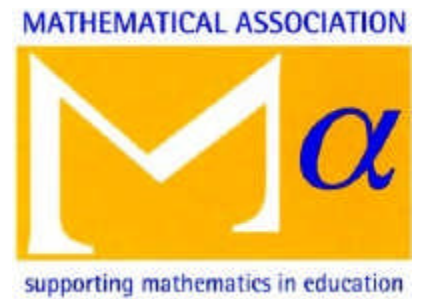




# ANNUAL REPORT 2010-2011



## President's Report

It has been a great honour to serve as MA President for 2010-11, and I believe that I will eventually look back on the past year as one of the most eventful and rewarding of my career.

I grew up in North London in the 1950s, and my early education included a lot of geometry, which provides – in my view – the only fast way in to the whole spirit of serious mathematics for a very young person. It has to be said, though, that the teaching at the time was not exactly stimulating.

My first truly inspirational maths teacher, Bertie Bellis, came much later, when I was in the sixth form at Highgate School. He emphasized the aesthetic side to mathematics, and, in particular, how one proof of a result can be more beautiful or 'elegant' (as he would say) than another. Bertie went on to become MA President for 1971-72, and it has been a great pleasure to follow in his footsteps, almost 40 years later.

After school, I took a Maths and Physics degree at King's College, London. There, the subject of fluid dynamics particularly interested me, for my mind had always boggled as to how on earth you even write down the equations, let alone solve them. And after King's I studied for a Ph.D. in geophysical and astrophysical fluid dynamics at the University of East Anglia.

It was at this stage that I met another inspirational figure: Raymond Hide. He was a world expert in the field, and had recently set up a Geophysical Fluid Dynamics Laboratory at the Meteorological Office, which was then in Bracknell. But even with his help, my Ph.D. was a roller-coaster affair, and I had little to show for it until the last minute, when a major result came out unexpectedly and surprised all the experts.

After that, I spent two years with Raymond on a postdoctoral fellowship at the Met Office, before taking up a temporary lecturing post in mathematics at Oxford in 1973. And after a further lucky break with my research I eventually secured a Fellowship in Applied Mathematics at Jesus College, Oxford, in 1977, and began a fully-fledged academic career that was to last for 31 years.

At first I pursued a fairly conventional mixture of teaching and research, but after a number of years I became restless. The movie star Robert Mitchum once said something like: "When you're young, you think that as you get older you'll get to do better. But you don't – you get to do more." I felt that was beginning to happen to me, and I didn't like it. So I struck out in a completely new direction, and devoted my non-teaching time, over several years, to writing a major university textbook on fluid dynamics. Literally hundreds of authors had tried this before me, but I was aiming for a combination of



David Acheson

photo by Julia Baier

scholarship and sheer readability that I felt had never been achieved before, and *Elementary Fluid Dynamics* was eventually published in 1990.

When I finally came back to research it was to the rather different field of nonlinear dynamics and chaos, with computer simulations of multiple pendulums, which were intended, at first, simply to enliven undergraduate mechanics lectures. This is how I discovered the 'upside-down pendulums theorem' – a little bit like the Indian Rope Trick – which eventually featured on BBC TV's *Tomorrow's World* in 1995. This led to another book, *From Calculus to Chaos* (1997), and, in due course, to an interest in bringing some of the ideas of real, serious mathematics to the general public via so-called 'popular' lectures. These in turn led to my third book *1089 and All That* (2002), and in 2008 I retired from my teaching post at Oxford to concentrate full-time on public lectures and writing.

In retrospect, I have been very, very lucky, for my academic career has taken all sorts of interesting and

unexpected twists and turns. And the most recent of these, of course, involved The Mathematical Association. My first task as President came almost immediately, at the Memorial Session for Doug French in April 2010. I am a great admirer of Doug's books on the teaching of algebra and geometry, so gave a short talk about them. Next, in September, came a visit to Stirling, to give the Plenary Lecture at the 5<sup>th</sup> Annual Scottish One-Day Conference for Teachers of Secondary Mathematics. These particular conferences are very successful, and while the scenery at Stirling certainly helps, this success is largely due, I think, to Bill Richardson.

Branches play an important role in the MA, so it was a pleasure to give a talk in Sussex last September, where the audience was boosted by a coachload of keen sixth-formers. In addition, I gave a talk to the Gloucester branch just before becoming President, and I look forward to visiting both the Yorkshire and Reading branches later this year.

After Sussex, the next major event for me was the joint MA/ATM Secondary Maths Roadshow in November in Preston, organised by Mary Ledwick and Mary Tuson. Here again, there was a very special atmosphere, helped by the headteacher and the staff of the school, to say nothing of some of the pupils, who not only shepherded us around as instructed, but even took an active part in my plenary session. Later, there was a follow-up event of a similar kind at Dursley in Gloucestershire, this time organised by the ATM, and I was again asked to give the plenary lecture. I believe that these particular joint events between the MA and the ATM, run on a great deal of goodwill and at very little cost, are a most encouraging development.

In addition to these events I did my best to promote the MA at about 30 other public lectures during the year, including the Netherlands Mathematical Congress in Utrecht, a Specialist Schools and Academies Trust Conference in Manchester, a Cafe Scientifique in Launceston, a Prince's Teaching Institute Conference in Cheshire, and Maths Inspiration shows in Cambridge and at the Theatre Royal, Newcastle.

By long tradition, the President is invited to give something of a steer to the MA's Annual Conference, and, in the end, I rather threw myself into it, helping Bill Richardson with the task of putting the whole programme together. As many of you will know, this year's conference was held at Loughborough, and the theme was *Mathematics: The Big Picture*. The Opening Lecture by Matt Parker and the Closing Lecture by Lynne McClure were both excellent, in very different ways. Two other highlights were a Primary Special from Rob Eastaway and Andrew Jeffrey, and a characteristically energetic after-dinner talk from James Grime. We also held an evening competition in the bar, colourfully hosted by Adam McBride, to find 'The Best Piece of Maths Ever', with the organisers more or less praying that some of the entries would not be entirely serious. (As it turned out, we need not have worried.)

