

GCSE statistics

Consultation on Conditions and guidance



February 2016

Ofqual/16/5832

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1. Introduction

1.1 As most readers will know, changes are being made to GCSEs, AS and A levels taken by students in England. New GCSEs in statistics will be taught in schools from September 2017.

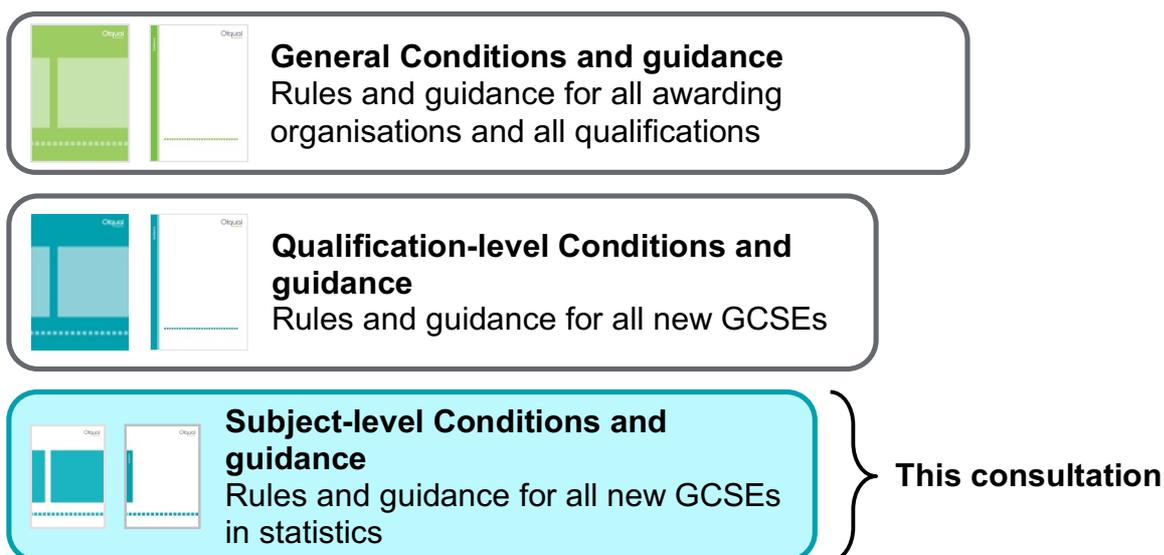
1.2 Following an earlier consultation,¹ the Department for Education (DfE) has published the subject content² for GCSE statistics.

1.3 Following our own consultation on assessment arrangements, we have confirmed³ that new GCSEs in statistics will be:

- assessed entirely by examination; and
- tiered.

1.4 We also confirmed the assessment objectives for GCSE statistics.

Scope of this consultation



1.5 This consultation builds on our – and DfE’s – earlier decisions. It seeks views on the subject-specific rules and guidance we should put in place for GCSE statistics.

¹ www.gov.uk/government/consultations/further-gcse-and-a-level-content-for-teaching-from-september-2017

² www.gov.uk/government/publications/gcse-statistics

³ www.gov.uk/government/consultations/developing-new-gcse-as-and-a-levels-for-first-teaching-in-2017

1.6 As explained in Appendix A, and illustrated in the figure above, these new rules and guidance will sit alongside our existing rules and guidance for

- all qualifications,⁴ and
- all new GCSE qualifications.⁵

1.7 This document sets out, and seeks views on:

- our proposed approach to regulating new GCSEs in statistics; and
- the subject-specific Conditions, requirements and guidance we propose to introduce to implement that approach.

⁴ www.gov.uk/guidance/awarding-organisations-understanding-our-regulatory-requirements#requirements-for-all-awarding-organisations-and-all-regulated-qualifications

⁵ www.gov.uk/government/collections/gcse-9-to-1-requirements-and-guidance

How to respond to this consultation

The closing date for responses is **6 March 2016**.

Please respond to this consultation in one of three ways:

- Complete the online response at <https://www.surveygizmo.com/s3/2577838/gcse-reform-regulations-for-statistics>
- Complete the consultation questions at the end of this document and email your response to consultations@ofqual.gov.uk. Please include the consultation title (GCSE Statistics Consultation 2016) in the subject line of the email and make clear who you are and in what capacity you are responding
- Post your response to: GCSE Statistics Consultation 2016, Ofqual, Spring Place, Coventry Business Park, 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 our 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 **6 March 2016**.

