

Setting the grade standards of new GCSEs in England – part 2

Covering:

- the overall approach to be taken to awarding GCSEs graded 9 to 1 in subjects first awarded from summer 2018
- the approach to awarding grades 8 and 9 in relation to GCSEs in English language, English literature and mathematics.



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1. About this consultation

- 1.1 We are seeking views on our proposals for setting grade standards for new GCSEs. This consultation follows on from our earlier consultation on *Setting the grade standards of new GCSEs in England*.¹
- 1.2 In September 2014 we announced our decisions² about the awarding of new GCSEs in English language, English literature and mathematics which will be first awarded in summer 2017.
- 1.3 We are now consulting on the approach to be taken in all other subjects.³ We are also consulting on a change to our previous decisions for English language, English literature and mathematics, about how grades 8 and 9 are set.
- 1.4 Our proposals are designed to protect students taking the new qualifications, particularly in the first year when teachers will be less familiar with the new content and how it is assessed. We want to minimise unexpected or unfair outcomes for students in the transition to the new GCSEs.
- 1.5 Further information about the reform of GCSEs can be found on our website.⁴

¹ See our consultation document:

<http://webarchive.nationalarchives.gov.uk/20141110161323/http://comment.ofqual.gov.uk/setting-the-grade-standards-of-new-gcse-april-2014/>

² See our board paper and summary documents:

<http://webarchive.nationalarchives.gov.uk/20141110161323/http://comment.ofqual.gov.uk/setting-the-grade-standards-of-new-gcse-april-2014/>

³ For details of when all new GCSEs will be first awarded see:

www.gov.uk/government/publications/get-the-facts-gcse-and-a-level-reform

⁴ www.gov.uk/government/publications/get-the-facts-gcse-and-a-level-reform.

Consultation summary

- 1.7 We propose to adopt largely the same approach to standard setting for new GCSEs in all other subjects as we have already announced for new GCSEs in English language, English literature and mathematics.
- 1.8 As set out above, the only difference from our previously announced approach relates to the award of grades 8 and 9. We are proposing to adopt a modified approach to the award of grades 8 and 9 across all subjects, including English language, English literature and mathematics.
- 1.9 We set out our proposed approach below:

The first award of grades 1 to 7

1.10 For the **first award only** of all new GCSEs, we are proposing that:

- Where the size and nature of the candidature in a subject allows, awarding will be based primarily on statistical predictions. Examiner judgement will remain as part of the process, but because of the reforms to each subject, alongside the move to a new grading scale, it will be less reliable than in other years. As a result, we are proposing a greater reliance on statistical predictions than in subsequent years.
- Broadly the same proportion of students will achieve a grade 4 and above as currently achieve a grade C and above in the subject.
- Broadly the same proportion of students will achieve a grade 7 and above as currently achieve a grade A and above in the subject.
- Broadly the same proportion of students will achieve a grade 1 and above as currently achieve a grade G and above.
- Grades 2, 3, 5 and 6 will be awarded arithmetically so that the grade boundaries are equally spaced in terms of marks from neighbouring grades. Grade 5 will be positioned in the top third of the marks for a current grade C and the bottom third of the marks for a current grade B.
- Where statistical predictions are less reliable, such as where there are low numbers of students taking the qualification, a modified approach to awarding may be needed. In these instances, the awarding process would be based on a wider range of information (including, for example, a greater reliance on examiners' judgements).

The first award of grades 8 and 9

1.11 We previously announced that the first award of grades 8 and 9 in new GCSEs in English language, English literature and mathematics would be implemented as follows:

- For each qualification, the top 20 per cent of those who achieve a grade 7 or above will get a grade 9 (the ‘20 per cent approach’).
- Grade 8 will be awarded arithmetically such that its grade boundary is equally spaced in terms of marks from the grade 7 and 9 boundaries.

1.12 We are now proposing that the first award of grades 8 and 9 for all new GCSEs (including GCSEs in English language, English literature and mathematics) should be implemented as follows:

- Across all subjects (as opposed to within each individual subject) close to 20 per cent of those awarded a grade 7 or above will be awarded a grade 9 (the ‘tailored approach’).
- Under the tailored approach, the proportion of grade 9s awarded in each subject will vary depending on the overall proportion of grades 7 and above awarded within the subject.
- A formula will be used to achieve these outcomes. Based on data from previous exam series the formula we propose to use is:

Percentage of those achieving at least grade 7 who should be awarded grade 9 = 7% + 0.5(percentage of candidates awarded grade 7 or above).⁵*

- Under the tailored approach, grade 8 will still be awarded arithmetically so that the grade boundary is equally spaced in terms of marks from the grade 7 and 9 boundaries.

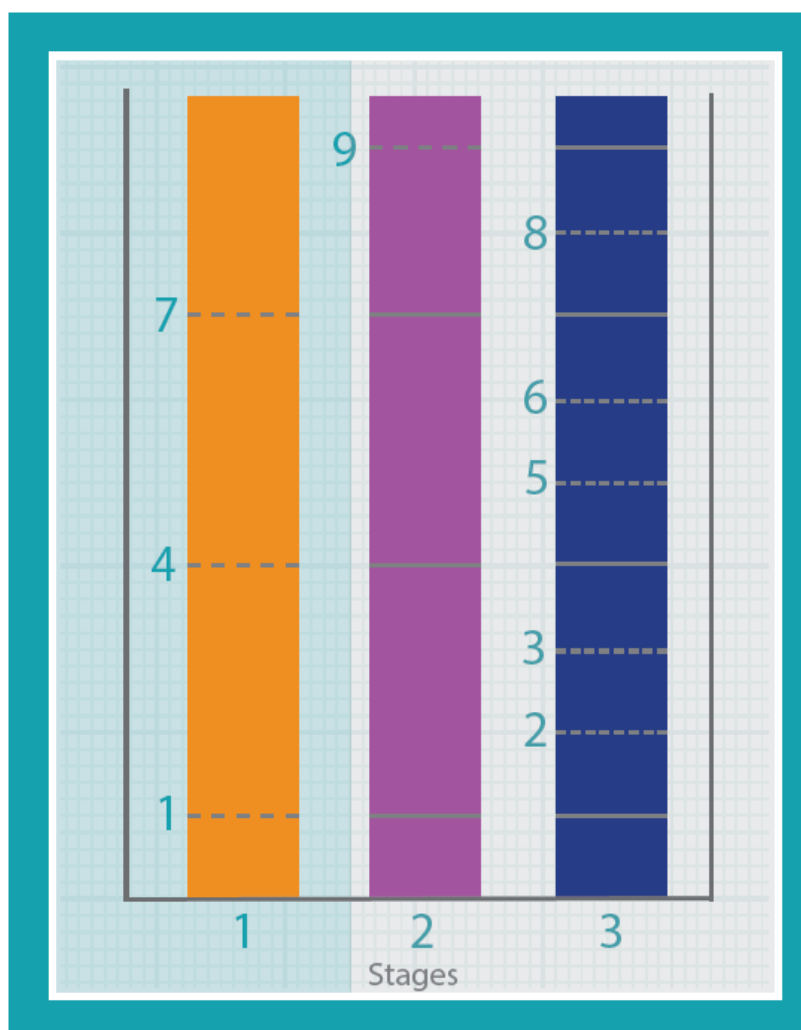
⁵ Further detail on the approach to awarding grade 9 is set out in the body of this consultation document. For further information on the development of the formula see: <http://www.cambridgeassessment.org.uk/Images/298710-a-possible-formula-to-determine-the-percentage-of-candidates-who-should-receive-the-new-gcse-grade-9-in-each-subject.pdf>

