



Ian Todd  
CEO and Accounting Officer  
Standards and Testing Agency  
53-55 Butts Road  
Earlsdon Park  
Coventry  
CV1 3BH

5 September 2014

Dear Mr Todd,

ACME engaged with the National Curriculum review throughout the reform process and supported the aspirations set out during the review. However, concerns have arisen regarding the content of the National Curriculum assessment 2016 sample materials for mathematics published in July 2014.

A major influence on planning and implementation of the new National Curriculum will be the shape of the assessment. Many teachers plan their teaching around assessment. This perspective was widely expressed during ACME's round table on the implementation of the National Curriculum. Therefore, these sample materials need to be accurate and assessment must encourage and support the most effective teaching. ACME appreciates that sample questions were explicitly chosen to focus on higher level requirements of the curriculum so that teachers would have an indication of how those aspects will be assessed. However, if these sample questions are the only evidence teachers have of the style of assessment, then these sample questions need to go beyond highlighting the increase in expectations on students. They must also emphasise other significant aims of the National Curriculum, those being fluency, including conceptual understanding, reasoning and problem solving

These aims are key to ensuring students can apply mathematics knowledge to unfamiliar contexts. Whilst, for example, the test framework (draft) describes the sample papers as presenting students with 'a range of mathematical problems, and a range of formats so they can fully demonstrate fluency, problem solving and reasoning', many questions exclusively emphasise formal knowledge and stipulated procedures. ACME can provide you with examples on request.

The Department for Education has set out the intention that 'no child leaves primary school unable to read, write or without a secure grounding in maths'. Research shows that high achievement at key stage 2 is more likely to be realised by an emphasis on understanding and reasoning, rather than arithmetical knowledge\*. The sample materials do not place emphasis on understanding and reasoning and therefore will not be able to capture pupils' performance. If the tests are to foster teaching to the National Curriculum aims, more items are needed to probe understanding and to present problems that can be solved in a range of ways.

The sample materials also run counter to the test framework statement that 'children working at the expected standard will be able to engage with all questions within the test'. The most difficult examples, presented as they are, will not be accessible to the majority of children.

We would welcome the opportunity to discuss these issues with you and your colleagues together with representatives from the mathematics education community. In order to set up a meeting, please do get in touch with the ACME Secretariat at [acme@royalsociety.org](mailto:acme@royalsociety.org) or on 020 7451 2575.

Yours sincerely,

Stephen Sparks

Professor Stephen Sparks FRS, Chair of the Advisory Committee on Mathematics Education

\*Nunes, T., Bryant, P., Sylva, K. & Barros, R. (2009) *Development of Maths Capabilities and Confidence in Primary School DCSF-RR118.*