2. Regulating GCSE statistics

Compliance with subject content and assessment objectives

- 2.1 As we explained in paragraph 1.2, DfE has published the subject content for new GCSEs in statistics.⁶
- 2.2 One of the ways we ensure new GCSEs, AS and A levels are comparable across exam boards is by requiring them to be in line with the relevant subject content and our assessment objectives.
- 2.3 The approach we have taken in every other new GCSE, AS and A level qualification is to introduce subject-specific Conditions which:
- require exam boards to comply with the requirements of the subject content (and have regard to any guidance within the subject content); and
 - require exam boards to comply with our assessment objectives (and have regard to our guidance on those assessment objectives).
- 2.4 In all other subjects this Condition includes a provision which requires exam boards to interpret the subject content in line with any rules we set and to have regard to any guidance we publish. Although we do not always specify how the subject content should be interpreted, we think it is important for us to be able to do so when there is a good reason for that (for example, if a different interpretation could compromise qualification standards or comparability).
- 2.5 We see no reason to take a different approach for statistics. We are therefore proposing that we should introduce a Condition which requires exam boards to:
- comply with the requirements (and have regard to any guidance) set out in the subject content – this includes requirements and guidance in the proposed new appendices;
 - comply with any requirements (and have regard to any guidance) we publish on interpreting the subject content; and
 - comply with our assessment objectives (and have regard to our guidance on those assessment objectives).

⁶ www.gov.uk/government/publications/gcse-statistics

Question 1: To what extent do you agree or disagree that we should introduce a Condition which requires exam boards to comply with the relevant subject content and assessment objectives?

Tolerance for assessment objective weightings

- 2.6 To help ensure assessments are valid and comparable across different specifications, we have set fixed weightings for the assessment objectives in almost all new GCSEs. There are, however, two exceptions – mathematics and the science subjects. In both of those subject, we have allowed a limited amount of flexibility in the weightings.
- 2.7 Our view is that – much like mathematics and the sciences – the nature of statistics at GCSE creates particular challenges for assessment design that can make it difficult for exam boards to achieve the same exact weightings every year.
- 2.8 We want to avoid creating a situation where good quality tasks or questions cannot be used simply because they would cause a small departure from the required weightings. At the same time, we do not want to undermine the assessment objective weightings by allowing exam boards to consistently assign a higher (or lower) weighting to some of them.
- 2.9 So – in line with mathematics and the sciences – we propose to allow exam boards limited flexibility to depart from the assessment objective weightings, by:
- allowing assessments in any given year to vary each of the assessment objectives by up to ± 3 per cent; and
 - requiring assessments to (on average) meet the specified weightings over each separate 4 year period (years 1 to 4 of awarding, then years 5 to 8, years 9 to 12 and so on) – we have deliberately chosen not to require a 4-year rolling average because this would eliminate all flexibility at the end of year 3.

Question 2: To what extent do you agree or disagree with our proposed approach to tolerances for assessment objective weightings in GCSE statistics?

Guidance on assessment objectives

- 2.10 For all other new GCSE, AS and A level qualifications, we have published guidance which explains how exam boards should interpret our assessment objectives. This is designed to ensure exam boards have a common

understanding of – and take a consistent approach to targeting – the different assessment objectives.

2.11 We propose we should introduce similar guidance for GCSE statistics.

Question 3: To what extent do you agree or disagree that we should introduce guidance which clarifies how exam boards should interpret our assessment objectives?

Tiering

2.12 As set out in paragraph 1.3, we have already confirmed that new GCSEs in statistics will be tiered.

2.13 The way our rules for all new GCSEs⁷ work means that, unless we specify otherwise, GCSEs must use untiered assessment. To enable tiering in GCSE statistics, we therefore need to introduce a subject-specific Condition which permits it. This Condition will also require exam boards to follow our more detailed rules for tiering in GCSE statistics (which we discuss in more detail below).

Design of tiering

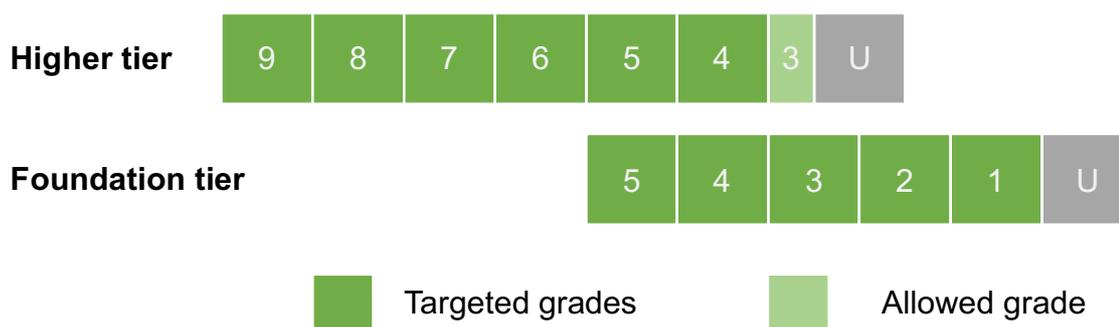
2.14 The only other subjects where we have chosen to use tiering in new GCSEs are mathematics, science (biology, chemistry, physics, combined science) and modern foreign languages (French, German, Spanish). In all of these subjects, we have required exam boards to design tiered assessments in the same way.