Setting grade boundaries in new GCSEs

1.13 We set out at Figure 1 below a diagram illustrating the approach to setting grade boundaries for new GCSEs.

- **Stage 1** – Using statistical information and examiner judgement the grade boundaries at grades 1, 4 and 7 must be set first.
- **Stage 2** – The grade 9 boundary will then be determined. The tailored approach formula will be used in the first award.
- **Stage 3** – Once the grade boundaries at grades 1, 4, 7 and 9 have been determined, the arithmetic grade boundaries for grades 2, 3, 5, 6 and 8 can be set.⁶

Figure 1: Setting grade boundaries in new GCSEs



⁶ The arithmetic grade boundaries for grades 2, 3, 5 and 6 could be set at any time after stage 1 has been completed. The grade 8 boundary can only be set once stage 1 and stage 2 have been completed.

Year 2 onwards

- 1.14 The approaches set out above relate only to the first year of award for new GCSEs – the grade 9 formula would not be used after the first year, and for other grades we will not refer back to standards in pre-reform GCSEs.
- 1.15 Instead, we propose to carry forward the grade standard established in the first award in subsequent years. This will be done through largely the same approach as is in place for pre-reform GCSEs, which is based on a mixture of statistics and examiner judgement.⁷
- 1.16 However, we will also look to improve on the current approach where possible, for example through using the outcomes from the National Reference Tests.

⁷ Further information on the approach taken to awarding pre-reform GCSEs is set out in our previous consultation:
<http://webarchive.nationalarchives.gov.uk/20141110161323/http://comment.ofqual.gov.uk/setting-the-grade-standards-of-new-gcse-april-2014/>

2. The approach to setting grade standards in new GCSEs

What do we mean by the standard of a qualification?

- 2.1 The standard of a qualification has three dimensions: the standard of the content, the standard of the assessment, and the standard of student performance required for the award of any particular grade (the grade standard). We explained these three dimensions further in our earlier consultation on GCSE grade standards.⁸
- 2.2 The main focus of this consultation is setting grade standards: how the minimum mark for the award of each grade (the grade boundary mark) should be determined.

Setting grade standards

Current approach to setting grade standards

- 2.3 We set out the approach to standard setting in pre-reform GCSEs in our previous consultation⁹ – an approach based on a combination of statistical information and examiner judgement – and summarise it below.
- 2.4 For each assessment, a small group of senior examiners (awarders) in each exam board decides the minimum mark that will be needed for key grades near the top, bottom and middle of the grade range. These are the key grade boundaries. Once these key grade boundaries are set, others are set arithmetically so that each grade boundary is equally spaced in terms of marks from neighbouring grades (see Figure 1 above).
- 2.5 Expert and research evidence¹⁰ shows it is difficult for awarders to make grade boundary judgements accurately and consistently simply by looking at students' work. Statistical information is crucial to the awarding process, and has been used for many years.
- 2.6 The exam boards aim to make sure the grade standards are in line with previous years and across exam boards, so that it is not easier or harder to

⁸ See pages 9 and 10 of our previous consultation:
<http://webarchive.nationalarchives.gov.uk/20141110161323/http://comment.ofqual.gov.uk/setting-the-grade-standards-of-new-gcses-april-2014/>

⁹ See pages 11 to 12 and Appendix A to our previous consultation:
<http://webarchive.nationalarchives.gov.uk/20141110161323/http://comment.ofqual.gov.uk/setting-the-grade-standards-of-new-gcses-april-2014/>

¹⁰ See for example: Baird, J, Alternative conceptions of comparability in Newton, P.E., Baird, J., Goldstein, H., Patrick, H. and Tymms, P (Eds.), (2007) Techniques for monitoring the comparability of examination standards. London, Qualifications and Curriculum Authority.

obtain a particular grade in one year or with one exam board. Statistical information is essential to secure that comparability.

Approach to setting grade standards in new GCSEs

2.7 We have already announced that almost all new GCSEs will be awarded on a 9 to 1 grade scale.¹¹ Combined science will be a double award GCSE, which will be awarded on a 17 point grade scale.¹² The grade scale for combined science will be 1-1, 1-2, 2-2, 2-3, 3-3, 3-4, 4-4, 4-5, 5-5, 5-6, 6-6, 6-7, 7-7, 7-8, 8-8, 8-9, 9-9.

Year 1

2.8 In our earlier consultation, we considered two alternatives to the current approach – a criterion-referenced approach and a norm-referenced approach – before deciding that an improved version of the current approach. This approach is based on statistical predictions and examiner judgement and should be adopted for the first award of English language, English literature and mathematics.

2.9 We think the same arguments against criterion- and norm-referenced approaches apply to the first award of other new GCSEs in the same way as they did for English language, English literature and mathematics. We therefore propose that for all remaining new GCSEs, exam boards should use an approach based on statistical predictions and examiner judgement to setting the grade standard in the first year.

2.10 We previously set out that the decisions taken around awarding English language, English literature and mathematics would provide the structural framework for the approach to be taken for other subject,¹³ and our proposal here is in line with that approach.

2.11 As we set out in our earlier consultation, we want to protect the interests of students taking the new qualifications, particularly in the first year when teachers will be less familiar with the new content and how it is assessed. We want to minimise unexpected or unfair outcomes for students in the transition to the new GCSEs.

