

Mathematics and Further Mathematics

AS and A-level

Summer 2021 exam changes and support

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Following JCQ's guidance on putting together a range of evidence for your students and deciding grades, here are some things to consider.

Think about what's been taught

The first stage in considering grading students this summer is to think about what content has been taught and to what depth, and then compare this with a 'normal' year. In mathematics, it's not unusual for students of differing attainment to cover the specification content to different depth, so the judgement of what's different this year isn't always straightforward. It's important that content essential for progression has been taught, though this will differ depending on the students in the group and their intended next steps.

It's also important that all students have covered all assessment objectives (AOs) and can be assessed across them. Grading based solely on technical fluency (AO1) wouldn't be valid for mathematics. Students should have demonstrated their ability to answer questions which address AO2 and AO3 as well. However, it may be that many students haven't been taught application of **all** AOs against **all** content and allowance should be made for that.

Finally, in considering what has been taught, you'll also want to think about what had been covered when particular assessments were carried out. This will help in judging how to use those results, and in thinking about any essential learning gaps you wish to address and then assess.

Choose the range of evidence that you will look at

The evidence you collect should, ideally, cover a broad sample of taught content including all content that you consider essential for progression and addressing all AOs. The range of evidence should be the same for all students in a class or cohort as far as possible. So, mock exams and past papers are likely to be key but may need to be adapted depending on circumstances. This is developed in the next section.

Other material that draws on examination questions is likely to be useful. This could include the following

- Assessment materials from AQA (<https://www.aqa.org.uk/2021-exam-changes/about-our-assessment-and-support-materials>) – for A-level Maths, we've grouped questions from

past papers by content area and then arranged them by difficulty to produce short, focussed assessments that may be useful to fill gaps or confirm judgements.

- For the Further Maths applications, past papers, practice papers and sample materials can be used in a similar way.
- Your own collections of past questions – using Exampro (<https://www.exampro.co.uk/mathematics/>), or otherwise, you may create bespoke assessments for your students using items from past papers. Exampro allows you to select questions by demand, assessment objective and topic and create editable collections of questions for any purpose.
- Internal tests and homework/classwork that may be relevant – such materials may provide good evidence of attainment against grade descriptors but, as with all evidence, you will need to be confident that it represents a student's own work.
- Similarly, classwork undertaken on the Large Data Set can provide additional evidence about a student's ability in statistics.

Using mocks and past papers

Using past exam papers as full or part mocks is a key source as they can give objective evidence using proven materials that cover all aspects of the specification and come with established grade boundaries. However, simply setting mocks and taking the set grade boundaries will not be the fairest approach for all students.

If students cover all content in the depth they usually would and take a mock exam at a time close to the grade submission date, then the established grade boundaries would be a very good guide. Having said that, the boundaries are only correct for the cohort who sat the actual exam so they aren't sufficient on their own to set a grade for this year's cohort.

So mock exams can only be one source of evidence and other material may indicate a different judgement. It's not the intention to replace formal examinations with school-based ones and teacher judgement should be informed but not decided by mock-examinations where they have taken place.

For many schools and colleges, mock exams may have taken place earlier in the school year before the course of study was completed. In those circumstances, the grade suggested by the established boundary may well be unrealistic though it may provide a good guide to the minimum overall grade that might be awarded. It would then be a matter of looking at whether other, more recent evidence indicated that a higher grade was most appropriate. Again, existing grade boundaries are a guide but shouldn't be taken as definitive.

If you decide to adapt past papers by removing questions assessing content that students haven't been taught, then this will, of course, mean that the grade boundary becomes less useful even as a guide to grading. To give you an idea of the effect of removing questions, you can refer to the mock exam analysers for that paper (available for the 2018 and 2019 examinations). These give the mean mark of each paper and of each question. If you have removed questions from a paper,

you can see how the mean score would be affected and could use this to get a sense of how the boundaries might change

Balancing the evidence

Once you have all the evidence to make a grading decision, you will need to consider it holistically to arrive at a final grade. Ideally, the range of evidence will cover all the main content areas, including the applications, and should address all assessment objectives. It won't be expected to cover all content or every element of the objectives. It should, however, address the content and skills that you judge are essential for progression at the appropriate level.

The grading exemplification documents should help you to understand the differences between students. The best students will demonstrate a consistent understanding across the curriculum which they have been taught that is not seen in those who do less well. They will demonstrate understanding of all the assessment objectives and make links across topics. Students working at the lower grades, however, will not have that range or depth, despite the fact that there may be individual topics which they excel at. For more information and examples please consult the grading exemplification documents.

Relevant resources

- Assessment materials - [AQA | 2021 exam changes | About our assessment and support materials](#)
- Past papers on All About Maths <https://allaboutmaths.aqa.org.uk/1368>
- Mock exam analysers on All About Maths <https://allaboutmaths.aqa.org.uk/1590>
- Exampro - <https://www.exampro.co.uk/mathematics/>

Available on Centre Services (or e-AQA if you're not yet registered for Centre Services)

- Grading exemplification
- Practice papers and Sample Materials