

Influences and impact: policies for high-quality mathematics education

2016 ACME conference summary report

ACME held its 2016 conference *Influences and impact: policies for high-quality mathematics education* at the Royal Society on Tuesday 12 July. 150 delegates attended, including teachers and senior leaders, mathematicians, policymakers and education researchers to discuss the key issues in mathematics education policy.

The conference explored how best to embed recent reforms in education policy and considered further reforms to ensure that young people have the mathematical skills needed to move into higher education and employment. Delegates had the opportunity to discuss issues such as the supply of teachers and training, curriculum reform, assessment and mathematics to 18, amongst others.

The conference is a key part of ACME's work; it provides an opportunity for ACME to engage with the education community and explore policy priorities in mathematics education to inform ACME's future activities.

1 Welcome and introduction from Chair



Professor Alex Halliday FRS
Vice President (Physical Secretary) of the Royal Society,
Interim ACME Chair

Professor Halliday opened the conference and welcomed everyone to the Royal Society, giving a special welcome to Nick Gibb MP, Minister of State for School Standards. He emphasised ACME's essential role in the Royal Society's policy and education work and noted that he had gladly taken on the role as Interim ACME Chair. He explained how important a forum the conference provided to feed into ACME's work, and encouraged everyone to consider collaborative solutions to key issues in mathematics education and in wider STEM education.

He described how ACME was set up in 2002 by the Joint Mathematical Council of the United Kingdom (JMC) and the Royal Society to provide advice to government and others on mathematics education in England. He explained how ACME is made up of independent members who collectively develop advice, along with an Outer Circle of 36 experts.

He noted that many of the reforms to mathematics education require long-term thinking, which is why the Royal Society published its long-term strategy, *Vision for Science and Mathematics Education*, in June 2014¹. He also set out opportunities for teachers in the shorter term provided by the work the Royal Society does through their education outreach team².

Returning to the theme of the conference, Professor Halliday explained that although the words 'policy' and 'mathematics education' are easily defined, there are many interpretations of what high quality means in terms of mathematics and mathematics education. He said that most agree that all young people should have an education that leaves them equipped with the mathematical knowledge and skills they will need in the future, and set the challenge to all present to consider what needs to be done to achieve this. He concluded by highlighting the speakers and sessions that delegates could look forward to during the day.

"Mathematics is pervasive throughout society and is of great importance to the economy."

Professor Alex Halliday FRS,
Vice President (Physical Secretary) of the Royal Society,
Interim ACME Chair

1. <https://royalsociety.org/topics-policy/projects/vision/>
2. <https://royalsociety.org/grants-schemes-awards/grants/partnership-grants/>

2 Keynote address: policy



Nick Gibb MP
Minister of State for School Standards

In his first policy keynote of the day, Nick Gibb expressed his gratitude to have been invited to join the conference and his appreciation for ACME's work in informing both government policy and classroom practice since 2002. He opened his speech by saying that he wanted to 'celebrate a renaissance in mathematics teaching that is taking place in our schools'. His speech covered a range of issues and included his observations from the classroom in the United Kingdom and abroad, policy announcements, and reflections on mathematics education. His full speech is available online³.

He spoke of his visits to schools and observations of teachers working with students to develop their mathematical knowledge and mastering basic number facts before building up towards more complicated mathematics. He noted the importance of students developing conceptual thinking and real world problem solving by the time they leave school.

He noted that 'the current renaissance in maths teaching is enlivening our classrooms with good ideas about maths teaching from around the world'. Mr Gibb went on to describe different approaches to teaching mathematics in Korea and Singapore, where mathematics performance amongst 15 year olds is considerably higher than that in the UK. Seeking to learn from this, the Government funded Maths Hubs, 35 centres of expertise in South Asian mastery teaching. He also described the partnership programme with teachers from England and Shanghai, which has been shown to lead to positive outcomes

for pupils and which he announced would be running for a further two years. He spoke about teaching methods in South Asia, referring to their extensive use of textbooks and interactive teaching methods. He discussed the need in the UK to see textbooks as an area for strategic improvement and described two English adaptations of Singaporean mathematics textbooks, entitled *Maths No Problem* and *Inspire Maths*, which are being trialed by Maths Hubs.

Mr Gibb then announced a £41 million investment over four years to bring South Asian mastery teaching to primary schools, through the Maths Hubs network. The funding will go towards textbooks, training 700 specialist mastery teachers and teacher release for training. The National Maths Education Centre will be overseeing the project and he announced the launch of the tender.

