

**Analysis of Responses to our
Consultation on Conditions and
Guidance for AS and A Level Science
(Biology, Chemistry, Physics)**



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Executive summary

Our consultation about the Conditions and guidance for AS and A level science (biology, chemistry, physics) took place between 8th June 2015 and 6th July 2015.

The consultation questions were available either to complete online or to download. A copy of the consultation is available at www.gov.uk/government/consultations/a-level-reform-regulations-for-biology-chemistry-and-physics.

There were 35 responses to the consultation – 25 from individuals and ten from organisations. All responses were in a form that matched or broadly followed the layout of the online consultation.

Most respondents supported our proposal to consolidate our requirements into a single set of documents, but some noted that these needed to reflect the differences between the three subjects.

Respondents also supported our overall approach to assessing practical skills, but did express concerns about the administrative burden that some of our proposals could place on teachers and schools. A number of respondents also commented that it was not clear what schools would need to provide by way of evidence and documentation.

Some respondents were also concerned that exam boards might not have the capacity to deliver the proposed monitoring arrangements, or that there could be inconsistencies between exam boards.

1. Introduction

This report is a summary of the views expressed by those who responded to our consultation on the revised Conditions and guidance for AS and A level science (biology, chemistry, physics) which took place between 8th June 2015 and 6th July 2015.

Background

Reformed AS and A level qualifications in biology, chemistry and physics are being introduced in England, and will be taught in schools from September 2015.

We have already accredited all the new AS and A level qualifications in biology, chemistry and physics that will be taught from September 2015. The specifications for these new qualifications currently include provisional information about the practical skills assessments.

This consultation focused on the detailed rules and guidance that we proposed to put in place for these assessments of practical skills. We also consulted on consolidating the rules and guidance for biology, chemistry and physics into a single set of documents that will apply to all three subjects.

2. Who responded?

We received a total of 35 responses to our consultation.¹ Twenty-five responses were from individuals and ten were from organisations. All of the responses were from individuals or organisations based in England or Wales.

We received a number of late responses to our consultation, which we have considered, but details of these responses are not included in the analysis below.

Table 1: Breakdown of consultation responses

Personal / Organisation response	Respondent type	Number
Personal	Teacher	19
Personal	Educational specialist	3
Personal	Parent / Carer	1
Personal	Student	2
Organisation	Exam board	3
Organisation	School / College	3
Organisation	Local authority	1
Organisation	School, college or teacher representative group	1
Organisation	Subject association / Learned society	1
Organisation	Union	1

¹ Where responses were received in hard copy we entered them into the online platform.

3. Approach to analysis

We published the consultation on our website. Respondents could choose to respond using an online form, by email or by posting their answers to the consultation questions to us. The consultation included nine questions.

This was a consultation on the views of those who wished to participate and while we tried to ensure that as many respondents as possible had the opportunity to reply, it cannot be considered as a representative sample of the general public or of any specific group.

Data presentation

We present the responses to the consultation questions in the order in which they were asked.

The consultation asked nine questions and each had a different focus. Respondents could choose to answer all or just some of the questions.

During the analysis phase we reviewed every response to each question.

4. Views expressed – consultation response outcomes

In this section we report the views, in broad terms, of those who responded to the consultation document. We have structured this around the questions covered in the consultation document.

A consultation is not the same as a survey and the responses only reflect the views of those who chose to respond. Typically these will be those with strong views and/or particular experience or interest in a topic. What follows is a fair reflection of the views expressed by respondents to the consultation.

A list of the organisations that responded to the consultation is included in Appendix A.

<p>Question 1 – Do you have any comments on our proposal to consolidate the Conditions, requirements and guidance relating to GCE qualifications in biology, chemistry or physics into one set of documents?</p>

This question referred to our proposal that we should publish a single set of regulatory rules and guidance that applied to biology, chemistry and physics.

Twenty-one respondents (17 individuals, four organisations) did not comment on our proposals.

Eleven respondents (five individuals, six organisations) supported this proposal.

One (an individual) felt that it was important to retain flexibility to tailor the Conditions to each subject.

One (an individual) commented that the differences in practical work between subjects should be reflected in our rules.

Two (both individuals) commented that it was important for teachers to have separate information for each subject.

