United Kingdom Mathematics Trust

UKMT Policy on the Education of Able Student

The UKMT supports a policy of mathematical enrichment rather than acceleration through the examination system. In particular:

1. Talented students, who are likely to specialise in mathematics, should experience a deep, rich, rigorous and challenging education in the subject.
2. The emphasis in teaching should be on profundity of understanding rather than exam technique or the use of algorithms.
3. There should be a healthy diet of multi-stage problems and a willingness to take risks. Able students need to find things difficult and to experience both failure and success. They should also be encouraged to ask penetrating questions and to adopt a critical approach to the ideas they encounter.
4. Strong mathematicians should stay, as far as practicable, with their peer-groups and experience whole-class teaching. Able students should be expected to master essentially the same material as their peers – but more robustly, fluently and deeply, and with a greater emphasis on making connections. They may, in turn, become 'experts' who can explain ideas to their peers.
5. In any scheme of work, there should be a clear pathway through to the next stage of mathematical education - ensuring continuity and progression. More advanced ideas can only be fully understood if there is a deep and rigorous mastery of core material.
6. Early advancement to the next stage in the curriculum should not be encouraged unless the foundations established earlier are thoroughly understood. Such acceleration in mathematics is often counterproductive, encouraging only a shallow mastery of the subject and a reluctance to revisit and reinforce key ideas from an earlier stage.
7. Early entry into public examinations should be discouraged if the consequence is that students focus on superficial technique, promoting procedural learning at the expense of deep understanding.
8. The examination syllabus offers only a subset of the topics available for study, and there are many age-appropriate concepts outside of the syllabus that are worthy of study by a young mathematician.

Further support for this policy can be found in the ACME document "Raising the bar: developing able young mathematicians":
http://www.acme-uk.org/media/10498/raisingthebar.pdf

on the NRich page "Supporting highly able mathematicians": http://nrich.maths.org/7741

and in the Mathematical Association policy document "On Enrichment":
http://www.m-a.org.uk/resources/Policy_on_Enrichment.pdf

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