

Joint Mathematical Council of the United Kingdom

Minutes of the Council meeting held at the Royal Statistical Society on Tuesday 10 March 2015

Present

Officers

Chair

Tim Rowland

Honorary Secretary

Peter Thomas

Honorary Treasurer

Paul Harris

Representatives of Participating Societies

Adults Learning Mathematics (after item 3)

Jeff Evans

Association of Mathematics Education Teachers

David Wright (deputy)

Association of Teachers of Mathematics

Sue Pope

British Society for the History of Mathematics

June Barrow-Green

British Society for Research into Learning Mathematics

Hilary Povey

Conference of Heads of Departments of Mathematical Sciences

Catherine Hobbs

Edinburgh Mathematical Society

David Pritchard

Institute of Mathematics and its Applications

Chris Chipperton

London Mathematical Society

Alice Rogers

The Mathematical Association

Peter Ransom

Mathematics in Education and Industry

David Holland (deputy)

National Association for Numeracy and Mathematics in Colleges

Sally Barton

National Association of Mathematics Advisors

Alice Onion

National Numeracy

Lynn Churchman

National STEM Centre

Stephen Lyon

NRICH representing the Millennium Mathematics Project

–

Operational Research Society

Charlene Timewell

Royal Academy of Engineering

–

Royal Statistical Society

Neil Sheldon

United Kingdom Mathematics Trust

Bill Richardson

Wales Institute of Mathematical and Computational Sciences

Stephen Williamson

Co-opted Members

Chair of the BCME Committee

David Martin

UK Representative to International Commission on Mathematical Instruction

–

Representatives of Observing Societies

Adults Learning Mathematics (until item 3)

Jeff Evans

Advisory Committee on Mathematics Education

Robert Barbour

Department for Education [England]

–

Department of Education [Northern Ireland]

Nick Todd

Education Scotland

Carol Copstick (deputy)

Higher Education Academy

–

National Centre for Excellence in the Teaching of Mathematics

Jane Imrie

National College for Teaching and Leadership

James O'Donoghue

Office for Standards in Education

–

The Office of Qualifications and Examinations Regulation

Laura Dougan (deputy)

The Royal Society

Aaron Maras (deputy)

Sector Skills Council for

science, engineering and manufacturing technologies in the UK

–

Visitors

Advisory Committee on Mathematics Education Secretariat

Niamh Mc Mahon

Department for Education and Skills [Wales]

–

The Office of Qualifications and Examinations Regulation

Alison Tonkin

1 Introduction

- 1.1 **Welcome** The Chair welcomed those present at the beginning of the Special General Meeting which immediately preceded the Council meeting.

- 1.2 **Practical Arrangements** The Honorary Secretary announced the procedure for emergency evacuation, as laid down in the contract for the booking of the premises, at the beginning of the Special General Meeting which immediately preceded the Council meeting.
- 1.3 **Apologies for Absence** The Honorary Secretary announced that apologies for absence had been received from John Craig (HEA), Charlie Gilderdale (NRICH), Janet Holloway (Ofqual), Ros Hyde (AMET), Jane Jones (Ofsted), David Montagu (The Royal Society), Fiona Robertson (Education Scotland), Charlie Stripp (MEI) and Elinor Wallace (Semta).

2 Minutes of the meeting held on Tuesday 11 November 2014

- 2.1 **Approval** The minutes were approved after from one change in item 3: 'Alan Eames-Long' was corrected to 'Alan Eames-Jones'.
- 2.2 **Matters arising not elsewhere on the agenda** None.

3 Application to become a Participating Society

Adults Learning Mathematics The Chair said that ALM's application had been made at the invitation of the JMC Executive Committee but this in no way tied the hands of Council. He then invited ALM's representative, Jeff Evans, to speak in support of the application.

Jeff Evans said that ALM is a Registered Charity established a little over twenty years ago to bring together researchers and teachers in adult numeracy. ALM is an international organisation and the venues for its annual conference have been around the world. It also has an international online journal and runs a series of webinars. The charity has a modest income, consisting mostly of membership subscriptions, amounting to £600 to £700 a year; most of its outgoings are bursaries for people attending its annual conference. ALM has eight trustees at least four of whom must be from the United Kingdom.

The Chair then outlined the procedure for the consideration of the application.