Through my deep involvement with the Annual Conference, and by attending Council and various other MA meetings, I have seen something, at least, of the enormous amount of work that goes on behind the scenes, not only by Marcia Murray and members of her

staff at HQ, but also by individual members of the MA who give so generously of their precious spare time. It seems to me that we treat this kind of dedication lightly at our peril, especially in the present economic climate.

My own view – possibly a rosy-coloured one – is that this only happens because enough members of our Association genuinely believe that mathematics is a truly exceptional subject, and that the MA has got broadly the right ideas about what that subject is, and how best to pass it on, in an inspiring way, to the next generation, whether through the school system, or otherwise.

I certainly believe this myself, and wish The Mathematical Association every success in the future.

*David Acheson (President 2010-2011)*

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### **Chair's Report from Council**

This is my first report as the Chair of Council. I took over from Barry Lewis at the AGM in April 2010 and would like to record my thanks to Barry for all his hard work during his term of office.

Council meets quarterly on Saturdays at MA Headquarters. The normal pattern for a Council meeting is to start at 10.30 and finish at 15.30 with a lunch break of roughly 30 minutes. Five hours is about the limit for intense discussion as thereafter fatigue sets in. During that time a huge amount of business has to be transacted. Major items come at the top of the agenda. Later on in the meeting, some reports from committees might be accepted without debate when there are no major issues. In between each Council meeting there is a meeting of Standing Committee which again typically lasts for about five hours. Each such meeting reviews the outcome of the previous Council meeting and prepares the ground for the next. The emphasis tends to be on matters of strategy rather than on the fine detail of reports from committees. Standing Committee has the power to act on Council's behalf if an issue arises which has to be handled quickly but it has to report to the next Council meeting on the action it has taken.

The various committees form a major part of MA business. Reports on their activities can be found later in this Annual Report and so I shall not duplicate details here. However, I would like to single out Teaching Committee which has by far the heaviest load. With a new government in office, many changes have occurred during the last year and it has been hard to keep up with all that has been happening. Bodies such as QCDA have ceased to exist and there has been a constant stream of initiatives to digest. Details of some of these were received directly while others were disseminated via the Joint Mathematical Council on which the MA is represented. Teaching Committee was the natural body to scrutinise most of these documents and, where appropriate, to prepare a response or position paper. Some of these can be found on the *We say* section of the website. Invitations are often received to send representatives to the launch of an initiative or a meeting with government officials. Every effort is made to take up such invitations so that the MA maintains a high profile and its voice is heard.

Money has loomed large over almost everything that Council has discussed and the Treasurer's reports at Council meetings have painted a gloomy picture. Particularly worrying has been a drop in subscription income. Members are the lifeblood of the Association and

there have been long debates on how to arrest the decline in membership. Recruitment and retention are key issues. For success, we need to know what members want.

Unfortunately, malfunction of some software led to problems with the membership database and resulted in some members receiving the wrong journals. A letter was sent to all members with the February 2011 *MA News* apologising for the errors and asking members to update their contact details. It is hoped that the problems will not recur.

At my first Council meeting in June 2010, I presented a paper headed *The Way Forward for the MA*, which suggested various areas of activity that we needed to scrutinise. This review continued throughout the year and will do so in the year to come. In this regard, at the March 2011 Council meeting, it was agreed to set up small groups to conduct a detailed examination of each of

Membership; Journals; Professional Development;

Primary Mathematics Challenge; Website; Conferences.

Each group was charged with producing a report, with recommendations where appropriate, which was to be presented at a two-day meeting to be held in June 2011. In addition, we want feedback from members and a small questionnaire was prepared for the 2011 Annual Conference.

One area which saw a lot of activity during the year was the website. The existing site is being completely overhauled. It is intended to introduce a Members' Area where, in the fullness of time, members will be able to go online to pay subscriptions, register for the Annual Conference, obtain discounts on items in the online shop and gain access to high quality teaching resources.

Fortunately among all the doom and gloom there were some things to cheer us up. In September Council was delighted to hear of an anonymous donation of £250,000. The donor had expressed the wish that the money was to be used to help the MA flourish, perhaps over the next ten years or so, particularly through activities such as Annual Conferences, One-Day Conferences, Branch meetings and membership recruitment. (Further, the money should not normally be used to cover things such as staff salaries or building maintenance.) Members will be encouraged to apply for funding for suitable projects. Details of the application procedure are being finalised.

In a similar vein, Council was pleased to hear of a legacy of £1729. The number has become famous because of the story of Hardy's Taxi. Prompted by this, at its March meeting, Council agreed to set up *The 1729 Group*. The purpose of this is partly serious, namely to encourage donations and legacies. However, in the spirit of the original legacy, there is also a light-hearted side. To be eligible for membership, the donor must donate a sum of mathematical significance and, where it is not obvious, explain this significance. Again details of this scheme are being finalised.

At each Annual General Meeting, various members of Council come to the end of their terms of office. Those stepping down in April 2011 included Jane Imrie (Immediate Past President), Keith Cadman (Chair of Branches), Michael Fox (Chair of Publications) and Mary Ledwick (Member without Office). Mundher Adhami (Member without Office) had resigned during the year.

Alison Clark-Wilson came to the end of her term as Chair of Professional Development but remains on Council as a Member without Office. To all of them I should like to offer sincere thanks for all their hard work on behalf of the MA, often over many years.