2.15 As illustrated in figure 1 below, this approach:

- uses two overlapping tiers – foundation tier and higher tier;
- targets foundation tier papers at grades 1 to 5; and
- targets higher tier papers at grades 4 to 9 (but also allows students who narrowly miss a grade 4 to be awarded a grade 3, rather than unclassified).

⁷ www.gov.uk/government/publications/gcse-9-to-1-qualification-level-conditions

Figure 1 – approach to tiering in new GCSEs



2.16 We see no reason to take a different approach in GCSE statistics, and are therefore proposing that exam boards should also design tiered assessments in statistics in this way.

Question 4: To what extent do you agree or disagree with our proposed approach to the design of tiered assessments in GCSE statistics?

Mixed tier entry

2.17 In all other new GCSEs which use tiering, we have set rules which prevent students taking a mixture of foundation tier and higher tier papers. Instead, students must either take only foundation tier papers, or only higher tier papers. We propose to take the same approach for new statistics GCSEs.

2.18 Our reasons for this are the same as in the other new GCSEs. First, we think it is unlikely that students who can take one higher tier paper will be unable to take the others. Second, and arguably more importantly, allowing mixed-tier entry would require a system similar to the Uniform Mark Scale (UMS)⁸ used for legacy GCSEs, AS and A levels.

2.19 As we have highlighted in previous consultations,⁹ UMS approaches mean the way students' marks are aggregated is more complex, and less transparent for students, parents and schools. They can also create technical difficulties – for example, how much a raw mark is 'worth' (in uniform marks) can vary based on where it falls in terms of the whole grade range.

⁸ Uniform mark scales are used to convert students' actual marks on an exam paper (referred to as their 'raw' marks) to points on a scale that is fixed (or 'uniform') over time. This approach allows students' marks across different exam papers to be added together (or 'aggregated') and compared, even though the difficulty of individual papers varies (for example, between foundation and higher tier, or over time).

⁹ <http://webarchive.nationalarchives.gov.uk/20141110161323/http://comment.ofqual.gov.uk/modern-foreign-and-ancient-languages/tiering-of-new-modern-foreign-language-gcses/mixed-tier-entries/>

2.20 Overall, we think that these concerns outweigh any possible benefits to students from allowing mixed-tier entry, and do not think there is a case for making an exception in GCSE statistics.

Question 5: To what extent do you agree or disagree that mixed-tier entry should be prohibited in GCSE statistics?

Assessing the full grade range

2.21 We want to make sure that assessments in all new GCSEs can measure students' performance effectively across the full grade range. In subjects with untiered assessments, our rules explicitly require assessments to allow students to access the full grade range. Our proposed subject-specific Condition outlined in paragraph 2.9 above (and set out in more detail in chapter 3 below) will lift this requirement for new GCSEs in statistics.

2.22 In line with the approach we have taken in other new GCSEs which use tiering, we are proposing to include a similar requirement in our tiering rules for GCSE statistics, which will require assessments within each tier to allow students to access the full grade range for that tier.

2.23 In addition – and again in line with our approach in other new GCSEs which use tiering – we are proposing to introduce requirements which make clear that exam boards must ensure their assessments:

- effectively differentiate between students with different abilities;
- effectively allow them to rank students according to their abilities;
- support the accurate and consistent setting of grades across the full grade range;
- require students to demonstrate a sufficient breadth of knowledge and understanding to achieve the lowest grade at each tier; and
- make it sufficiently challenging for students to achieve the highest grades at each tier.

Question 6: To what extent do you agree or disagree with our proposed approach to assessing the full grade range in GCSE statistics?

Comparability across tiers

2.24 Our proposed approach to tiering in GCSE statistics means that grades 4 and 5 will be available at both foundation and higher tier.

- 2.25 We want to make sure that all students awarded a grade 4 or 5 have demonstrated comparable knowledge, skills and understanding – regardless of whether they took foundation tier or higher tier papers.
- 2.26 To achieve this, we are proposing to take a similar approach to other new GCSEs with tiering, and introduce a broad, purposive obligation which requires exam boards to take all reasonable steps to ensure that grades 4 and 5 are comparable across tiers.
- 2.27 We are also proposing to introduce more detailed requirements which supplement this purposive obligation. These require exam boards to:
- have some questions which are common to both foundation and higher tier papers – these questions must be targeted at grades 4 and 5, support effective comparison between tiers, and be worth at least 20 per cent of total marks; and
 - target an appropriate proportion of marks at each tier at grades 4 and 5.
- 2.28 The main reason we think these additional rules are necessary is because statistics (like mathematics and, to some extent, science) is a subject where higher-performing students will typically complete more difficult tasks, rather than completing the same task better than a lower-performing student. As a result, we think it is not possible to secure effective comparability across tiers without having a minimum proportion of common questions, and sufficient marks targeted at grades 4 and 5.

