



Young Persons Consultative Panel

Summary of recent developments in
maths education

Like all areas of education, maths education is constantly changing; even within the space of just a few years, the transformation can be dramatic – you can probably recall examples of this from your own education experience!

It is helpful for the members of the Young Persons Consultative Panel (YPCP) to have some awareness of these changes; however, detailed knowledge of any of these matters is not an expectation.

The information in this document provides a brief overview of recent changes to maths education in England. We have focused on:

- Key Stage 4 (Years 10-11)
- Key Stage 5 (Years 12-13)
- The transition to undergraduate study



These are the areas most relevant to the YPCP activity and are likely to be where you will be able to contribute your ideas most effectively. Throughout the document, there are some links to other sources of information to explore further. Again, this is entirely optional and not a requirement of applying for a role as a member of the YPCP.

Key Stage 4 (Years 10-11)

Most Key Stage 4 (KS4) students at state schools in England take GCSE Mathematics at the end of Year 11. GCSEs were first introduced in 1987 to provide a 'leaving qualification' for students who decided not to go on to further study after the age of 16. The content and grading structure of GCSEs has changed several times since 1987.

Reform in 2017

Most recently, GCSE Mathematics, alongside all other GCSE subjects, was part of a reform process. The new GCSE Mathematics was taught from 2015, with the first examination in 2017. It has two tiers, Foundation and Higher, with the possible grades available on each tier being 1 – 5 and 4 – 9, respectively. If you aren't familiar with the new numerical grading system, or indeed, if you aren't familiar with the old letter grading system, the diagram will help.



New grading structure	Previous grading structure
9	A*
8	
7	A
6	B
5	C
4	D
3	
2	E
1	F
U	G
	U



School closures and assessment

During the period of school closure due to COVID-19, GCSE Mathematics was assessed differently. Formal written examinations took place in the summer of 2019; schools and colleges provided centre-assessed grades for their students in 2020 and teacher-assessed grades in 2021. In recent years, the assessment of GCSEs has returned to the more standard arrangements we had before COVID-19 arrangements

Grade 4 is sometimes referred to as a 'standard pass' and is commonly a minimum entry requirement for some post-16 courses, such as A levels. Some university degree courses require a grade 5 or grade 6 at GCSE if maths is not studied post-16.

Students who do not achieve a grade 4 pass in GCSE Mathematics are required to continue studying maths, either working towards resitting their GCSE Mathematics qualification or towards a pass in a 'stepping stone' or equivalent qualification, such as Functional Skills, alongside a post-16 course of study.

Grade 5 is sometimes referred to as a 'strong pass' and is used as a measure in school league tables, which track the performance of school cohorts each year.

More information about how grades were awarded in [2020](#) and [2021](#) is available on the government website. A report on the work to develop a new



We know that many students found the period of school closure difficult. There is a range of published evidence about a growing gap between the most and least advantaged students regarding the degree of learning loss during this time and with a potential ongoing impact. Factors referenced include the student's access to technology, their access to a quiet place to study, and the amount of parental support available.

MEI is keen to support schools to help ensure that all students, whatever their background, can achieve their mathematical potential and progress to their choice of future study and employment.



You can [find and compare school league tables](#) on the government website.

GCSE Mathematics is split into six sections:

1. Number
2. Algebra
3. Ratio, proportion and rates of change
4. Geometry and measures
5. Probability
6. Statistics

These have slightly different weightings at Foundation and Higher tier.

The GCSE Mathematics assessment is via three papers; a calculator is allowed for two of the three papers.



Key Stage 5 (Years 12 -13)

Much of MEI's work at Key Stage 5 (KS5) focuses on:

- AS and A level Mathematics
- AS and A level Further Mathematics
- Core Maths

These are all classified as 'level 3' qualifications; they are taken at any time after completion of GCSEs or equivalent qualifications.

AS levels

The number of students taking AS qualifications has fallen dramatically in recent years due to a combination of factors:

- **AS levels are now standalone qualifications**

It used to be the case that the three modules that formed the AS level counted for 50% of the A level qualification, so students taking three modules in Year 12 would be awarded an AS qualification, then carry on with a further three modules to form the A level qualification. Now, the AS and A level qualifications are 'linear', which means there are no modules, just exams at the end of the course. They are also 'decoupled', which means that AS and A level qualifications are separate and AS attainment does not contribute to A level attainment.