Of course, there is always one other person standing down at each AGM, namely the retiring President. Retiring is perhaps not the word that you would normally associate with David Acheson. David has been an outstanding President who has thrown himself wholeheartedly into all spheres of MA activity. Sometimes this has taken place behind the scenes, sometimes more publicly. Both aspects were present in the 2011 Annual Conference which, by common consent, was a triumphant success, and for many one of the best ever. Over a period of several months David, with the assistance of Bill Richardson as Chair of Conferences, meticulously put together a superb programme with an all-star cast of plenary speakers and a huge range of supporting acts covering everything from Primary to Tertiary and matters of general interest. Much more publicly David gave us a wonderful Presidential Address which combined some pointed comments on the current educational scene with his famous inverted pendulum experiment and a performance of an original composition on the electric guitar. Throughout his Presidential year, David maintained a high profile, not least by going out on the road and giving lectures at events up and down the country. He will stay on Council in the coming year and we look forward to more of his wit and wisdom. However, now is the time to give David a huge vote of thanks.

The MA faces many challenges. Nevertheless, with Paul Andrews as President for 2011-12 and some dynamic new recruits to Council, the MA can look to the future with cautious optimism.

***Adam McBride (Chair of Council)***

#### **Branches Committee**

MA Branches Committee met twice during the year from 30 April 2010 to 30 April 2011.

The first meeting was the annual Branches Day at Leicester HQ in October. The morning session was given over to a meeting of committee and included formal reports together with a review of nominations and appointments. In the afternoon there were sessions involving the submission and exchange of past and future programmes together with a discussion about publicity in *MA News* and the MA website.

David Pountney, of Liverpool Branch, was the committee's nomination to succeed me as Chair of Branches due to my term of office ending in April 2011. David was duly elected as the new Chair at the MA Annual Conference in April. He has also agreed to continue as Youth Activities Officer as an interim measure. The remaining committee officers all agreed to continue.

The second committee meeting took place right at the end of the annual conference in April. Geoff Tennant, Vice-Chair of Branches and organiser of Meridian, chaired this meeting.

Branch representatives have always been encouraged to provide updates for *MA News* and the Branches section of the website. Recent editions of the newsletter have featured many impressive accounts of local activity. Branches have been implored on a regular basis to

provide details of forthcoming single meetings, or future programmes, for the website.

*Keith Cadman (Chair of Branches)*

### **Annual Conference 2011**

In 2011, the MA Annual Conference was held once again at the University of Loughborough, as it had been five years before. It started on Thursday April 14th and finished on the Saturday and was therefore of a similar style to the one in Cambridge in 2009. In 2006 Loughborough proved to be an excellent venue and, happily, the same was true this year as well. The conference facilities are excellent with none of the session rooms more than two minutes from the central area which housed the exhibitors and the excellent lunchtime catering. The accommodation came in for a little criticism under two headings: the washing facilities were 'compact' and the rooms were some distance from the main centre. But, judging from the evaluation forms, these did not detract significantly from the overall enjoyment.

The opening plenary was a swashbuckling affair provided by Matt Parker, a young and very entertaining mathematician who gave a superb performance which would not have been outshone by any stand-up comedian. In the following two days, delegates were stimulated by a wide range of sessions. Credit must go to the then President, David Acheson, for his tireless work in contacting and cajoling so many and so talented an array of speakers, as well as for much else. It was his idea to organise a 'competition' on the first evening for delegates to stand up and explain why their favourite piece of mathematics was truly sensational. David and I were very worried beforehand that there might only be one or two brave souls who were willing to stand up and 'be counted' and the event would be done in 10 minutes. However, with over 30 offerings, the pressure was to get a move on and it turned out to be one of the most hilarious evenings that I can recall at MA conferences since I began in 1985!

The middle day was a very busy one indeed. It was planned to have a good range of sessions to entice primary practitioners in for the day. With that in mind, there was a mini-plenary provided by Andrew Jeffrey and Rob Eastaway which, by all accounts, was extremely entertaining. On the same day, David Acheson gave his Presidential Address which was another extravaganza which will live long in many memories. Its truly grand finale was a live demonstration of the stand-up pendulum which, some years before, had formed the basis of a television programme. The AGM came and went. Financially the MA is far from healthy and any members who have ideas to improve the situation radically should contact MA Headquarters.

The Annual Dinner was a splendid affair. The President has free rein (or reign?) as to who the guests on top table are and David went for youth. There was scarcely a wrinkle in sight! The 'after dinner speech' was given by James Grime who made full use of a panoply of modern technology which left this wrinkly gasping in admiration.

So we arrived at the final morning, a much more sober affair, perhaps a reaction to all the whizz-bang entertainment on the first day and a half. The closing, very thought-provoking, plenary was given by Lynne McClure, the current director of the Nrich project and with much experience in other educational projects.

So, in conclusion, it was a great conference and must be up there as one of the best! What made it so good? There were tremendous speakers. The ambience was excellent. The subsidy made available probably increased the numbers but, as was widely commented, there were an awful lot of young delegates. Let us hope that this feature continues for many years to come.

*Bill Richardson (Chair of Conferences)*

### **Professional Development Committee**

The Professional Development Committee met three times during 2010-11 at the London Mathematical Society HQ, London. The Committee continues to monitor closely the individual professional development project finances and to develop PD events for both members and the wider teaching workforce in line with the principal objective for the Association which is "to promote and support the professional development of teachers".

A notable success during the year was the award of the National Centre for Excellence in the Teaching of Mathematics (NCETM) CPD Standard, the application for which had been submitted by the Professional Development Committee on behalf of The Mathematical Association. As a holder of the NCETM CPD Standard, the Association now has an entry on the NCETM website at <https://www.ncetm.org.uk/cpd/organisation/63540>. This Standard provides evidence for the high quality of the Association's professional development activities in addition to offering a set of criteria to support this quality being maintained into the future. The Professional Development Committee has produced a useful booklet that is available to members of the Association who are organising professional development activities for teachers that encompass these standards. In addition, the NCETM's professional development calendar is now widely used to publicise the Association's branch meetings and events to a wider audience.

The Committee continues to promote the award of Chartered Mathematics Teacher status for those actively involved in mathematics teaching and three of its members, Jennie Golding, Liz Woodham and Alison Clark-Wilson represent The Mathematical Association on the Chartered Mathematics Teacher Registration Authority. Full details of the designation and how to apply can be found on The Mathematical Association's website.

