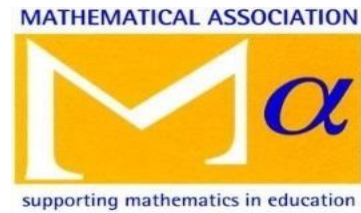




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The Rt. Hon. Justine Greening
Secretary of State for Education
Department for Education
Piccadilly Gate
Store Street
Manchester M1 2WD

22nd August 2017

Dear Ms Greening,

We are writing to you as two of the subject associations that represent mathematics teachers to ask why continuation funding was not found for the Underground Mathematics project given its success and the emphasis you have placed on the development of Level 3 mathematics.

In your industrial strategy, your government has set out a strong commitment to STEM education in schools in order to develop capacity in higher education and research and development. The Green Paper recognised the important contribution mathematics A-level makes to this and noted the (then forthcoming) Smith report's identification of the problem of regional variation.

Professor Sir Adrian Smith's review of post-16 mathematics has identified that one factor contributing to the shortage of STEM skills is the take up of advanced mathematics qualifications, including A-level Mathematics, Further Mathematics and Core Mathematics. We have already made substantial progress on this since 2010: the proportion of people studying mathematics is now at its highest ever level, and it is the most popular A-level. But there is significant regional variation and students in some areas are much less likely to progress to A-level Mathematics than their peers in other parts of the country. There are significantly more students studying advanced mathematics in London and the South East than other parts of the country. (Building our Industrial Strategy page 44)

One way in which regional differences can be tackled is the provision of high quality online interactive resources that can be used by both teachers and students. An outstanding example of this is the Underground Mathematics website. This was developed by a highly skilled team who brought a wide range of specialist expertise. The value of this site cannot be overstated. It facilitates the development of conceptual understanding for a wide range of users including:

- Students about to embark on A-level
- Students on A-level courses
- Students preparing for university mathematics entrance papers e.g. STEP
- Teachers about to embark on ITT courses
- Teachers who are taking on Higher Tier GCSE, Core Mathematics and A-level teaching
- Experienced teachers who need to develop their skills to meet the demands of the new A-level.

In the recently published Smith Review of 2017, Underground Maths was given as an example of how universities can significantly contribute to improving 16-18 mathematics.

Underground Maths - a University of Cambridge project funded by the Department for Education to develop curriculum and teaching materials across A level Mathematics with the aim of fostering connections between elements of mathematics and deepening understanding of central concepts. This project worked with 45 partner schools and colleges to develop curriculum resources and now works with 600 affiliate schools and colleges to embed and evaluate the use of these resources. (Smith Review, 2017, Paragraph 211)

The resources are reported by our members to be of an extremely high calibre in terms of the careful construction of tasks and the deep connections that they draw attention to. They were designed with the new A-level in mind and address modelling and problem solving. They were also developed with teacher involvement and have been tested and improved.

This outstanding project is not yet complete. Ceasing funding at this stage in the project is an extraordinary decision and makes no sense in terms of the government's declared priorities.

Please can you explain why ongoing funding was not available to Underground Maths? It is difficult to understand how long term development is ever going to be achieved when support is not sustained for programmes that are of great value to the sector.

Yours sincerely,

For Association of Teachers of Mathematics

For The Mathematical Association



Anne Howarth
Chair of General Council



Peter Ransom
Chair of Council