He announced the publication of four new reports following the Carter Review of Initial Teacher Training⁴. In particular, he discussed Stephen Munday's report on core content in initial teacher training and David Weston's new standard for professional development, both of which emphasise the importance of subject and pedagogical knowledge alongside professional development throughout a teacher's career. He noted that 'much of teaching is of course a craft but it is a craft that is underpinned with concrete knowledge about what to teach and how best to teach it'.

3. <https://www.gov.uk/government/news/south-asian-method-of-teaching-maths-to-be-rolled-out-in-schools>

4. <https://www.gov.uk/government/publications/carter-review-of-initial-teacher-training>

Mr Gibb ended his speech by noting the increased proportion of students studying mathematics A Levels since 2010 and the introduction of Core Maths qualifications. He went on to discuss Professor Sir Adrian Smith FRS's review commissioned by the Government, on the feasibility of all students continuing to study mathematics to 18, and announced the publication of the terms of reference. He ended by saying that 'the demands of the working world in the 21st century are such that all pupils and not just the future accountants of the world must have it within them to do maths'.

"I'm confident that we will one day have a country where mass innumeracy and the phrase 'can't do maths' are things of the past."

Nick Gibb MP, Minister of State for School Standards

Q&A with the Minister

A question was raised about the need for all three pillars of mathematics teaching seen in Shanghai to be present in order to achieve a mathematics revolution in England, that is an emphasis on mathematical structure, textbooks and whole class teaching.

Nick Gibb noted that when observing teaching in Shanghai, he saw all three elements combined and this is what brought success for them. In relation to textbooks, he noted these were developed through teacher collaboration, as well as input from teacher groups. He said that the very best teaching methods, approaches and sequences are incorporated into these textbooks.

A question was raised about whether teachers in the UK will have more time to prepare for lessons, as is the case in Shanghai.

Nick Gibb noted that in Shanghai teachers have the luxury of only teaching 2 – 3 lessons per day and he acknowledged the differences between cultures in South Asia compared to Britain. He however noted that there remained the opportunity to learn from a different approach.

A question was raised about what the government can do to help the profession and publishers learn how to write textbooks for Key Stage 3 that are not associated with any exam board.

Nick Gibb described how the Government had worked with publishers over the last two years to improve textbooks. He highlighted the new framework document to guide textbook content development and how publishers are now producing better quality textbooks.

A question was raised about the potential for a change in policy so that learners are taught more by subject specialists at primary, as they are in Shanghai.

Nick Gibb referred to efforts to encourage education faculties in universities to offer courses to train primary teachers with mathematics specialisms and noted that schools will also need to demand these trained teachers. He also noted the importance of good textbooks for non-specialist mathematics teachers.

3 Keynote address: policy



Charlie Stripp

Director of the National Centre for Excellence in the Teaching of Mathematics (NCETM)

Mr Stripp followed on from the Minister's announcement by reflecting on some of the key elements of his speech, particularly around mastery teaching for mathematics.

He opened by discussing what is meant by mathematics teaching for mastery and outlining some of its benefits. He explained that from NCETM's perspective it is an approach which assumes that all children can learn mathematics effectively. He also described how he thinks that it challenges pervasive attitudes in the UK that mathematics is something that cannot be learnt.

He reflected on his time in Shanghai and how impressed he had been by the intensity of the teaching, questioning, commitment to understanding mathematical ideas and discussion between pupils. He considered what it means to have mastered a piece of mathematics, explaining that mathematics has been mastered when it can be used to form a secure foundation for further mathematics high school learning. He emphasised the importance of early intervention to make sure that students do not have critical gaps in their knowledge.

To get the mastery approach right, he highlighted the need for collaboration between schools and the Maths Hubs network. He also stressed the need for high-quality professional development and he pointed towards the crucial pillars of subject knowledge and pedagogical knowledge underpinning it. High-quality textbooks were mentioned as a practical tool to support the development of this knowledge.

Mr Stripp referred to the announcement from Minister Nick Gibb around the expansion of, and investment in, mastery and he talked about how pleased he was to hear of it. He gave an outline of how it was going to be rolled out, describing the key focus over the coming years to embed mathematics teaching for mastery throughout schools. He reflected on some of the positive feedback that had come back from mastery specialists that had already been through the training programme, and showed a number of video clips of them talking about their experiences.