The Chair then invited questions of ALM's representative. The Chair asked if it was true that ALM is an international organisation but registered as a charity in the United Kingdom. Jeff Evans replied that this was the case; when setting up ALM, Diana Coben was insistent it should be an international organisation, and the organisation benefited greatly from its members in other countries, especially Ireland and the USA.

Jeff Evans then withdrew. The Chair then informed Council that the JMC Executive Committee recommended acceptance of the application. A period of discussion followed. A vote was then taken on a show of hands; the application was approved unanimously except for one abstention. Jeff Evans was then invited to re-join the meeting and the decision conveyed to him.

4 Reports from JMC Executive Committee

- 4.1 **Chair** The Chair said that in December 2014 the JMC Executive Committee wrote to Ofqual at the request of Council to express concerns relating to the new GCSEs in Mathematics in England; a reply was received from Glenys Stacey in January, much of the text of her reply was common to that of the letter that she sent to JMC Participating Societies outlining the actions Ofqual was taking. The Chair replied to welcome in principle Ofqual's actions and to draw attention to the expertise available within JMC. He felt a useful dialogue had been established with Ofqual. As evidence of this, he said that Ofqual had invited JMC to nominate two people to its A Level Working Group which was to meet for the first time at the end of the month to work on the assessment objectives, assessment structures and exemplar specimen assessment materials; the JMC Executive Committee had nominated Sue Pope and Peter Thomas.

The Chair then invited Laura Dougan, representing Ofqual, to speak. She said that there were three strands to Ofqual's research concerning the new GCSE: mock examinations were to be taken by 4000 students, work was being undertaken to understand the level of demand of questions against international benchmarks and work was ongoing to look at the extent to which questions from the sample assessment materials elicit problem solving skills. The results of the work would be known by the end of April and Ofqual will act quickly if it judges it needs to do so, making a direction to awarding organisations if needed.

Sue Pope expressed concern about the timescale as schools usually have a year's notice to prepare for new specifications and Ofqual would not know the outcomes of its research until the end of April, awarding organisations would then have to respond at what was for them a busy time of year, only then would revised material reach schools. She asked for a year's delay. Laura Dougan responded that a reply to ATM's request for a year's delay should reach ATM that day.

[Post-meeting note: The Ofqual A Level Working Group will meet for the first time on 16 April 2015 and its work is expected to be concluded by July 2015.]

- 4.2 **Honorary Secretary** The Honorary Secretary said that SMP was in the process of being wound-up and it was no longer an Observing Society of the JMC. Also, Semta had given notice of its withdrawal from being an Observing Society of the JMC.
- 4.3 **Honorary Treasurer** The Honorary Treasurer said he had nothing to add to his written report. The Chair asked if the level of outstanding subscription payments at that time was par for the course; the Honorary Treasurer responded that it was.

5 **ICME**

The Chair said that the JMC Executive Committee was aware that there had been no activity as yet by the ICME13 Bursaries Committee and was taking action to stimulate activity; Hilary Povey, the JMC representative on the committee, will be contacting Chris Budd, the chair of the committee.

6 **BCME**

David Martin, Chair of the BCME Committee said that the first meeting of the BCME Committee would be on 17 March 2015. He asked Participating Societies to send to Peter Ransom, Secretary of the BCME Committee, names of representatives for the Reference Group and views on the starting date and length of BCME9; he also asked for suggestions of possible venues. The Chair emphasised that BCME9 was a JMC event which was open to all its constituent societies. The Reference Group is meant to enable that input; he thanked those Participating Societies that had made nominations and encouraged others to identify someone to be a member of the Reference Group.

Sue Pope asked what it was foreseen that the Reference Group would be doing and to what information they would have access. David Martin responded that the aim of the Reference Group was to tap into the wishes and desires for the conference of all the Participating Societies; it would concern itself with high-level matters such as the theme and how organisations can best participate. Sue Pope asked whether the members of the Reference Group would see BCME Committee minutes or key points after each meeting of the committee. David Martin said that that had not been clarified at that point and the balance between giving sufficient information and not overloading members with information was to be decided. The Chair said that this could be considered at the first meeting. Alice Onion said that there was an issue of transparency here, the agenda and minutes of the BCME Committee should be made available on a website.