Question 7: To what extent do you agree or disagree with our proposed approach to securing comparability across tiers in GCSE statistics?

3. Our proposed Conditions and guidance

3.1 As set out above, we are proposing to introduce subject-specific Conditions, requirements and guidance to implement the proposals in this consultation. We set out our proposed Conditions, requirements and guidance below.

Proposed Conditions and requirements for GCSE statistics

3.2 We are proposing to introduce the following Conditions and requirements which will apply to all new GCSE qualifications in statistics:

- a Condition covering compliance with subject content and assessment objectives;
- a Condition which enables tiered assessments, and requires exam boards to follow our tiering rules;
- our assessment objectives – including our proposed tolerances; and
- our tiering rules.

Condition GCSE(Statistics)1	Compliance with content requirements
GCSE(Statistics)1.1	<p>In respect of each GCSE Qualification in Statistics which it makes available, or proposes to make available, an awarding organisation must –</p> <ul style="list-style-type: none"> (a) comply with the requirements relating to that qualification set out in the document published by the Secretary of State entitled ‘Statistics GCSE subject content’¹⁰, document reference DFE-00041-2016 (b) have regard to any recommendations or guidelines relating to that qualification set out in that document, and (c) interpret that document in accordance with any requirements, and having regard to any guidance, which may be published by Ofqual and revised from time to time.
GCSE(Statistics)1.2	<p>In respect of each GCSE Qualification in Statistics which it makes available, or proposes to make available, an awarding organisation must comply with any</p>

¹⁰ www.gov.uk/government/publications/gcse-statistics

requirements, and have regard to any guidance, relating to the objectives to be met by any assessment for that qualification which may be published by Ofqual and revised from time to time.

**Condition
GCSE(Statistics)2**

Assessing the full range of abilities

GCSE(Statistics)2.1

In respect of each GCSE Qualification in Statistics which it makes available, or proposes to make available –
 (a) Condition GCSE1.1 does not apply, and
 (b) the awarding organisation must ensure that the qualification, and each assessment for it, complies with any requirements which may be published by Ofqual and revised from time to time.

Assessment objectives – GCSE Qualifications in Statistics

Condition GCSE(Statistics)1.2 allows us to specify requirements relating to the objectives to be met by any assessment for GCSE Qualifications in Statistics.

The assessment objectives set out below constitute requirements for the purposes of Condition GCSE(Statistics)1.2. Awarding organisations must comply with these requirements in relation to all GCSE Qualifications in Statistics they make available.

	Objective	Weighting
AO1	Demonstrate knowledge and understanding, using appropriate terminology and notation, of standard statistical techniques used to – <ul style="list-style-type: none"> ■ collect and represent data ■ calculate summary statistics and probabilities 	50%
AO2	Interpret statistical information and results in context and reason statistically to draw conclusions	25%
AO3	Assess the appropriateness of statistical methodologies and the conclusions drawn through the application of the statistical enquiry cycle	25%

In respect of each GCSE Qualification in Statistics which it makes available, or proposes to make available, an awarding organisation must design and set the assessments on the basis that –

- (a) in each set of assessments¹¹ the weightings in respect of each of the assessment objectives outlined above may vary by ± 3 per cent,
- (b) taking together those assessments the first four years of awarding (i.e. the first four assessment series) the weightings specified above are achieved for each of the foundation and higher tiers, and
- (c) taking together those assessments over each subsequent and discrete four-year period, the weightings specified above are achieved for each of the foundation and higher tiers.

For the purposes of paragraph (c) above, the reference to each subsequent and discrete four-year period means years 5-8 of awarding, years 9-12 of awarding, and so on. As each four-year period will be discrete there will not be any overlap between periods. Thus, an awarding organisation is not required to achieve the weightings specified above in years 2-5 or years 7-10 of awarding, for example

Tiering requirements – GCSE Qualifications in Statistics

Condition GCSE(Statistics)2.1(b) allows us to specify requirements relating to assessing the full range of abilities for GCSE Qualifications in Statistics.

We set out below our requirements for the purposes of Condition GCSE(Statistics)2.1(b). An awarding organisation must design, deliver and award each GCSE Qualification in Statistics that it makes available, or proposes to make available, in accordance with these requirements.

Use of the overlapping tiers model

1. GCSE Qualifications in Statistics must be tiered. An awarding organisation must design and set the assessments for a GCSE Qualification in Statistics that it makes available, or proposes to make available, using an overlapping tiers model.

¹¹ For the purposes of these requirements a 'set of assessments' means the assessments to be taken by a particular Learner for a GCSE Qualification in Statistics. For clarity, the assessments taken by Learners may vary, depending on any possible routes through the qualification.

2. Such a model must use two tiers – a foundation tier and a higher tier – and each assessment must be designed and set in such a way as to fall within one of those two tiers only.

