



Advisory  
Committee on  
Mathematics  
Education



Rt. Hon Ed Balls MP  
Secretary of State  
Department for Children, Schools and Families  
Sanctuary Buildings  
Great Smith Street  
London SW1P 3BT

17 July 2009

Dear Secretary of State,

### **Use of Mathematics A-Level**

We are writing regarding the recent negative media coverage of proposals to introduce an A-Level in Use of Mathematics. This coverage – generated by the think tank Reform – explicitly calls for abandoning moves to create an A-Level in Use of Mathematics. It is our view that Reform's recommendation would be deeply harmful to mathematics education in England.

ACME, JMC and many others in the mathematics community supports attempts to widen participation in the study of mathematics post 16. As you are no doubt aware, England has a historically poor record of students choosing mathematics beyond 16, particularly in comparison with many of our international competitors. Despite recent rises in the numbers choosing A-Level Mathematics, the unenviable comparison will remain an issue, and will have a negative impact on those seeking employment and will continue to be a restraint on progression to – and through – higher education.

Much of the early work in this area is contained in Adrian Smith's 2004 report, *Making Mathematics Count*. Professor Smith's report highlighted the importance of mathematics pathways as progression routes for learners. These pathways will require a range of appropriate mathematical qualifications suitable to the needs of the learner. We firmly believe that the fundamentals of the pathways model continue to be sound.

However, Reform's opinions run totally counter to the whole concept of mathematical pathways. Their argument overlooks the pupils who would benefit from continuing mathematics education after 16 but who would struggle with the current A-Level or whose other studies are in areas, such as business studies, the social sciences and some aspects of the sciences, where many pupils, at present, do not study mathematics beyond GCSE. Rather than run the risk of diluting the current qualification, we believe it is better to provide separate qualifications to accommodate their needs. These will form a part of a suite of qualifications, including AS/A-Levels in Mathematics, Further Mathematics, Use of Mathematics and Use of Statistics, plus Free Standing Mathematics Qualifications (FSMQs), to serve the pathways model.

We admit that there are risks to creating an A-Level in Use of Mathematics, and it will be important to guard against these risks, which include:

- Pupils for whom A-Level Mathematics would be more appropriate may choose Use of Mathematics instead; and

- Centres may offer just Use of Mathematics, rather than offering it alongside Mathematics.

But there are ways to address these risks, including:

- Ensuring pupils receive appropriate information, advice and guidance so that they choose carefully between A-Level Mathematics and Use of Mathematics with full knowledge of the suitability of each qualification for progression routes to HE and employment
- Schools and colleges which provide Use of Mathematics should be closely monitored, with uptake gradual, to ensure that the intake on Use of Mathematics is from a group of learners who would not normally have chosen to study mathematics beyond GCSE, and that it does not draw away pupils who would taken A-Level Mathematics successfully.

Our overall aim must be to broaden participation in mathematics beyond GCSE. We believe this will be achieved by creating a suite of qualifications in mathematics at Level 3 – including A-Level Use of Mathematics – which meet the demands of progression pathways appropriate to the needs of the learners. The views expressed by Reform run the very real risk of actually reducing participation in the study of mathematics beyond 16, and would continue to serve the needs of only the minority of students post 16.

In fact, so important is the whole area of mathematics beyond 16 that ACME, with the support of the JMC, is beginning a piece of work on Level 3 mathematical pathways, in which it is proposed that there is an expectation that everyone will study mathematics up to 18. The specific mathematics which is studied would be appropriate for the needs of the learner, served by a suite of appropriate qualifications. We hope to publish a discussion document on this subject during the autumn, and we hope to provoke a debate on the merits of such proposals.

However, in the meantime, we strongly urge you to have the courage to introduce a full A-Level in Use of Mathematics as we believe this will contribute to the creation of a suite of qualifications serving a pathways model that will underpin the widening of participation in mathematics beyond 16.

Yours sincerely



**Dame Professor Julia Higgins FRS FREng**

Chair, Advisory Committee on Mathematics  
Education (ACME)



**Professor Ros Sutherland**

Chair, Joint Mathematical Council of the UK  
(JMC)