Finally, he discussed the importance of teacher research groups to facilitate knowledge sharing and plan mathematics teaching, and how the mastery specialists trained through the programme can develop and lead these groups.

4 Workshop sessions

ACME members led four parallel workshop sessions, which explored key issues in mathematics education policy.



The discussions during the workshops will feed into ACME's work on initial teacher education (ITE), assessment of the primary curriculum and the assessment of problem solving, the professional learning of teachers of mathematics and mathematics for all to 18.

ITE discussions will inform future work on teacher supply and build on ACME's work on *Beginning teaching: best in class*, which explores what is needed for high-quality ITE.

Primary curriculum discussions will build on ACME's work on *Problem solving in mathematics: realising the vision through better assessment* and inform ACME's next steps to engage with the Government and relevant agencies to improve assessment.

Professional development discussions will inform the work of the ACME-convened expert panel on the professional learning of teachers of mathematics.

Outputs from the mathematics to 18 discussions will feed into the 2016 Smith Review into the feasibility of compulsory mathematics study for all pupils up to 18 which was announced by the Government in March 2016⁵.

5. <https://www.gov.uk/government/news/south-asian-method-of-teaching-maths-to-be-rolled-out-in-schools>



GROUP 1: Moving towards a long-term strategic plan for the ITE of teachers of mathematics

WORKSHOP LEAD Professor Jeremy Hodgen

ACME published *Beginning teaching: best in class?* in November 2015, to provide recommendations on how to ensure that trainees leave initial teacher education (ITE) effectively equipped to begin their teaching careers in mathematics classrooms throughout England⁶. ACME argued that whatever route is taken, there are a number of elements in terms of mathematics-specific development that should be consistent across every ITE programme. These include:

- a firm foundation in subject knowledge and deep pedagogical subject knowledge (mathematics specific education);
- the opportunity to develop the skills needed to become reflective practitioners able to evaluate and apply research on mathematics education and develop their own enquiries (critical evaluation);
- access to extensive mathematics-specific mentoring with trained mentors during and for two years following initial teacher education.

During this session, delegates across a range of networks (ITE providers, learned societies and subject associations) came together to discuss how to move towards a long-term strategic plan for ITE. Delegates considered how to build on best practice and discussed the next steps towards achieving each key element listed above. Delegates were asked to identify where there is potential for collaborative action, what success would look like and how it can potentially be achieved. There was some discussion about ways of emphasising the role of university mathematics departments in recruiting potential teachers to ITE. Below is a list of suggestions put forward by delegates under each key element.

Mathematics specific education

Delegates wanted to see a steady, sustainable flow of competent teachers. One idea for how this could be achieved was through the development of quality-assessed subject knowledge enhancement (SKE) courses at national level, with a transition element for those who do not first have a mathematics degree. Another suggestion was for mathematics departments, through representative organisations, to explicitly address mathematics relevant to teaching. A third suggestion was the development of a national strategy to promote routes into secondary mathematics teaching.

6. <http://www.acme-uk.org/media/33228/beginningteachingbestinclass2015.pdf>

Critical evaluation skills

Delegates wanted to see stronger teaching which is evidenced through better learning. Two suggestions for how this could be achieved, included i) providing opportunities for teachers to compare practice to research in a safe environment, and ii) for mathematics departments to link with higher education institutions to develop a professional dialogue which is informed by engagement with research and policy.

Mentoring

Delegates wanted to see a nationally-recognised structure for the role of the mentor, with different levels of accreditation (including masters). This would lead to partnership networking with value for the mentor and the mentee. Suggestions for how this could be achieved included introducing well-defined ITE and newly qualified teacher (NQT) mentoring standards with subject-specific components and clear 'value', and ring-fenced funding for accredited mentors in schools.





GROUP 2: Realising the aims of the National Curriculum in primary assessment

WORKSHOP LEADS Anne White (ACME Deputy Chair) and Dr Sue Gifford

In June 2016, ACME published a report called *Problem solving in mathematics: realising the vision through better assessment* which sets out actions for policymakers, awarding organisations and the mathematics community to ensure that improvements in the quantity and quality of problem solving in mathematics tests and assessments are realised over time⁷.