Preclusion of mixed tier entry

3. An awarding organisation must ensure that each Learner is permitted to take assessments in either the foundation tier or the higher tier only.

Targeting of grades in each tier

4. The questions or tasks in foundation tier assessments must be targeted at the Level of Demand required for the award of grades 1 to 5.
5. The questions or tasks in higher tier assessments must be targeted at the Level of Demand required for the award of grades 4 to 9.

Awarding of grades in each tier

6. A Learner who takes foundation tier assessments must be awarded a grade within the range of 1 to 5, or be unclassified.
7. A Learner who takes higher tier assessments must be awarded a grade within the range of 4 to 9, or be unclassified. However, if the mark achieved by such a Learner is a small number of marks below the 4/3 grade boundary, that Learner may be awarded a grade 3.

Assessing the full range of abilities

8. An awarding organisation must ensure that the assessments within each tier allow each specified level of attainment available for that tier to be reached by a Learner who has attained the required level of knowledge, skills and understanding.
9. An awarding organisation must ensure that the assessments both within each tier, and taken together across both tiers –
 - (a) ensure sufficient differentiation¹² between Learners;

¹² For the purposes of these requirements, 'differentiation' means the provision of opportunities in an assessment for Learners to generate evidence demonstrating different levels of attainment according to their knowledge, skills and understanding.

- (b) ensure sufficient discrimination¹³ between Learners; and
 - (c) ensure the accurate and consistent setting of grades across the full range of attainments demonstrated by Learners.
10. In designing assessments, an awarding organisation must take all reasonable steps to ensure, at each tier, that –
- (a) Learners achieving the lowest targeted grade have demonstrated attainment with regard to a sufficient range of the subject requirements, in terms of the subject content and the assessment objectives; and
 - (b) Learners achieving the higher targeted grades have demonstrated attainment with regard to suitably stretching and challenging requirements, in terms of the subject content and the assessment objectives.

The overlap at grades 4 and 5

11. An awarding organisation must take all reasonable steps in the design and delivery of the assessments and awarding processes to secure that the level of attainment in terms of the subject content and the assessment objectives indicated by grades 4 and 5 is comparable regardless of the tier for which a Learner is entered. Each awarding organisation must demonstrate in its assessment strategy the steps it has taken to secure such comparability between tiers, including on an ongoing basis.
12. In particular, an awarding organisation must ensure that –
- (a) at least 20% of the marks available in the assessments for each tier are made available through questions that –
 - (i) are common to both tiers,
 - (ii) support effective comparison between Learners' attainment at foundation tier and higher tier, in particular by allowing Learners to demonstrate attainment with regard to a representative range of the subject requirements, including in terms of the subject content and the assessment objectives, and

¹³ For the purposes of these requirements, 'discrimination' means the rank ordering of Learners on the basis of the different levels of attainment they have demonstrated in an assessment or set of assessments.

(iii) are targeted at a Level of Demand consistent with grades 4 and 5, and

(b) an appropriate proportion of marks for each tier are targeted at a Level of Demand consistent with grades 4 and 5.

Proposed guidance for GCSE statistics

3.3 We are proposing to introduce guidance on assessment objectives (set out below) which will apply to all new GCSEs in statistics.

Guidance on assessment objectives for GCSE Qualifications in Statistics

Condition GCSE(Statistics)1.2 allows us to specify requirements and guidance relating to assessment objectives for GCSE Qualifications in Statistics.

We published our requirements in relation to assessment objectives in *GCSE Subject Level Conditions and Requirements for Statistics*, and reproduce them in the table below.

	Objective	Weighting
AO1	Demonstrate knowledge and understanding, using appropriate terminology and notation, of standard statistical techniques used to – <ul style="list-style-type: none"> ■ collect and represent data ■ calculate summary statistics and probabilities 	50%
AO2	Interpret statistical information and results in context and reason statistically to draw conclusions	25%
AO3	Assess the appropriateness of statistical methodologies and the conclusions drawn through the application of the statistical enquiry cycle	25%

We set out below our guidance for the purposes of Condition GCSE(Statistics)1.2. This guidance explains how we expect awarding organisations to interpret these assessment objectives in terms of:

- the different ‘strands’ within each of the assessment objectives;
- the discrete ‘elements’ within each assessment objective and its strands which questions and tasks could target and/or seek to credit – our expectation is that

each and every question/task should target or seek to credit at least one of these elements, and may target or seek to credit multiple elements across one or more assessment objectives;

- the coverage expectations, such as in relation to the different elements within each assessment objective and how those elements should be sampled over time; and
- the key areas of emphasis in each assessment objective and the particular meaning for the subject of any key terms and phrases used; defined terms are shown in bold text, followed by their definitions.

