



The Mathematical Association
Supporting Mathematics in Education

On the subject of **Early and Repeated Presentation for GCSE Mathematics** we say ...

The Mathematical Association believes that the early and repeated presentation of students for GCSE Mathematics, arising from government policy and realised through the ambitions and fears of head teachers, teachers and parents, is damaging to students' mastery of mathematics, and has consequences for the future of business and industry in Britain.

The Mathematical Association believes that good mathematics teaching should help all young people to use elementary mathematics with confidence. Daily school experience should consistently reinforce the message that, however abstract, the objects and processes of mathematics have *meaning* – both in relation to mathematics itself and to what they allow us to calculate in the world around us. Effective teaching and learning in this spirit is a long-term venture: it takes time to build confidence and to achieve mastery.

In contrast, summative assessment, such as GCSE, is more of a snapshot. It can nevertheless be a useful summary, provided it is not allowed to distort the learning process: that is, if students are helped to achieve whatever confidence and mastery they can during their secondary years, and can then demonstrate what they are in command of at the end of that phase. The recent trend towards early and repeated presentation for GCSE Mathematics may result in increasing distaste for mathematics and reducing students' inclination to pursue the subject beyond the age of 16, whether as part of academic or vocational training.

All students benefit from a broader, deeper experience of mathematics. Different groups may well achieve different levels of mastery within the same time frame, but all groups benefit from achieving whatever competence they can within the available time before being subjected to summative assessment. Considerable damage is done if those who find mathematics difficult are entered prematurely, and repeatedly, in the belief that this might somehow improve the grade they ultimately achieve. The negative effect on their self-esteem brought about by repeated failure is harmful to their emotional well-being and flies in the face of advice in *Every Child Matters*. More able students are also generally better served if the available time is used for enrichment and deepening, opening their eyes to the relevance of mathematics in the modern world, broadening their experience and depth of understanding, and encouraging more of them to pursue mathematical studies at A level and beyond.

The Mathematical Association suggests that most students are best served by 'digging deep', building robust, fluent and confident use and understanding of mathematics and aiming at the highest possible grade, which for almost all students means entering GCSE at the end of Year 11. Appropriate pacing is essential.