The Committee is currently exploring a range of future developments to increase teachers' access to high quality mathematics CPD, which includes the development of online professional development in addition to its one-day events and courses.

Over the past year the Committee oversaw a number of activities and events, as follows.

### **5th Annual Scottish One-day Conference for Teachers of Secondary Mathematics**

This event took place at the University of Stirling, on Saturday, 18th September 2010 and was attended by 182 delegates. David Acheson offered the well-received (and musical) plenary session and the attendees were very positive about the day. The Association is indebted to the event organiser Bill Richardson, whose continued commitment to the event has ensured that it is now a regular annual professional development conference for many Scottish mathematics teachers.

## Joint ATM/MA Secondary Maths Roadshow, Preston November 20th 2010

This event was organised on behalf of the Association by Mary Ledwick and was attended by nearly 50 delegates who evaluated the day highly, with many attendees referring to David Acheson's engaging plenary session as the highlight of an excellent day!



David Acheson, President of The Mathematical Association in full swing!

## National Science Academy Wales – Professional Development workshops

The Mathematical Association worked with the National Science Academy Wales (NSAW) to produce CPD modules and accompanying training for mathematics teachers in Wales. The materials for three workshops were developed and a 2-day training course was organised for the mentors who will lead the dissemination of the professional development in Welsh schools.

### The way forward for professional development

The Professional Development Committee finished the year by focussing attention on the vision for the Association's professional development activities in the coming years. This was especially relevant as the support previously offered through the National Strategies and Local Authorities diminished. The Committee was keen to hear both from members of the Association and from the wider mathematics community about opportunities and ideas on how it might support all teachers of mathematics in this new landscape with new professional development activities to complement its existing one-day events and conferences.

**Alison Clark-Wilson (Chair of Professional Development)**

## Publications Committee

The Committee continues to meet three times per year and has been chaired by myself or Barry Lewis as Acting Chair. The Committee consisted of myself, Paul Harris, Barry Lewis, Bill Richardson, Sue Waring, Mary Ledwick, Paul Metcalf, Geoff Tennant and Chris Pritchard.

During the year we have been pleased to publish two new titles: *Problem Solving – The creative side of Mathematics* by Derek Holton and *GCSE Revision Cards* by Mary Ledwick. Both were published in time for Conference. Work is under way to publish three new titles: *Challenge Your Pupils 2*, *GCSE Posters* and a reprint of *50% Proof*.

Again I give my thanks to the Committee for all their dedicated hard work over the last year, and to all the

others who give their time and expertise in preparing resources for publication.

**Michael Fox (Chair of Publications)**

## Editorial Happenings

I would once again like to thank the editors, and those behind the scenes for their exceptional work during the last year. It has not been easy to reconcile quality publications with reducing expenditure but the team has done a phenomenal job under difficult circumstances.

My thanks also go to Janet Powell who has worked tirelessly to bring in additional advertising revenue which benefits our publications in offering more pages and a greater number of these in full colour.

JSTOR royalty revenues have been a welcome addition to the MA finances and provide a welcome service to those who wish to access our publications on line. Other income generation ideas are being pursued.

During the year, *Equals* went through a successful transition from a printed journal to becoming the MA's first online journal. This has not been easy and we are aware of some of the pitfalls which we are attempting to address.

In the meantime, I am entering my last year as Editor-in-Chief and concerned to find a successor. Similarly, we have agreed that many of the editorial posts would benefit from having other members shadowing their roles. If you might be interested then please get in touch. My thanks go to the following colleagues for their tireless work: -

### Editors

|                 |   |
|-----------------|---|
| John Berry      | <i>Mathematics in School</i>  |
| Ray Gibbons     | <i>Equals</i>   |
| Gerry Leversha  | <i>Mathematical Gazette</i>   |
| Lynne McClure   | <i>Primary Mathematics</i>  |
| Martin Perkins  | <i>SymmetryPlus</i>   |
| Chris Pritchard | <i>Mathematics in School</i>  |
| Wil Ransom      | <i>Mathematical Pie</i><br>(and Erik Gooding for <i>Pie Notes</i> ) |
| Sue Waring      | <i>MA News</i>  |

### Production Editors

|                 |                              |
|-----------------|------------------------------|
| Helen Morris    | <i>Mathematics in School</i> |
| Bill Richardson | <i>Mathematical Gazette</i>  |
| Tina Webb       | <i>Mathematics in School</i> |

**Advertising** Janet Powell

...and, of course, my grateful thanks to the staff at HQ.

**Paul Metcalf (Editor-in-Chief)**

## Publicity and Membership

A number of ideas have been considered by the publicity and membership committee over the course of the year:

- Reviewing the membership structure, with the possibility of promoting the existing 'Friends' membership for people, including parents, who are not mathematicians but can see the value of the subject;
- Looking to ensure good take-up by students in initial teacher training;
- Targeting specific groups of people – including those on training courses – who might be persuaded to join;
- Reviewing the membership package to ensure that it meets the needs of prospective members.

- Looking to increase communication by email and using social networking websites such as Facebook and Twitter;
- Working more closely with the ATM and other organisations involved with mathematics on specific projects, seeing what mutually beneficial possibilities there are in working together on membership issues;
- Looking to ensure that the logistical aspects of joining are made as straightforward as possible.

I am grateful to the Publicity and Membership committee for their support over the last year.

**Geoff Tennant (Chair of Publicity and Membership)**

### Primary Mathematics Challenge

For the third consecutive year there was a drop in the number of schools taking the PMC this year. 2361 schools took part, 216 less than last year. 84080 papers were sold. The 1009 pupils who scored 22 and over were invited to take part in the second round of the challenge. We awarded 33 Gold Medals, 163 Silver medals and 165 Bronze medals.