In line with the obligations set out in Condition GCSE(Statistics)1.2, we expect awarding organisations to be able to demonstrate how they have had regard to this guidance. For example, an awarding organisation could map how it has regard to the guidance as it:

- develops its sample assessment materials;
- delivers the qualification;
- develops and applies its approach to sampling the elements into which the assessment objectives are divided; and
- monitors the qualification to make sure it addresses all elements appropriately.

AO1: Demonstrate knowledge and understanding, using appropriate terminology and notation, of standard statistical techniques used to –			50%
Strands	Elements	Coverage	Interpretations and definitions
1 – Demonstrate knowledge and understanding, using appropriate terminology and notation, of standard statistical techniques used to collect and represent data	1a – Demonstrate knowledge and understanding, using appropriate terminology, of standard statistical techniques used to collect data	<ul style="list-style-type: none"> ■ Full coverage in each set of assessments¹⁴ (but not in every assessment). ■ A reasonable balance between the strands within this assessment objective, and between the elements within each strand. ■ Awarding organisations should justify the balance between the strands and elements in their assessment strategies. 	<ul style="list-style-type: none"> ■ Both here and in AO2, standard statistical techniques means the techniques set out in the document published by the Secretary of State entitled ‘Statistics GCSE subject content’, reference [reference] (the ‘Content Document’), as appropriate to the tier of entry. These techniques should be understood, but need not always be assessed, in the context of the statistical enquiry cycle outlined in appendix 3 to the Content Document. ■ Notation refers to standard statistical notation, rather than any notation related to specific software tools. ■ Learners should be expected to use appropriate terminology and notation
	1b – Demonstrate knowledge and understanding, using appropriate terminology, of standard statistical techniques used to represent data		

¹⁴ For the purposes of this guidance, a ‘set of assessments’ means the assessments to be taken by a particular Learner for a GCSE Qualification in Statistics. For clarity, the assessments taken by Learners may vary, depending on any possible routes through the qualification.

AO1: Demonstrate knowledge and understanding, using appropriate terminology and notation, of standard statistical techniques used to –		50%	
<ul style="list-style-type: none"> ▪ collect and represent data ▪ calculate summary statistics and probabilities 			
Strands	Elements	Coverage	Interpretations and definitions
2 – Demonstrate knowledge and understanding, using appropriate terminology and notation, of standard statistical techniques used to calculate summary statistics and probabilities	2a – Demonstrate knowledge and understanding, using appropriate terminology, of standard statistical techniques used to calculate summary statistics		<p>throughout their responses. As such, individual questions/tasks do not need to allocate specific marks for correct use of terminology and notation.</p> <ul style="list-style-type: none"> ▪ Tasks may be broken down into a number of steps or parts, provided this does not undermine the expectation that Learners should demonstrate their ability to understand the statistical enquiry cycle as a coherent whole. ▪ Learners should not be penalised for using statistical functions on their calculators during the assessment, unless it would be inappropriate to the question/task. This does not prevent awarding organisations setting questions/tasks which require Learners to apply one or more specific formulae manually.
	2b – Demonstrate knowledge and understanding, using appropriate terminology, of standard statistical techniques used to calculate probabilities		

AO2: Interpret statistical information and results in context and reason statistically to draw conclusions			25%
Strands	Elements	Coverage	Interpretations and definitions
n/a	1a – Interpret statistical information and results in context	<ul style="list-style-type: none"> ■ Full coverage in each set of assessments (but not in every assessment). ■ A reasonable balance between the elements within this assessment objective. ■ Awarding organisations should justify the balance between elements in their assessment strategies. ■ Each set of assessments – <ul style="list-style-type: none"> □ should include questions/tasks which target AO2 using results given in the question/task, and using results calculated by the Learner as part of the question/task □ need not target every combination of elements 1a and 1b with each of given results and calculated results. 	<ul style="list-style-type: none"> ■ See guidance in relation to AO1 for the definition of standard statistical techniques. ■ Interpret statistical information and results in context means relating information and/or results to the context provided in the question/task – for example by showing what they mean in that specific context or situation. ■ Reason statistically means forming a statistical conclusion or judgement using appropriate statistical terminology. This may be linked to, or independent of, element 1a.
	1b – Reason statistically to draw conclusions		

AO3: Assess the appropriateness of statistical methodologies and the conclusions drawn through the application of the statistical enquiry cycle			25%
Strands	Elements	Coverage	Interpretations and definitions
n/a	<p>1a – Assess the appropriateness of statistical methodologies.</p> <p>1b – Assess the conclusions drawn through the application of the statistical enquiry cycle</p>	<ul style="list-style-type: none"> ■ Full coverage in each set of assessments (but not in every assessment). ■ A reasonable balance between the elements within this assessment objective. ■ Awarding organisations should justify the balance elements in their assessment strategies. 	<ul style="list-style-type: none"> ■ Appropriateness refers to the suitability of a methodology for the type of statistical enquiry being undertaken. ■ Statistical methodologies refer to the techniques applied as part the statistical enquiry cycle.