Bill Richardson said that in all previous BCME Committees, each Participating Society had a right to have a member on the BCME Committee and he asked why this was no longer the case. David Martin replied that the new arrangement was to keep down the size of the committee and the cost of meetings, although in practice the number of societies that were represented was small. David Martin also saw the subcommittees as providing opportunities for engagement; the Communications Committee would meet virtually and it could have many people involved; for the other subcommittees, requests for involvement would be considered on an individual basis. The first meeting of the committee will consider the matter.

Sally Barton said that the first step for a society in getting involved was to participate in the Reference Group. David Martin agreed but said it was best to express an interest to Peter Ransom or himself if one wanted day-to-day involvement. The Chair said that if someone was eager to be involved then he was sure that a role would be found for them. Peter Ransom agreed.

Lynn Churchman enquired about how the interests of groups, such as mathematics advisers, not represented on the BCME Committee would be secured. The Chair pointed out that the structure had been agreed at the previous meeting of the Council and there was a need to limit the size of the committee yet have key players represented. Alice Onion said that NAMA wants to be engaged with BCME but it does not see the need for it to be represented on the BCME Committee.

Hilary Povey asked how the three subcommittee chairs were to be chosen. David Martin said there was no formal process but this would be discussed on 17 March 2015. She also asked whether it was envisaged that the BSRLM representative on the Reference Group would be the same as or different from the BSRLM representative on the BCME Committee. Peter Ransom responded that he had no view on the matter.

Bill Richardson said that there had never been more than nine at a BCME Committee meeting, so it was unlikely to be overwhelmed by each society being able to have a representative and the risk of exclusion in the new structure was a definite one.

7 **Reports from Participating Societies**

7.1 **Association of Mathematics Education Teachers** David Wright said there were three headlines in AMET's report.

- AMET was moving to one-day conferences. The first would be on 11 March 2015 with about twenty attending; it would be repeated in the north of England and there would be a third later in the year.
- AMET welcomed the call for a partnership of schools and HEIs by the Carter Review as well as the review's acknowledgement of the importance of subject knowledge. AMET was worried that for shortage subjects there was a lack of recognition of the importance of Subject Knowledge Enhancement courses. AMET was also worried by Recommendation 14 that a PGCE should be regarded as an option enroute to QTS, moving away from an accredited graduate route into teaching.
- For SKE provision, all comers can apply for funding for courses; AMET was worried about the resulting quality of provision.

The Chair asked if the online SKE courses need to be accredited. David Wright replied that they did not; anyone could set one up. The Chair then observed that it was for the Initial Teacher Education provider to decide whether any SKE provision used was adequate. David Wright agreed and he added that it was difficult for the ITE provider to judge given the diversity of provision.

James O'Donoghue drew attention to the government's response to the Carter Review. He would be pleased to receive evidence of any variation of quality in SKE provision. He said that online SKE courses had a place, for example for career changers who could undertake the course before quitting their previous jobs. Hilary Povey said that PGCE and School Direct places were dependent on completion of SKE but the choice of SKE course was by the applicant; how could ITE providers decide whether a particular SKE course was good enough: there was a gap in the quality loop. James O'Donoghue responded that ITE providers could stipulate which SKE course an applicant should follow but applicants had the option of going elsewhere for their ITE.

7.2 **Institute of Mathematics and its Applications** Chris Chipperton gave an update on the Mathematics Teacher Training Scholarships following the close of applications for Round 3; 114 applications had been received.

The Chair noted that the IMA had withdrawn its paper on the definition of a specialist teacher of mathematics from JMC consideration (and possible adoption). James O'Donoghue asked what was now the status of that paper. Chris Chipperton said that it was now an IMA position paper. James O'Donoghue asked if there was still the opportunity to offer comments. Chris Chipperton and Sue Pope replied that the paper had now been finalised; Sue Pope added that the IMA would use the paper in its discussions with Teach First and when making decisions about the award of Chartered Mathematics Teacher status.

7.3 **London Mathematical Society** Alice Rogers welcomed the JMC letter to Ofqual on GCSE Mathematics and reported that the President of the LMS had received a letter from Ofqual in response. The LMS Education Committee was concerned about the Ofqual review process for accreditation and wished to know who carried it out and what their expertise was.

The ALCAB Mathematics Panel, on which IMA and LMS were represented, has now been disbanded, but the members of the panel felt that getting the content right was not enough and they are carrying on in an *ad hoc* capacity to complete the work. The group would be meeting on 16 March and Alice Rogers was pleased that Laura Dougan would be present.

