LONDON
MATHEMATICAL
SOCIETY

Royal Society - Vision for science and mathematics education 5-19
Response from the London Mathematical Society

We have difficulty knowing how to respond. The theme is important – but unusually broad. The outline contrasts starkly with the excellent recent Royal Society report *Shut down or restart?*, which chose a limited theme, analysed it boldly and in great detail, and drew impressive and convincing conclusions. There are potential advantages in considering a broad canvas: for example, current work by SCORE has revealed a widespread dissatisfaction with the mathematical content of A level science examinations, which needs to be addressed collaboratively. But there are also dangers in excessive breadth: science and mathematics show that real progress generally emerges from detailed and specific analysis of *particular* issues. Though many of your listed questions are relevant, **the ambitious spread suggests a lack of focus which may make useful conclusions elusive.**

The committee includes an impressive array of relevant wisdom. Yet the uniform response of our colleagues has been to observe that it includes little by way of relevant experience in mathematics, or mathematics education. Though the recent STEM agenda has been widely welcomed by scientists, engineers and mathematicians, there has been a disturbing tendency for *non-experts* to specify the *mathematical* components of recent schemes without consulting those who have spent their lives learning *why* mathematics teaching is less effective than we would like. Mathematics plays an increasing role in all the sciences, and in seeking improved provision, it is essential that key judgments are not made without involving those with the relevant mathematical and educational expertise. We would love to help provide focused answers to the most important of your questions – even though to do them justice would have required more than the eight weeks since the launch of this initiative. But experience suggests that detailed responses to questions in mathematics education are too often misconstrued by those whose experience and expertise lies elsewhere. Hence our second observation is to suggest that, if you wish to understand the issues surrounding *mathematics education*, and to relate these to the needs of science, **you may well need a specialist subcommittee** (to which we would be happy to contribute).

We accept that the issues you raise are important. However, many of them are raised here without apparently acknowledging that crucial decisions on many of these issues have been, or are currently being, made and implemented, and have been justified on the basis of *answers already elicited* to the kind of questions you pose. It is unclear whether your quest for a 'vision' is to be interpreted relative to where we were 'yesterday' (before current policies have been implemented), or relative to where the present administration expects us to be in 10 years' time, or whether your questions imply a critique of the analysis which lies behind current changes.

Thus we apologise for failing to provide the kind of response you may have hoped for. But we repeat that we would be happy to contribute should you establish a subgroup with a more restricted – and hence more achievable – remit.

LMS Education Committee

16th March 2012