¹¹ <http://webarchive.nationalarchives.gov.uk/20141110161323/http://comment.ofqual.gov.uk/gcse-reform-june-2013/>

¹² www.gov.uk/government/consultations/gcse-reform-regulations-for-science

¹³ See page 4 of our board paper:

<http://webarchive.nationalarchives.gov.uk/20141110161323/http://comment.ofqual.gov.uk/setting-the-grade-standards-of-new-gcse-april-2014/>

- 2.12 We therefore propose that in the first award of new GCSEs in a subject, awarding will be based primarily on statistical predictions.¹⁴ Examiner judgement will remain as part of the process, but because of the reforms to each subject, alongside the move to a new grading scale, it will be less reliable than in other years. The statistical approach will provide the best protection for the first year group.
- 2.13 We recognise however that the size and nature of the candidature varies across different GCSE subjects. Where there are few entries, the statistical predictions will be less reliable. In those circumstances, we want to allow examiner judgements of scripts to play a more significant role, while recognising the difficulty the awarders will have in making dependable comparisons between old and new qualification standards. The proposed approach is flexible enough that the balance of, and exact statistical approach used, can be tailored to the candidature of the subject in question.

Year 2 onwards

- 2.14 We propose that we maintain the qualification standard established in the first award in subsequent years.¹⁵ This will be done through largely the same approach as is in place for pre-reform GCSEs i.e. an approach based on a mixture of statistics and examiner judgement. However, we will also look to improve on the current approach where this would be possible, for example through using the outcomes from the National Reference Tests (NRT).
- 2.15 The purpose of the NRT are to provide evidence of how students' attainments are changing over time in English language and mathematics. Over several years they should show if there is a change in how 16 year olds across England are performing. That additional information can be used to support the awarding of the new GCSE grades.
- 2.16 The NRT were trialled in 2016. The first full test will be held in early 2017, so it will be 2018 at the earliest before the outcomes from the NRT could influence GCSE awards. The NRT are new and the extent to which they may be relied upon in future awards and across subjects is yet to be determined.
- 2.17 We will appraise the approach taken to awarding annually. Unless we find that refinements to the approach would be beneficial based on additional information from previous awards, in each subject we are proposing that the exam boards should employ the same awarding arrangements in second and subsequent years. Small changes may be made, but any improvements

¹⁴ The statistical predictions will normally be based only on those students who are 16 years old.

¹⁵ In new GCSEs in English language and mathematics, the second award will take place in November 2017. The entry profile is likely to be atypical, so examiner judgement will play a larger role than in summer 2017.

introduced would be consistent with our objective to maintain standards over time.

Proposal: We are proposing that the first award of new GCSEs will be based primarily on statistical predictions, in order to protect the interests of students. Examiner judgement will play a secondary role as it will be, on the whole, less reliable.

Where the size and nature of the candidature means that statistical predictions are less reliable, a modified approach based on a wider range of information (including, for example, a greater reliance on examiner judgements) may be needed for the first award.

Question 1: To what extent do you agree or disagree with our proposed approach to the first award of new GCSEs?

Proposal: We are proposing that we carry forward the grade standard established in the first award in subsequent years. This will be done through largely the same approach as is in place for pre-reform GCSEs i.e. an approach based on a mixture of statistics and examiner judgement.

Question 2: To what extent do you agree or disagree with our proposed approach to the award of new GCSEs in the second and subsequent years?

Approach to setting the standard in the first year of awarding new GCSEs

Proposed reference points between current and new grades – awarding grades 1 to 7

2.18 The approach to awarding set out below relates to the first award of each subject only. Grade standards would then be carried forward from the first year to subsequent years.

2.19 In relation to new GCSEs in English language, English literature and mathematics we have decided that:

- Where the cohort has the same level of prior attainment, broadly the same proportion of students will achieve a grade 4 and above as currently achieve a grade C and above – i.e. these grades will be statistically aligned.

- Where the cohort has the same level of prior attainment, broadly the same proportion of students will achieve a grade 7 and above as currently achieve a grade A and above.
- Where the cohort has the same level of prior attainment, broadly the same proportion of students will achieve a grade 1 and above as currently achieve a grade G and above.
- Grade boundaries that are not set using statistical rules (i.e. those for grades 2, 3, 5 and 6) will be set arithmetically (as they are in pre-reform specifications) based on the grades set for 1, 4, 7 and 9. Grade 5 will be positioned in the top third of the marks for a current grade C and the bottom third of the marks for a current grade B.

2.20 The approach proposed for new GCSEs in English language, English literature and mathematics attracted support from the majority of respondents to our earlier consultation.¹⁶ The statistical alignment of key grades provides a clear link between the awarding of pre-reform and new GCSEs, and a good reference point for qualification users. We have considered what proportion of students are likely to get all grades – we will be publishing this separately.

2.21 We cannot see a reason to adopt a different approach for the first award of other new GCSEs, and it would be appropriate to adopt a consistent approach across all new GCSEs.¹⁷ We are therefore proposing that the same approach is adopted for the first award of grades 1 to 7 across all new GCSEs.

2.22 As set out above, this process of alignment of grades between pre-reform and new GCSEs would only be undertaken in the first award. In future awards there will be no reference back to outcomes achieved in pre-reform GCSEs, and instead, the grade standards would be carried forward from those set in the first year, with grades awarded using an approach similar to that for pre-reform GCSEs as set out above (i.e. an approach based on statistical predictions and examiner judgement).

Question 3: To what extent do you agree or disagree that we should adopt the same approach to the first award of grades 1 to 7 in all new GCSEs as we have confirmed will be adopted for new GCSEs in English language, English literature and mathematics?

¹⁶See the analysis of consultation responses:

<http://webarchive.nationalarchives.gov.uk/20141110161323/http://comment.ofqual.gov.uk/setting-the-grade-standards-of-new-gcse-april-2014/>

¹⁷ For double award GCSEs, the key grades will be 1-1, 4-4 and 7-7, and these will be statistically aligned with pre-reform GCSEs. Grades 1-2, 2-2, 2-3, 3-3, 3-4, 4-5, 5-5, 5-6, 6-6 and 6-7 will be awarded arithmetically.