Alice Rogers continued that The Royal Society in 2014 produced its Vision report which recommended the establishment of an over-arching STEM committee with subject committees in the three sciences and mathematics feeding into it. The Council for the Mathematical Sciences, as the nearest equivalent in mathematics to the Institute of Physics in physics, had been approached by The Royal Society to establish a National Mathematics Subject Committee; discussions were at an early stage. It was quite clear that there was a need to involve others from within and without JMC; this was not going to be a CMS take-over of mathematics education, but the lack of input into school education from higher education in recent years had been unfortunate and there was a need to get the balance right. Niamh Mc Mahon added that the learned societies in biology, chemistry and physics had created such subject committees two years ago prior to The Royal Society initiative but they are only beginning to become effective bodies two years later; establishing such bodies takes time.

Nick Todd asked whether the subject content for the new A Level Mathematics (in England) would be reviewed. Laura Dougan said it was now final but there was a need to develop Assessment Objectives. Nick Todd asked what the timescale was for this. Laura Dougan responded that the timeline had not been finalised but the exam boards were fully involved and the assessment objectives in the consultation would provide a starting point. Nick Todd pointed out that the revised A Level in

Northern Ireland was planned to be introduced in 2016 and not delayed until 2017 as in England; it raised a question as to whether Northern Ireland should delay the introduction of its new A Level. Lynn Churchman expressed concern that there were already substantial differences at GCSE across England, Northern Ireland and Wales.

The Chair said that it was good to know that CMS is taking steps towards convening a national mathematics subject committee and that there would be a contribution to that thinking from beyond the learned societies and wider representation on it; he offered the JMC's expertise in that work.

- 7.4 **The Mathematical Association** Peter Ransom said that the MA Council would be meeting on 14 March 2015 and it was hoped that the Memorandum of Understanding for BCME9 would be sorted out then. The Chair explained that the Memorandum of Understanding was between ATM, MA and JMC and it stated how responsibility for BCME9 would be shared.
- 7.5 **National Association of Mathematics Advisers** Alice Onion said in supplement to her written report that NAMA had gained 30 new members in the last year. Its day conference on 16 May 2015 will have a different speaker from the one in the written update. Its annual conference in York was successful with 72 attending. Arrangements for the Japanese immersion programme had been finalised with 11 places being awarded (the programme is a collaboration between the Bowland Trust, NAMA and CRME). NAMA, representing professional development providers, is working in partnership with the Maths Hubs programme and two representatives of NAMA attended the National Maths Hubs Forum on 27 February 2015. Alice Onion emphasised that NAMA sought to collaborate with other bodies even when it occasionally disagrees with them.
- 7.6 **National STEM Centre** Stephen Lyon emphasised the invitation to other organisations in the last paragraph of his written report to make use of the National STEM Centre's facilities.

8 Reports from Observing Societies

- 8.4 **Advisory Committee on Mathematics Education** Robert Barbour drew attention to ACME's discussion paper on Initial Teacher Education, which was then at the printers; it asked seven key questions to which ACME would welcome responses. The ACME Conference this year will be on 9 July. ACME is undertaking a small work strand on problem-solving seeking to establish the principles for the good assessment of problem-solving (this is for the longer-term rather than for immediate use in the new examinations in England); Robert Barbour requested that anyone who had good problem-solving material should send it to him. There will be call for three new members in May as Richard Browne, Jennie Pennant and Andy Noyes are retiring from the committee this year.

Robert Barbour said that the Carter Review is setting up a process to look at a common core for initial teacher education, a subject element is vital and he asked whether JMC could offer to the Carter Review input or a person who could provide expertise. After discussion, it was agreed that JMC would offer such assistance to the Carter Review.

[Post-meeting note: The letter sent to Sir Andrew Carter and the response from DfE can be found in Appendices 8.4.1 and 8.4.2, respectively, at the end of these minutes.]

Alice Onion welcomed ACME's publication of its *Maths Snapshots* papers.

Robert Barbour thanked JMC for its support of ACME.

- 8.1 **National Centre for Excellence in the Teaching of Mathematics** Jane Imrie was pleased to inform Council that the contract for the extension of NCETM to 31 March 2016 had been signed. It will provide further opportunity to provide assistance to the Maths Hubs; there will be a focus on the England-China exchange, textbooks and post-16 participation.