Questions on proposed Conditions, requirements and guidance

Question 8: Do you have any comments on our proposed Conditions and requirements for GCSE statistics?

Question 9: Do you have any comments on our proposed guidance for GCSE statistics?

4. Equality impact analysis

Ofqual's role, objectives and duties

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

Equality impact analysis relating to proposed changes to GCSE statistics

- 4.2 We have considered the potential impact on students who share protected characteristics¹⁵ of the application of the principles and features that will apply to all new GCSE, AS and A level qualifications. Our equality impact analysis for our earlier consultation on GCSE reform is therefore of interest and we encourage you to read it.
- 4.3 Issues concerning the proposed subject content have been considered by DfE, who have published their own Equalities Impact Analysis on their subject content proposals.¹⁶
- 4.4 We have also previously considered the potential impact on students who share protected characteristics of our decisions on assessment arrangements for this subject.¹⁷
- 4.5 We do not repeat here all of the evidence we have considered, as this can be found in our earlier reports. We focus instead on the specific issues that arise from the new proposals in this consultation, and from the way in which we are implementing our previous policy decisions.
- 4.6 We have not identified any additional negative impacts on students who share protected characteristics which would result from the proposals in this consultation (beyond those that we and DfE have already identified in our earlier reports).
- 4.7 During this consultation, we will continue to seek and consider evidence and feedback to our proposals that might help us identify any potential subject-specific impacts on students who share a protected characteristic.

¹⁵ For the purposes of the public sector equality duty, the protected characteristics are disability, racial group, age, religion or belief, pregnancy or maternity, sex, sexual orientation, gender reassignment.

¹⁶ www.gov.uk/government/consultations/further-gcse-and-a-level-content-for-teaching-from-september-2017

¹⁷ www.gov.uk/government/consultations/developing-new-gcses-as-and-a-levels-for-first-teaching-in-2017

- 4.8 Exam boards are required to consider the accessibility of their qualifications at the design stage and to remove any unjustifiable barriers.

Question 10: We have not identified any ways in which the proposals for GCSE statistics would impact (positively or negatively) on persons who share a protected characteristic.¹⁸ Are there any potential impacts we have not identified?

Question 11: 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 12: Do you have any other comments on the impacts of the proposals on students who share a protected characteristic?

¹⁸ '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.

Appendix A: Regulatory tools

Comparability and innovation

Exam boards operate in a market. They can design and deliver their qualifications in different ways, within the parameters we set. This provides some choice to schools or colleges, which is one of the benefits of a qualifications market. Exam boards must, however, make sure that the levels of attainment indicated by their qualifications are comparable to those of other exam boards' versions of the qualifications. The exam boards cooperate in a range of ways to make sure that the standards of their respective qualifications are comparable. To make sure standards are maintained and comparability is secured, we review AS and A level qualifications before they can be made available, by applying an accreditation requirement to the qualifications, and we oversee the awarding of AS and A level qualifications.

We do not wish to close down opportunities for exam boards to design and deliver their qualifications in different ways. Indeed, we have a statutory duty to have regard to the desirability of facilitating innovation in connection with the provision of regulated qualifications and a statutory objective with regard to the efficiency with which the qualifications market works. If we adopt a regulatory approach in which all aspects of a qualification are very tightly defined, we could effectively remove scope for exam boards to distinguish their qualifications from others and stop choice for schools or colleges. On the other hand, if exam boards have too much scope to vary their approach their qualifications might not be comparable.

In striking a balance, we use a range of tools to regulate qualifications and the exam boards that provide them. The main regulatory tools we use for the qualifications in this consultation are explained below.

Conditions of Recognition

Exam boards must comply at all times with our Conditions of Recognition. These are the main regulatory rules that we use. We can take regulatory action against an exam board that breaches or is likely to breach a Condition.

There are three sets of Conditions that will apply to new GCSEs (graded 9 to 1):

- (i) the published *General Conditions of Recognition*¹⁹ that apply to all regulated qualifications;

¹⁹ www.gov.uk/government/publications/general-conditions-of-recognition

- (ii) GCSE (9 to 1) Qualification Level Conditions and Requirements²⁰ that apply to all new GCSE qualifications;
- (iii) GCSE Subject Level Conditions that apply to new GCSEs (graded 9 to 1) in a specific subject. We are consulting now on draft GCSE Subject Level Conditions for statistics.

Regulatory documents

In some Conditions we refer to published regulatory requirements. We publish these in regulatory documents. The Conditions require exam boards to comply with such documents.

We are proposing to introduce one regulatory document, which covers our requirements for tiering of assessments.

The requirements will have effect as if they were part of a Condition. The requirements will be set out in a stand-alone section of the Conditions document, simply because they are technical and detailed so they sit better as separate from, rather than within, the Condition itself.