The aims of the primary assessment workshop session were to consider the influence of assessment in realising the aims of the National Curriculum (NC) and to identify ways in which assessment could be improved to better reflect them. Delegates were invited to analyse and discuss the extent to which fluency, reasoning and problem solving were given due prominence in national publications relating to primary assessment. The description below outlines some of the discussion points that were raised during the session highlighting issues of concern in both policy and practice.

There was concern that the Key Stage 2 sample tests and the 2016 live tests did not assess the whole of the curriculum and did not address the National Curriculum aims of fluency, reasoning and problem solving in a balanced way. The majority of delegates concluded that future papers needed to include more questions designed to assess reasoning and problem solving and that this should be reflected in the allocation of marks in the mark schemes. The group welcomed the ACME report on assessment of problem solving and hoped that policy makers and test designers would take note of its content.

Delegates thought that greater transparency and communication between the test developers and the mathematics teaching community could become a positive influence on achieving the National Curriculum aims. Delegates also urged greater emphasis on transparency and use of mathematics expertise in the development of official documents, such as 2016 teacher assessment guidance⁸ and exemplification⁹, and were keen to understand the process through which such material is published. There were also concerns about the ongoing interim status of the 2016/17 teacher guidance¹⁰.

7. www.acme-uk.org/media/35168/acme%20assessment%20of%20problem%20solving%20report%20-%20june%202016%20-%20final.pdf

8. <https://www.gov.uk/government/publications/interim-frameworks-for-teacher-assessment-at-the-end-of-key-stage-2>

9. <https://www.gov.uk/government/collections/national-curriculum-assessments-2016-teacher-assessment-exemplification>

10. <https://www.gov.uk/government/publications/2017-interim-frameworks-for-teacher-assessment-at-the-end-of-key-stage-2>

There were suggestions about how the testing regime could better support the realisation of the curriculum aims over time. Historical experience, it was suggested, might be drawn on, for example annual publications analysing performance of learners against individual test items and which also set out implications for teacher and learning. As the Mathematics Test Framework includes the parts of the programme

of study covered in the test (the content domain), as well as the cognitive processes associated with the measurement of mathematics (the cognitive domain), it was noted that an analysis paper could also reference these domains¹¹. Delegates also noted the need for the publication of a national analysis on the distribution of the marks across papers 1, 2 and 3 at Key Stage 2.



11. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/443889/2016_KS2_Mathematics_framework_PDFA_V2.pdf



GROUP 3: The professional development learning of teachers of mathematics

WORKSHOP LEAD: Robert Barbour

ACME set out its vision for professional development (PD) in its report, *Empowering teachers: success for learners*, published in November 2013¹². The report stated that all students should be taught by well-qualified teachers who are themselves professional learners.

In order to understand more about the mathematics-specific knowledge that teachers need, ACME convened an expert panel in January 2016 to produce guidance that will set out mathematics-specific aspects of professional learning for mathematics teachers and senior leaders. In 2016, the expert panel hosted a number of events with the mathematics and wider STEM community and engaged with teachers and senior leaders, including through a survey with over 200 responses.

During the workshop, delegates explored the key ideas emerging from the expert panel, namely that all teachers should have the opportunity to continually build on their mathematics-specific knowledge and practice in a collaborative setting, and that high-quality professional practice rests on strong foundations of mathematical knowledge gained through professional opportunities.

In groups, delegates reviewed a table drawn up by the expert panel which sets out the mathematics-specific knowledge that primary, secondary and further education teachers should gain throughout their career. Delegates spent time looking at whether the table works across phases, whether it might be useful for teachers and senior leaders in development conversations, and whether it contains the right content and exemplification.

Delegates also considered how to embed the importance of mathematics-specific PD across schools and colleges and the barriers and enablers to the successful implementation of mathematics-specific guidance. They explored the capacity of schools to engage with external PD and develop internal PD in a teacher learning group, as well as the conditions needed for this to flourish. The following points of note came up:

- the importance of keeping teacher groups highly focused and research based;
- the role of external advisors;
- the key drivers of financial resources, inspection criteria and exam outcomes, how they link to accountability measures and whether league tables should take these into account;
- allocated time for teachers to spend time doing mathematics together.

12. <http://www.acme-uk.org/media/14054/acmepdreport2013.pdf>

Finally, delegates considered how the mathematics-specific guidance would fit into the wider policy context, for example with the development of the College of Teaching and within the PD Standard that

was published by the DfE after an announcement at the ACME conference. They also considered how it might compliment the Chartered Mathematics Teacher (CMathTeach) designation¹³.