Sue Pope asked if there is an intention to have an advisory group for the Maths Hubs. Jane Imrie replied that there was not but there was a National Maths Hubs Forum and a number of organisations were strategic partners. The JMC needs to think how it should act in this regard; NCETM will help ease the way; there was a need to work together. The Chair said that JMC had a representative on the National Maths Hubs Forum but that it was hard to identify how its role as strategic adviser to the Maths Hubs Forum might operate; there would be value in a conversation between NCETM and the JMC Executive Committee. Jane Imrie said that she believed that John Westwell had initiated a discussion.

The Chair expressed curiosity about Shanghai Wave 1 and asked what evaluation was being undertaken. Jane Imrie replied that an evaluation is being undertaken by Sheffield Hallam University.

- 8.5 **National College for Teaching and Leadership** James O'Donoghue provided some updated figures; recruitment is now at 88% of target for September 2015, it is a challenging year particularly for science and mathematics, and it is not clear what final figures will be. In December the Prime Minister announced that 17 500 new science and mathematics teachers will be trained, the details behind this

announcement will be published in due course. There will be additional marketing this year including a resumption of television advertisements.

Robert Barbour observed that in 2013–14 School Direct had an increase in its allocation of places of 628 but only 88 of those places were taken up. James O'Donoghue responded that places in mathematics and physics are uncapped. Robert Barbour continued that 70% of allocated provider-led places were taken up but only 34% of School Direct places were taken up. James O'Donoghue said it was 40%; and he went on to say candidates can apply to both routes so it is not fair to characterise recruitment problems as being with School Direct. Robert Barbour said there was an active programme of recruitment by providers but more passive with School Direct and he asked whether providers should be incentivised. James O'Donoghue responded that providers were more experienced in teacher recruitment and that NCTL was doing work with schools about the complexities of teacher recruitment. Robert Barbour drew attention to the concern expressed by Michael Wilshaw about the geographical distribution of provision; James O'Donoghue said that discussions on the matter were ongoing. Robert Barbour then raised the matter of retention, saying that four years ago a report had said that retention is twice as good in teaching as in other professions but he questioned the validity of the criteria used in the comparison; James O'Donoghue said the issue would be examined further.

8.2 **Department of Education** Nick Todd drew attention to the differences between Northern Ireland and England which are commented upon in his report. He noted that ETI's *Second Report on the Follow-up to Better Mathematics* had shown there had been a slight improvement in the teaching of mathematics in the province but there was still a need for improvement in post-primary. The third report was prepared some time ago but its publication awaits ministerial approval; the report addresses numeracy across the curriculum and looks at how mathematics and other departments can work together to achieve a good mathematical education.

8.3 **Education Scotland** Carol Copstick said that this year schools would be able to do either the old or the new Highers; in Mathematics 53% had chosen to take the new Higher. Referring to the figures in the report from Education Scotland, she added that this year there was a better take-up of the Lifeskills qualifications.

9 Reports from meetings

9.1 **Bowland Trust: 1 December 2014** The report was noted.

9.2 **Council for Subject Associations: 4 February 2015** Sally Barton said that the official minutes of the meeting had yet to be received and in the interim made the following points.

- CfSA will respond to the Carter Review suggesting ways subject associations could contribute to initial teacher education.
- There was a discussion of teacher assessment of students' work. There were inconsistencies of approach across subjects and a lack of piloting; this was linked to a lack of subject specialists within Ofqual.
- There was an exploration of ways of providing subject expertise to assist Ofqual.
- The Expert Advisory Groups' remit ends in August but the groups are seeking to continue as advisory groups, promoting themselves as subject experts within the College of Teaching.
- CfSA has set up a small group to see how subject associations could provide subject expertise to the College of Teaching.

When the official minutes of the meeting are received they will be circulated through the Honorary Secretary.

9.3 **National Maths Hubs Forum: 26 February 2015** Jane Imrie said that no national evaluation was yet being undertaken of the Maths Hubs. Steve Watson was working with the Cambridge hub on self-evaluation and NCETM had commissioned an extension of his work for other hubs to use for self-evaluation.

9.4 **Joint Ministerial STEM Advisory Group: 2 March 2015** The Chair observed that the JMC would be writing to Sir Andrew Carter.

