

# Update on the work of the Advisory Committee on Mathematics Education (ACME)

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# Presentation outline

- Introduction to ACME
- Update on qualifications reform
- Recent ACME work
- Input to the Smith Review
- Change of Governance for ACME

# Introduction to ACME

- ACME was originally set up in 2002 by the Joint Mathematical Council and the Royal Society.
- The Committee developed advice to influence mathematics education policy in England.
- Committee members were experts with experience across all phases of education.



Early in 2017 changes in governance took place. ACME is now a Committee of the Royal Society.

# Reforms of Qualifications

- During the most recent series of qualification changes ACME has been active in responding to consultations, engaging with ministers, the Department for Education and other stakeholders in face to face meetings and via formal correspondence.
- It has been active in convening roundtables to harness the views of the mathematics education community, including at the request of others such as the Department for Education and Ofqual.
- At the request of the Department of Education ACME set up an Expert Panel to provide advice on the content of the Core Maths qualifications.

# Reforms of Qualifications

## (a) Recent Changes

2015: All students remain in full-time education until the age of 18.

Students with a grade D in GCSE Mathematics have to resit the qualification.

The new larger GCSE Mathematics was introduced for first teaching.

2016: The first assessment of Core Maths took place.

# Reforms of Qualifications

## (b) Pending Changes

2017: New A-level Mathematics and Further Mathematics will be introduced for first teaching in September.

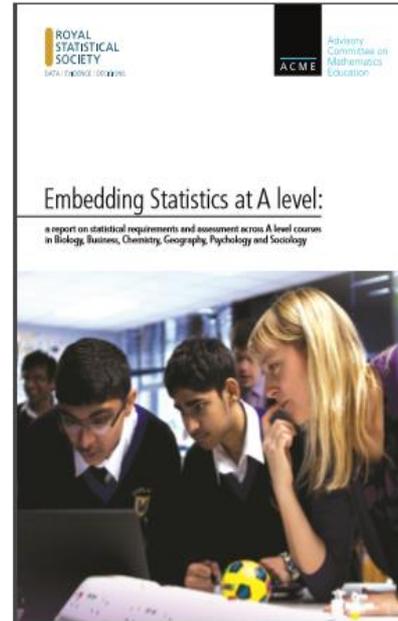
First assessment of A-levels in other subjects with increased mathematical requirements will take place.

First assessment of the new GCSE Mathematics will take place.

New grades for GCSE Mathematics will be introduced.

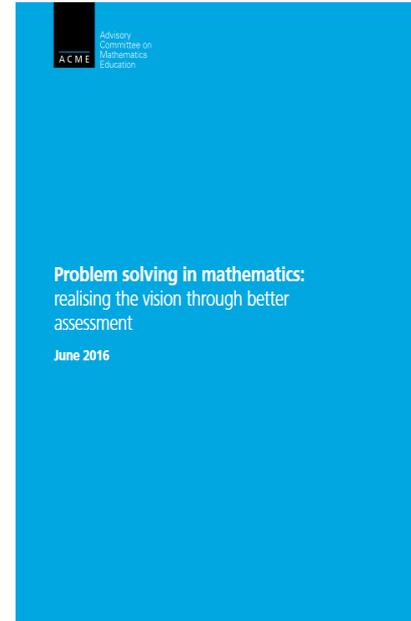
# Statistics in A-level Assessments

- This work was a collaboration between ACME and the RSS.
- Recently reformed A-levels in some subjects now have more specific mathematical requirements.
- The work highlighted the need for assessments which contain statistics that is:
  - (i) authentic;                      (ii) embedded;
  - (iii) appropriate; and (iv) at the right level.



# Assessment of Problem Solving

- Problem solving plays a key role in students' mathematical development.
- Problem solving needs to be in assessments as this drives what is taught in the classroom.
- The report focuses on what is needed within assessments and the need for continuity across phases of education.
- The report makes recommendations on the assessment of problem solving in the areas of regulation, research and development and professional development.



# Initial Teacher Education and Professional Learning for Mathematics Teachers

- These two reports take a systematic look at the training and subsequent professional learning journey of teachers of mathematics.
- The report *Beginning teaching: best in class?* looks at international comparisons and makes recommendations about mathematics subject knowledge and mathematical pedagogy within initial teacher education.



# ACME's Input to the Smith Review

Areas of concern that were highlighted in ACME's submission to the Smith review included:

- (i) the current GCSE resit policy;
- (ii) the decoupling of AS and A-level Mathematics and its potential impact on uptake of the subject at A-level;
- (iii) the current funding policy and its potential impact on uptake of Further Mathematics;
- (iv) the current shortage of specialist mathematics teachers;
- (v) the need for more teachers of mathematics to meet the demands of increased uptake in post-16 mathematics, the GCSE resit policy and projected increases in the school population.

# Change of Governance of ACME

- The governance of ACME changed early in 2017. This followed discussions between the Royal Society and mathematical organisations.
- ACME is now a Committee of the Royal Society.
- The Committee has been expanded.
- Its remit will cover the whole of the UK.
- A new pattern of meetings has been established.
- Working groups will be established.
- The new Committee has met once in March 2017 and is establishing itself and its programme of work.

# ACME at April 2017

## Professor Frank Kelly FRS (Chair)

Professor Martin Bridson FRS

Dr Paul Golby CBE FREng

Professor Jeremy Hodgen

Dame Jil Matheson DCB

Dr Mary McAlinden

Lynne McClure

Professor Emma McCoy

Professor Sir David Spiegelhalter OBE FRS

Professor Paul Glaister (JMC)



The Committee  
is expected to  
expand in the  
coming months  
as new  
members are  
appointed.