<p>Question 2 – Do you have any comments on our proposed Conditions and requirements relating to the practical science assessments in new A levels in biology, chemistry or physics?</p>

Thirteen respondents (ten individuals, three organisations) did not answer this question. A further 12 respondents (nine individuals, three organisations) did not comment on our consultation proposals.

Four respondents (all individuals) commented that the expectation that students 'consistently and routinely' demonstrate practical skills was unclear, and could be difficult or burdensome to evidence.

One (an individual) commented that it was important that students demonstrated competency across the full range of practical skills (and could not substitute good performance in one skill for poor performance in another).

One (an individual) commented that the requirement to measure 'levels of competency' in different skills appeared to conflict with the overall pass/fail nature of the practical assessment.

Three (all organisations) commented on the detailed drafting of our requirements, noting that:

- it was not clear on the face of the draft requirements that separate endorsements of practical skills were needed for biology, chemistry and physics;
- our draft requirements appeared to prevent teachers assessing students' skills in practical work that was not part of the 12 required activities;
- our draft requirements suggest that all of the practical skills listed in the subject content would be assessed through practical work – but some would only be assessed in the exams;
- we had not specified the records that schools should keep to evidence their judgements on students' practical skills, and that a consistent approach was needed; and
- our draft requirements permitted exam board marking of practical work, which would not be possible in practice.

Question 3 – Do you have any comments on our proposed requirements on exam board monitoring of schools' provision of practical science assessments?

Twelve respondents (ten individuals, two organisations) did not answer this question.

Five respondents (three individuals, two organisations) commented that it was unrealistic to expect monitors to directly observe practical work on every visit, as this would require significant advance notice and/or compromise effective teaching.

Respondents also commented that monitoring visits needed to be "rigorous" (one individual), and that exam boards need to take a consistent approach (one

individual). Three (all individuals) also commented that it was not clear what exam boards would want to see on a monitoring visit. One (an individual) commented that the proposed collaboration between exam boards was a good step.

Three (all organisations) commented on the timing of visits, noting that they should not take place during exam preparation, and might be most useful just after the halfway point of the A level course.

Three respondents (two individuals, one organisation) expressed concern about the way in which monitoring visits would be conducted. The organisation commented that visits should be part of a supportive and development process, not a “mini-OFSTED ... for science practicals”. The individuals expressed concerns that teachers could focus unduly on what was being inspected (rather than good teaching), and that monitoring of approaches could then lead to unexpected and/or unfair adjustments to practical marks at moderation.

Two respondents (both organisations) commented on the details of monitoring arrangements, with one suggesting that our proposals should only apply for the first two years of teaching, and another commenting that it was not possible for an exam board to ensure that another exam board carried out a monitoring visit appropriately.

Question 4 – Do you have any comments on our proposed certificate requirements for new A levels in biology, chemistry and physics?

This question referred to our proposed requirements that implemented our earlier decisions on how outcomes for A level practical science assessments should be reported on certificates.

Eighteen respondents (14 individuals, four organisations) did not comment on our proposals.

Three respondents (one individual, two organisations) supported the use of a single pass grade and unclassified. One organisation and one individual felt that there should be more pass grades. One organisation also suggested that students should get a certificate if they passed the practical skills assessment but were unclassified on written exams.

Two respondents (one individual, one organisation) expressed concerns about the possible administrative burden that these requirements could introduce.

Two respondents (one individual, one organisation) commented that it was not clear whether students who had to resit either their written assessment or their practical assessment, could in both cases carry over the results from the other component for which they may have received a satisfactory grade.

One (an individual) commented that the practical endorsement should refer to the marks awarded in exams for practical work as well as the directly assessed practical skills.

One (an organisation) commented that it would be helpful to be clear that practical skills are assessed separately for biology, chemistry and physics.

Question 5 – Do you have any comments arising from the fact that the new Conditions and requirements proposed in this consultation will, if adopted, have the effect of revising the accreditation criterion for GCE science (biology, chemistry and physics)?

This question referred to our proposal that we would not require exam boards to submit their existing AS or A level science qualifications for re-accreditation. Instead, existing qualifications would need to comply with our new rules but would remain accredited.

Twenty-three respondents did not comment on our proposals.