The mark distribution for the February round was:

|       |     |      |       |       |       |
|-------|-----|------|-------|-------|-------|
| Marks | 0-5 | 6-10 | 11-15 | 16-20 | 21-25 |
| 100%  | 1   | 7    | 35    | 45    | 12    |

There was a change in personnel. Peter Bailey handed over the reins to Lesley Jones (Chair of Management Committee) and Rudolf Loewenstein (Chair of Problems Committee). Brian Weller (ex- Northampton University Teacher Training) has joined the problem team. Margaret Williams has resigned from the team.

In the feedback received, the comments about the administration were very positive, with teachers mentioning the helpfulness of staff at MA Headquarters and the ease of administration of the challenge itself. There were a few problems with the on-line registration, but for the most part that too went smoothly. The snowy weather also caused a few delays with the post in some parts of the country.

Some people felt that the paper was harder than last year's and others felt it was easier. In fact the statistics on the results show a classic 'normal distribution'.

Percentage Results November 2010

|            |     |      |       |       |       |
|------------|-----|------|-------|-------|-------|
| 2010 marks | 0-5 | 6-10 | 11-15 | 16-20 | 21-25 |
| 100%       | 5   | 26   | 39    | 25    | 5     |

There were many comments about the last five questions. Some teachers felt that these were too difficult and others would prefer the multiple-choice format throughout the paper. Some teachers really liked these last questions and used them to stimulate more work and discussion in class after the event. Question 25 caused particular problems where pupils added the numbers, rather than the digits.

There were quite a few comments about the language used. Three particular issues were:

- Clarity of language e.g. in Qu19 'both' might have been clearer if we used 'each'
- Reading level e.g. in Qu 18 'effectively'
- Use of unfamiliar names.

As regards the clarity of the questions:

- Qu 8. Some children thought the Police station was straight on
- Qu 9. The B in 'cube' was very slightly asymmetric

- Qu 10. A drawing of a regular pentagon would have helped.

There were some requests for the paper to be set later in the year once more work had been covered.

Council proposed an increase in price of the packs, from £8.50 + VAT to £9.00 + VAT and from £7.00 + VAT to £8.00 + VAT. PMC Management Committee reluctantly agreed to this, but there was some concern since school budgets are decreasing and the rise might lead to a decrease in sales. Perhaps a pricing system should be considered which allows a reduction for larger orders.

PMC Management is aware of the need to increase take-up of the Challenge and has pursued some ideas to improve the situation. Further suggestions were to place adverts in various educational publications and to ensure PMC is linked into appropriate search engines.

Publications: *Challenge Your Pupils* (2007) is to be re-printed and 2 new books are proposed: (1) a compilation of questions from past papers and (2) a compilation from 'spare' questions, unused in PMC.

**Lesley Jones (Chair of PMC Management Team)**

### Library Committee

#### Wittgenstein Archive of Francis Skinner:

This valuable Archive of the MA has been on loan to Trinity College Cambridge since 2002. Over the past year, there have been serious ongoing concerns, reported and discussed in Council, over the cataloguing, care and historiography, particularly over the provenance, of the Archive. These concerns culminated in a meeting in the Wren Library on 11 March 2011, involving the MA Chair of Council, President, Librarian and Archivist, and the Librarian and Archivist of Trinity. Concerns over the cataloguing and care were put to rest but the concern over recent publications about the Archive remains and the prospect of a major published edition of the Archive is uncertain. In these circumstances, the Archive remains on temporary loan to Trinity, renewable annually.

#### Catalogue of the Special Collection:

A complete list of MA books and periodicals in the University of Leicester's Special Collection was published by the MA in 2005. The size of the Collection has now nearly doubled to over 700 records and three supplementary lists have now been produced as Excel spreadsheet files: the books of John Hersee, other books added since 2005, and an updated list of early mathematical serials. These three files are downloadable from the MA website.

#### John Hersee Room Collections:

The MA Archives are accommodated in the John Hersee Room at MA HQ. The Room houses the complete published output of the MA since 1897 and a comprehensive list of all MA publications, bar serials, has been produced by the Archivist, Mary Walmsley, for reference use at HQ; it is planned to add this file to the MA website. The historical collection of around 250 duplicate books in the Room has also been catalogued by the Archivist; the list is available at HQ for reference but, for security reasons, electronic copy has not been made available.



### **Manuscript Copy Books of John Hersee:**

The extensive collection of over 200 manuscript books, 1704-1907, is still accommodated in the John Hersee Room. The catalogue of these books by John Hersee, including contents listings, has kindly been first edited by Jackie Stedall of the University of Oxford and can be downloaded from the University Library Special Collections website. The books can be researched in the John Hersee Room on request to the MA Librarian. Dr Stedall has researched a very small sample of these books, particularly girls' copy books, for a forthcoming publication.

### **New Donations of Books:**

The widow of Doug French has kindly donated a good collection of recent works on mathematical education, together with some contemporary school textbooks. Around 50 of these books are being added to the MA Library and catalogued with a note to acknowledge the source of the gift. A further collection of around 40 books for the MA Library, largely on primary mathematics, has been donated by the MA Librarian. The MA Library now runs to over 10500 catalogue records.

### **Publicity for the MA Library:**

The MA Librarian and Archivist gave a joint talk and presentation on 'The MA Library of Surprises' at the MA Loughborough Conference. The Library's history, the older books, the copy books of John Hersee and the Wittgenstein Archive were all featured, and examples of older books and copy books, all from the John Hersee Room, were displayed as part of the MA Exhibition. Some surplus material was also brought for disposal and yielded around £30 in donations to the MA Library fund.

***Mike Price (Librarian and Chair of Library Committee)***

### **Teaching Committee**

**Chair Chris Pritchard**  
**[tc-chair@m-a.org.uk](mailto:tc-chair@m-a.org.uk)**

In line with our normal calendar of events, Teaching Committee met three times over the past twelve months, though a move to include one meeting a year in York (with two remaining in London) was something of a departure in recent times and afforded an excellent opportunity to involve Adam McBride as Chair of Council more closely.

