

# **GCSE Engineering**

# **GCSE, AS and A level Design and Technology**

Consultation on Conditions and guidance



December 2015

Ofqual/15/5816

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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 GCSE qualifications in engineering, and new GCSE, AS and A level qualifications in design and technology will be taught in schools from September 2017.
- 1.2 The Department for Education (DfE) published the subject content<sup>1</sup> for GCSE design and technology in November 2015.
- 1.3 At the same time, and following our own consultation on assessment arrangements, we confirmed<sup>2</sup> that new GCSEs in design and technology:
- will not be tiered; and
  - will allocate 50 per cent of total marks to exams, and 50 per cent to non-exam assessment.
- 1.4 We also confirmed the assessment objectives for new GCSEs in design and technology.
- 1.5 In December 2015 the DfE published the subject content for GCSE engineering,<sup>3</sup> and for AS and A level design and technology.<sup>4</sup>
- 1.6 At the same time, and following a separate consultation on assessment arrangements, we confirmed<sup>5</sup> that:
- new GCSEs in engineering will not be tiered;
  - new GCSEs in engineering will allocate 60 per cent of total marks to exams, and 40 per cent to non-exam assessment; and
  - new AS and A levels in design and technology will allocate 50 per cent of total marks to exams, and 50 per cent to non-exam assessment.
- 1.7 We also confirmed the assessment objectives for new GCSEs in engineering, and for new AS and A levels in design and technology.

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<sup>1</sup> [www.gov.uk/government/publications/gcse-design-and-technology](http://www.gov.uk/government/publications/gcse-design-and-technology)

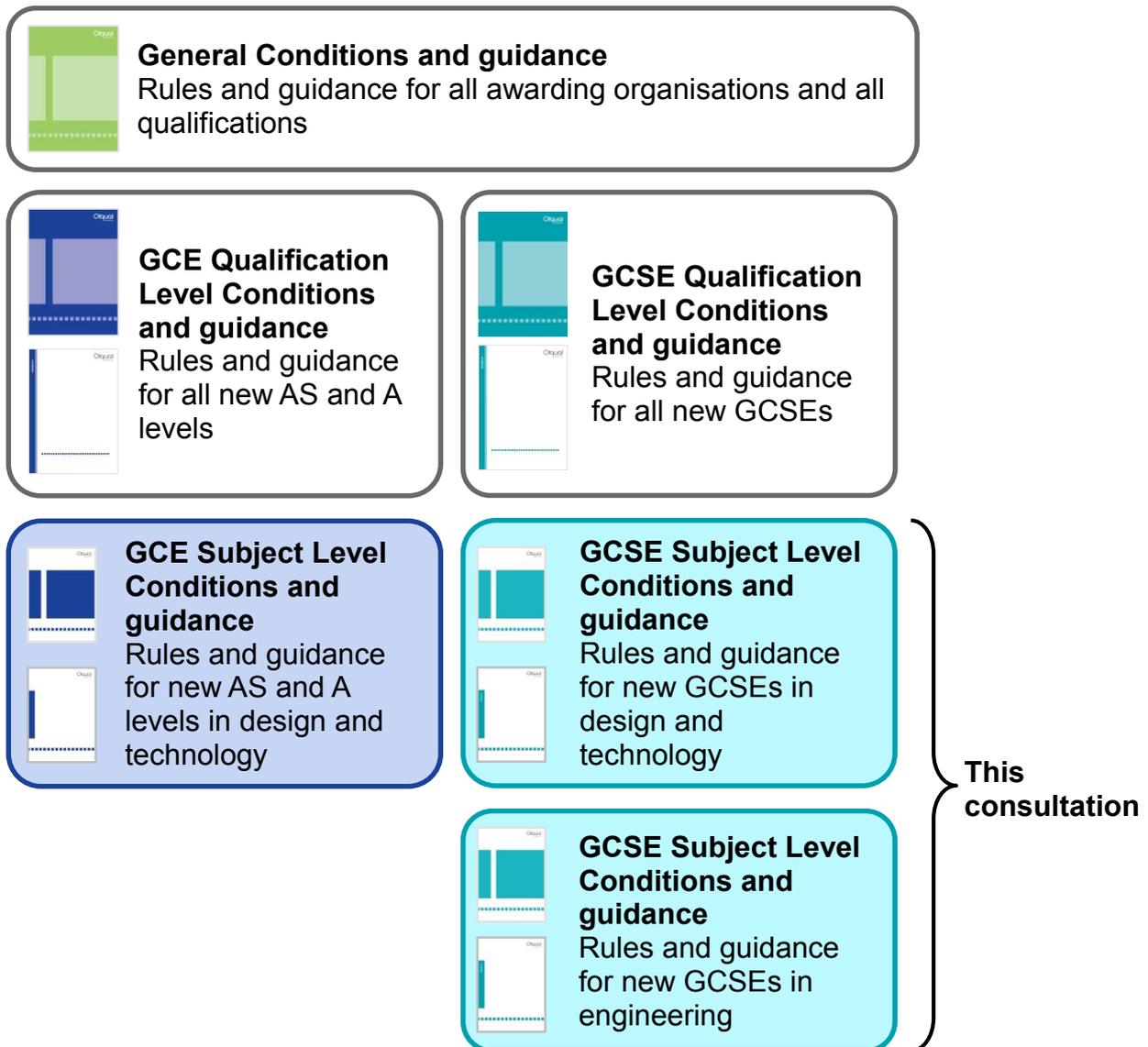
<sup>2</sup> [www.gov.uk/government/consultations/gcse-reform-regulations-for-design-and-technology](http://www.gov.uk/government/consultations/gcse-reform-regulations-for-design-and-technology)

<sup>3</sup> [www.gov.uk/government/publications/gcse-engineering](http://www.gov.uk/government/publications/gcse-engineering)

<sup>4</sup> [www.gov.uk/government/publications/gce-as-and-a-level-design-and-technology](http://www.gov.uk/government/publications/gce-as-and-a-level-design-and-technology)

<sup>5</sup> [www.gov.uk/government/consultations/development-of-new-gcses-and-a-levels-for-teaching-from-2017](http://www.gov.uk/government/consultations/development-of-new-gcses-and-a-levels-for-teaching-from-2017)

## Scope of this consultation



1.8 This consultation builds on our – and the DfE’s – earlier decisions. It seeks views on the subject-specific rules and guidance we should put in place for GCSE engineering, GCSE design and technology, and for AS and A level design and technology.

1.9 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,<sup>6</sup>

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<sup>6</sup> [www.gov.uk/guidance/awarding-organisations-understanding-our-regulatory-requirements#requirements-for-all-awarding-organisations-and-all-regulated-qualifications](http://www.gov.uk/guidance/awarding-organisations-understanding-our-regulatory-requirements#requirements-for-all-awarding-organisations-and-all-regulated-qualifications)

- all new GCSE qualifications;<sup>7</sup> and
- all new AS and A level qualifications.<sup>8</sup>

1.10 This document sets out, and seeks views on:

- our proposed approach to regulating new GCSEs in engineering, and new GCSEs, AS and A levels in design and technology; and
- the subject-specific Conditions, requirements and guidance we propose to introduce to implement that approach.

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<sup>7</sup> [www.gov.uk/government/collections/gcses-9-to-1-requirements-and-guidance](http://www.gov.uk/government/collections/gcses-9-to-1-requirements-and-guidance)

<sup>8</sup> [www.gov.uk/government/collections/new-a-level-and-as-level-qualifications-requirements-and-guidance](http://www.gov.uk/government/collections/new-a-level-and-as-level-qualifications-requirements-and-guidance)

## How to respond to this consultation

The closing date for responses is **20 January 2016**.

Please respond to this consultation in one of three ways:

- Complete the online response at [www.surveygizmo.com/s3/2496122/GCSE-AS-and-A-level-reform-regulations-for-engineering-and-design-and-technology](http://www.surveygizmo.com/s3/2496122/GCSE-AS-and-A-level-reform-regulations-for-engineering-and-design-and-technology);
- Complete the consultation questions at the end of this document and email your response to [consultations@ofqual.gov.uk](mailto:consultations@ofqual.gov.uk). Please include the consultation title (Engineering and Design and Technology Consultation 2015) in the subject line of the email and make clear who you are and in what capacity you are responding; or
- Post your response to: Engineering and Design and Technology Consultation 2015, 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 **20 January 2016**.

## **2. Regulating GCSE engineering and GCSE, AS and A level design and technology**

### **Compliance with subject content and assessment objectives**

- 2.1 As we explained in paragraphs 1.2 and 1.5 above, the DfE has published the subject content for new GCSEs in engineering and design and technology, and for AS and A levels in design and technology.
- 2.2 One of the ways we ensure new GCSEs, AS and A levels are comparable 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 that we publish in relation to 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). As set out below, we are consulting on requirements for interpreting the subject content in GCSE engineering.
- 2.5 We see no reason to take a different approach for either engineering or design and technology. We are therefore proposing that – for each of GCSE design and technology, GCSE engineering and AS and A level design and technology – 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;
  - 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).

**Question 1: To what extent do you agree or disagree that – for each of GCSE design and technology, GCSE engineering and AS and A level design and technology – we should introduce a Condition which requires exam boards to comply with the relevant subject content and assessment objectives?**

### **Interpreting the subject content**

- 2.6 The subject content for GCSE engineering includes a list of equations which students taking GCSE engineering must be able to “know and apply”.
- 2.7 Our view is that the best way to assess students’ knowledge of, and ability to apply, equations is through of a mix of three different types of questions:
- questions which require students to recall specific equations;
  - questions which require students to recall specific equations, then apply them to a context or scenario; or
  - questions which require students to apply equations given in the question to a more complex context or scenario.
- 2.8 The subject content could be interpreted as permitting only the second type of question (recalling equations, then applying them to a simple context). This interpretation would limit how much exam boards could test students’ knowledge of equations in any given year, and their ability to set questions which require more sophisticated application of equations.
- 2.9 We do not think it is appropriate (or desirable) for the subject content to be interpreted in this way. We are therefore proposing to introduce rules which require this part of the subject content to be interpreted as permitting all three of the different question types we set out above.

**Question 2: To what extent do you agree or disagree with our proposed approach to interpreting the subject content requirements for equations in GCSE engineering?**

- 2.10 We are not proposing to introduce any requirements or guidance for interpreting the subject content for either GCSE design and technology, or AS and A level design and technology. This is because we do not believe there is currently a need for any such requirements or guidance.

### **Guidance on assessment objectives**

- 2.11 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.
- 2.12 We are proposing we should introduce similar guidance for each of GCSE design and technology, GCSE engineering and AS and A level design and technology.