Awarding grades 8 and 9

First award of grades 8 and 9 in new GCSEs from summer 2018 onwards¹⁸

- 2.23 One of our aims of the reforms to the grading structure was that there should be greater discrimination at the top of the performance range than in pre-reform GCSEs.¹⁹ Where previously there were just two grades (A and A*), in new GCSEs there will be three. Another aim was that the standard of performance needed for a student to achieve a grade 9 should be exceptional.
- 2.24 We previously announced that the grade 9 boundary for new GCSEs in English language, English literature and mathematics would be set in each qualification so that 20 per cent of those students awarded at least a grade 7 are awarded a grade 9 (the ‘20 per cent approach’). The boundary for grade 8 would then be set arithmetically such that the grade boundary is equidistant in terms of marks from the grade 7 and 9 boundaries.
- 2.25 Our earlier consultation had proposed a ‘50 per cent approach’ – in each subject half as many grade 9 awards would be made as there are A* awards now. This 50 per cent approach, is superficially attractive, but it would tie the awarding of grade 9 closely to current A* awarding. Although this was seen as a possible solution it does have a number of potential flaws, including current perceptions about inconsistencies in awarding the current A* grade across subjects being carried forward to grades 8 and 9 in the new system.
- 2.26 In coming to the decision to adopt the 20 per cent approach we had, in addition to the 50 per cent approach, considered and rejected a number of different approaches to awarding grades 8 and 9. These are set out at Appendix A. We remain of the view that none of the alternative approaches we considered for English language, English literature and mathematics would be viable approaches to the award of grades 8 and 9 in other subjects.
- 2.27 In coming to the figure of 20 per cent, we looked at data for pre-reform GCSE awards. In pre-reform GCSEs, across all subjects around 30 per cent of those students who achieve at least a grade A are awarded an A*. In line with our expectation that grade 9 should be awarded for exceptional performance, we

¹⁸ Our proposals here relate to the award of all new GCSEs from summer 2018 onwards. Most new GCSEs will be first awarded in summer 2018 and 2019. For details of when all new GCSEs will be first awarded see: www.gov.uk/government/publications/get-the-facts-gcse-and-a-level-reform

¹⁹ See page 7 of our summary document: <http://webarchive.nationalarchives.gov.uk/20141110161323/http://comment.ofqual.gov.uk/gcse-reform-june-2013/>

decided that a smaller percentage of students should be awarded a grade 9 than would have been awarded an A*. We were, and remain of the view that 20 per cent is an appropriate percentage overall.

- 2.28 At present about 8 per cent of the GCSE results of 16 year olds are A* grades. Using the 20 per cent approach, we would expect the proportion of grade 9s for the same population in the future to be about 5 per cent. Reducing the percentage awarded the top GCSE grade from about 8 per cent to about 5 per cent is consistent with the aims stated above.
- 2.29 Our original proposal to use the 20 per cent approach for the award of grade 9 was for English language, English literature and mathematics. These are subjects taken by a very large proportion of the cohort. However, using the same approach in other subjects does create problems. It compresses the range of top grades awarded across all subjects, regardless of different entry profiles and the proportion of top grades awarded in pre-reform qualifications. The 20 per cent approach reduces the proportion of students awarded top grades in subjects where proportionally more students will achieve a grade 7 or above, and increases the proportion of students awarded top grades in subjects where proportionally fewer students achieve a grade 7 or above – this was not our aim. Implementing the 20 per cent approach in all subjects could affect entry patterns in an unintended way.
- 2.30 The greatest impact of the 20 per cent approach would be on students studying biology, chemistry, physics, classical Greek, Latin and some languages that are less commonly taught in schools. For chemistry the proportion of pupils achieving the top grade would drop from 19.6 per cent to 9.3 per cent. In Latin the proportion of pupils awarded grade 9 would be substantially lower than the current A* percentage (14.3 per cent compared to 44.2 per cent).²⁰ For both of these subjects it would become significantly more difficult to achieve the top grade.
- 2.31 In order not to make it much harder to achieve the top grade in some subjects than in others compared to the present position, we do not consider that we should award grade 9 to a flat percentage of those achieving at least grade 7 across all subjects, and we have sought an approach that does reflect the different grade proportions currently seen in different subjects.
- 2.32 We are therefore proposing to adopt for the remaining new GCSE subjects a modification to the 20 per cent approach. We are describing our proposed approach as the ‘tailored approach’. The tailored approach uses a formula that would result in, across all subjects, close to 20 per cent of those awarded a grade 7 or above being awarded a grade 9. The proportion of grade 9s awarded

²⁰ See Table 1 below.

in each subject will vary depending on the overall proportion of grades 7 and above awarded within the subject.

- 2.33 Based on data from previous exam series the formula we propose to use to achieve this outcome is:

Percentage of those achieving at least grade 7 who should be awarded grade 9 = 7% + 0.5(percentage of candidates awarded grade 7 or above).²¹*

- 2.34 The grade 9 standard established in this way can then be carried forward into future years.
- 2.35 We commissioned a report from Datalab²² to look in more detail at the effect of the three most workable approaches to awarding grade 9: the 50 per cent approach; the 20 per cent approach; and the tailored approach. The respective outcomes based on pre-reform GCSEs are shown in Table 1 below, and Figures 2 and 3 below.

²¹ For further information on the development of the formula see:

<http://www.cambridgeassessment.org.uk/Images/298710-a-possible-formula-to-determine-the-percentage-of-candidates-who-should-receive-the-new-gcse-grade-9-in-each-subject.pdf>

²² <https://www.gov.uk/government/publications/options-for-setting-the-grade-9-boundary-in-gcses>

Table 1: Respective modelled outcomes for the 50 per cent approach, the 20 per cent approach and the tailored approach, for a selection of GCSE subjects²³

Subject	Entry (000)	Percentage of Grade A*	Percentage of Grades A and A*	The 50 per cent approach (percentage of Grade 9)	The 20 per cent approach (percentage of Grade 9)	The tailored approach (percentage of Grade 9)
All GCSE subjects	4897	8.4	24.0	4.2	4.8	5.1
English language	491	6.5	22.8	3.3	4.5	4.2
English literature	484	7.0	23.9	3.5	4.7	4.5
Mathematics	585	8.8	21.5	4.4	4.2	3.7
Geography	213	10.6	28.2	5.3	5.6	5.9
History	245	11.4	30.3	5.7	6.0	6.6
Biology	155	19.0	46.2	9.5	9.2	13.9
Chemistry	152	19.6	46.8	9.8	9.3	14.2
Physics	151	20.5	47.1	10.3	9.4	14.4
Science	360	1.7	9.8	0.8	1.9	1.2
Additional science	273	2.6	12.0	1.3	2.4	1.6

²³ Data extracted from Datalab report: Options for setting the grade 9 boundary March 2016: <https://www.gov.uk/government/publications/options-for-setting-the-grade-9-boundary-in-gcse>

Subject	Entry (000)	Percentage of Grade A*	Percentage of Grades A and A*	The 50 per cent approach (percentage of Grade 9)	The 20 per cent approach (percentage of Grade 9)	The tailored approach (percentage of Grade 9)
French	164	11.8	25.9	5.9	5.2	5.2
German	60	9.8	25.1	4.9	5.0	4.9
Spanish	91	14.1	30.6	7.1	6.1	6.8
Classical Greek	1	62.4	83.7	31.2	16.7	40.9
Latin	9	44.2	71.5	22.1	14.3	30.5
Art and design	84	8.4	21.4	4.2	4.3	3.8
Business studies	71	3.6	18.8	1.8	3.7	3.0
Drama and theatre	71	5.4	22.9	2.7	4.6	4.2
Media/Film/TV studies	50	3.2	16.2	1.6	3.2	2.4
Music	42	9.5	31.7	4.7	6.3	7.2
Physical education	103	4.1	19.9	2.0	4.0	3.4
Religious studies	257	11.3	30.7	5.7	6.0	6.7
Statistics	46	5.2	22.4	2.6	4.4	4.0