The restructuring of Teaching Committee is almost complete and we are hopeful that this will sit well with the review of The Mathematical Association currently being carried out by Adam. Our aim from the outset was to build a team that could focus on the core activities of Teaching Committee and we feel that we are getting closer to that goal. The committee can be seen as having four components, a management team providing vision and direction, representatives from Council offering strategy and advice, subcommittee representatives forming the bridges to our three age-and-stage subcommittees, and a liaison group that links with other MA groups, together with a number of external bodies. In addition, a valuable advisory group exists in the ether, providing insight and counsel on key issues upon request. Special thanks go to Sue Forrest who is temporarily doubling up her duties as both Treasurer and Secretary.



It is important that MA members know who represent them on Teaching Committee. They are:

|               |                 |
|---------------|-----------------|
| David Acheson | David Miles     |
| Sue Forrest   | Cherri Moseley  |
| Paul Harris   | Catherine Ogden |
| Fiona Hogg    | Keith Porteous  |
| Ray Huntley   | Rachael Read    |
| Adam McBride  | Peter Thomas.   |

The Advisory Group consists of:

|                |               |
|----------------|---------------|
| Jennie Golding | Lynne McClure |
| Mary Ledwick   | Peter Thomas. |

The three Subcommittee Chairs are:

Primary: Liz Woodham

11-16: Rachael Read

Post-16: Peter Thomas.

Their reports follow this overview.

The cross-stage ICT Subcommittee which had not been particularly active in recent months was stood down recently but I am delighted to report that three members of that team have offered their skills and experience to other subcommittees.

Among Teaching Committee's core functions is the development of policy for Council's consideration. In the past year two policy statements have been written, firstly on 'Early and repeated presentation for GCSE Mathematics' and then on 'Enrichment'. The former has attracted significant interest and been quoted by ACME and by the BBC, and more than a flavour of it is to be found in the Government White Paper, 'The Importance of Teaching'. However, the door still appears to be open to schools accelerating pupils to examinations and more work still needs to be done in persuading those in power of the inadvisability of this approach. The policy on enrichment, already on the MA website, will soon be supplemented with further guidance.

Teaching Committee has been centrally involved in communications with Government and consultative bodies, grappling with some of the major issues under consideration and review. A letter was written to Michael Gove expressing concern over the decision to abolish the QCDA, thereby weakening links between the profession and the Government. A response from Nick Gibb included an early indication that the National Curriculum is to be revised. On this matter, Teaching Committee drafted evidence on behalf of Council in the fortnight leading up to Conference. In addition, we have benefited from Jennie Golding's involvement with QCDA Linked Pair groups and thank her for keeping us up to date with developments. In January there was also some discussion around the Teaching Committee table on the subject of the 2009 Pisa international comparative study. Regrettably, we were unable to find sufficient common ground to provide evidence to the Wolf Review on vocational education 14-19, but we remain committed to contributing to debates on the major issues.

### **Primary Subcommittee**

**Chair Liz Woodham**  
**[tc-primary@m-a.org.uk](mailto:tc-primary@m-a.org.uk)**

The joint MA/ATM Primary Group last met on 26 February at the Institute of Education. This year, we have reviewed our purpose and



membership, and as a result, information about the group on both the MA and ATM websites has been updated.

We were represented at the ACME workshop on Primary arithmetic, which was held in December to draw together key issues in that area. The resulting report will be presented to Nick Gibb MP, Minister for Schools, imminently.

We are also represented in the Cambridge Primary Review Network, which has recently been established to take forward the ideas and recommendations of the Review by supporting reform in primary schools.

The group fed into ACME's response to the Bew SATs review and also plans to feed into the MA's response to the National Curriculum Call for Evidence.

The first drafts of the group's forthcoming publications are nearing completion. The two parallel books, one for middle and one for upper primary, will be entitled '... And Maths'. Each publication includes one double-page spread of activities for another curriculum subject and mathematics, both subjects being given equal weight. Each book will be accompanied by a CD, which includes additional resources. One book will be published by MA and the other by ATM.

We are excited by the prospect of a primary day at each Association's annual conference this year and many members of the group are leading sessions.

The next meeting will take place on Tuesday 28 June at the Institute of Education.

#### **11-16 Subcommittee**

**Chair Rachael Read**

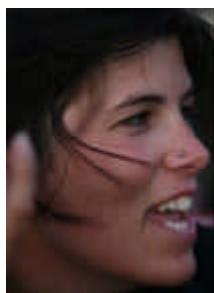
[tc-secondary@m-a.org.uk](mailto:tc-secondary@m-a.org.uk)

We are actively searching for new members. Rachael's first nephew born at 10.10am on 1<sup>st</sup> January 2011 is obviously mathematically minded but may need a few years yet!

The subcommittee has continued to develop materials for publication; the Maths Activities pack, *Mathematics in School* resources and GCSE revision postcards. Several members are considering applying for grants towards writing days, to produce further hard copy resources and more for the MA website. We were also thrilled to see the start of a new age for the Mathematical Association with the new MA Facebook Group. With 51 members already we hope that this will prove to be a successful method of passing on news of the MA, MA events and, more generally, news and ideas on mathematics education.

The subcommittee was well represented at the BCME conference, although there were some difficulties with the scheduling and location of the meetings and this made recruitment more difficult.

Mary Ledwick and Mary Tuson organised an extremely successful joint MA/ATM event in Preston on 20 November. With 50 people attending, the event gave us many ideas for future Saturday MA events. Each delegate was given the choice between six workshops in each of the 3-hour sessions. Speakers included members of the 11-16 Subcommittee, exam board representatives and local teachers. David Acheson gave a well-received opening lecture and the day was deemed to be a wonderful success. A great deal of thanks and praise is



due to both Marys for their hard work and enthusiasm in organising the day! A follow-up event organised predominantly by ATM members was held at Rednock School, Dursley, on 5 February; Adrian Oldknow and Ray Huntley represented the MA.