**Question 3: To what extent do you agree or disagree that – for each of GCSE design and technology, GCSE engineering and AS and A level design and technology – we should introduce guidance which clarifies how exam boards should interpret our assessment objectives?**

### **Rules and guidance for exam assessment**

- 2.13 In a number of other new GCSE, AS and A level subjects, we have specified rules which cover how specific areas of the subject content should be assessed. We normally do this where we think it is important to ensure exam boards take a consistent and comparable approach to assessing an area of content (in terms of the weighting assigned to that content area and/or the types of question used to target it).
- 2.14 For example, the subject content for a number of the new GCSEs, AS and A levels which have been developed for first teaching from September 2015 and September 2016 include mathematical skills that students should be able to demonstrate.
- 2.15 In these subjects, either we or the DfE have set minimum proportions of exam marks which must be allocated to these content areas, and we have specified further rules around how they should be assessed.
- 2.16 Similarly, the subject content for:
- GCSE engineering includes specified mathematical skills;
  - GCSE design and technology includes both mathematical and scientific skills; and
  - AS and A level design and technology includes both mathematical and scientific skills.
- 2.17 We think this means we need to take a similar approach to regulating exam assessments in engineering and design and technology as we have in other

subjects. So we are proposing to introduce rules which require exam boards to take a consistent approach to assessing mathematical skills in GCSE engineering, and mathematical and scientific skills in GCSE, AS and A level design and technology.

- 2.18 These rules will also ensure consistency across the suite of engineering and design and technology qualifications. This is particularly important because students who want to progress from GCSE design and technology or GCSE engineering can both move on to take AS or A level design and technology.

**Question 4: To what extent do you agree or disagree that we should introduce rules for exam assessment to ensure exam boards take a consistent approach to assessing mathematical skills in GCSE engineering?**

**Question 5: To what extent do you agree or disagree that we should introduce rules for exam assessment to ensure exam boards take a consistent approach to assessing mathematical and scientific skills in GCSE, AS and A level design and technology?**

### **Assessing mathematical skills in GCSE engineering**

- 2.19 The subject content requirements for GCSE engineering include an appendix which specifies the mathematical skills that students taking GCSE engineering should be able to use and apply.
- 2.20 When the DfE consulted on the subject content for GCSE engineering, it included a requirement (in each subject) that at least 15 per cent of marks should be allocated to assessment of mathematical skills. Respondents to the DfE's consultation supported this requirement, which reflects the importance of mathematical skills within engineering. Since this requirement relates to how GCSE engineering should be assessed, we have agreed with the DfE that it should form part of our rules on assessment, rather than the subject content. It is therefore included within our draft assessment requirements set out below.
- 2.21 As well as setting a consistent weighting for mathematical skills, we also want to make sure that all exam boards assess students' mathematical skills in a way which is consistent, and which reliably differentiates between candidates with different abilities.
- 2.22 Our experience with controlled assessments in legacy (graded A\* to G) GCSEs suggests that non-exam assessment is not well-suited to assessing mathematical skills. Non-exam assessments which test mathematical skills tend to result in mark distributions which are heavily skewed towards the higher end of

the possible range. In turn, this makes it difficult for exam boards to distinguish between students with different abilities and to set standards, reducing confidence in the level at which grades have been awarded.

2.23 Consequently, our view is that mathematical skills are most effectively assessed through written exams. We are therefore proposing that – for GCSE engineering – mathematical skills should be assessed primarily through the written exams.

2.24 Our proposal means that exam boards will need to allocate at least 15 per cent of total marks to assessing mathematical skills within the written exams. This is equivalent to 25 per cent of the marks for the written exams. Exam boards will be able to test (and reward) students' use of mathematical skills within the non-exam assessment, but this will not count towards the 15 per cent minimum.

2.25 We also want to make sure that exams for GCSE engineering assess mathematical skills in a way which is appropriate to the subject. In particular, we want to make sure that:

- mathematical skills are assessed at a comparable level of demand across exam boards;
- mathematical skills are assessed in the context of other areas of the subject content (and not in isolation); and
- students across the ability range have opportunities to access marks for mathematical skills (and these marks are not simply targeted at higher or lower ability candidates).

2.26 To do this, we are proposing to set rules which require exam boards to ensure their exams:

- assess mathematical skills in the context of other areas of the subject content, and not in isolation;
- allocate at least 15 per cent of the marks for the qualification to rewarding use of mathematical skills at a level of demand which is at least equivalent to Key Stage 3; and
- assess mathematical skills across a range of levels of demand which supports effective differentiation between candidates.

**Question 6: To what extent do you agree or disagree with our proposed approach to assessing mathematical skills (including our approach to the 15 per cent minimum weighting) for GCSE engineering?**

## **Assessing mathematical skills in GCSE design and technology**

2.27 The subject content requirements for GCSE design and technology include an appendix which:

- specifies the mathematical knowledge, skills and understanding that students should be able to use and apply; and
- provides examples of their application in design and technology contexts.

2.28 Neither we nor the DfE have previously consulted on specifying a minimum weighting for mathematical knowledge, skills and understanding within GCSE design and technology. On reflection, however, we think we need to. Mathematical knowledge, skills and understanding are a key part of design and technology. Assessments need to reflect this, and mathematical knowledge, skills and understanding need to be given a sufficient weighting to ensure that they can make a meaningful contribution to students' overall grade.

2.29 At the same time, our view is that – when compared to GCSE engineering – the subject content for GCSE design and technology has slightly less mathematical content. Consequently, we believe that the most appropriate approach is to set a minimum weighting of 10 per cent for mathematical knowledge, skills and understanding in GCSE design and technology.

2.30 As with GCSE engineering, our view is that mathematical skills in GCSE design and technology would be most effectively assessed through written exams. For all the reasons outlined in paragraph 2.22 above, we are not satisfied that non-exam assessment provides a reliable way of assessing mathematical skills. Consequently, we are proposing that mathematical skills in GCSE design and technology should be assessed primarily through the written exams.

2.31 The consequence of this proposal is that exam boards would need to allocate at least 10 per cent of total marks (equivalent to 20 per cent of the marks for the written exams) to assessing mathematical skills within the written exams. Exam boards will be able to test (and reward) students' use of mathematical skills within the non-exam assessment, but this will not count towards the 10 per cent minimum.

2.32 We also want exam boards to assess mathematical skills in a way which is appropriate to the subject. So, in line with the approach we have proposed for GCSE engineering, we are proposing to set rules which require exam boards to ensure their exams:

- assess mathematical skills in the context of other areas of the subject content, and not in isolation;

- allocate at least 10 per cent of the marks for the qualification to rewarding use of mathematical skills at a level of demand which is at least equivalent to Key Stage 3; and
- assess mathematical skills across a range of levels of demand which supports effective differentiation between candidates.

**Question 7: To what extent do you agree or disagree with our proposed approach to assessing mathematical skills (including the proposed 10 per cent minimum weighting) for GCSE design and technology?**

### **Assessing mathematical skills in AS and A level design and technology**

2.33 The subject content for AS and A level design and technology is designed around a number of different endorsed routes which focus on different areas of design and technology:

- design and technology (product design);
- design and technology (fashion and textiles);
- design and technology (design engineering).

2.34 It includes core content (common to all routes), and additional technical knowledge for each of the endorsed routes.

2.35 The subject content also includes an appendix which:

- specifies the mathematical knowledge, skills and understanding that students should be able to use and apply; and
- for each of the different endorsed routes, provides examples of their application in design and technology contexts.

2.36 Neither we nor the DfE have previously consulted on specifying a minimum weighting for mathematical knowledge, skills and understanding within AS and A level design and technology. As at GCSE, however, we think mathematical knowledge, skills and understanding are a key part of design and technology, which need to be reflected both in assessments, and in students' overall grades.

2.37 Both the depth and breadth of mathematical knowledge, skills and understanding required depend on the endorsed route students are following. The engineering route includes significantly more mathematics than the other optional routes, both in terms of the number of topic areas which use mathematical skills, and – particularly at A level – the skills themselves.

2.38 So we are proposing to specify minimum weightings (15 per cent for the ‘design engineering’ endorsed route, and 10 per cent for all other endorsed routes) for mathematical knowledge, skills and understanding for AS and A level design and technology. This aligns with the equivalent percentages for GCSE engineering and GCSE design and technology.

2.39 In line with both GCSE engineering and GCSE design and technology, our view is that mathematical skills in AS and A level design and technology would be most effectively assessed through written exams. For all the reasons outlined in paragraph 2.22 above, we are not satisfied that non-exam assessment provides a reliable way of assessing mathematical skills. Consequently, we are proposing that mathematical skills in AS and A level design and technology should be assessed primarily through the written exams.

2.40 The consequence of this proposal is that exam boards would need to allocate:

- for the ‘design engineering’ endorsed route, at least 15 per cent of total marks (equivalent to 30 per cent of the marks for the written exams) to assessing mathematical skills within the written exams;
- for all other endorsed routes, at least 10 per cent of total marks (equivalent to 20 per cent of the marks for the written exams) to assessing mathematical skills within the written exams.

2.41 Exam boards will be able to test (and reward) students’ use of mathematical skills within the non-exam assessment, but this will not count towards the minimum percentages.

2.42 We also want exam boards to assess mathematical skills in a way which is appropriate to the subject. Our approach here is the same as that proposed for both GCSE engineering and GCSE design and technology, but with a higher level of demand.

2.43 For AS and A level design and technology, we are proposing to set rules which require exam boards to ensure their exams:

- assess mathematical skills in the context of other areas of the subject content, and not in isolation;
- for the ‘design engineering’ endorsed route, allocate at least 15 per cent of the marks for the qualification to rewarding use of mathematical skills at a level of demand which is at least equivalent to the higher tier of GCSE mathematics;

- for all other endorsed routes, allocate at least 10 per cent of the marks for the qualification to rewarding use of mathematical skills at a level of demand which is at least equivalent to the higher tier of GCSE mathematics; and
- assess mathematical skills across a range of levels of demand which supports effective differentiation between candidates.

**Question 8: To what extent do you agree or disagree with our proposed approach to assessing mathematical skills (including the proposed minimum weightings) for AS and A level design and technology?**

### **Assessing scientific knowledge, skills and understanding in GCSE, AS and A level design and technology**

- 2.44 The subject content requirements for both GCSE and AS and A level design and technology include an appendix which provides examples of the application of scientific knowledge, skills and understanding in design and technology contexts.
- 2.45 Unlike the equivalent requirements for mathematical skills – the specified scientific knowledge, skills and understanding simply reflect the way in which other aspects of the subject content draw on underpinning scientific knowledge, skills and understanding. They are not additional requirements which students must be able to demonstrate.
- 2.46 As a result, we do not think it is appropriate to set a minimum weighting for scientific knowledge, skills and understanding. Instead, we are proposing that – for GCSE, AS and A level design and technology – exam boards must explain and justify in their assessment strategies how they have addressed the requirements for scientific knowledge, skills and understanding in both the qualification specification and the assessments.