Two respondents (both organisations) agreed that we should not require exam boards to submit their qualifications for re-accreditation. One noted that re-accreditation should be required if exam boards make major changes to their specifications that could impact on schools. The other commented that it was not clear what process exam boards should follow for updating their assessment strategies.

Three (two individuals, one organisation) commented that the changes were being proposed very close to the introduction of these new qualifications.

One (an individual) commented that it was not clear what the revisions would be.

Question 6 – We have summarised how we believe the proposals for the assessment of practical science skills would impact (positively or negatively) on persons who share a protected characteristic.² Are there any potential impacts we have not identified?

Thirty respondents (24 individuals, six organisations) did not comment on our proposals.

² '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.

One respondent (an organisation) commented that students who had been “looked after” up to the age of 16 may have lower attendance than other students, and therefore might be unable to complete the practical requirements.

One (an organisation) commented that our proposals had not taken account of independent learners.

One (an organisation) commented that it was important that any adjustments made to practical assessments did not lead to a situation where practical grades did not give a reliable indication of skills. They also commented that specific practical activities could be less accessible to some students and that it would be better for exam boards to offer some choice over the practical activities.

One (an organisation) noted that it was not clear whether and how practical assessments could be adjusted for students with reading difficulties.

One (an individual) commented that some students will perform better in coursework than in exams and would therefore be disadvantaged by the removal of coursework. They also suggested that this might have a bigger impact on girls than boys.³

Question 7 – Are there any additional steps we could take to mitigate any negative impact resulting from these proposals on persons who share a protected characteristic?

Thirty-one respondents (23 individuals, eight organisations) did not comment on our proposals.

Two respondents (both individuals) commented that AS and A level should include coursework that contributes to the overall grade.

Two (both organisations) commented that suitable allowances should be made for disabled students, and that schools should be allowed to exercise their judgement in determining adjustments that could be made to support them.

³ This is an issue that we considered when taking decisions on the overall design of AS and A level qualifications. While some studies have suggested that girls may perform better at controlled assessment (and boys may perform better in exams), the overall body of research does not support this view.

Question 8 – Have you any other comments on the impacts of the proposals on persons who share a protected characteristic?

Thirty-three respondents (24 individuals, nine organisations) did not comment on our proposals.

One respondent (an organisation) commented that there was a danger that the practical requirements would discourage some disabled students from pursuing A level science.

One (an individual) commented that students perform better in practical investigations than in exams, and suggested that AS and A level science should include coursework.

Question 9 – Do you have any comments on the impacts of our proposals on schools and/or exam boards?

Fifteen respondents (ten individuals, five organisations) did not comment on our proposals.

Ten respondents (six individuals, four organisations) expressed concerns that the new arrangements for practical work could result in increased costs for schools, or additional administrative burden. Respondents were particularly concerned about the burden associated with evidencing students' performance, and with exam board monitoring visits.

Four (all individuals) expressed support for our overall approach to assessing practical skills.

Two (one individual, one organisation) commented that questions assessing practical skills in the exam needed to be carefully written, and should be monitored to ensure that they are effective.

Two (both individuals) questioned whether exam boards had the capacity to carry out the required monitoring visits.

One (an individual) commented that the different arrangements for assessing practical skills in AS and A level qualifications in Wales provided an opportunity for comparative research.

Other issues

A number of respondents commented on issues outside the scope of the consultation, including:

- our overall approach to assessing practical skills in A level biology, chemistry and physics – although most respondents expressed support for this approach, a small minority commented that we should reintroduce coursework or have the practical skills assessment contribute to the overall grade;
- the timing of our consultation (particularly in relation to the start of new courses in September 2015); and
- how universities (and UCAS) would use the separately reported practical grade in admissions.

Appendix A: List of organisational consultation respondents

When completing the questionnaire, respondents were asked to indicate whether they were responding as an individual or on behalf of an organisation.

Below we list those organisations that submitted a response to the consultation. We have not included a list of those responding as an individual. However, all responses were given equal status in the analysis.

AQA

Association for Science Education

Association of School and College Leaders

Association of Teachers and Lecturers

Buckinghamshire County Council

Institute of Physics

King Edward VI Grammar School, Chelmsford

King's College School, Wimbledon

OCR

Ofsted

Pearson

St Bernard's Catholic Grammar School, Slough

The Independent Schools Association

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