10 Any other business not elsewhere on the agenda

Advisory Committee on Mathematics Education Review Aaron Maras said that The Royal Society sees ACME as a very important part of its education strategy. A Memorandum of Understanding concerning ACME is being developed by The Royal Society and the JMC; before that is finalised a review is to be undertaken of ACME: the resources needed, its governance, the selection of members. The review is to be undertaken by Graham Hutchings and Margaret Brown together with a third person who will be from outside science education.

11 Discussion Item

Scottish Survey of Literacy and Numeracy

On behalf of Education Scotland, Carol Copstick (Senior Education Officer), deputising for Fiona Robertson, gave a presentation on the Scottish Survey of Literacy and Numeracy. The SSLN was a joint survey by the Scottish Qualifications Authority and Education Scotland; the data for the report was provided by the Education Analytical Services Division. (The PowerPoint slides used in the presentation can be found in the [JMC Council Document Archive](#) in the file *JMC Council 20150310 Item 11.pdf*. The Scottish Government's reports on Literacy and Numeracy can be found at <http://www.educationscotland.gov.uk/learningandteaching/assessment/ssl/sslfindings/index.asp> and the professional learning resources referred to in the presentation can be found at <http://www.educationscotland.gov.uk/learningandteaching/assessment/ssl/resources/numeracyprofessionallearningresource/index.asp>.)

Two surveys had been carried out, in 2011 and 2013. Alongside the mathematical questions were surveys of pupil experience, mathematics teachers and non-mathematics teachers. The questions were pre-tested. There was 96% participation by schools.

In 2013, the survey showed for attainment in 2013:

Primary 4:	69% (girls 67%, boys 71%) doing well or very well	0% working below level
Primary 7:	66% (girls 64%, boys 68%) doing well or very well	2% working below level
Secondary 2:	42% (girls 41%, boys 43%) doing well or very well	35% working below level

The decline between P7 and S2 is a cause for concern. The results have also been analysed by deprivation:

Primary 4:	most deprived: 61%	middle: 71%	least deprived: 76%
Primary 7:	most deprived: 53%	middle: 67%	least deprived: 77%
Secondary 2:	most deprived: 25%	middle: 41%	least deprived: 52%

The difference increases over time and schools are being challenged about this. Analysis has also been undertaken by aspects of the numeracy organiser, such as decimal fractions, measurement, tables and place value. Mental mathematics was also tested; addition was done well but division is not done well.

The Scottish Government provided £1 200 000 to raise attainment in numeracy.

There has been a drop from 2011 to 2013 in P4 and P7, mainly among those doing very well – it would appear that learners are not being challenged enough. Although we are not comparing like with like, when comparing with literacy, there are big differences, with levels for numeracy being considerably lower, especially for the most deprived.

After each survey 10% of the questions are released. Each book of test questions, sat by a learner, contained 25% of the questions used, with not only the selection of questions varying from book to book but also the order of the questions.

The survey of pupil experience showed that learners are enjoying their experience of numeracy. In the pupil survey, pupils reported that there has been an increase in the amount of discussion going on in the curriculum, to support reasoning skills, and a growth of independent learning. Pupils in P4 and P7 are making less use of ICT than before whilst those in S2 are making more use. Pace is considered by pupils to be about right in P4 and S2 but not fast enough in P7. All ages thought themselves good at money but not at fractions.

Over 90% of teachers of P4 and P7 and over 80% of teachers of S2 felt confident in teaching numeracy. There has been an increase in the use of explorations and investigations and a reduction in the use of textbooks.

In summary, the areas of strength were:

- “No statistically significant difference between girls and boys who performed well or very well at P4 and S2.
- Across all stages children did best in addition mental maths questions.
- Almost all children reported they wanted to do well in their learning.
- High proportions of primary school teachers and secondary maths teachers reported confidence, in delivering the Experiences and Outcomes across all organisers in the numeracy curriculum”

The areas for development were:

- “Improving attainment
- Understanding progression
- Mental maths / agility & Connections between the operations
- Numeracy across learning”

In response to the results of the surveys support is being given to schools. A National Numeracy Progression framework has been developed and there is a National Numeracy Network which involves all local authorities. A principal teacher network has been set up. A virtual national numeracy hub has been set up; this has been based on all the good work going on in the local hubs. There were 6 local hubs which 22 out of the 32 authorities had some involvement with to varying degrees. The virtual hub will broadcast once or twice a week .