**Question 9: To what extent do you agree or disagree with our proposed approach to assessing scientific knowledge, skills and understanding in GCSE, AS and A level design and technology?**

### **Non-exam assessment**

- 2.47 As we have explained in previous consultations,<sup>9</sup> it is generally more difficult to ensure reliability in non-exam assessments. As a result, we have only permitted

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<sup>9</sup> See, for example, <http://webarchive.nationalarchives.gov.uk/20141031163546/http://comment.ofqual.gov.uk/gcse-reform-june-2013/>

non-exam assessment in subjects where the part of the subject content cannot be validly assessed through an exam.

- 2.48 Because it is difficult to ensure reliability in non-exam assessments, we aim to ensure that exam boards take as consistent an approach as possible to non-exam assessment. This includes – where appropriate – specifying:
- what should be assessed (for example, the relevant parts of the subject content and/or assessment objectives); and
  - how that should be assessed (for example, the tasks students should carry out, and how those tasks should be set and marked).
- 2.49 In each of GCSE engineering, GCSE design and technology, and AS and A level design and technology, we have identified significant elements of the subject content which cannot be validly assessed by an exam. That is why we have previously decided that GCSE engineering should have 40 per cent non-exam assessment, and GCSE, AS and A level design and technology should have 50 per cent non-exam assessment.
- 2.50 To implement these decisions, we are proposing to introduce a subject-specific Condition in each of GCSE engineering, GCSE design and technology, and AS and A level design and technology. This Condition will permit non-exam assessment, specify the appropriate proportion of exam- and non-exam assessment, and allow us to set more detailed rules and guidance on non-exam assessment.

**Question 10: To what extent do you agree or disagree that – for each of GCSE design and technology, GCSE engineering and AS and A level design and technology – we should introduce a Condition which permits non-exam assessment, specifies the proportion of exam- and non-exam assessment, and allows us to set more detailed rules and guidance on non-exam assessment?**

- 2.51 In line with our overall approach to non-exam assessment, we are also proposing to set more detailed rules for non-exam assessment in each subject; we discuss these separately below.

### **Non-exam assessment tasks in GCSE engineering**

- 2.52 The subject content states that:

Specifications must require students to draw upon their knowledge and understanding of engineering in order to apply key practical skills to create

engineering solutions to a given problem. They will be required to produce an engineered product from a given brief.

- 2.53 The subject content goes on to list a range of practical engineering skills which students will need to apply when producing the engineered product.
- 2.54 It is this part of the subject content which sets out the knowledge, skills and understanding which cannot be assessed through non-exam assessment, and our proposed approach to regulating the non-exam assessment is derived from the subject content.
- 2.55 The practical engineering skills specified in the subject content fall into two broad categories:
- the majority of skills relate to the production of the engineered product (such as producing engineering drawings, selecting materials, and using tools, equipment and processes) – which would most naturally be assessed under assessment objective AO2; and
  - the remaining skills relate to the analysis, evaluation and appraisal of students' work (such as performing calculations to predict performance and designing tests of the finished product) – which would most naturally be assessed under assessment objective AO3.
- 2.56 We think it is important that the marks awarded for non-exam assessment reflect both these categories of skills, and that both are given the appropriate emphasis within the non-exam assessment. To ensure this happens consistently, both between different exam boards and over time, we believe we should specify the how the marks for non-exam assessment should be allocated between the assessment objectives.
- 2.57 So, we are proposing that 75 per cent of the non-exam assessment marks (equivalent to 30 per cent of total marks) should be allocated to AO2, with the remaining non-exam assessment marks (10 per cent of total marks) allocated to AO3.

**Question 11: To what extent do you agree or disagree with our proposed approach to allocating non-exam assessment marks to assessment objectives in GCSE engineering?**

- 2.58 In line with the requirements of the subject content, we are proposing that there should be a single non-exam assessment task, in which students are required to produce an engineered product based on a brief.

- 2.59 Because the non-exam assessment focuses on students' ability to follow a set brief, it is important that all students work from briefs that are comparably challenging (including in terms of the amount of time they would typically take to complete), and offer students comparable opportunities to demonstrate the required knowledge, skills and understanding. We think that the best way to achieve this is through briefs set by the exam boards, as this offers a greater degree of control over (and therefore consistency between) the tasks students undertake than the alternative approach of briefs set by teachers within schools.
- 2.60 We are therefore proposing that – for GCSE engineering – the briefs for the non-exam assessment should:
- be set by the exam board;
  - be designed to allow students to demonstrate the practical engineering skills specified in the subject content;
  - be designed to be completed in approximately 30 hours; and
  - be designed in a way which facilitates comparability of non-exam assessments (including over time), and which minimises predictability of the products students must produce.
- 2.61 We have deliberately chosen not to specify how many different briefs an exam board should offer every year. This is because we think the optimum number of briefs depends on the particular approach an exam board takes to non-exam assessment, and we do not want to close off legitimate alternative approaches to the non-exam assessment.

**Question 12: To what extent do you agree or disagree with our proposed approach to setting the brief(s) for non-exam assessment in GCSE engineering?**

- 2.62 Finally, we think we need to specify a release date for the brief(s). If the brief(s) are available throughout the course of study, then this could encourage an excessive (or even exclusive) focus on practical work for the non-exam assessment task. This would undermine the curriculum intention that students should undertake a broad range of practical work.
- 2.63 We are therefore proposing that briefs should be released no earlier than the 1 June in the year before the qualification is to be awarded. For a student in England taking exams at the end of year 11, this would mean that the briefs could not be available before June in year 10. We think this addresses the concerns about an undue focus on the non-exam assessment task, while still

giving students and schools sufficient time to prepare for (and complete) the non-exam assessment.

**Question 13: To what extent do you agree or disagree with our proposal that the briefs for non-exam assessment in GCSE engineering should be released no earlier than 1 June in the year before the qualification is to be awarded?**

### **Non-exam assessment tasks in GCSE design and technology**

2.64 As with GCSE engineering, the subject content for GCSE design and technology identifies practical skills which students will need to demonstrate, but the nature and breadth of skills required differs between the two subjects.

2.65 The subject content for design and technology identifies skills which fall into three broad categories, which we have (intentionally) reflected in our assessment objectives:

- skills related to identifying and generating design possibilities (which align with assessment objective AO1);
- skills related to designing and making (which align with assessment objective AO2); and
- skills related to analysis and evaluation (which align with assessment objective AO3).

2.66 As with engineering, we are proposing that the marks awarded for non-exam assessment should reflect these categories of skills, and that each should be given the appropriate emphasis within the non-exam assessment. To ensure this happens consistently, both between different exam boards and over time, we are proposing that the marks for non-exam assessment should be divided between the assessment objectives as follows:

- 10 per cent for assessment objective AO1;
- 30 per cent for assessment objective AO2; and
- 10 per cent for assessment objective AO3 (which must include all marks allocated for analysis and evaluation of students' own work).

2.67 Our view is that it is particularly important to be clear that analysis and evaluation of students' own work should form part of the non-exam assessment, because it is very difficult to validly assess this in an exam.

**Question 14: To what extent do you agree or disagree with our proposed approach to allocating non-exam assessment marks to assessment objectives in GCSE design and technology?**

- 2.68 In line with the requirements of the subject content, the non-exam assessment task in GCSE design and technology will require students to develop a design brief based on a contextual challenge set by the awarding organisation.
- 2.69 The nature of the contextual challenges means that it is not appropriate for us to specify in detail how exam boards should set them. However, we do think we need to specify a release date for them.
- 2.70 As with GCSE engineering, we think that making the contextual challenge(s) available throughout the course of study could encourage an excessive (or even exclusive) focus on practical work for the non-exam assessment task. This would undermine the curriculum intention that students should undertake a broad range of practical work.
- 2.71 We are therefore proposing that the contextual challenges should be released no earlier than the 1 June in the year before the qualification is to be awarded. For a student in England taking exams at the end of year 11, this would mean that the briefs could not be available before June in year 10. We think this addresses the concerns about an undue focus on the non-exam assessment task, while still giving students and schools sufficient time to prepare for (and complete) the non-exam assessment.

**Question 15: To what extent do you agree or disagree with our proposal that the contextual challenges for non-exam assessment in GCSE design and technology should be released no earlier than 1 June in the year before the qualification is to be awarded?**

**Non-exam assessment tasks in AS and A level design and technology**

- 2.72 The practical skills which students need to demonstrate in AS and A level design and technology are broadly similar to those at GCSE. However, there is greater emphasis on analysis and evaluation at AS and A level, and the different endorsed routes through the qualification may place different emphasis on design and production skills. Our assessment objective weightings recognise this, and allow some variation in the weightings for assessment objectives AO1, AO2 and AO3.
- 2.73 We are proposing to reflect this difference in the rules we set for AS and A level design and technology, by requiring non-exam assessments to:

- include all the marks for assessment objective AO1 (10 to 15 per cent of total marks);
- include all the marks for assessment objective AO2 (20 to 25 per cent of total marks); and
- allocate the remaining marks (10 to 20 per cent of total marks) to assessment objective AO3 (which must include all marks allocated for analysis and evaluation of students' own work).

2.74 As with GCSE, our view is that it is particularly important to be clear that analysis and evaluation of students' own work should form part of the non-exam assessment, because it is very difficult to validly assess this in an exam.

**Question 16: To what extent do you agree or disagree with our proposed approach to allocating non-exam assessment marks to assessment objectives in AS and A level design and technology?**

### **Authenticating and marking non-exam assessment in GCSE engineering, and GCSE, AS and A level design and technology**

2.75 Whenever non-exam assessment is used, it creates particular challenges for exam boards around authentication and marking of students' work.

2.76 The challenges around authentication arise because non-exam assessment takes place over an extended period of time, which makes it harder for teachers to be sure that students have not received help with their work.

2.77 It is exam boards' responsibility to ensure they put in place appropriate arrangements which enable them to authenticate students' work. This is required by our *General Conditions of Recognition*, but we have also put in place specific rules in a number of other subjects which require non-exam assessment to take place under conditions set by the exam board which ensure that students' work can be authenticated.

2.78 We are proposing to put in place a similar rule in GCSE engineering and GCSE, AS and A level design and technology. However, we also think we need to put in place further rules about authenticating students' work on their product or prototype.

