

12 August 2016

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Dear Sharon,

Condition H4.1 – GCSE Mathematics 1MA0 – 2016

Further to our conversation earlier today, this letter sets out Ofqual's requirements for the purposes of Condition H4.1.

1. Under Condition H4.1 where –

- (a) an awarding organisation makes available a qualification,
- (b) at least one other awarding organisation makes available a qualification which is viewed by the generality of Users of qualifications as being a direct equivalent to that qualification,
- (c) each awarding organisation sets the specified levels of attainment for the equivalent qualification that they respectively make available,
- (d) Ofqual considers that a specified level of attainment set by an awarding organisation prevents the equivalent qualifications from indicating a consistent level of attainment (including, where Ofqual considers appropriate, over time), and
- (e) Ofqual specifies to an awarding organisation, in writing, the requirements in relation to a specified level of attainment for the qualification which it makes available (either for a particular assessment cycle or during a particular time period),

any awarding organisation to which Ofqual has specified such requirements must ensure that, before the qualification is awarded for that assessment cycle or during that time period, the specified level of attainment for the qualification complies with those requirements.

2. This letter refers to the Pearson qualification 'Pearson Edexcel Level 1/Level 2 GCSE in Mathematics A (1MA0)'. That qualification together with the following

qualifications made available by AQA and OCR are considered to be equivalent qualifications for the purposes of Condition H4.1(b) –

- AQA Level 1/Level 2 GCSE in Mathematics A
- AQA Level 1/Level 2 GCSE in Mathematics B
- OCR Level 1/Level 2 GCSE in Mathematics A
- OCR Level 1/Level 2 GCSE in Mathematics B

3. Specified levels of attainment have been set for those other qualifications. For the reasons given below, Ofqual considers that the specified level of attainment set by Pearson for grade C on paper 1H will prevent the equivalent qualifications indicating a consistent level of attainment, both with each other and in relation to past awards.

4. We therefore require you to move the grade boundary for grade C on paper 1H from 32 to 33.

Specified Level of Attainment

5. You have set the following grade boundaries at grade C for the affected qualification:

Paper	Grade C
1F	72
1H	32
2F	70
2H	37
Foundation tier overall	142
Higher tier overall	69

Background

6. On 23 June 2016 we confirmed our expectation that all exam boards would maintain grade standards for GCSE qualifications in summer 2016 using predictions based on prior attainment at Key Stage 2.

7. On 24 June 2016, we published the Regulatory Document entitled Summer 2016 Data Exchange Procedures. We subsequently amended that document, but those amendments did not affect GCSE qualifications.

8. On 21 July 2016, during a teleconference with members of the Standards and Technical Issues Group you disclosed a potential issue in relation to specified levels of attainment for GCSE Mathematics. That is, you indicated that grade boundaries for that qualification might need to be set at higher marks than expected, due to an increase in the mean marks, particularly on the higher tier papers. This suggested to you that students had found these papers more accessible than those in previous years.
9. During a subsequent teleconference on 25 July 2016, you reported that you had conducted further analysis which confirmed that several of the papers had indeed proved to be more accessible than in recent assessment cycles. You were therefore not concerned about the reliability of the KS2-based predictions and you intended to conduct the award as usual.
10. On 4 August 2016, we asked you to provide further details of the increases in mean marks and the corresponding adjustments to grade boundaries which you intended to make. You subsequently provided this information.
11. On 8 August 2016, having reviewed the information you provided, we were not satisfied and we asked you to provide further rationale for the proposed adjustments to grade boundaries.
12. One of the aspects in respect of which we required further explanation was why the grade boundary for grade C on the 1MA0 award had not increased more in line with the increase in mean mark.
13. We also asked you, on 8 August 2016, to provide further evidence, in the form of the 'tick charts' for the 1MA0 award.
14. On 10 August 2016 you provided a detailed report (dated 9 August 2016) outlining the evidence which, you argued, supported the grade boundaries you had set following your awarding meetings, including for grade C for the 1MA0 award. In that report, you asserted that the grade boundaries you had set would lead to fewer students securing a grade C at 'common centres' (schools and colleges entering students in both the summer 2015 and summer 2016 assessment cycles). For this reason, you argued the grade boundaries should remain unchanged as to increase the boundary would further distort the year on year award at these common centres. You also disclosed the tick charts.
15. We wrote to you on 11 August 2016 setting out our view that the grade boundaries you had set did not give sufficient weight to the evidence of predictions based on prior attainment at Key Stage 2. Furthermore, the proposed grade boundaries were not strongly supported by the judgemental evidence from the tick charts, hence the rationale for a movement away from prediction was weak. We set out our conclusions (at that time) as to four changes we thought you should make to your grade boundaries, which included:

- Paper 1H – move the C boundary up one mark from 32 to 33
16. We notified you that if you did not make the changes we had suggested, a recommendation would be made that a letter specifying requirements (within the meaning of Condition H4.1) be issued.
 17. On the same date, you did not confirm that you would change the specified levels of attainment.
 18. We agreed to discuss the issue further with you and a telephone meeting took place between 8am and 8.45am on Friday 12 August 2016. We explained that we now required only one change (rather than the four changes we had previously recommended) to the C grade boundary and listened to your explanation of your analysis as to why your grade C boundary was appropriate on the basis of the statistical and judgemental evidence you had considered.
 19. You told us that you had given significant weight to the statistical evidence from 'large stable common centres', which for the purposes of your analysis you defined as centres entering at least 20 Year 11 students in each of 2015 and 2016, and where the entry numbers in 2016 are within plus or minus 20% of the 2015 entry numbers. On the basis of this evidence, the grade boundaries you had currently set would result in a year-on-year decrease in grade Cs awarded of 0.5 percentage points. If you moved the grade boundary so the overall award would be closer to prediction, the award for these common centres would deviate even further year-on-year. You regarded this evidence as more compelling than the evidence derived from predictions based on Key Stage 2 attainment. You also told us that your focus had been to secure an award that was within tolerance.
 20. You also questioned our proposal to specify that the grade C boundary for paper 1H should be increased, rather than specifying that you should ensure the award was closer to the award which would be made by OCR and AQA.
 21. We said we would consider your arguments. We told you that if we decided to issue an H4 letter then we would do so as a matter of urgency and without further notice. We also told you that it would be necessary for you to respond to any such letter within a very short timescale.

Analysis

22. We have carefully considered all of the evidence and argument you have provided. We have changed our view about three of the changes we identified in our email dated 11 August 2016. However, we remain of the view that it is necessary to change the grade C boundary for GCSE Mathematics 1MA0 paper 1H.

23. The summer 2016 Data Exchange Procedures documents make clear that awarding organisations should report aggregated outcomes for GCSE Mathematics, including both linear and previously modular specifications, against the aggregated prediction, and that it is those aggregated outcomes that we will focus on in terms of monitoring whether the GCSE Mathematics qualifications offered by different awarding organisations indicate a consistent level of attainment.
24. We have reviewed aggregated outcomes relative to prediction for AQA, OCR and Pearson.
25. At grade C, the specified levels of attainment set by OCR and AQA will result in awards by those organisations which are +0.6 percentage points relative to the prediction. The specified level of attainment currently set by Pearson will result in an award which is +0.9 relative to prediction.
26. Pearson has 327,000 matched entries for GCSE Mathematics, far larger than either of the other two awarding organisations. The predictions for Pearson are therefore likely to be more reliable due to the volume of entry. A variance of +0.3 relative to prediction between Pearson and the other awarding organisations will, Ofqual believes, result in an award by Pearson which prevents its GCSE Mathematics qualification from indicating a consistent level of attainment, at grade C, with the equivalent qualifications made available by AQA and OCR.
27. Furthermore, Pearson's equivalent award in 2015 was at -0.1% relative to prediction. In this context, the grade boundaries you have currently set will, we believe, result in students taking Pearson Mathematics 1MA0 in the summer 2016 assessment cycle being unfairly advantaged compared to students who took equivalent qualifications last year.
28. We have reviewed the tick chart evidence for AQA, OCR and Pearson. In our view the judgemental (tick chart) evidence for the C grade boundary on Pearson's paper 1H suggests that the majority of work seen at a mark of 32 was not thought worthy of a grade C. This judgemental evidence would also support grade boundaries that would produce outcomes that were closer to predictions. Indeed, in some cases, the proposed grade boundary for grade C appears to be hard to defend on the basis of the judgemental evidence: for example, on paper 1H the current grade C boundary mark of 32 has just three ticks in support but 20 crosses. This strongly indicates that the assessors did not think that work awarded 32 marks was worthy of a grade C.
29. You argued that it was inappropriate to rely on the tick chart in isolation and told us that you had considered a variety of evidence which supports the grade C boundary which you had set. We asked you to send this evidence to us and you disclosed two documents: the Chair's Report on Borderline Learner Performance and the Chair's Review, for GCSE Mathematics 1MA0. We have reviewed those reports and take the view that there is nothing in those reports to indicate why the