Professional Learning Resources have been published, initially in response to the 2011 survey, they are now being re-published on a topic-by-topic basis. They contain analyses of pupils' correct and incorrect responses, and released or cloned questions. They have proved very popular with teachers.

An online Progression Framework has been developed with layered resources. It contains key milestones, giving high level messages explaining why a topic is being taught and why it is important later. It will be further enriched, for example by the inclusion of the previous knowledge needed to move forward.

Two documents have been produced for teachers: Learning Together Mathematics and Excellence in Mathematics. These were produced before the SSLN and are good reference documents.

The messages to teachers advocate teaching addition and subtraction together, and multiplication and division together. (Northern Ireland and Wales are taking a similar approach, but not England).

Results for individual schools and local authorities are not published.

Nick Todd said there were similar views about the transition from primary to post-primary in Northern Ireland.

Lynn Churchman said that several initiatives have been undertaken in England to improve numeracy but they had not yet proved successful.

Referring to the decline between attainment in P7 and S2, Sue Pope asked what are the standards required in S2 and whether they are appropriate. Carol Copstick replied that there was not as much difference in levels between second and third as in some other levels but it was the application of the knowledge and understanding which increased the complexity. Neil Sheldon also questioned the benchmarking levels and additionally he asked whether subject effects for those chosen to take part in the survey had been taken into account.

Carol Copstick concluded by saying that the materials produced to support teachers were being promoted at roadshows around Scotland, by working with local authority hub champions and by providing posters and postcards for use in schools.

12 Conclusion

Having thanked Carol Copstick for her presentation on the Scottish Survey of Literacy and Numeracy, the Chair closed the meeting.

13 Dates of future meetings

Tuesday 16 June 2015 (starting at 1100)

Tuesday 10 November 2015 (starting at 1100 following the Annual General Meeting at 1000)

Tuesday 23 February 2016 (starting at 1100)

These meetings will be held at the Royal Statistical Society.



Joint Mathematical Council
of the United Kingdom

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16 March 2015

Sir Andrew Carter
Carter Review of Initial Teacher Training
Department for Education
Great Smith Street
London
SW1P 3BT

Dear Sir Andrew,

Review of Initial Teacher Training: working group on a framework of core content

The Joint Mathematical Council of the United Kingdom welcomes the establishment of the independent working group on a framework of core content for ITT, and in particular the recognition of the vital importance of subject knowledge and subject-specific training, following the publication of your independent review of initial teacher training. We realise that in taking these matters forward the working group will need subject expertise. The Council agreed at its latest meeting that it would, on behalf of the mathematics community, offer the working group its assistance both in providing advice and by being ready to offer the names of persons who might act as expert advisers.

High-quality mathematics teaching is vital to the future success of our young people and nation. We look forward to learning how we can support the working group in its development of a framework for initial teacher training which ensures teachers have a first-class command of the discipline and pedagogy of the subjects they teach.

Yours sincerely,

A handwritten signature in black ink that reads 'Tim Rowland'.

Tim Rowland,
JMC, Chair

APPENDIX 8.4.2

From: Carter.REVIEW@education.gsi.gov.uk [mailto:Carter.REVIEW@education.gsi.gov.uk]

Sent: 23 March 2015 11:15

To: secretary@jmc.org.uk

Subject: RE: Independent working group on a framework of core content for ITT

Dear Mr Rowland,

Thank you for your letter of 16 March, addressed to Sir Andrew, about the working group that will be developing a framework of core content for initial teacher training (ITT). Your letter has been gratefully received by Sir Andrew, and has passed your letter to me for reply as a member of the Carter Review secretariat.

Sir Andrew Carter and the review team were grateful for the contributions made to the Carter Review by the mathematics community, particularly on how ITT can best prepare trainees to be outstanding teachers in STEM subjects.

As you are aware, in response to the report, the Secretary of State committed to taking forward a range of recommendations in the short term, including appointing an independent working group to develop a core ITT framework. These will be taken forward shortly, and once a group has been formed, the secretariat will inform them of your interest and offer of assistance in their evidence gathering.

Thank you for your continued interest and in supporting the implementation of the Carter review recommendations.

Kind regards,

Jason Morris

Jason Morris

Review Support Team | Carter Review of Initial Teacher Training

Tel: 0207 340 7824 – **Ext:** x307824 – **Web:** <https://www.gov.uk>