2.79 We think that the only way teachers can authenticate a student's product or prototype is if they have been able to observe the student making it. So – for GCSE engineering and GCSE, AS and A level design and technology – we are proposing to put in place a rule which requires students to produce their product or prototype while under supervision.

2.80 To do this, we are proposing to make use of the defined term ‘Immediate Guidance or Supervision’ from our *General Conditions of Recognition*. This would permit teachers to supervise students’ work remotely (for example using video chat) as well as directly, but we think that this is acceptable for authentication purposes. Of course, there may be other reasons (for example in relation to health and safety) why exam boards or schools might choose not to allow remote supervision.

**Question 17: To what extent do you agree or disagree with our proposed approach to authenticating non-exam assessment in GCSE engineering and GCSE, AS and A level design and technology?**

2.81 There are two main challenges around marking non-exam assessment in engineering and design and technology.

2.82 The first challenge is the need to ensure that there is sufficient evidence to judge whether (and how well) students have demonstrated the required knowledge, skills and understanding.

2.83 While some of the knowledge, skills and understanding specified in the subject content can be assessed directly (or at least inferred) from the finished product or prototype, others (for example, skills related to the production process in engineering, or the design process in design and technology) cannot.

2.84 We are therefore proposing to set rules which ensure that non-exam assessment tasks require students to produce:

- a design brief (GCSE and AS design and technology only)
- a final product/prototype; and
- whatever additional evidence is needed to assess how well the student has met the assessment criteria for the non-exam assessment.

2.85 We have deliberately chosen not to specify the form which this additional evidence must take. This is because we want to give exam boards freedom to innovate, and develop approaches which suit their approach to assessment and meet the needs of schools. We are particularly keen to encourage exam boards to consider alternatives to the traditional portfolio-based approach to assessment, which both schools and exam boards have told us has become increasingly burdensome over time.

2.86 The second challenge is largely a logistical one. Marking non-exam assessment in both engineering and design and technology necessarily involves appraising the object the student has produced. The physical size (and, particularly in the

case of design and technology, the diversity) of objects that students can produce means that it is difficult for exam boards to mark non-exam assessment themselves. That said, we would not want to prevent an exam board from marking non-exam assessments itself if it found a way to overcome the logistical difficulties. This is because exam board marking can be more reliable than teacher marking.

2.87 As a result, we are proposing to allow non-exam assessment in both engineering and design and technology to be marked by teachers within schools (and moderated by exam boards), by the exam boards themselves, or by a combination of the two.

2.88 All of these different approaches to marking non-exam assessment have their strengths and weaknesses. Whichever approach an exam board chooses to take, our *General Conditions of Recognition* require it to identify the risks associated with that approach, and to mitigate those risks. We are therefore proposing that exam boards must set out in their assessment strategies how they have managed the particular risks that their approach to non-exam assessment entails.

**Question 18: To what extent do you agree or disagree with our proposed approach to marking of non-exam assessment in GCSE engineering, and GCSE, AS and A level design and technology?**

### 3. Proposed Conditions, requirements and guidance for GCSE engineering

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 for GCSE engineering below.

#### Proposed Conditions and requirements

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

- a Condition covering compliance with subject content and assessment objectives;
- a further Condition which permits non-exam assessment, specifies the percentage of exam- and non-exam assessment, and allow us to set more detailed rules and guidance for both exam- and non-exam assessment;
- requirements for interpreting the subject content which cover assessment of equations;
- our assessment objectives; and
- requirements for assessments which cover assessment of mathematical skills in exams and non-exam assessment.

<b>Condition</b>	<b>Compliance with content requirements</b>
<b>GCSE(Engineering)1</b>	
GCSE(Engineering)1.1	In respect of each GCSE Qualification in Engineering which it makes available, or proposes to make available, an awarding organisation must – (a) comply with the requirements relating to that qualification set out in the document published by the Secretary of State entitled ‘Engineering GCSE subject content’, <sup>10</sup> document reference DFE-00196-2015,

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<sup>10</sup> [www.gov.uk/government/publications/gcse-engineering](http://www.gov.uk/government/publications/gcse-engineering)

	<ul style="list-style-type: none"> <li>(b) have regard to any recommendations or guidelines relating to that qualification set out in that document, and</li> <li>(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.</li> </ul>
GCSE(Engineering)1.2	In respect of each GCSE Qualification in Engineering which it makes available, or proposes to make available, an awarding organisation must comply with any 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.
<b>Condition GCSE(Engineering)2</b>	<b>Assessment</b>
GCSE (Engineering)2.1	Condition GCSE4.1 does not apply to any GCSE Qualification in Engineering which an awarding organisation makes available or proposes to make available.
GCSE (Engineering)2.2	<p>In respect of the total marks available for a GCSE Qualification in Engineering which it makes available, an awarding organisation must ensure that –</p> <ul style="list-style-type: none"> <li>(a) 60 per cent of those marks are made available through Assessments by Examination, and</li> <li>(b) 40 per cent of those marks are made available through assessments set by the awarding organisation that are not Assessments by Examination.</li> </ul>
GCSE(Engineering)2.3	An awarding organisation must ensure that in respect of each assessment for a GCSE Qualification in Engineering which it makes available it complies with any requirements, and has regard to any guidance, which may be published by Ofqual and revised from time to time.

## **Requirements in relation to subject content for GCSE Qualifications in Engineering**

The subject content for GCSE Qualifications in Engineering is set out in the document published by the Secretary of State entitled 'Engineering GCSE subject content', document reference DFE-00196-2015 (the 'Content Document').

Condition GCSE(Engineering)1.1(c) requires awarding organisations to interpret the Content Document in line with any requirements published by Ofqual.

We set out our requirements for the purposes of Condition GCSE(Engineering)1.1(c) below.

### **Equations**

The Appendix to the Content Document specifies a list of 'Equations in GCSE Engineering' that:

students should be able correctly to recall, and apply [...] using  
standard SI units

In respect of each GCSE Qualification in Engineering which it makes available, or proposes to make available, an awarding organisation must –

- (a) interpret the above requirement in the Content Document as permitting the awarding organisation to set individual questions and/or tasks which require Learners to –
  - (i) recall one or more of those specified equations, and/or
  - (ii) recall, and then apply, one or more of those specified equations, and/or
  - (iii) apply one or more of those specified equations which is given in the question and/or task, and
- (b) design and set the assessments for that qualification such that, over the shortest period of time that is reasonably practicable, those assessments require Learners to demonstrate their ability to recall, and then apply, each of the equations listed in the Appendix to the Content Document.

### **Assessment objectives – GCSE Qualifications in Engineering**

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

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

	Objective	Weighting
AO1	Demonstrate knowledge and understanding of engineering principles and processes	25%
AO2	Apply knowledge, understanding and skills in different contexts, including through the use of a range of tools, equipment, materials, components and manufacturing processes	50%
AO3	Analyse and evaluate evidence in relation to a range of engineering contexts	25%

### Assessment requirements – GCSE Qualifications in Engineering

Condition GCSE(Engineering)2.1 allows us to specify requirements in relation to assessments for GCSE Qualifications in Engineering.

We set out below our requirements for the purposes of Condition GCSE(Engineering)2.1. Awarding organisations must comply with these requirements in relation to all GCSE Qualifications in Engineering they make available.

#### Assessment of mathematical content

The Appendix to the Content Document specifies the mathematical skills, knowledge and understanding which Learners will be required to use in GCSE Qualifications in Engineering (the ‘Mathematical Skills’).

In designing and setting the Assessments by Examination for a GCSE Qualification in Engineering which it makes available, or proposes to make available, an awarding organisation must ensure that –

- (a) questions and tasks rewarding the use of Mathematical Skills assess those skills within the context of other areas of the subject content, and not in isolation,
- (b) in those Assessments by Examination, at least 15 per cent of the total marks for the qualification reward the use of Mathematical Skills at a Level of Demand which is not lower than that which is expected of Learners at Key

Stage 3 as outlined in the Department for Education's document 'Mathematics programmes of study: key stage 3,' document reference DFE-00179-2013, and

- (c) without prejudice to the above requirements and those outlined in the Content Document, in each set of assessments Mathematical Skills are assessed across a range of Levels of Demand which supports effective differentiation in relation to the qualification.

### **Non-examination Assessment**

Condition GCSE(Engineering)2.2(b) states that an awarding organisation must ensure that, of the total marks available for a GCSE Qualification in Engineering, 40 per cent of those marks are made available through assessments set by the awarding organisation which are not Assessments by Examination.

In respect of that 40 per cent, an awarding organisation must ensure that the marks are comprised as follows –

- (a) 30 per cent of the total marks for the qualification through marks made available in respect of assessment objective AO2, and
- (b) 10 per cent of the total marks for the qualification through marks available in respect of assessment objective AO3.

In respect of the assessments which are not Assessments by Examination, an awarding organisation must ensure that each Learner is required to complete a single task which –

- (a) is designed and set to –
- (i) allow the Learner to demonstrate the practical engineering skills specified in paragraph 15 of the Content Document, and
  - (ii) be completed by the Learner during periods of assessment totalling 30 hours,
- (b) requires the Learner to produce the following evidence –
- (i) a single engineered product based on a brief set by the awarding organisation, and
  - (ii) such additional evidence as is necessary to enable the consideration of that Learner's level of attainment in respect of all of the relevant criteria

against which Learners' performance in that assessment will be differentiated, and

- (c) must be taken under conditions specified by the awarding organisation, including, in particular, conditions which –
  - (i) ensure that the evidence generated by each Learner can be Authenticated, and
  - (ii) require each Learner to produce the engineered product under Immediate Guidance or Supervision.

In respect of the brief(s) it sets for the assessments which are not Assessments by Examination, an awarding organisation –

- (a) must design and set those brief(s) in a way which –
  - (i) minimises the predictability of non-examination assessment tasks in any given set of assessments, and
  - (ii) facilitates comparability of non-examination assessment tasks, both within a set of assessments, and over time, and
- (b) must not communicate the brief(s) that it has set before 1 June in the calendar year before the year in which the qualification is to be awarded.

### **Marking of non-examination assessments**

Evidence generated by a Learner in an assessment for a GCSE Qualification in Engineering which is not an Assessment by Examination may be marked –

- (a) by the awarding organisation or a person connected to the awarding organisation,
- (b) by a Centre, or
- (c) through a combination of (a) and (b).

In any event, the awarding organisation must demonstrate to Ofqual's satisfaction in its assessment strategy that –

- (a) it has taken all reasonable steps to identify the risk of any Adverse Effect which may result from its approach to marking the assessments (and to Moderation where appropriate) and

(b) where such a risk is identified, it has taken all reasonable steps to prevent that Adverse Effect or, where it cannot be prevented, to mitigate that Adverse Effect.