#### **Post-16 Subcommittee**

**Chair Peter Thomas**

[tc-post16@m-a.org.uk](mailto:tc-post16@m-a.org.uk)

The year 2010 was one of transition for the MA's post-16 activities. The old Post-16 Subcommittee did much good work over the years but it came to the conclusion that it was not being as effective as it might in furthering the MA's aims in the post-16 sector, and it asked Teaching Committee to place it in abeyance and think afresh about how we should be supporting mathematics education post-16.

Teaching Committee decided to explore the possibility of the MA working together, in the post-16 sector, with the Association of Teachers of Mathematics (ATM) and the National Association for Numeracy and Mathematics in Colleges (NANAMIC). Whilst ATM decided in the end not to take part, an enthusiastic response was received from NANAMIC and the result has been the establishment of the Post-16 Group. For the moment, the new group will concentrate on supporting teachers in their work and the two associations will continue to address policy issues independently (and jointly through existing channels).

The Post-16 Group has set up two working groups on engaging learners at Level 3 and teaching the new GCSEs post-16; the groups are developing resources to support professional development days to be held in the spring and summer of 2011. To find out more about the Post-16 Group or sign up for its e-newsletter, go to <http://www.nanamic.org.uk/post16group.htm>.

The MA's representatives on the Steering Group of the Post-16 Group now constitute the membership of the MA's Post-16 Subcommittee. The subcommittee will also continue to have a responsibility for ensuring MA members' voices are heard on post-16 policy issues. It is fitting to conclude by placing on record the MA's thanks to the members of the old Post-16 Subcommittee for their service, often over many years, and to encourage members to support and make use of the work of the new Post-16 Group.



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#### **United Kingdom Mathematics Trust (UKMT)**

The numbers of students entered for the Mathematics Challenges this year were as follows: Junior 281,070; Intermediate 243,570; Senior 95,520. The total number is slightly down compared to last year. Almost 1,500 teams entered the Team Mathematics Challenge, and 978 teams entered the Senior Team Mathematics Challenge, both these numbers up on last year.

In addition, three teacher meetings are due to take place in the early summer 2011 in Greenwich, Bristol and Leeds, and students continue to benefit from the mentoring scheme. There is an increasing list of mathematical books published by UKMT.

In July 2010, the International Mathematical Olympiad was held in Kazakhstan, and the UK team came back with 1 Gold, 1 Silver and 2 Bronze medals, plus 2 Honourable



Mentions. The 52nd IMO will be held in The Netherlands, in July 2011. During 2010-11, UK teams were also sent to compete in the Romanian Master of Mathematics and the Balkans Mathematical Olympiad.

In August 2010, a team of girls was sent to compete in the China Girls' Mathematical Olympiad. Following on from this, the UKMT announced the establishment of the first European Girls' Mathematical Olympiad (EGMO), to be held at Murray Edwards College (founded as New Hall) at the University of Cambridge in April 2012. This event is created by a partnership between Murray Edwards College and the UKMT, and full details can be found on the EGMO 2012 website at [www.egmo2012.org.uk](http://www.egmo2012.org.uk).

The dates for the challenges in 2011-12 are:

Junior Challenge (ages 11-13): Thursday 26 April 2012  
Intermediate Challenge (ages 13-16): Thursday 2 February 2012; Senior Challenge (ages 16-18): Tuesday 8 November 2011. In addition to these three challenges, students who do well are invited to take part in the follow-on rounds, the Junior, Intermediate and British Mathematical Olympiads and the European Kangaroo.

The Chairman of UKMT is Professor Frances Kirwan, and in May 2011, Rachel Greenhalgh was appointed Director of the Trust in succession to Mary Wimbury whose family has relocated to North Wales.

UKMT is always looking for more helpers, whether to submit questions or to help at events. There is a volunteers form at:

<http://www.getting-involved.ukmt.org.uk/>

**John Silvester (MA representative)**

#### **The British Mathematical Olympiad Committee**

The 51st International Mathematical Olympiad was held in July 2010 in Kazakhstan, where the UK team gained 1 Gold, 1 Silver, 2 Bronze medals and 2 Honourable Mentions (awarded to contestants who, while not qualifying for a medal, manage full marks on at least one question). This gave the UK a position of 25th out of some 100 participating countries. As usual the performance of the six team members was celebrated at the Royal Society in September. For the first time the UK sent a team of four to the China Girls' Mathematical Olympiad in August 2010; they came away with 2 Silver medals and 1 Bronze. It is worth mentioning here that it is proposed to initiate a European Girls' Mathematical Olympiad in April 2012, at Murray Edwards College, Cambridge, organised by the UKMT and the College. In Moldova at the Balkan Mathematical Olympiad in May 2010 a UK team of six achieved 2 Silver and 2 Bronze medals and 2 Honourable Mentions. The UK performed extremely well at the very testing Romanian Master of Mathematics competition in February 2011, coming joint second out of 15, with a medal tally of 1 Gold, 3 Silver, 1 Bronze, with one Honourable Mention.

The training programme starts with a camp at Oxford in September and continues with Hungary (New Year),

Cambridge (Easter), Oundle (May), and the pre-IMO camp with the Australian team. The two rounds of the British Mathematical Olympiad in December and January allow students to be recognised for inclusion in the training, as does the Mentoring scheme, running at Junior, Intermediate and Senior levels, with an Advanced level for those close to IMO standard. For pupils in Years 10 and 11 the Summer Schools in Birmingham in July provide a mathematical boost.

