

16-19 Level 1 English and Maths Qualifications - Government consultation

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The Southampton Education School has a rich history of rigorous research on mathematics education. Some of this work is relevant for this consultation, for example our work with post-16 colleges and mathematics textbooks for GCSE resits, based on the School's seminal work of the School Mathematics Project (from the 60s to now). Based on this work and related research, we provide the following answers to the consultation.

Cohort

Recommendation: *We think this qualification could be particularly beneficial for those who need to evidence a particular level of (mathematics) proficiency for their career path.*

Among the 16-19 students we think this qualification could be particularly beneficial for those who need to evidence a particular level of (mathematics) proficiency for their career path. Rather than being seen as having 'failed' a level 2 GCSE mathematics or English exam, they obtained a level 1. The biggest challenge for the level 1 audience, is motivation. The audience will often have quite negative attitudes towards mathematics, and this needs to be addressed in terms of variety, enjoyment and the complete pedagogical repertoire needed to motivate learning. We do want to note that apart from the 16-19 audience, adult education also is a relevant target audience (though not part of this consultation) for this qualification in a context of life-long learning.

Qualification structure

Recommendation: *We recommend a modular structure with the condition there is some flexibility of topics, and prior knowledge is tested and reinforced when needed.*

We are broadly in agreement with a modular structure, as it allows students to make progress in smaller content units. Sufficient attention should be given to retention or retrieval of previously completed content units. It is good to see that the consultation document acknowledges this risk. In mathematics in particular, the hierarchical structure of the subject is important: new content knowledge is built upon prior understanding, which must be actively retrieved and, where necessary, misconceptions addressed. This should be an important phase to implement in the modular structure of the qualification. The hierarchical nature of mathematics also means that the 'flexibility' mentioned in that particular section will be even more limited, as schools will need to ensure that pre-requisite knowledge is present. We know from research that variety, enjoyment and knowledge acquisition benefit from a broad curriculum. Therefore, flexibility should be organised through continuing to offer different mathematical topics, rather than restricting to algebra and statistics, for example graph theory and cryptography.

Content

Recommendation: *Content should be organised in ways that are compatible with future GCSE subject content requirements, focus on the 'what' not the 'how' and be supported with low-cost, rigorous custom textbooks.*

To ensure rigour and transferability of the qualification, we think subject content should be organised in a similar way as future GCSE subject content requirements. Diverging too far from existing certificate structure could potentially undermine the sector's (and employers') trust in the system. Qualifications should focus on the 'what' but not on the 'how', to allow for schools' freedom in teaching the curriculum. Note that we are in favour of rigorous, low-cost supplementary resources for content, for example in custom mathematics textbooks. The Southampton Education School is working with a local post-16 institution to create rigorous, low-cost, even free, textbooks for GCSE resits to obtain grades 1/2 and 3/4 at GCSE level 2. This process could inform the creation of a custom textbook for the new Qualification.

Qualification Achievement and Grading

Recommendation: *We recommend that the Level 1 qualification is defined as a subset of Level 2 content, graded with a consistent pass at grade 4 and designed with clear vocational pathways.*

The current system of what constitutes a pass, including yearly determined grade boundaries by exam board, is quite confusing as it is, so setting yet another boundary at grade 3 would be even more confusing. Furthermore, with level 2 constituting a clearly defined set of content and a '4' considered a pass, it is contradictory to define level 1 in terms of a grade. It would be more consistent to define level 1 in terms of a 'subset' of content at level 2, and to grade at that level, with a pass at '4' still being the norm. This level 1 should be the basic expected level for all students, but only if the degree is obtained by the largest part of the student population. This would also mean that at that level, for grades below the 'passing grade' (which we suggest to be at '4') no qualification would be obtained.

Considering that students who pass the level 1 qualification may not progress on to gain a GCSE grade 4, the DfE should consider adding a vocational focus and structure to the design of the qualification that fits with alternative trajectories, like moving into work. Ideally, there should be a clear pathway and sufficient offer towards further workplace training. This would require that the government educates stakeholders (employers, parents and other external audiences) that one pathway isn't 'higher' or 'better' than another, but simply only different, and with a better fit to the needs of the student. We think that the student should receive separate overviews of the complete qualification and what it entails, and sub-components. The latter should not be an integral part of the overall qualification result, but be available if useful.

Equalities Impact

Recommendation: *We recommend that in designing the qualification the DfE also thinks about support in areas of gender and disability through the provision of appropriate resources and tools for learners.*

We would like to note that within mathematics education there are some intersectionalities that play a role and therefore should be considered when implementing these plans. We highlight two here. One concerns gender differences in mathematical proficiency, especially in spatial awareness. A new qualification should be designed in such a way that it is fair and equitable with regard to gender. One way to do this is to include spatial content (e.g. 'building houses', see Bokhove & Redhead, 2025). A second challenge concerns visually impaired students and 3D geometry in mathematics. As we do think that these topics are an essential component of mathematical proficiency, we recommend not

to remove or reduce these topics, but maintain content in that area. As Southampton Education School we are currently developing open source resources for supporting 3D geometry content for visually impaired students in the MultiModalMaths project.

References

Bokhove, C., & Redhead, E. S. (2026). Building digital cube houses to improve mental rotation skills. *International journal of mathematical education in science and technology*, 57(3), 393-412. <https://doi.org/10.1080/0020739X.2024.2441889>

<https://doi.org/10.5258/SOTON/PP0183>