## Proposed guidance

3.3 We are proposing to introduce guidance on assessment objectives which will apply to all new GCSEs in engineering.

### Guidance on assessment objectives for GCSE Qualifications in Engineering

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

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

	Objective	Weighting
AO1	Demonstrate knowledge and understanding of engineering principles and processes	25%
AO2	Apply knowledge, understanding and skills in different contexts, including through the use of a range of tools, equipment, materials, components and manufacturing processes	50%
AO3	Analyse and evaluate evidence in relation to a range of engineering contexts	25%

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

- the discrete ‘elements’ within each assessment objective 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(Engineering)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 of engineering principles and processes			25%
Strands	Elements	Coverage	Interpretation and definitions
n/a	1a – Demonstrate knowledge of engineering principles and processes	<ul style="list-style-type: none"> <li>■ Full coverage in each set of assessments<sup>11</sup> (but not in every assessment).</li> </ul>	<ul style="list-style-type: none"> <li>■ <b>Engineering principles and processes</b> means the knowledge and understanding specified in paragraphs 9 to 14 of the Content Document.</li> </ul>
	1b – Demonstrate understanding of engineering principles and processes	<ul style="list-style-type: none"> <li>■ A reasonable balance between elements 1a and 1b.</li> <li>■ Awarding organisations should justify the balance between elements 1a and 1b in their assessment strategies.</li> </ul>	

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<sup>11</sup> 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 Engineering. For clarity, the assessments taken by Learners may vary, depending on any possible routes through the qualification.

AO1: Apply knowledge, understanding and skills in different contexts, including through the use of a range of tools, equipment, materials, components and manufacturing processes			50%
Strands	Elements	Coverage	Interpretation and definitions
n/a	This assessment objective is a single element	<ul style="list-style-type: none"> <li>■ Full coverage in each set of assessments (but not every assessment).</li> </ul>	<ul style="list-style-type: none"> <li>■ <b>Skills, knowledge and understanding</b> are aspects of subject content. Awarding organisations should explain and justify their approach to targeting them in their assessment strategy.</li> <li>■ The emphasis within this assessment objective is on the application of knowledge, understanding and skills in practical contexts. This includes:                             <ul style="list-style-type: none"> <li>□ the application of the practical engineering skills specified in paragraph 15 of the Content Document, and</li> <li>□ the application of knowledge and understanding in practical contexts in the Assessments by Examination.</li> </ul> </li> </ul>

AO3: Analyse and evaluate evidence in relation to a range of engineering contexts			25%
Strands	Elements	Coverage	Interpretation and definitions
n/a	1a – Analyse evidence in relation to a range of engineering contexts.	<ul style="list-style-type: none"> <li>■ Full coverage in every assessment.</li> <li>■ A reasonable balance between elements 1a and 1b in every assessment.</li> </ul>	<ul style="list-style-type: none"> <li>■ In the context of this assessment objective:                             <ul style="list-style-type: none"> <li>□ <b>analyse</b> means deconstructing information and/or issues to find connections and provide logical chain(s) of reasoning,</li> <li>□ <b>evaluate</b> means appraising and/or making judgements with respect to information and/or issues, and</li> <li>□ analysis and evaluation should draw on underpinning knowledge and understanding.</li> </ul> </li> <li>■ <b>Engineering contexts</b> should be construed widely. It includes, but is not limited to, engineering products, activities, materials, manufacturing processes and systems.</li> </ul>
	1b – Evaluate evidence in relation to a range of engineering contexts.	<ul style="list-style-type: none"> <li>■ Awarding organisations should justify the balance between elements 1a and 1b in their assessment strategies.</li> </ul>	

**Questions on proposed Conditions, requirements and guidance for  
GCSE engineering**

**Question 19: Do you have any comments on our proposed Conditions and requirements for GCSE engineering?**

**Question 20: Do you have any comments on our proposed guidance for GCSE engineering?**

## 4. Proposed Conditions, requirements and guidance for GCSE design and technology

4.1 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 for GCSE design and technology below.

### Proposed Conditions and requirements

4.2 We are proposing to introduce the following Conditions and requirements which will apply to all new GCSE qualifications in design and technology:

- a Condition covering compliance with subject content and assessment objectives;
- a further Condition which permits non-exam assessment, specifies the percentage of exam- and non-exam assessment, and allows us to set more detailed rules and guidance for both exam- and non-exam assessment;
- our assessment objectives; and
- requirements for assessments which cover assessment of mathematical and scientific skills in exams, and non-exam assessment.

<b>Condition GCSE(Design and Technology)1</b>	<b>Compliance with content requirements</b>
GCSE(Design and Technology)1.1	In respect of each GCSE Qualification in Design and Technology which it makes available, or proposes to make available, an awarding organisation must – (a) comply with the requirements relating to that qualification set out in the document published by the Secretary of State entitled ‘Design and technology GCSE subject content’ <sup>12</sup> , document reference DFE-00283-2015, (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,

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<sup>12</sup> [www.gov.uk/government/publications/gcse-design-and-technology](http://www.gov.uk/government/publications/gcse-design-and-technology)

GCSE(Design and Technology)1.2	<p>which may be published by Ofqual and revised from time to time.</p> <p>In respect of each GCSE Qualification in Design and Technology which it makes available, or proposes to make available, an awarding organisation must comply with any 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.</p>
<b>Condition GCSE(Design and Technology)2</b>	<b>Assessment</b>
GCSE (Design and Technology)2.1	Condition GCSE4.1 does not apply to any GCSE Qualification in Design and Technology which an awarding organisation makes available or proposes to make available.
GCSE (Design and Technology)2.2	<p>In respect of the total marks available for a GCSE Qualification in Design and Technology which it makes available, an awarding organisation must ensure that –</p> <p>(a) 50 per cent of those marks are made available through Assessments by Examination, and</p> <p>(b) 50 per cent of those marks are made available through assessments that are not Assessments by Examination.</p>
GCSE(Design and Technology)2.3	An awarding organisation must ensure that in respect of each assessment for a GCSE Qualification in Design and Technology which it makes available it complies with any requirements, and has regard to any guidance, which may be published by Ofqual and revised from time to time.
<b>Assessment objectives – GCSE Qualifications in Design and Technology</b>	
Condition GCSE (Design and Technology)1.2 allows us to specify requirements relating to the objectives to be met by any assessment for GCSE Qualifications in Design and Technology.	
The assessment objectives set out below constitute requirements for the purposes of Condition GCSE(Design and Technology)1.2. Awarding	

organisations must comply with these requirements in relation to all GCSE Qualifications in Design and Technology they make available.

	Objective	Weighting
AO1	Identify, investigate and outline design possibilities to address needs and wants	10%
AO2	Design and make prototypes that are fit for purpose	30%
AO3	Analyse and evaluate – <ul style="list-style-type: none"> <li>■ design decisions and outcomes, including for prototypes made by themselves and others</li> <li>■ wider issues in design and technology</li> </ul>	20%
AO4	Demonstrate and apply knowledge and understanding of – <ul style="list-style-type: none"> <li>■ technical principles</li> <li>■ designing and making principles</li> </ul>	40%

### Assessment requirements – GCSE Qualifications in Design and Technology

Condition GCSE(Design and Technology)2.1 allows us to specify requirements in relation to assessments for GCSE Qualifications in Design and Technology.

We set out below our requirements for the purposes of Condition GCSE(Design and Technology)2.1. Awarding organisations must comply with these requirements in relation to all GCSE Qualifications in Design and Technology they make available.

#### Mathematical skills, knowledge and understanding

The subject content for GCSE Qualifications in Design and Technology is set out in the document published by the Secretary of State entitled ‘Design and technology GCSE subject content’,<sup>13</sup> document reference DFE-00283-2015 (the ‘Content Document’)

<sup>13</sup> [www.gov.uk/government/publications/gcse-design-and-technology](http://www.gov.uk/government/publications/gcse-design-and-technology)

Appendix 1 to the Content Document specifies the mathematical skills, knowledge and understanding which Learners will be required to apply in GCSE Qualifications in Design and Technology ('Mathematical Skills').

In designing and setting the Assessments by Examination for a GCSE Qualification in Design and Technology which it makes available, or proposes to make available, an awarding organisation must ensure that –

- (a) questions and tasks rewarding the use of Mathematical Skills assess those skills within the context of other areas of the subject content, and not in isolation,
- (b) in those Assessments by Examination, at least 10 per cent of the total marks for the qualification reward the use of Mathematical Skills at a Level of Demand which is not lower than that which is expected of Learners at Key Stage 3 as outlined in the Department for Education's document 'Mathematics programmes of study: key stage 3,' document reference DFE-00179-2013, and
- (c) without prejudice to the above requirements and those outlined in the Content Document, in each set of assessments Mathematical Skills are assessed across a range of Levels of Demand which supports effective differentiation in relation to the qualification.

### **Scientific skills, knowledge and understanding**

Appendix 1 to the Content Document also specifies the scientific skills, knowledge and understanding which Learners will be required to apply for GCSE Qualifications in Design and Technology (the 'Science Requirements').

In respect of each GCSE Qualification in Design and Technology which it makes available, or proposes to make available, an awarding organisation must explain and justify in its assessment strategy how it has addressed the Science Requirements within both the specification and assessments for that qualification.

### **Non-examination Assessment**

Condition GCSE(Design and Technology)2.2(b) states that an awarding organisation must ensure that, of the total marks available for a GCSE Qualification in Design and Technology, 50 per cent of those marks are made available through assessments that are not Assessments by Examination.

In respect of the 50 per cent, an awarding organisation must ensure that the marks are comprised as follows –

- (a) 10 per cent through marks made available in respect of assessment objective AO1 (i.e. assessing AO1 in its entirety),
- (b) 30 per cent through marks made available in respect of assessment objective AO2 (i.e. assessing AO2 in its entirety), and
- (c) 10 per cent through marks made available in respect of assessment objective AO3.

In relation to paragraph (c) above, a Learner's analysis and evaluation of design decisions and outcomes for prototypes that the Learner has made must only be assessed through the assessments which are not Assessments by Examination.

In respect of the assessments which are not Assessments by Examination, an awarding organisation must ensure that each Learner is required to complete a task which –

- (a) requires the Learner to produce the following evidence –
  - (i) a design brief developed in response to a contextual challenge set by the awarding organisation,
  - (ii) a final prototype(s) based on that design brief, and
  - (iii) such additional evidence as is necessary to enable the consideration of that Learner's level of attainment in respect of all of the relevant criteria against which Learners' performance in that assessment will be differentiated, and
- (b) must be taken under conditions specified by the awarding organisation, including, in particular, conditions which –
  - (i) ensure that the evidence generated by each Learner can be Authenticated, and
  - (ii) require each Learner to produce the final prototype(s) in (a)(ii) above under Immediate Guidance or Supervision.