Figure 2:

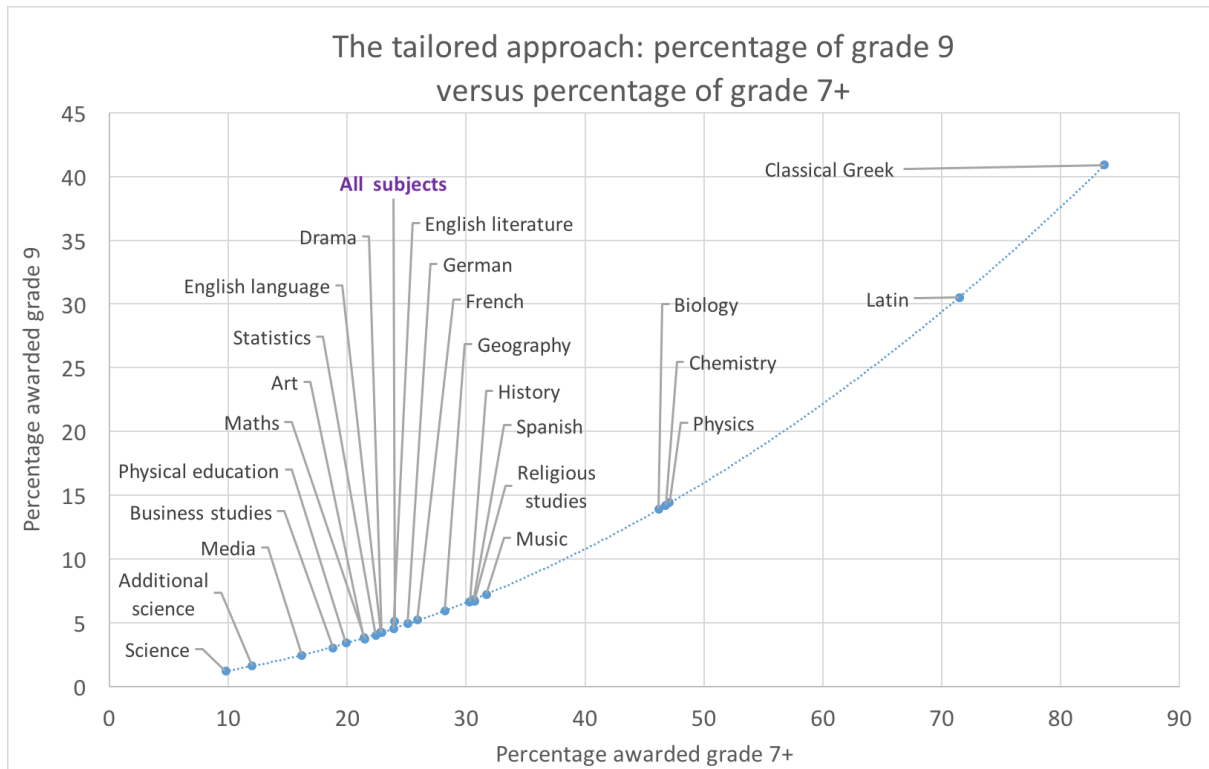
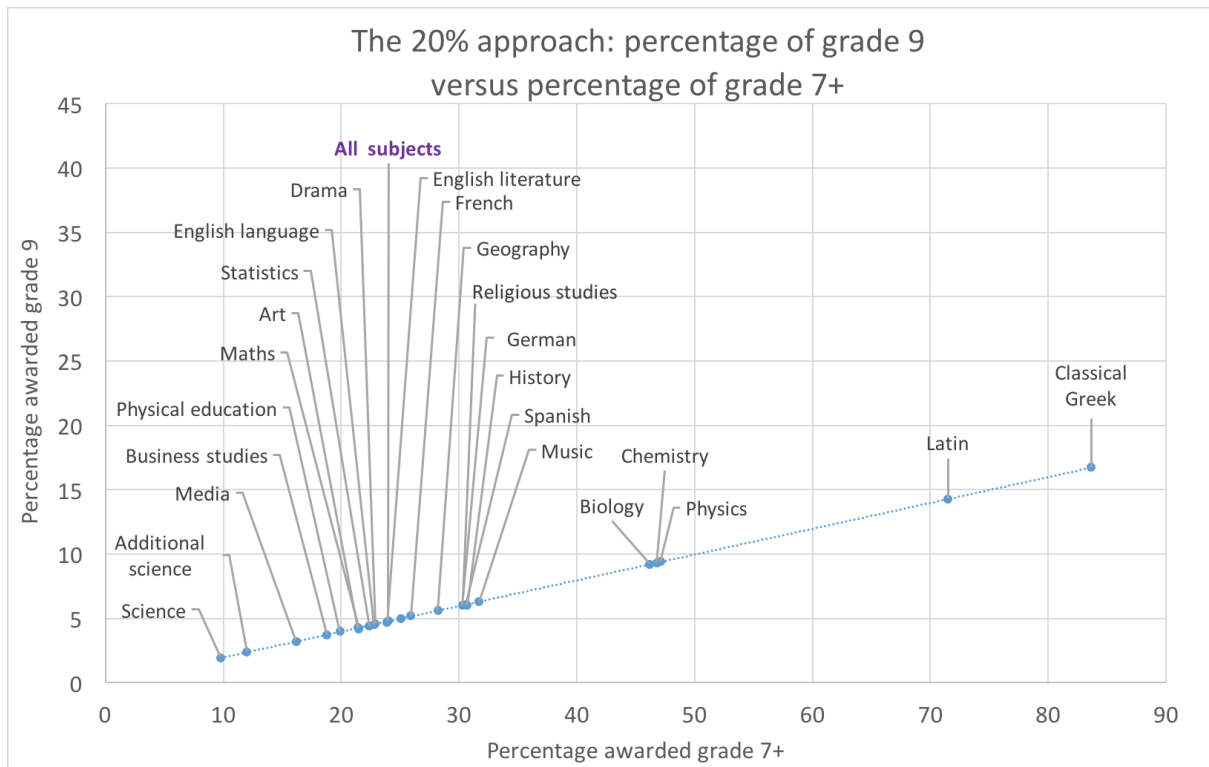


Figure 3:



- 2.36 Table 1 shows that across all subjects, the approach used to the award of grade 9 does not make much difference to the overall percentage of grade 9s awarded. However, the impact of the different approaches is evident at subject level.
- 2.37 Subjects such as history, geography and modern foreign languages would see similar proportions of grade 9s awarded under either the 20 per cent approach, or the tailored approach. Science and additional science would see the award of fewer grade 9s using the tailored approach than the 20 per cent approach (though these subjects will not continue in their current form in new GCSEs) but conversely, the separate sciences would be awarded more grade 9s under the tailored approach. Some subjects such as Latin would see a substantial increase in the proportion of grade 9s under the tailored approach as a function of the high proportion of students that achieve at least an A under the current system. Equally, some non-EBacc subjects would see fewer grade 9s under the tailored approach compared to the 20 per cent approach as a lower proportion of students achieve a grade A under the current system (for example, business studies).
- 2.38 We have set out at Appendix B how the formula for the tailored approach can be used to calculate the percentage of grade 9s in a subject.
- 2.39 The new grade 9 is intended to provide a greater degree of discrimination than the present A* at the top of the grade range. So if more grade 9s than A*s are awarded, we are not achieving our aim. For many subjects, for example geography, history, French, and German, applying different grade 9 approaches results in similar numbers of grade 9s being awarded. However, the 20 per cent approach results in more grade 9s than A*s in subjects with fewer higher attainers. Using the 70 subject categories in the Datalab report, applying the 20 per cent approach results in nine subjects awarding more grade 9s than presently they award A*s. Applying the tailored approach reduces that number to two – GCSE English²⁴ and GCSE Science, neither of which are continuing as new GCSEs.
- 2.40 The outcomes for the tailored approach fit with the aims for grade 9 in that:
- the percentage of students achieving grade 9 will almost always be substantially lower than the percentage who achieved grade A*,²⁵ meaning that grade 9 will reflect exceptional performance,

²⁴ Here we are referring to GCSE English, and not to GCSE English language or to GCSE English literature.

²⁵ See table 1 above.

- the standards established in the pre-reform GCSEs at the top of the grading scale are broadly reflected ensuring, as far as possible, fairness for students in the first award of a new subject, and
- as a result of the way the tailored approach works, it is much less likely than the 20 per cent approach to encourage subject choices to be influenced by the perceived ease of achieving a top grade.

2.41 We wanted to understand the impact of the ‘tailored approach’ in the context of the new school accountability arrangements. The report from Datalab²⁶ looked at how the different grade 9 awarding approaches might affect different types of schools. The report confirms that within major subject groupings:

[I]argely, the impact is not particularly significant with the ratio of grades allocated between state-funded and independent sectors varying very little.²⁷

2.42 The report goes on to point out that:

because independent and grammar schools more frequently enter students for subjects that are allocated greater numbers of grade 9s under the tailored rule (particularly the separate sciences) . . . [there are] some small, but noticeable, differences in the overall allocation of grade 9s.

2.43 The report sets out that

...the switch from A-G to 9-1 will widen the gaps between the schools with the most able intakes and the rest. There is very little difference in the extent to which this will happen by different grade 9 boundary rules.²⁸*

2.44 The decision to move from an A* to G grading scale to a 9 to 1 grading scale was the subject of previous consultation.²⁹ We are not consulting on the move to a 9 to 1 grading scale within this consultation.

2.45 We therefore propose to adopt the tailored approach for the first award of new GCSEs from summer 2018 because this both best achieves our aim that grade 9 should reflect exceptional performance and provides the fairest approach for

²⁶ <https://www.gov.uk/government/publications/options-for-setting-the-grade-9-boundary-in-gcse>

²⁷ <https://www.gov.uk/government/publications/options-for-setting-the-grade-9-boundary-in-gcse>,

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²⁸ <https://www.gov.uk/government/publications/options-for-setting-the-grade-9-boundary-in-gcse>,

page 13

²⁹ See our *GCSE reform consultation – June 2013* and related equality analysis:

<http://webarchive.nationalarchives.gov.uk/20141110161323/http://comment.ofqual.gov.uk/gcse-reform-june-2013/>

students in the first cohort. It also appears to have no negative implications for school accountability arrangements.

2.46 As set out above, the boundary for grade 8 would be set arithmetically based on the boundaries set for grades 7 and 9.³⁰

First award of grades 8 and 9 in new GCSEs in summer 2017 (English language, English literature and mathematics)

2.47 We previously decided for new GCSEs in English language, English literature and mathematics that we would use the 20 per cent approach. We are, however, now of the view that the same approach should be used across all new GCSEs, and that the tailored approach should also be adopted for English language, English literature and mathematics.

2.48 The figures set out in Table 1 above indicate that if the tailored approach were applied to English language, English literature and mathematics, it would result in slightly fewer grade 9s being awarded in each of those subjects than if the 20 per cent approach were adopted. The differences are very small – for example, in a year group of 200 in a school where GCSE results match the national average, the 20 per cent approach would give about nine grade 9s in each of the three subjects, while the tailored approach would give about eight grade 9s in each subject.

2.49 It is worth noting that where subjects are taken by almost the whole cohort (for example in English language, English literature and mathematics), the impact on accountability arrangements of taking a different approach to the award of grades 8 and 9 would be negligible.

2.50 There appears to be no clear rationale for us to adopt a different approach to the award of grades 8 and 9 in these subjects. Although they are important for a number of reasons, including progression, it does not follow that a different approach should be applied to English language, English literature and mathematics.

2.51 If awards had already been made for new GCSEs in English language, English literature or mathematics, and we then changed the approach, there would be inconsistency in grade 9 standards between years. However, as the first awards are over a year away, no inconsistencies would be created by modifying the approach to awarding grade 9 in these subjects now.

³⁰ In double award GCSEs, the tailored approach formula would be applied to grade 9-9, with grades 7-8, 8-8 and 8-9 being set arithmetically.

2.52 We propose to adopt the tailored approach in relation to English language, English literature and mathematics.

Question 4: To what extent do you agree or disagree that we should adopt the ‘tailored approach’ to awarding grade 9 in new GCSEs to be awarded from summer 2018?

Question 5: To what extent do you agree or disagree that we should also adopt the ‘tailored approach’ for those subjects to be awarded from summer 2017 – i.e. English language, English literature and mathematics?

Subsequent awards of grades 8 and 9 in new GCSEs

2.53 As we explained above, the formula approach to grade 9 awarding approach is proposed for the first award of each subject only. Grade standards would then be carried forward from year to year as they would for the other grades.

Question 6: To what extent do you agree or disagree that the award of grade 9 in the second and subsequent years should be based on the standard set in the first award?

3. Equality analysis

Ofqual's role, objectives and duties

- 3.1 We are subject to the public sector equality duty. We have set out in Appendix C how this duty interacts with our statutory objectives and other duties.