13. <http://www.cmathteach.org.uk/>



Group 4: Mathematics for all to 18?

WORKSHOP LEAD: Dr Mary McAlinden

One of the five key principles in ACME's *Blueprint for Mathematics Education* is that all young people 'study appropriate and engaging mathematics up to the age of 18'¹⁴. For many years ACME has advocated the development of post-16 pathways suitable to the needs of all learners. The UK has a clear economic need for a mathematically competent workforce and employers have repeatedly highlighted the value of strong numerical skills, problem solving ability and confidence in working with data. In England, many students give up the subject at age 16 and struggle when faced with the quantitative demands of university degree programmes¹⁵.

This conference workshop session took place during the Government's Smith Review (2016), the terms of reference for which were announced during the ACME conference¹⁶. It also followed on several days after the publication of the Sainsbury Report on technical education¹⁷. The focus of the session was the policy landscape and scope for change with particular emphasis on current and future post-16 mathematics pathways and qualifications, and ways to achieve greater attainment in mathematics post-16.

The workshop began with a review of the recent major reforms to mathematics qualifications, and some of the recent funding initiatives, including those designed to attract new entrants into mathematics teaching. Delegates were invited to explore barriers and enablers to the mathematics to 18 agenda and to discuss strategic policy interventions that could be undertaken over the next 10 years. The areas discussed covered frameworks to support the uptake of post-16 mathematics and issues around teaching workforce capacity, resourcing and funding.

An area of concern that arose repeatedly in the discussion was the current policy on GCSE Mathematics resits. Delegates were of the opinion that requiring students to resit GCSE Mathematics repeatedly was not productive and many expressed the view that an alternative to GCSE Mathematics could offer a better way forward for students who did not successfully achieve a good pass in the qualification. Another general area which arose on a number of occasions was funding for level 3 mathematics qualifications. In particular there was concern about the long-term impact of current policy on the future uptake of A level Further Mathematics.

14. http://www.acme-uk.org/media/18410/issue_1_blueprint_final_version_10june.pdf

15. https://www.heacademy.ac.uk/sites/default/files/resources/hea_mathematical-transitions_webv2.pdf

16. <https://www.gov.uk/government/news/south-asian-method-of-teaching-maths-to-be-rolled-out-in-schools>

17. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/536046/Report_of_the_Independent_Panel_on_Technical_Education.pdf

Some of the other suggestions for high priority interventions which came forward included:

- improving teacher retention e.g. by increasing salaries, reducing hours and workload;
- a greater governmental focus on targeted teacher recruitment;
- ensuring better data collection to better understand the mathematics teaching workforce and reasons for entering and leaving the profession;
- allocating funding to reduce contact time to allow time for intelligent lesson design and professional development;
- providing targeted support for the professional learning of further education teachers of mathematics;
- developing a strong Functional Skills mathematics qualification.

Delegates noted the great opportunities that there are to think critically about mathematics education through the Smith Review, the Sainsbury Review and the ongoing review of Functional Skills¹⁸.



18. <http://www.pyetait.com/fsreform/>

5 Panel discussion

Key opportunities in mathematics education in the next five years.



The panel discussion followed a 'Question Time' approach. Questions were submitted by delegates in advance of the conference.

Chair

Dr Simon Gallacher, Head of Quantitative Skills, The Nuffield Foundation.

Panel

- Dan Abramson, Head of King's College London Mathematics School
- Lynne McClure, Director of Cambridge Mathematics
- Professor Terezinha Nunes, Professor of Educational Studies, University of Oxford
- Professor Sir Adrian Smith FRS, Vice-Chancellor, University of London

This section is a summary of some of the points discussed during the panel session. The ideas explored should not be considered to be the view of all panellists but a selection of some of the points raised in the discussion.