### **Contextual challenges**

The Content Document requires awarding organisations to set –

contextual challenges, which provide a basis from which students can undertake a design, make and evaluate project.

In respect of each set of assessments, an awarding organisation must not communicate the contextual challenges that it has set before 1 June in the calendar year before the year in which the qualification is to be awarded.

### **Marking of non-examination assessments**

Evidence generated by a Learner in an assessment for a GCSE Qualification in Design and Technology which is not an Assessment by Examination may be marked –

- (a) by the awarding organisation or a person connected to the awarding organisation,
- (b) by a Centre, or
- (c) through a combination of (a) and (b).

In any event, the awarding organisation must demonstrate to Ofqual's satisfaction in its assessment strategy that –

- (a) it has taken all reasonable steps to identify the risk of any Adverse Effect which may result from its approach to marking the assessments (and to Moderation where appropriate) and
- (b) where such a risk is identified, it has taken all reasonable steps to prevent that Adverse Effect or, where it cannot be prevented, to mitigate that Adverse Effect.

## **Proposed guidance**

- 4.3 We are proposing to introduce guidance on assessment objectives which will apply to all new GCSEs in design and technology.

### **Guidance on assessment objectives for GCSE Qualifications in Design and Technology**

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

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

	Objective	Weighting
AO1	Identify, investigate and outline design possibilities to address needs and wants	10%
AO2	Design and make prototypes that are fit for purpose	30%
AO3	Analyse and evaluate – <ul style="list-style-type: none"> <li>■ design decisions and outcomes, including for prototypes made by themselves and others</li> <li>■ wider issues in design and technology</li> </ul>	20%
AO4	Demonstrate and apply knowledge and understanding of – <ul style="list-style-type: none"> <li>■ technical principles</li> <li>■ designing and making principles</li> </ul>	40%

We set out below our guidance for the purposes of Condition GCSE(Design and Technology)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(Design and Technology)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: Identify, investigate and outline design possibilities to address needs and wants			10%
Strands	Elements	Coverage	Interpretations and definitions
n/a	1a – Identify and investigate design possibilities to address needs and wants	<ul style="list-style-type: none"> <li>■ Full coverage in every task that addresses it.</li> <li>■ A reasonable balance between elements 1a and 1b.</li> </ul>	<ul style="list-style-type: none"> <li>■ <b>Identify</b> means looking at areas and opportunities in which designs can take place.</li> <li>■ <b>Investigate</b> means pursuing ideas and gathering information relating to a context.</li> <li>■ Identify and investigate are interdependent. The processes work together and take place in no particular order.</li> <li>■ <b>Outline</b> means to produce a design brief and specification to inform AO2</li> </ul>
	1b – Outline design possibilities to address needs and wants		

AO2: Design and make prototypes that are fit for purpose			30%
Strands	Elements	Coverage	Interpretations and definitions
n/a	This assessment objective is a single element	<ul style="list-style-type: none"> <li>Full coverage in every task that addresses it</li> </ul>	<ul style="list-style-type: none"> <li><b>Design</b> means the generation and development of ideas that can be presented to a third party, and can be evaluated and tested. However, the actual analysis and evaluation forms part of AO3.</li> <li><b>Prototype</b> means an appropriate working solution to a need or want that is sufficiently developed to be tested and evaluated (for example, full-sized products, scaled working models or functioning systems).</li> <li>In the context of a prototype, <b>fit for purpose</b> means (in addition to being a working solution) addressing the needs/wants of the intended user.</li> <li>Making skills can be assessed through the designing and making of the prototype(s), as well as the nature and quality of the final prototype.</li> </ul>

AO3: Analyse and evaluate –			20%
<ul style="list-style-type: none"> <li>■ design decisions and outcomes, including for prototypes made by themselves and others</li> <li>■ wider issues in design and technology</li> </ul>			
Strands	Elements	Coverage	Interpretations and definitions
<b>1 – Analyse and evaluate design decisions and outcomes, including for prototypes made by themselves and others</b>	1a – Analyse design decisions and outcomes, including for prototypes made by themselves and others	<ul style="list-style-type: none"> <li>■ Full coverage in each set of assessments (but not in every assessment).</li> <li>■ A reasonable balance between the strands within this assessment objective, and between the elements within each strand</li> </ul>	<ul style="list-style-type: none"> <li>■ In the context of this assessment objective:                             <ul style="list-style-type: none"> <li>□ <b>analyse</b> means deconstructing information and/or issues to find connections and provide logical chain(s) of reasoning,</li> <li>□ <b>evaluate</b> means appraising and/or making judgements with respect to information and/or issues, and</li> <li>□ analysis and evaluation should draw on underpinning knowledge and understanding.</li> </ul> </li> <li>■ Each set of assessments need not cover both design decisions and outcomes in the context of both prototypes made by the Learner and prototypes made by others. But there should be a reasonable balance between each of:                             <ul style="list-style-type: none"> <li>□ design decisions and outcomes; and</li> <li>□ prototypes made by the Learner, prototypes made by others, and other contexts within design and technology.</li> </ul> </li> </ul>
	1b – Evaluate design decisions and outcomes, including for prototypes made by themselves and others		
<b>2 – Analyse and evaluate wider issues in design and technology</b>	2a – Analyse wider issues in design and technology		
	2b – Evaluate wider issues in design and technology		

AO4: Demonstrate and apply knowledge and understanding of –			40%
<ul style="list-style-type: none"> <li>▪ technical principles</li> <li>▪ designing and making principles</li> </ul>			
Strands	Elements	Coverage	Interpretations and definitions
1 -Demonstrate and apply knowledge and understanding of technical principles	1a – Demonstrate knowledge of technical principles	<ul style="list-style-type: none"> <li>■ Full coverage in each set of assessments (but not in every assessment).</li> <li>■ No more than 10% of total marks should reward demonstrating knowledge in isolation.<sup>14</sup></li> <li>■ A reasonable balance between the elements in each strand.</li> </ul>	<ul style="list-style-type: none"> <li>■ Both <b>technical principles</b> and <b>designing and making principles</b> are aspects of subject content. Awarding organisations should explain their approach to targeting them in their assessment strategies.</li> <li>■ The emphasis in this assessment objective should be on the demonstration and application of knowledge and understanding of technical principles.</li> </ul>
	1b – Demonstrate understanding of technical principles		
	1c – Apply knowledge and understanding of technical principles		
2 -Demonstrate and apply knowledge and understanding of designing and making principles	2a – Demonstrate knowledge of designing and making principles		
	2b – Demonstrate understanding of designing and making principles		
	2c – Apply knowledge and understanding of designing and making principles		

<sup>14</sup> Marks that “reward demonstrating knowledge in isolation” include any mark awarded solely for recalling facts or other knowledge that is part of the specification. It does not include marks awarded for selecting appropriate knowledge (for example, to evidence an argument), or for applying knowledge to a particular context.

**Questions on proposed Conditions, requirements and guidance for GCSE design and technology**

**Question 21: Do you have any comments on our proposed Conditions and requirements for GCSE design and technology?**

**Question 22: Do you have any comments on our proposed guidance for GCSE design and technology?**

## 5. Proposed Conditions, requirements and guidance for AS and A level design and technology

5.1 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 for AS and A level design and technology below.

### Proposed Conditions and requirements

5.2 We are proposing to introduce the following Conditions and requirements which will apply to all new AS and A level qualifications in design and technology:

- a Condition covering compliance with subject content and assessment objectives;
- a further Condition which permits non-exam assessment, specifies the percentage of exam- and non-exam assessment, and allows us to set more detailed rules and guidance for both exam- and non-exam assessment;
- our assessment objectives; and
- requirements for assessments which cover assessment of mathematical and scientific skills in exams, and non-exam assessment.

<b>Condition GCE(Design and Technology)1</b>	<b>Compliance with content requirements</b>
GCE(Design and Technology)1.1	<p>In respect of each GCE Qualification in Design and Technology which it makes available, or proposes to make available, an awarding organisation must –</p> <p>(a) comply with the requirements relating to that qualification set out in the document published by the Secretary of State entitled ‘Design and technology AS and A level subject content’,<sup>15</sup> document reference DFE-00210-2015,</p> <p>(b) have regard to any recommendations or guidelines relating to that qualification set out in that document, and</p>

<sup>15</sup> [www.gov.uk/government/publications/gce-as-and-a-level-design-and-technology](http://www.gov.uk/government/publications/gce-as-and-a-level-design-and-technology)

GCE(Design and Technology)1.2	<p>(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.</p> <p>In respect of each GCE Qualification in Design and Technology which it makes available, or proposes to make available, an awarding organisation must comply with any 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.</p>
<b>Condition GCE(Design and Technology)2</b>	<b>Assessment</b>
GCE(Design and Technology)2.1	<p>Condition GCE4.1 does not apply to any GCE Qualification in Design and Technology which an awarding organisation makes available or proposes to make available.</p>
GCE(Design and Technology)2.2	<p>In respect of the total marks available for a GCE Qualification in Design and Technology which it makes available, an awarding organisation must ensure that –</p> <p>(a) 50 per cent of those marks are made available through Assessments by Examination, and</p> <p>(b) 50 per cent of those marks are made available through assessments that are not Assessments by Examination.</p>
GCSE(Design and Technology)2.3	<p>An awarding organisation must ensure that in respect of each assessment for a GCE Qualification in Design and Technology which it makes available it complies with any requirements, and has regard to any guidance, which may be published by Ofqual and revised from time to time.</p>
<b>Assessment objectives – GCE Qualifications in Design and Technology</b>	
<p>Condition GCE(Design and Technology)1.2 allows us to specify requirements relating to the objectives to be met by any assessment for GCE Qualifications in Design and Technology.</p>	

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

	Objective	Weighting (A level)	Weighting (AS)
AO1	Identify, investigate and outline design possibilities to address needs and wants	10-15%	10-15%
AO2	Design and make prototypes that are fit for purpose	20-25%	20-25%
AO3	Analyse and evaluate – <ul style="list-style-type: none"> <li>■ design decisions and outcomes, including for prototypes made by themselves and others</li> <li>■ wider issues in design and technology</li> </ul>	20-25%	20-25%
AO4	Demonstrate and apply knowledge and understanding of – <ul style="list-style-type: none"> <li>■ technical principles</li> <li>■ designing and making principles</li> </ul>	35-40%	35-40%

### Assessment requirements – GCE Qualifications in Design and Technology

Condition GCE(Design and Technology)2.1 allows us to specify requirements relating to the objectives to be met by any assessment for GCE Qualifications in Design and Technology.