**Philip Coggins (MA representative)**

#### **Headquarters**

##### **At April 2010, the Headquarters Team was:-**

Senior Administrator - Marcia Murray  
Finance Officer - Linda Medhurst  
Membership Officer - Charnjit Seehra  
Administrative Assistant - Lisa O'Donnell  
Clerical Assistant - Anne-Marie Brown  
Clerical Assistant - Emma de Riso

**Marcia Murray (Senior Administrator)**

#### **Association Regulations**

Regulations can be viewed at:

<http://www.m-a.org.uk/jsp/index.jsp?lnk=850>

#### **The Council from April 2010**

|                          |                        |
|--------------------------|------------------------|
| President                | Dr David Acheson       |
| Immediate Past President | Mrs Jane Imrie         |
| President Designate      | Dr Paul Andrews        |
| Chair of Council         | Professor Adam McBride |
| Secretary                | Dr Catherine Ogden     |
| Treasurer                | Dr Paul Harris         |

#### **Chairs of Committees**

|                          |                        |
|--------------------------|------------------------|
| Branches                 | Mr Keith Cadman        |
| Conferences              | Mr Bill Richardson     |
| Editor-in-Chief          | Mr Paul Metcalf        |
| Professional Development | Dr Alison Clark-Wilson |
| Publications             | Mr Michael Fox         |
| Publicity and Membership | Dr Geoff Tennant       |
| Teaching Committee       | Dr Chris Pritchard     |

#### **Members-without-Office**

|                   |                   |
|-------------------|-------------------|
| Mr Mundher Adhami | Dr Tony Gardiner  |
| Ms Fiona Allan    | Ms Mary Ledwick   |
| Dr David Crawford | Mrs Lynne McClure |
| Mr Rob Eastaway   | Ms Rachael Read   |

#### **Note:**

Ms Cherri Moseley was co-opted as a Member without Office.

The Company Secretary is Mr Bill Richardson.

**THE MATHEMATICAL ASSOCIATION**  
(A company limited by guarantee)  
**STATEMENT OF FINANCIAL ACTIVITIES**  
(Incorporating an income and expenditure account)  
**YEAR ENDED 31 DECEMBER 2010**

|   | Notes | Total<br>2010<br>Unrestricted<br>£ | 2009<br>As<br>Restated<br>£ |
|---|-------|------------------------------------|-----------------------------|
| <b>INCOMING RESOURCES</b>                                 |       |                                    |                             |
| <b>Incoming resources from generated funds</b>            |       |                                    |                             |
| Rent receivable   |       | 5,553                              | 5,218                       |
| <b>Voluntary income</b>                                   |       |                                    |                             |
| Donations   |       | 255,881                            | 1,818                       |
| <b>Activities for generating funds</b>                    |       |                                    |                             |
| <b>Investment income</b>                                  |       |                                    |                             |
| Bank interest   |       | 482                                | 875                         |
| <b>Incoming resources from charitable activities</b>      |       |                                    |                             |
| Members subscriptions                                     |       | 268,964                            | 269,922                     |
| Editorial board   |       | 48,032                             | 36,878                      |
| Publications  |       | 34,333                             | 43,112                      |
| Conferences   |       | 24,269                             | 69,600                      |
| Primary mathematics challenges                            |       | 75,898                             | 77,505                      |
| Professional development income                           |       | 20,478                             | 43,371                      |
| Branch income   |       | 878                                | 4,591                       |
| Library income  |       | -                                  | 161                         |
| <b>Other operating resources</b>                          |       |                                    |                             |
| Miscellaneous income                                      |       | 653                                | -                           |
| <b>TOTAL INCOMING RESOURCES</b>                           |       | <b>735,421</b>                     | <b>553,051</b>              |
| <b>RESOURCES EXPENDED</b>                                 |       |                                    |                             |
| <b>Costs of generating funds</b>                          |       |                                    |                             |
| Publicity expenses  |       | 26,882                             | 22,348                      |
| <b>Charitable activities</b>                              | 2     | 489,427                            | 542,153                     |
| <b>Governance costs</b>                                   |       |                                    |                             |
| Audit and accountancy                                     |       | 7,134                              | 8,575                       |
| <b>TOTAL RESOURCES EXPENDED</b>                           |       | <b>523,443</b>                     | <b>573,076</b>              |
| <b>NET (OUTGOING)/INCOMING RESOURCES BEFORE TRANSFERS</b> |       |                                    |                             |
| Revaluation / loss on disposal of fixed assets            |       | -                                  | (17)                        |
| <b>NET MOVEMENTS IN FUNDS</b>                             |       | <b>211,978</b>                     | <b>(20,042)</b>             |
| <b>RECONCILIATION OF FUNDS</b>                            |       |                                    |                             |
| <b>Total funds brought forward</b>                        |       | <b>403,554</b>                     | <b>423,596</b>              |
| <b>Total funds carried forward</b>                        | 10    | <b>615,532</b>                     | <b>403,554</b>              |

# THE MATHEMATICAL ASSOCIATION

(A company limited by guarantee)

REGISTERED NUMBER: 05729264

## BALANCE SHEET 31 DECEMBER 2010

|   | Notes | 2010<br>£      | 2009<br>As Restated<br>£ |
|---|-------|----------------|--------------------------|
| <b>FIXED ASSETS</b>                                       |       |                |                          |
| Tangible  | 6     | 335,006        | 343,394                  |
| <b>CURRENT ASSETS</b>                                     |       |                |                          |
| Stocks  |       | 28,128         | 37,191                   |
| Debtors   | 7     | 12,465         | 12,746                   |
| Cash at bank and in hand                                  |       | 358,464        | 148,265                  |
|   |       | <u>399,057</u> | <u>198,202</u>           |
| <b>CREDITORS: amounts falling due<br/>within one year</b> | 8     | (118,531)      | (138,042)                |
| <b>NET CURRENT ASSETS</b>                                 |       | <u>280,526</u> | <u>60,160</u>            |
| <b>TOTAL ASSETS LESS CURRENT LIABILITIES</b>              |       | <u>615,532</u> | <u>403,554</u>           |
| <b>REPRESENTED BY</b>                                     |       |                |                          |
| Unrestricted Funds  | 10    | 615,532        | 403,554                  |
|   |       | <u>615,532</u> | <u>403,554</u>           |

The financial statements have been prepared in accordance with the special provisions of Part 15 of the Companies Act 2006 relating to small companies and in accordance with the Financial Reporting Standard for Smaller Entities (effective April 2008).

The financial statements were approved and authorised for issue by the Council and were signed on its behalf on