Equality analysis relating to proposals for setting the grade standards of new GCSEs

- 3.2 We recognise the importance of making sure the decisions we take in relation to regulated qualifications do not unfairly discriminate against or prejudice students because of their protected characteristics.³¹
- 3.3 We previously published our equality analysis that informed our decisions on the design, assessment and grading of new GCSEs.³²
- 3.4 We also published an equality analysis in our April 2014 consultation on setting the grade standards of new GCSEs in England.³³
- 3.5 We noted in our equality analysis for our previous consultation on setting the grade standards of new GCSEs in England that under our *General Conditions of Recognition*,³⁴ we require exam boards to design assessments in such a way as to minimise any disadvantage that may be suffered by students with protected characteristics. We also require that exam boards put in place arrangements which allow reasonable adjustments to be made for students with disabilities when taking assessments.³⁵ We will be asking exam boards to demonstrate how they have taken such equalities considerations into account in the assessment strategies which they will be required to put in place for the new GCSEs.
- 3.6 The purpose of these measures is to ensure that by the time grades are set for a particular assessment, steps have been taken to ensure that, as far as possible, all students have been given the opportunity in that assessment to demonstrate their knowledge, skills and understanding on a level playing field.

³¹ The protected characteristics under the Equality Act 2010 are: age, disability, gender reassignment, marriage and civil partnerships, pregnancy and maternity, race, religion or belief, and sex or sexual orientation. Under section 149 of the Equality Act 2010, we are not required to consider the impact of the reforms on those who are married or in a civil partnership.

³² See our equality analysis of GCSE reforms:

<http://webarchive.nationalarchives.gov.uk/20141110161323/http://comment.ofqual.gov.uk/gcse-reform-june-2013/>

³³ <http://webarchive.nationalarchives.gov.uk/20141110161323/http://comment.ofqual.gov.uk/setting-the-grade-standards-of-new-gcse-april-2014/>

³⁴ General Condition E4.2 – www.gov.uk/government/publications/general-conditions-of-recognition

³⁵ General Condition G6.2 – www.gov.uk/government/publications/general-conditions-of-recognition

- 3.7 Grade setting therefore focuses on the level of the knowledge, skills and understanding which has been demonstrated in those assessments, and does not take account of the particular characteristics of the individual students who have taken those assessments. The grade awarded to each individual student solely reflects the performance of that student in that assessment. To do otherwise would risk introducing different standards in the same qualification for students with protected characteristics and those without. This would not be desirable for students, employers or further and higher education institutions.
- 3.8 We did not in our previous consultation, and have not identified in respect of the proposals in this consultation, any potential impacts on students who share any of the protected characteristics.

Question 7: We have not identified any ways in which our proposals on setting the grade standards of new GCSEs would impact (positively or negatively) on persons who share a protected characteristic.³⁶ Are there any potential impacts we have not identified?

Question 8: Are there any additional steps we could take to mitigate any negative impact resulting from these proposals on persons who share a protected characteristic?

Question 9: Do you have any other comments on the impacts of the proposals on students who share a protected characteristic?

³⁶ 'Protected characteristic' is defined in the Equality Act 2010. Here, it means disability, racial group, age, religion or belief, pregnancy or maternity, sex, sexual orientation and gender reassignment.

How to respond to this consultation

The closing date for responses is **17 June 2016**.

Please respond to this consultation in one of three ways:

- complete the online response at <https://www.surveygizmo.com/s3/2726600/Setting-the-grade-standards-of-new-GCSEs-in-England-2017-2018>
- download the response form from <https://www.gov.uk/government/consultations/setting-the-grade-standards-of-new-gcses-in-england-2017-2018> and either:
 - email your response to consultations@ofqual.gov.uk – please include the consultation title (*Setting the grade standards of new GCSEs in England – part 2*) in the subject line of the email and make clear who you are and in what capacity you are responding
 - post your response to: *Setting the grade standards of new GCSEs in England – part 2*, Ofqual, Spring Place, Herald Avenue, Coventry, CV5 6UB, making clear who you are and in what capacity you are responding

Evaluating the responses

To evaluate responses properly, we need to know who is responding to the consultation and in what capacity. We will therefore only consider your response if you complete the information page.

Any personal data (such as your name, address and any other identifying information) will be processed in accordance with the Data Protection Act 1998 and our standard terms and conditions.

We will publish the evaluation of responses. Please note that we may publish all or part of your response unless you tell us (in your answer to the confidentiality question) that you want us to treat your response as confidential. If you tell us you wish your response to be treated as confidential, we will not include your details in any published list of respondents, although we may quote from your response anonymously.

Please respond by 17 June 2016.

Appendix A: Alternative approaches to awarding grades 8 and 9

In coming to the decision to adopt the 20 per cent approach for English language, English literature and mathematics, we considered and rejected a number of different approaches to awarding grades 8 and 9 as not being viable. We set these approaches out below:

- **Fixed percentage awarding** – this approach would use a pre-determined percentage (for example four per cent) of students that exam boards should award a grade 9 in every subject. This approach could lead to perverse incentives for students to be entered into subjects where there is less competition for the top grade.
- **Judgemental awarding** – this option would require the generation of one generic description of ‘grade 9 performance’ that would apply across all subjects. Exemplars in each subject would then be required for awarding meetings. Selecting that work in a way that produces consistency across subjects would be immensely challenging. Even once the exemplification was agreed, the awarders would find it very hard to decide grade boundary marks in which they had confidence. Within each subject the exam boards could use statistics to produce inter-board alignment in the first award. Even so, it is unclear how inter-subject outcomes would be managed. This approach is similar in a number of ways to criterion-referencing, and would most likely produce unpredictable outcomes, inconsistent grade standards between boards in a subject and inconsistencies between subjects.
- **Extrapolation** – this approach would rely on the key boundaries (grades 4 and 7) being set through statistical predictions, and grades 5 and 6 being set by dividing up the range of marks between grades 4 and 7 equally. The same grade width could then be applied above grade 7 to determine the grade 8 and 9 boundaries. Whilst a similar arithmetic approach would work well for the award of grades 2,3,5, 6, (and grade 8 if grade 9 was set through a different approach), in relation to grade 9 the approach would produce unpredictable outcomes and inconsistent grade standards between exam boards in a subject because the mark distribution will be different between exam boards.

Appendix B: Calculating the percentage of grade 9s using the formula for the tailored approach

The formula proposed in the tailored approach is:

*Percentage of those achieving at least grade 7 who should be awarded grade 9 = 7% + 0.5 * (percentage of candidates awarded grade 7 or above).*

The two examples below use this formula and data from Table 1 above to calculate the percentage of students who will be awarded a grade 9 in physics and in science.