We set out below our requirements for the purposes of Condition GCE(Design and Technology)2.1. Awarding organisations must comply with these requirements in relation to all GCE Qualifications in Design and Technology they make available.

#### Mathematical skills, knowledge and understanding

The subject content for GCE Qualifications in Design and Technology is set out in the document published by the Secretary of State entitled 'Design and technology

GCE AS and A level subject content',<sup>16</sup> document reference DFE-00210-2015 (the 'Content Document')

Paragraph 9 of the Content Document states that –

Design and technology specifications may offer one of more of the endorsed titles [...]

- design and technology (product design)
- design and technology (fashion and textiles)
- design and technology (design engineering)

Appendix 1 to the Content Document specifies, for each of the endorsed titles, the mathematical skills, knowledge and understanding which Learners will be required to apply in GCE Qualifications in Design and Technology ('Mathematical Skills').

In designing and setting the Assessments by Examination for a GCE Qualification in Design and Technology which it makes available, or proposes to make available, an awarding organisation must ensure that –

- (a) questions and tasks rewarding the use of Mathematical Skills assess those skills within the context of other areas of the subject content, and not in isolation,
- (b) in the Assessments by Examination for a GCE Qualification in Design and Technology with a 'design engineering' endorsed title, at least 15 per cent of the total marks for the qualification are made available through questions and tasks that reward the use of Mathematical Skills,
- (c) in the Assessments by Examination for a GCE Qualification in Design and Technology without a 'design engineering' endorsed title, at least 10 per cent of the total marks for the qualification are made available through questions and tasks that reward the use of Mathematical Skills,
- (d) the questions and tasks outlined in (b) and (c) are set at a Level of Demand that is not lower than that which is expected of Learners in assessments for the higher tier in a GCSE Qualification in Mathematics, and
- (e) without prejudice to the above requirements and those outlined in the Content Document, in each set of assessments Mathematical Skills are assessed

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<sup>16</sup> [www.gov.uk/government/publications/gce-as-and-a-level-design-and-technology](http://www.gov.uk/government/publications/gce-as-and-a-level-design-and-technology)

across a range of Levels of Demand which supports effective differentiation in relation to the qualification.

### **Scientific skills, knowledge and understanding**

Appendix 1 to the Content Document also specifies, for each of the endorsed titles, the scientific skills, knowledge and understanding which Learners will be required to apply for GCE Qualifications in Design and Technology (the ‘Science Requirements’).

In respect of each GCE Qualification in Design and Technology which it makes available, or proposes to make available, an awarding organisation must explain and justify in its assessment strategy how it has addressed the Science Requirements within both the specification and assessments for that qualification.

### **Non-examination Assessment**

Condition GCE(Design and Technology)2.2(b) states that an awarding organisation must ensure that, of the total marks available for a GCE Qualification in Design and Technology, 50 per cent of those marks are made available through assessments that are not Assessments by Examination.

In respect of that 50 per cent, an awarding organisation must ensure that –

- (a) assessment objective AO1 is assessed in its entirety through the assessments that are not Assessments by Examination,
- (b) assessment objective AO2 is assessed in its entirety through the assessments that are not Assessments by Examination, and
- (c) at least 10 per cent of the marks available for the qualification are made available in respect of assessment objective AO3.

In relation to paragraph (c) above, a Learner’s analysis and evaluation of design decisions and outcomes for prototypes that the Learner has made must only be assessed through the assessments which are not Assessments by Examination.

### **Non-examination Assessment (A level)**

The requirements in this section apply to GCE A level qualifications in Design and Technology which an awarding organisation makes available or proposes to make available.

In respect of the assessments which are not Assessments by Examination, an awarding organisation must ensure that each Learner is required to complete a task which –

- (a) requires the Learner to produce the following evidence –
- (i) a final prototype(s) based on a design brief developed by the Learner, and
  - (ii) such additional evidence as is necessary to enable the consideration of that Learner's level of attainment in respect of all of the relevant criteria against which Learners' performance in that assessment will be differentiated, and
- (b) must be taken under conditions specified by the awarding organisation, including, in particular, conditions which –
- (i) ensure that the evidence generated by each Learner can be Authenticated, and
  - (ii) require each Learner to produce the final prototype in (a)(ii) above under Immediate Guidance or Supervision.

**Non-examination Assessment (AS)**

The requirements in this section apply to GCE AS qualifications in Design and Technology which an awarding organisation makes available or proposes to make available.

In respect of the assessments which are not Assessments by Examination, an awarding organisation must ensure that each Learner is required to complete a task which –

- (a) requires the Learner to produce the following evidence –
- (i) a design brief developed in response to a contextual challenge set by the awarding organisation,
  - (ii) a final prototype(s) based on that design brief, and
  - (iii) such additional evidence as is necessary to enable the consideration of that Learner's level of attainment in respect of all of the relevant criteria against which Learners' performance in that assessment will be differentiated, and
- (b) must be taken under conditions specified by the awarding organisation, including, in particular, conditions which –
- (i) ensure that the evidence generated by each Learner can be Authenticated, and

- (ii) require each Learner to produce the final prototype(s) in (a)(ii) above under Immediate Guidance or Supervision.

### **Marking of non-examination assessments**

Evidence generated by a Learner in an assessment for a GCE Qualification in Design and Technology which is not an Assessment by Examination may be marked –

- (a) by the awarding organisation or a person connected to the awarding organisation,
- (b) by a Centre, or
- (c) through a combination of (a) and (b).

In any event, the awarding organisation must demonstrate to Ofqual's satisfaction in its assessment strategy that –

- (a) it has taken all reasonable steps to identify the risk of any Adverse Effect which may result from its approach to marking the assessments (and to Moderation where appropriate) and
- (b) where such a risk is identified, it has taken all reasonable steps to prevent that Adverse Effect or, where it cannot be prevented, to mitigate that Adverse Effect

## **Proposed guidance**

- 5.3 We are proposing to introduce guidance on assessment objectives which will apply to all new AS and A level qualifications in design and technology.

### **Guidance on assessment objectives for GCE Qualifications in Design and Technology**

Condition GCE(Design and Technology)1.2 allows us to specify requirements and guidance relating to assessment objectives for GCE Qualifications in Design and Technology.

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

	Objective	Weighting (A level)	Weighting (AS)
AO1	Identify, investigate and outline design possibilities to address needs and wants	10-15%	10-15%
AO2	Design and make prototypes that are fit for purpose	20-25%	20-25%
AO3	Analyse and evaluate – <ul style="list-style-type: none"> <li>■ design decisions and outcomes, including for prototypes made by themselves and others</li> <li>■ wider issues in design and technology</li> </ul>	20-25%	20-25%
AO4	Demonstrate and apply knowledge and understanding of – <ul style="list-style-type: none"> <li>■ technical principles</li> <li>■ designing and making principles</li> </ul>	35-40%	35-40%

We set out below our guidance for the purposes of Condition GCE(Design and Technology)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 GCE(Design and Technology)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: Identify, investigate and outline design possibilities to address needs and wants			10-15% (A level) 10-15% (AS)
Strands	Elements	Coverage	Interpretations and definitions
n/a	1a – Identify and investigate design possibilities to address needs and wants	<ul style="list-style-type: none"> <li>■ Full coverage in every task that addresses it.</li> <li>■ A reasonable balance between elements 1a and 1b.</li> </ul>	<ul style="list-style-type: none"> <li>■ <b>Identify</b> means looking at areas and opportunities in which designs can take place.</li> <li>■ <b>Investigate</b> means pursuing ideas and gathering information relating to a context.</li> <li>■ Identify and investigate are interdependent. The processes work together and take place in no particular order.</li> <li>■ <b>Outline</b> means to produce a design brief and specification to inform AO2</li> </ul>
	1b – outline design possibilities to address needs and wants		

AO2: Design and make prototypes that are fit for purpose			20-25% (A level) 20-25% (AS)
Strands	Elements	Coverage	Interpretations and definitions
n/a	This assessment objective is a single element	<ul style="list-style-type: none"> <li>Full coverage in every task that addresses it.</li> </ul>	<ul style="list-style-type: none"> <li><b>Design</b> means the generation and development of ideas that can be presented to a third party, and can be evaluated and tested. However, the actual analysis and evaluation forms part of AO3.</li> <li><b>Prototype</b> means an appropriate working solution to a need or want that is sufficiently developed to be tested and evaluated (for example, full-sized products, scaled working models or functioning systems).</li> <li>In the context of a prototype, <b>fit for purpose</b> means (in addition to being a working solution) addressing the needs/wants of the intended user.</li> <li>Making skills can be assessed through the designing and making of the prototype(s), as well as the nature and quality of the final prototype.</li> </ul>

AO3: Analyse and evaluate –			20-25% (A level) 20-25% (AS)
<ul style="list-style-type: none"> <li>■ design decisions and outcomes, including for prototypes made by themselves and others</li> <li>■ wider issues in design and technology</li> </ul>			
Strands	Elements	Coverage	Interpretations and definitions
<b>1 – Analyse and evaluate design decisions and outcomes, including for prototypes made by themselves and others</b>	1a – Analyse design decisions and outcomes, including for prototypes made by themselves and others	<ul style="list-style-type: none"> <li>■ Full coverage in each set of assessments (but not in every assessment).</li> <li>■ A reasonable balance between the strands within this assessment objective, and between the elements within each strand</li> </ul>	<ul style="list-style-type: none"> <li>■ In the context of this assessment objective:                             <ul style="list-style-type: none"> <li>□ <b>analyse</b> means deconstructing information and/or issues to find connections and provide logical chain(s) of reasoning,</li> <li>□ <b>evaluate</b> means appraising and/or making judgements with respect to information and/or issues, and</li> <li>□ analysis and evaluation should draw on underpinning knowledge and understanding.</li> </ul> </li> <li>■ Each set of assessments need not cover both design decisions and outcomes in the context of both prototypes made by the Learner and prototypes made by others. But there should be a reasonable balance between each of:                             <ul style="list-style-type: none"> <li>□ design decisions and outcomes; and</li> <li>□ prototypes made by the Learner, prototypes made by others, and other contexts within design and technology.</li> </ul> </li> </ul>
	1b – Evaluate design decisions and outcomes, including for prototypes made by themselves and other		
<b>2 – Analyse and evaluate wider issues in design and technology</b>	2a – Analyse wider issues in design and technology		
	2b – Evaluate wider issues in design and technology		