evidence relied on was thought to be more compelling than predictions based on Key Stage 2 performance. The reports disclose no significant further evidence over and above that which you have already told us about, and which, in our view, does not carry significant weight.

30. The judgmental evidence for AQA and OCR gives us greater assurance that the work seen at the boundary mark for equivalent qualifications was worthy of a grade C. Given the reliability of Pearson's predictions, we do not believe that the current grade boundaries indicate a consistent level of attainment with other awarding organisations, and we have not seen any compelling evidence to support outcomes that are +0.9 percentage points from the prediction.
31. We believe that unless the grade boundary for grade C is changed in accordance with our requirements, students taking Pearson GCSE Mathematics 1MA0 will be unfairly advantaged as compared to students taking the equivalent qualifications made available by OCR and AQA.
32. Our concern following the Maintenance of Standards meeting on 9 August 2016 was that the grades awarded to students for the equivalent qualifications would not represent a consistent level of attainment between awarding organisations. Ofqual's view is that the predictions based on prior attainment at Key Stage 2 provide the most effective means of aligning specified levels of attainment between equivalent qualifications offered by different awarding organisations, in this case GCSE Mathematics.
33. We recognise that there are other sources of evidence available (some of which are set out in your report of 9 August 2016) but we have been clear (for example in our letter of 23 June 2016) that we consider that greatest weight should be given to predictions as the strongest source of statistical evidence.
34. We note Pearson's reliance on evidence from common centres (schools and colleges entering students in both the summer 2015 and summer 2016 assessment cycles). Although this can be valuable evidence where there are questions over the reliability of the predictions, no such concerns have been expressed this summer with regard to the reliability of the Key Stage 2-based predictions and so we have no reason to consider common centres to be a more reliable source of evidence.
35. We have carefully considered your argument that significant weight should be given to statistical evidence arising from 'large stable common centres'. In the first instance, we do not agree that greater weight should be given to this evidence than to predictions; as set out above, it has been Ofqual's consistent position that greatest weight should be given to predictions based on Key Stage 2 attainment. We note the potential impact of changing grade boundaries on outcomes for common centres, but do not believe this is sufficient reason for Pearson's grade C boundary to be maintained at +0.9% from prediction, whilst the equivalent qualifications, with less of the cohort, are at +0.6%.