Statutory guidance

We publish guidance to help exam boards identify the types of behaviour or practices they could use to meet a Condition. Exam boards must have regard to such guidance, but they do not have to follow this guidance in the same way that they must comply with the Conditions; they are free to meet the outcomes of the Conditions in their own ways. An exam board that decides to take a different approach to that set out in our guidance must still be able to show that it is meeting the Condition or Conditions to which the guidance relates.

We are consulting now on draft guidance for new GCSEs in statistics.

²⁰ www.gov.uk/government/publications/gcse-9-to-1-qualification-level-conditions

Appendix B: 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 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.²¹ 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 AS and A level 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.

²¹ Equality Act 2010, section 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 than 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 2010 Act, we are not required to have due regard to impacts on those who are married or in a civil partnership.

Responding to the consultation

Your details

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 following information section.

We will publish our 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 answer all questions marked with a star*

Name*

Position*

Organisation name (if applicable)*

Address

Email

Telephone

Would you like us to treat your response as confidential?*

If you answer yes, we will not include your details in any list of people or organisations that responded to the consultation.

Yes No

Is this a personal response or an official response on behalf of your organisation?*

Personal response (please answer the question ‘If you ticked “Personal response”...’)

Official response (please answer the question ‘If you ticked “Official response”...’)

If you ticked “Personal response”, which of the following are you?

Student

Parent or carer

Teacher (but responding in a personal capacity)

Other, including general public (please state below)

If you ticked “Official response”, please respond accordingly:

Type of responding organisation*

Awarding organisation

Local authority

School or college (please answer the question below)

Academy chain

Private training provider

University or other higher education institution

Employer

Other representative or interest group (please answer the question below)

School or college type

- Comprehensive or non-selective academy
 - State selective or selective academy
 - Independent
 - Special school
 - Further education college
 - Sixth form college
 - Other (please state below)
-

Type of representative group or interest group

- Group of awarding organisations
 - Union
 - Employer or business representative group
 - Subject association or learned society
 - Equality organisation or group
 - School, college or teacher representative group
 - Other (please state below)
-

Nation*

- England
- Wales
- Northern Ireland
- Scotland
- Other EU country: _____
- Non-EU country: _____

How did you find out about this consultation?

Our newsletter or another one of our communications

Our website

Internet search

Other

May we contact you for further information?

Yes No

Questions

Question 1: To what extent do you agree or disagree that we should introduce a Condition which requires exam boards to comply with the relevant subject content and assessment objectives?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

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Question 2: To what extent do you agree or disagree with our proposed approach to tolerances for assessment objective weightings in GCSE statistics?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

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Question 3: To what extent do you agree or disagree that we should introduce guidance which clarifies how exam boards should interpret our assessment objectives?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

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Question 4: To what extent do you agree or disagree with our proposed approach to the design of tiered assessments in GCSE statistics?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

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Question 5: To what extent do you agree or disagree that mixed-tier entry should be prohibited in GCSE statistics?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

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Question 6: To what extent do you agree or disagree with our proposed approach to assessing the full grade range in GCSE statistics?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

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Question 7: To what extent do you agree or disagree with our proposed approach to securing comparability across tiers in GCSE statistics?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

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Question 8: Do you have any comments on our proposed Conditions and requirements for GCSE statistics?

- Yes No

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Question 9: Do you have any comments on our proposed guidance for GCSE statistics?

- Yes No

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Question 10: We have not identified any ways in which the proposals for GCSE statistics would impact (positively or negatively) on persons who share a protected characteristic.²² Are there any potential impacts we have not identified?

Yes No

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Question 11: Are there any additional steps we could take to mitigate any negative impact resulting from these proposals on persons who share a protected characteristic?

Yes No

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Question 12: Do you have any other comments on the impacts of the proposals on students who share a protected characteristic?

Yes No

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²² '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.

Accessibility of our consultations

We are looking at how we provide accessible versions of our consultations and would appreciate it if you could spare a few moments to answer the following questions. Your answers to these questions will not be considered as part of the consultation and will not be released to any third parties.

We want to write clearly, directly and put the reader first. Overall, do you think we have got this right in this consultation?

Yes No

Do you have any comments or suggestions about the style of writing?

Yes No

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Do you have any special requirements to enable you to read our consultations? (for example, screen reader, large text, and so on)

Yes No

Which of the following do you currently use to access our consultation documents? (select all that apply)

Screen reader / text-to-speech software

Braille reader

Screen magnifier

Speech-to-text software

Motor assistance (blow-suck tube, mouth stick, and so on)

Other

Which of the following document formats would meet your needs for accessing our consultations? (select all that apply)

- A standard PDF
- Accessible web pages
- Large-type PDF (16 point text)
- Large-type Word document (16 point text)
- eBook (Kindle, iBooks, or similar format)
- Braille document
- Spoken document
- Other

How many of our consultations have you read in the last 12 months?

- 1
- 2
- 3
- 4
- 5
- More than 5

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