AO4: Demonstrate and apply knowledge and understanding of –		35-40% (A level) 35-40% (AS)	
<ul style="list-style-type: none"> <li>▪ technical principles</li> <li>▪ designing and making principles</li> </ul>			
Strands	Elements	Coverage	Interpretations and definitions
<b>1 -Demonstrate and apply knowledge and understanding of technical principles</b>	1a – Demonstrate knowledge of technical principles	<ul style="list-style-type: none"> <li>▪ Full coverage in each set of assessments (but not in every assessment).</li> <li>▪ No more than 10% of total marks should reward demonstrating knowledge in isolation.<sup>17</sup></li> <li>▪ A reasonable balance between the elements in each strand.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Both <b>technical principles</b> and <b>design and making principles</b> are aspects of subject content. Awarding organisations should explain their approach to targeting them in their assessment strategies.</li> <li>▪ Knowledge and understanding of technical principles and designing and making principles includes both the core and the additional specialist knowledge set out in the ‘Design and technology GCE AS and A level subject content’,<sup>18</sup> document reference DFE-00210-2015.</li> <li>▪ The emphasis in this assessment objective should be on the demonstration and application of knowledge and understanding of technical principles.</li> </ul>
	1b – Demonstrate understanding of technical principles		
	1c – Apply knowledge and understanding of technical principles		
<b>2 -Demonstrate and apply knowledge and understanding of designing and making principles</b>	2a – Demonstrate knowledge of designing and making principles		
	2b – Demonstrate understanding of designing and making principles		
	2c – Apply knowledge and understanding of designing and making principles		

<sup>17</sup> Marks that “reward demonstrating knowledge in isolation” include any mark awarded solely for recalling facts or other knowledge that is part of the specification. It does not include marks awarded for selecting appropriate knowledge (for example, to evidence an argument), or for applying knowledge to a particular context.

<sup>18</sup> [www.gov.uk/government/publications/gce-as-and-a-level-design-and-technology](http://www.gov.uk/government/publications/gce-as-and-a-level-design-and-technology)

**Questions on proposed Conditions, requirements and guidance for  
AS and A level design and technology**

**Question 23: Do you have any comments on our proposed Conditions and requirements for AS and A level design and technology?**

**Question 24: Do you have any comments on our proposed guidance for AS and A level design and technology?**

## 6. Equality impact analysis

### Ofqual's role, objectives and duties

- 6.1 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 engineering and GCSE, AS and A level design and technology

- 6.2 We have considered the potential impact on students who share protected characteristics<sup>19</sup> of the application of the principles and features that will apply to all new GCSE, AS and A level qualifications. Our equality impact analyses for our earlier consultations on GCSE,<sup>20</sup> AS and A level reform<sup>21</sup> are therefore of interest and we encourage you to read them.
- 6.3 Issues concerning the proposed subject content have been considered by the DfE, which has published its own Equalities Impact Analysis on its subject content proposals.<sup>22</sup>
- 6.4 We have also previously considered the potential impact on students who share protected characteristics of our decisions on assessment arrangements for both engineering and design and technology.<sup>23</sup>
- 6.5 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.
- 6.6 We have not identified any additional negative impacts on students who share protected characteristics which would result from the proposals in this

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<sup>19</sup> 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.

<sup>20</sup> <http://webarchive.nationalarchives.gov.uk/20141031163546/http://comment.ofqual.gov.uk/gcse-reform-june-2013/category/8-equality-impact-analysis/>

<sup>21</sup> <http://webarchive.nationalarchives.gov.uk/20141031163546/http://www.ofqual.gov.uk/files/2012-06-18-equality-analysis-of-the-a-level-reform-consultation.pdf>

<sup>22</sup> [www.gov.uk/government/consultations/gcse-and-a-level-reform-content-for-teaching-from-september-2017](http://www.gov.uk/government/consultations/gcse-and-a-level-reform-content-for-teaching-from-september-2017)

<sup>23</sup> [www.gov.uk/government/consultations/gcse-reform-regulations-for-design-and-technology](http://www.gov.uk/government/consultations/gcse-reform-regulations-for-design-and-technology) and [www.gov.uk/government/consultations/development-of-new-gcses-and-a-levels-for-teaching-from-2017](http://www.gov.uk/government/consultations/development-of-new-gcses-and-a-levels-for-teaching-from-2017)

consultation (beyond those that we and the DfE have already identified in our earlier reports).

- 6.7 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.
- 6.8 Exam boards are required to consider the accessibility of their qualifications at the design stage and to remove any unjustifiable barriers.

**Question 25: We have not identified any ways in which our proposals for GCSE engineering, and for GCSE, AS and A level design and technology would impact (positively or negatively) on persons who share a protected characteristic.<sup>24</sup> Are there any potential impacts we have not identified?**

**Question 26: 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 27: Do you have any other comments on the impacts of the proposals on students who share a protected characteristic?**

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<sup>24</sup> '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*<sup>25</sup> that apply to all regulated qualifications;

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<sup>25</sup> [www.gov.uk/government/publications/general-conditions-of-recognition](http://www.gov.uk/government/publications/general-conditions-of-recognition)

- (ii) GCSE (9 to 1) Qualification Level Conditions and Requirements<sup>26</sup> that apply to all new GCSE qualifications; and
- (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 Design and Technology, and on draft GCSE Subject Level Conditions for Engineering.

There are also three sets of Conditions that will apply to new AS and A level qualifications:

- (i) the *General Conditions of Recognition*;
- (ii) *GCE Qualification Level Conditions and Requirements*<sup>27</sup> that apply to all new AS and A level qualifications; and
- (iii) GCE Subject Level Conditions that apply to new AS and A level qualifications in a specific subject. We are consulting now on draft GCE Subject Level Conditions for Design and Technology.

## 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 the following regulatory documents, which cover:

- for GCSE engineering, the interpretation of subject content;
- for each of GCSE design and technology, GCSE engineering, and GCE design and technology our requirements for assessments (including non-exam 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

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<sup>26</sup> [www.gov.uk/government/publications/gcse-9-to-1-qualification-level-conditions](http://www.gov.uk/government/publications/gcse-9-to-1-qualification-level-conditions)

<sup>27</sup> [www.gov.uk/government/publications/gce-qualification-level-conditions-and-requirements](http://www.gov.uk/government/publications/gce-qualification-level-conditions-and-requirements)

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, AS and A levels in design and technology, and for new GCSEs in engineering.

## **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.<sup>28</sup> 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.

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<sup>28</sup> 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)

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**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

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**May we contact you for further information?**

Yes  No

## Questions

**Question 1: To what extent do you agree or disagree that – for each of GCSE design and technology, GCSE engineering and AS and A level design and technology – 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 interpreting the subject content requirements for equations in GCSE engineering?**

- 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 – for each of GCSE design and technology, GCSE engineering and AS and A level design and technology – 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 that we should introduce rules for exam assessment to ensure exam boards take a consistent approach to assessing mathematical skills in GCSE engineering?**

- 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 we should introduce rules for exam assessment to ensure exam boards take a consistent approach to assessing mathematical and scientific skills in GCSE, AS and A level design and technology?**

- 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 mathematical skills (including our approach to the 15 per cent minimum weighting) for GCSE engineering?**

- 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 assessing mathematical skills (including the proposed 10 per cent minimum weighting) for GCSE design and technology?**

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

Please explain your reasons:

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**Question 8: To what extent do you agree or disagree with our proposed approach to assessing mathematical skills (including the proposed minimum weightings) for AS and A level design and technology?**

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

Please explain your reasons:

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**Question 9: To what extent do you agree or disagree with our proposed approach to assessing scientific knowledge, skills and understanding in GCSE, AS and A level design and technology?**

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

Please explain your reasons:

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**Question 10: To what extent do you agree or disagree that – for each of GCSE design and technology, GCSE engineering and AS and A level design and technology – we should introduce a Condition which permits non-exam assessment, specifies the proportion of exam- and non-exam assessment, and allows us to set more detailed rules and guidance on non-exam assessment?**

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

Please explain your reasons:

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**Question 11: To what extent do you agree or disagree with our proposed approach to allocating non-exam assessment marks to assessment objectives in GCSE engineering?**

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

Please explain your reasons:

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**Question 12: To what extent do you agree or disagree with our proposed approach to setting the brief(s) for non-exam assessment in GCSE engineering?**

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

Please explain your reasons:

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**Question 13: To what extent do you agree or disagree with our proposal that the briefs for non-exam assessment in GCSE engineering should be released no earlier than 1 June in the year before the qualification is to be awarded?**

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

Please explain your reasons:

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**Question 14: To what extent do you agree or disagree with our proposed approach to allocating non-exam assessment marks to assessment objectives in GCSE design and technology?**

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

Please explain your reasons:

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**Question 15: To what extent do you agree or disagree with our proposal that the contextual challenges for non-exam assessment in GCSE design and technology should be released no earlier than 1 June in the year before the qualification is to be awarded?**

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

Please explain your reasons:

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**Question 16: To what extent do you agree or disagree with our proposed approach to allocating non-exam assessment marks to assessment objectives in AS and A level design and technology?**

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

Please explain your reasons:

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**Question 17: To what extent do you agree or disagree with our proposed approach to authenticating non-exam assessment in GCSE engineering and GCSE, AS and A level design and technology?**

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

Please explain your reasons:

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**Question 18: To what extent do you agree or disagree with our proposed approach to marking of non-exam assessment in GCSE engineering, and GCSE, AS and A level design and technology?**

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

Please explain your reasons:

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**Question 19: Do you have any comments on our proposed Conditions and requirements for GCSE engineering?**

Yes  No

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**Question 20: Do you have any comments on our proposed guidance for GCSE engineering?**

Yes  No

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**Question 21: Do you have any comments on our proposed Conditions and requirements for GCSE design and technology?**

Yes  No

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**Question 22: Do you have any comments on our proposed guidance for GCSE design and technology?**

Yes  No

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**Question 23: Do you have any comments on our proposed Conditions and requirements for AS and A level design and technology?**

Yes  No

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**Question 24: Do you have any comments on our proposed guidance for AS and A level design and technology?**

Yes  No

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**Question 25: We have not identified any ways in which our proposals for GCSE engineering, and for GCSE, AS and A level design and technology would impact (positively or negatively) on persons who share a protected characteristic.<sup>29</sup> Are there any potential impacts we have not identified?**

Yes  No

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**Question 26: Are there any additional steps we could take to mitigate any negative impact resulting from these proposals on persons who share a protected characteristic?**

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<sup>29</sup> '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.

Yes  No

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**Question 27: 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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## 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

We wish to make our publications widely accessible. Please contact us at [publications@ofqual.gov.uk](mailto:publications@ofqual.gov.uk) if you have any specific accessibility requirements.



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