, 10 and 11 to the Senior Kangaroo and the ultimate challenge of the British Mathematical Olympiad (BMO) and the opportunity to represent the UK in international mathematical competitions such as the International Mathematical Olympiad or the European Girls' Mathematical Olympiad. This year the Intermediate Olympiad and Kangaroo took place on the day before the government closed schools and so there was inevitably some disruption. Schools have been holding on to scripts as the UKMT Office, based at the University of Leeds, also closed at that time but we hope to complete the process at some point.

In July 2019 UKMT was heavily involved in the International Mathematical Olympiad which was held

this year in Bath. UKMT provided a large part of the funding for this event and many of its volunteers were involved in every aspect of the running of the event. The event was a great success with the UK team finishing 20th out of 112 participating countries, gaining one Gold Medal, two Silver Medals and three Bronze Medals and all competitors, Team Leaders and helpers from around the world having a very enjoyable time.

As well as the individual competitions, the Team Mathematical Challenges have continued to flourish with around 1300 schools taking part in the Senior Team Maths Challenge. This culminated in first place for Westminster School at the National Final in February, while the poster competition winners were Bancroft's School.

The Team Maths Challenge itself has been disrupted by the Covid-19 outbreak with fewer than half of the Regional Finals actually running. Unfortunately, this has meant that the National Final, usually held in London in June, has been cancelled.

The MA's Primary Mathematics Challenge is recommended as an additional enrichment event for primary children in UKMT's instructions for the PTMR. On behalf of the MA, the UKMT once again marked the Bonus Round of the MA's Primary Mathematics Challenge (PMC) using our staff and optical mark reader and is happy to continue to do so in the future.

The Mentoring Scheme continues to support young people to develop their problem-solving skills.

UKMT would not be successful without the support of its volunteers and helpers and thanks are due to all who help make it as successful as it is.

> David Crawford (MA representative)

THE BRITISH MATHEMATICAL OLYMPIAD COMMITTEE

The highlight of the past year was the 60th International Mathematical Olympiad, which was held in the UK at the University of Bath. A large number of volunteers were involved in organizing and running the event and ensuring that teams from 112 countries had a worthwhile and memorable experience. The UK team achieved one Gold and two Bronze medals, the other three students each gaining an Honourable Mention, for solving a question fully, placing us 20th. At the celebration of their success, held at Westminster Central Hall, Dr Jeremy King gave a lecture entitled "The Romanian Polygon Game".

In other international competitions during the year, the Balkan Mathematical Olympiad in Moldova in May 2019 saw the British team win five Bronze medals and an Honourable Mention. At the Romanian Master of Mathematics competition in February 2020 the UK team came 5th out of 19 participating countries, with one Gold, two Bronze medals and three Honourable Mentions. This year's European Girls' Mathematical Olympiad was held as a virtual competition (because of COVID-19 restrictions); the UK team of four achieved one Gold, two Silver and one Bronze medal, placing them 5th out of 53 teams (not all from Europe!).

The pandemic is affecting other events as well. This year's Trinity College training camp was cancelled and, though last year's four Summer Schools took place, 2020's have been cancelled. Other training, including the New Year Hungarian camp and a pre-IMO camp in Leeds, took place, as did the usual national competitions of EGMO, BMO1 and BMO2. Mentoring is continuing during the lock-down. It remains to be seen what other effects the pandemic may have on the year ahead.

Philip Coggins (*MA Representative*)

ASSOCIATION ARTICLES AND REGULATIONS

These documents can be viewed at:

https://www.m-a.org.uk/articles-and-regulations

The Council from April 2019 to April 2020

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Chairs of Committees		HEADQUARTERS
Branches	Keith Cadman	
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Membership Teaching Committee	Julia Brown (until December 2019) Jim Simons	Executive Officer Sandi Atkinson (commenced January 2020)
Publicity and Media	Jo Morgan	Finance Officer
		Linda Medhurst
Members-without-Office	Elizabeth Glaister Chris Pritchard Gerry Leversha Cordelia Myers Bobby Seagull (from December 2019) Ed Southall Owen Toller	 Membership Officer Charnjit Seehra Sales, Marketing, Challenges Alice Hall Committees, Conferences, Publications Carol Mackerness
The Company Secretary	Bill Richardson	

THE MATHEMATICAL ASSOCIATION BALANCE SHEET FOR THE YEAR TO 31 DECEMBER 2019

			2019		2018
	Note		£		£
Fixed assets					
Tangible assets	11		402,456		326,376
			402,456		326,376
Current assets					
Stocks		22,601		21,757	
Debtors	13	63,770		66,071	
Cash at bank and in hand		156,498		222,949	
		242,869		310,777	
Creditors: amounts falling due within one year	14	(50,217)		(56,524)	
Net current assets			192,652		254,253
Total assets less current liabilities			595,108		580,629
Charity funds					
Restricted funds	17		6,500		6,500
Unrestricted funds	17		335,409		389,929
Revaluation reserve	17		253,199		184,200
Total charity funds	17		595,108		580,629



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HOOKED ON MATHEMATICS A PROGRAMME OF STUDY BASED ON QUALITY FREE RESOURCES FOR 7–11 YEAR OLDS



MATHEMATI

SCHOO

Jenni Back

Hooked on Mathematics shares an exciting approach to teaching mathematics at Key Stage 2 that gets children interested and keen to learn and is based on a long term collaboration with the staff and pupils at St Martin's CE Primary School, Brighton. We use quality free resources from NRICH and CIMT's Mathematics Enhancement Programme to make sure children are motivated and have opportunities to develop their fluency, problem solving and reasoning. Based on a project that has run successfully for six years, we are keen to share what we have developed and have written this book to encourage you to follow our example. You too can transform your children's attitudes to, and success in, mathematics.







The Mathematical Association

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