Example 1: GCSE physics

In physics, using the data in Table 1, the results show 47.1% of students gaining grades A and A*. Physics is a subject with a much greater than average proportion of high grades: 47.1% at A/A* in 2014 (Table 1).

Using the formula above, the percentage of those achieving at least grade 7 who should be awarded grade 9 = 7% + 0.5 x 47.1 = 7% + 23.6% = 30.6%.

That figure is much greater than the figure that the 20 per cent approach would produce (9.4% - see Table 1).

To convert that into a percentage of all entries gaining a grade 9 we have to multiply that figure by the percentage who gained a grade 7:

$$30.6 * 47.1/100 = 14.4\%$$

So 14.4% of physics entries would be awarded a grade 9 using the tailored approach. That compares to 20.5% presently awarded a grade A*

Example 2: GCSE science

In science, using the data in Table 1, the results show 9.8% of students gaining grades A and A*. Science is a subject with a much lower than average proportion of high grades.

Using the formula above, the percentage of those achieving at least grade 7 who should be awarded grade 9 = 7% + 0.5 * 9.8 = 7% + 4.9% = 11.9%.

That figure is much smaller than the figure that the 20 per cent approach would produce (1.9%).

To convert that into a percentage of all entries gaining a grade 9 we have to multiply that figure by the percentage who gained a grade 7:

$$11.9 * 9.8/100=1.2\%$$

So 1.2% of science entries would be awarded a grade 9.

Using the 20 per cent approach would produce $20\% * 9.8 = 1.9\%$ grade 9s. That would be greater than the percentage presently awarded a grade A* (1.7%) and so would be contrary to our aims.

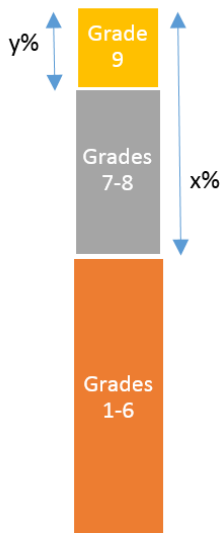
Alternative approach

There is an alternative way of using the same formula and the same data.

*Proportion of those achieving at least grade 7 who should be awarded grade 9 = $7\% + 0.5 * (\text{percentage of candidates awarded grade 7 or above})$*

Call the percentage of those achieving at least grade 7 = x

And call the percentage of those achieving grade 9 = y



Multiplying by 100 so that the outcome is a percentage, the formula becomes:

$100y/x=7+0.5x$ which can be rearranged to:

$$y=(7+0.5x)x/100 \text{ or}$$

$$y=0.07x+0.005x^2$$

Taking the examples above

For **physics** where $x=47.1$

$$\text{then } y=0.07*47.1+0.005*47.1^2$$

$$= 3.3+11.1$$

$$=14.4\%$$

For **science** where $x = 9.8$

$$y = 0.07*9.8+0.005*9.8^2$$

$$= 0.69+0.48$$

$$=1.2\%$$

Appendix C: Ofqual’s role, objectives and duties

Our statutory objectives include the qualifications standards objective, which is to secure that the qualifications we regulate:

- (a) give a reliable indication of knowledge, skills and understanding; and
- (b) indicate:
 - (i) a consistent level of attainment (including over time) between comparable regulated qualifications; and
 - (ii) a consistent level of attainment (but not over time) between qualifications we regulate and comparable qualifications (including those awarded outside of the UK) that we do not regulate.

We must therefore regulate so that qualifications properly differentiate between students who have demonstrated that they have the knowledge, skills and understanding required to attain the qualification and those who have not.

We also have a duty under the Apprenticeship, Skills, Children and Learning Act 2009 to have regard to the reasonable requirements of relevant students, including those with special educational needs and disabilities, of employers and of the higher education sector, and to aspects of government policy when so directed by the Secretary of State.

As a public body, we are subject to the public sector equality duty.³⁷ This duty requires us to have due regard to the need to:

- (a) eliminate discrimination, harassment, victimisation and any other conduct that is prohibited under the Equality Act 2010;
- (b) advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it;
- (c) foster good relations between persons who share a relevant protected characteristic and persons who do not share it.

The exam boards that design, deliver and award GCSE, A level and AS qualifications are required by the Equality Act, among other things, to make reasonable adjustments for disabled people taking their qualifications, except where we have specified that such adjustments should not be made.

³⁷ Equality Act 2010, s.149.

When we decide whether such adjustments should not be made, we must have regard to:

- (a) the need to minimise the extent to which disabled persons are disadvantaged in attaining the qualification because of their disabilities;
- (b) the need to secure that the qualification gives a reliable indication of the knowledge, skills and understanding of a person upon whom it is conferred;
- (c) the need to maintain public confidence in the qualification.

Legislation therefore sets out a framework within which we must operate. We are subject to a number of duties and we must aim to achieve a number of objectives. These different duties and objectives can, from time to time, conflict with each other. For example, if we regulate to secure that a qualification gives a reliable indication of a student's knowledge, skills and understanding, a student who has not been able to demonstrate the required knowledge, skills and/or understanding will not be awarded the qualification. A person may find it more difficult, or impossible, to demonstrate the required knowledge, skills and/or understanding because they have a protected characteristic. This could put them at a disadvantage relative to others who have been awarded the qualification. It is not always possible for us to regulate so that we can both secure that qualifications give a reliable indication of knowledge, skills and understanding and advance equality between people who share a protected characteristic and those who do not. We must review all the available evidence and actively consider all the available options before coming to a final, rational decision.

Qualifications cannot be used to mitigate inequalities or unfairness in the education system or in society more widely that might affect, for example, students' preparedness to take the qualification and the assessments within it. While a wide range of factors can have an impact on a student's ability to achieve a particular mark in an assessment, our influence is limited to the way the qualification is designed and assessed.

We require the exam boards to design qualifications to give a reliable indication of the knowledge, skills and understanding of those on whom they are conferred. We also require the exam boards to avoid, where possible, features of a qualification that could, without justification, make a qualification more difficult for a student to achieve because they have a particular protected characteristic. We require exam boards to monitor whether any features of their qualifications have this effect.

In setting the overall framework within which exam boards will design, assess and award the reformed GCSE, A level and AS qualifications, we want to understand the possible impacts of the proposals on persons who share a protected characteristic.

The protected characteristics under the Equality Act 2010 are:

- Age
- Disability
- Gender reassignment
- Marriage and civil partnerships
- Pregnancy and maternity
- Race
- Religion or belief
- Sex
- Sexual orientation.

It should be noted that with respect to the public sector equality duty under section 149 of the Equality Act, we are not required to have due regard to impacts on those who are married or in a civil partnership.

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