Topic	Discussion points included
Teaching and teachers	<ul style="list-style-type: none"> • the lack of data on the number and profile of teachers of mathematics in schools and FE colleges • the need to disaggregate mathematics teacher shortages regionally and by level • the need to identify strategies for retention as well as recruitment • the importance of having mathematics specialists in schools • the potential of going into universities to target graduates for teacher recruitment
Encouraging pupils to study mathematics	<ul style="list-style-type: none"> • the external pull factors to study mathematics, including incentives from employers or higher education • the critical point at Key Stage 3 at which it is essential to build student enthusiasm for mathematics
Continued Professional Development (CPD)	<ul style="list-style-type: none"> • the need for teachers to reflect on their own practice • the potential of exploring technology and PD • the benefits of extended PD training courses • the General Teaching Council in Scotland's kite marking route and annual teacher re-registration
Curriculum content and reform	<ul style="list-style-type: none"> • the importance of monitoring the impacts of curriculum reform • the potential for a set cycle of curriculum reform, e.g. every 10 years • the professional development learning required of teachers to support the teaching of reasoning and problem solving • the importance of a one-stop-shop, like ACME, which co-ordinates expertise to advise Ministers on curriculum reform • the potential for future collaboration between mathematics and digital technology, data science and computer science in the curriculum • the importance of geometry in the primary curriculum
Core Maths	<ul style="list-style-type: none"> • the importance of offering a range of mathematical pathways for students • the role of Core Maths as a way of enthusing students to study mathematics

6 Keynote address: mathematics



Dr Vicky Neale

Lecturer at the Mathematical Institute at Balliol College
University of Oxford

Prime jewellery

Dr Neale delivered the mathematical keynote address, engaging the audience with a talk on the distribution of prime numbers using bracelets and the things that she had noticed when threading them.

She spoke of using the bracelets to see and predict patterns and she invited the audience to notice what would change mathematically in a range of different sized bracelets. She pointed out differences in the frequency and pairing of the primes and she explained that she had never seen these patterns before. She compared a bracelet showing the prime numbers to a bracelet showing the squared numbers and she explained that while the predictability of squares makes them powerful to work with mathematically, they turn out to be very disappointing for jewellery! As well as observing patterns, Dr Neale described how she uses the bracelets to provide solutions to difficult mathematical questions.

She then explained why we should care about prime numbers, pointing out that their application to cryptography and beyond, and how their layers and complexity make them irresistible to study. She played a short video visualising prime factorisations, and commented on the ingenuity her students have in predicting the visualisations using different approaches from the computer.

“I sometimes worry when I give talks to students, that I end up giving the impression that mathematics is stuff that’s been ‘done in the past by dead people’, or stuff we don’t know how to do. I feel like that’s a really inaccurate representation of where we’re at with mathematics.”

Dr Vicky Neale
Whitehead Lecturer at the Mathematical Institute
at Balliol College University of Oxford

Finally, she reflected on recent developments to the prime number theorem and she explained how a Polymath project launched in 2013 has seen a number of exciting breakthroughs. She finished her talk by highlighting the importance of mathematicians sharing their mistakes in order to overcome complex mathematical obstacles.

7 Closing speech



Professor Alex Halliday FRS

Vice President (Physical Secretary) of the Royal Society,
Interim ACME Chair

Professor Halliday closed the conference with a few words on the day's events and announcements.

He began by discussing the big players and influences that present opportunities for the mathematics community including the Sainsbury Report on technical education and the ongoing Smith Review of mathematics to 18. He also recognised the big challenge around securing a sustainable supply of qualified mathematics teachers.

He described the buzz and passion that he had seen throughout the day from a community that he sees enjoying getting together to discuss and share perspectives on mathematics education policy. He referred to how important it is that the teaching profession maintains their confidence to teach, communicate and work well within their own school environment, in the midst of a period of change. He was keen to make sure that teachers do not feel derailed by what is going on around them.

“ACME, in terms of what it's delivered over the years, is arguably by far the most important side of our policy work in terms of really affecting change in the way things are done.”

*Professor Alex Halliday FRS,
Vice President (Physical Secretary) of the Royal Society,
Interim ACME Chair*

He reflected on the work of ACME and what it has delivered over the years, saying that it has been one of the most important parts of the Royal Society's policy work and emphasised how effective it has been at bringing about change. He pointed out the need to work closely with industry to help make the case for greater funding going into mathematics education in this country. He concluded by saying that the Royal Society, through ACME, look forward to a very strong interface with the Government and working alongside mathematicians, teachers and others to provide strong educational outcomes.

**For further information about the Advisory
Committee on Mathematics Education:**

The Royal Society,

6 – 9 Carlton House Terrace, London SW1Y 5AG

T +44 (0)20 7451 2575

E acme@royalsociety.org

🐦 [@ACMEmaths](https://twitter.com/ACMEmaths)



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