36. Moreover, we do not agree with your assertion that a centre entering at least 20 Year 11 students in each of 2015 and 2016, and where the entry numbers in 2016 are within plus or minus 20% of the 2015 entry numbers, represents either a large or a stable centre in the context of GCSE Mathematics.
37. The research evidence¹ confirms that predictions based on Key Stage 2 prior attainment are a more reliable predictor of GCSE attainment than predictions based on common centre outcomes.
38. For the avoidance of doubt, we recognise that, as you note in your email of 11 August and repeated during our conversation this morning, the grade boundaries which Pearson intended to set would have been within reporting tolerances, as set out in the Data Exchange document.
39. However, in accordance with our statutory objectives, and as set out in our letter of 24 June 2016, our priority is to ensure that specified levels of attainment for equivalent qualifications do not prevent those qualifications from indicating a consistent level of attainment. That grade boundaries will result in an award which is within tolerance of predictions based on performance at Key Stage 2 does not prevent those grade boundaries from resulting in an award which will not indicate a consistent level of attainment between equivalent qualifications. This is particularly the case where, as here, the qualification taken by the greatest proportion of the cohort is significantly closer to the margins of tolerance than the equivalent qualifications and where the deviation from prediction is not supported by the other evidence.
40. You also suggest that at the meeting on 9 August 2016 Ofqual approved this award. We do not agree with this assertion. Ofqual does not approve awards.
41. In any event, we note that on 9 August 2016 we had not received your report of the same date, which we received by email on 10 August 2016, which the analysis above takes into account.
42. We have considered whether, as you suggested, we should specify only that Pearson should seek to ensure the award for GCSE Mathematics was closer to the award which will be made by AQA and OCR, and allow Pearson to consider how that outcome should be achieved.
43. We do not believe that would be an appropriate approach in this instance. We have carefully considered the various ways in which Pearson might ensure the grade C boundary will result in an award which indicates a consistent level of attainment with equivalent qualifications. We have concluded that to change the grade boundary for grade C on paper 2, rather than paper 1, would be

¹ For example <http://www.cambridgeassessment.org.uk/Images/181034-exploring-the-value-of-gcse-prediction-matrices-based-upon-attainment-at-key-stage-2.pdf>

inconsistent with the judgemental evidence and would create a notable gap between the percentage of the cohort respectively obtaining sufficient marks for a grade C on the two papers.

44. We have therefore decided to require Pearson to increase the C grade boundary for paper 1H and to make no other changes to grade boundaries. This change is consistent with the judgemental evidence, will bring closer together the percentage of the cohort respectively obtaining sufficient marks for a grade C on the two papers and will bring the award into equivalence with that being made by AQA and OCR.

Regulatory Decision


45. In light of the analysis set out above, Ofqual considers that the specified level of attainment set by Pearson for Grade C in respect of the 1MA0 award (GCSE Mathematics) will prevent this qualification and equivalent qualifications made available by other awarding organisations from indicating a consistent level of attainment for the summer 2016 assessment cycle.
46. Ofqual therefore specifies that Pearson must make the following adjustments to the specified level of attainment for the 1MA0 award (GCSE Mathematics):
 - Paper 1H – move the grade C boundary up one mark from 32 to 33; and
 - Move the grade C boundary for the qualification from 69 to 70.
47. Pearson must make no adjustment to grade boundaries for the 1MA0 (GCSE Mathematics) award other than as specified above.
48. In accordance with Condition H4.1, Pearson must ensure before the qualification is awarded for the summer 2016 assessment cycle, that the specified levels of attainment set for the qualification comply with the requirements Ofqual has set out.

Next steps

49. Under Condition H6.1(e) and (f), Pearson is required to take all reasonable steps to meet any published date for the issue of results for the 1MA0 award and to ensure that the issue of its results is timely. The published date for the issue of results is 25 August 2016.
50. As outlined above, under Condition H4.1, Pearson must ensure that any award of the qualification accords with the requirements we have set out in this letter.

51. The combined effect of Conditions H4.1 and H6.1 is that Pearson must take all reasonable steps to publish its results on 25 August 2016 and must ensure that those results adhere to our requirements.
52. Accordingly, we ask that Pearson provide formal confirmation, in writing, that it will publish results for its 1MA0 award on 25 August 2016 and that those results will be on the basis that the grade C boundary mark for paper 1H is set at 33 and the grade C boundary for the qualification is set at 70.
53. We expect to receive that confirmation by **2pm on 12 August 2016**. Please provide the confirmation to cath.jadhav@ofqual.gov.uk.
54. Please be aware that failure to provide that confirmation may be taken by Ofqual as evidence that Pearson is likely to fail to comply with Condition H4.1 and/or Condition H6.1. In that event Ofqual will consider whether to take enforcement action directing Pearson to take steps to bring itself into compliance with the conditions of its recognition.

Yours sincerely,

A handwritten signature in black ink that reads "S Collier". The signature is written in a cursive style. Below the name, there is a long, horizontal, slightly curved line that serves as a flourish or underline.