- **There have been changes to post-16 funding.**

Previously, schools and colleges tended to offer four AS courses in Year 12 and three A level courses in Year 13; now, the standard model tends to be three A level courses across the two years, probably with something additional such as an EPQ or Core Maths.

These factors mean that schools and colleges are less likely to offer AS Mathematics to be taken in Year 12 and are more likely to just offer a full two-year A level Mathematics course.

AS and A level Further Mathematics

MEI believes that it is important for students who intend to progress to a degree in maths or a closely related subject to have the opportunity to study AS or Further A level Mathematics. This qualification is taken in addition to A level Mathematics. It provides students with additional depth and breadth of experience in maths, which is extremely helpful in making the transition to study a highly mathematical subject at university. Indeed, several universities list Further Mathematics as a requirement of entry to some of their courses.

Where schools and colleges are unable to offer AS or A level Further Mathematics due to low numbers or a lack of teachers available to teach the qualification, the Advanced Mathematics Support Programme (AMSP), which is managed by MEI, provides a programme of A level Further Mathematics tuition so that all students across England have the opportunity to study this qualification.



Core Maths

Core Maths is a relatively new qualification. It is classed as a 'level 3' qualification, meaning that it is studied by students who have attained a grade 4 or above in GCSE Mathematics; however, it is not designed for those studying AS/A level Mathematics or Further Mathematics.

In Core Maths, students learn some new topics, but it mainly involves maths already used within the GCSE course. Where it differs is its focus on developing the skills needed to apply maths to the kinds of real-life problems encountered in study, work, and life. Core Maths can be studied over one or two years. It's equal in size to an AS level and is graded A-E. It has the same number of UCAS tariff points as an AS level.


The intention behind the Core Maths qualification is to ensure that students do not have a two-year gap in their study of maths between GCSE and university study, employment, or other routes post-18.


Several universities have already expressed their support for Core Maths by making reduced offers for those students who have taken the qualification. You can find out about these changes on our [alternative admissions page on our website](#).

MEI would like all students with a grade 4 or above at GCSE who are not studying AS/A level Mathematics to take Core Maths alongside their level 3 studies.

Other post-16 qualifications

MEI also has a dedicated team that works on wider post-16 initiatives, supporting the provision of GCSE resit, functional skills, and adult numeracy. This team works to provide support and resources for teachers, as well as developing enrichment opportunities for those studying maths below level 3 post-16, such as the FE Maths Challenge. MEI also works on curriculum developments post-16. Throughout 2019, MEI worked in consultation with key stakeholders to develop a new curriculum in maths for post-16 GCSE students with a greater emphasis on applying maths in realistic contexts. This project included a small-scale study to assess the suitability of the curriculum as a basis for an alternative to the existing GCSE Mathematics.

 The AMSP provides [more information about the Core Maths](#).

A report on the work to develop a new curriculum for post-16 GCSE Mathematics is available on [MEI's website](#). 

We also considering the new T-level qualifications as they become more established, looking at how the mathematical elements build on GCSE Mathematics and how T-levels support progression to future study within STEM (Science, Technology, Engineering and Mathematics) disciplines. elements build on GCSE Mathematics and how T-levels support progression to future study within STEM (Science, Technology, Engineering and mathematics) disciplines.



Transition to undergraduate study

MEI provides support through the Advanced Mathematics Support Programme (AMSP) for students progressing to STEM degrees and other degrees with a quantitative element.

In addition to the Further Mathematics tuition mentioned above, there is also support for students applying for a degree that requires a mathematics entrance test that is additional to A level requirements. You can learn more about these tests on the AMSP website.

 The AMSP provides [more information about mathematics university admissions tests](#).

We encourage students to take a Core Maths qualification, which supports the transition to degrees in a wide range of subjects, including

psychology, biology and geography, all of which have a quantitative element and benefit from deeper maths skills than those developed at GCSE. To increase and support the provision of this qualification, we offer a range of professional development courses for teachers so that they feel well-informed about this relatively new qualification and acquire the tools to teach it effectively.

In the future, we want to learn more about Higher and Degree level apprenticeships, the nature of the maths involved, and the extent to which GCSE Mathematics, Core Maths and A level Mathematics provide a suitable foundation for progressing to these courses.



Thank you

Thanks for your interest in this work. If joining the YPCP is of interest to you, we very much look forward to receiving your application.

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