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Dear Mr Hall

The Royal Society response to the QCDA consultation on GCSE Science Criteria.

The Royal Society has the following comments on the QCDA consultation on GCSE Science Criteria consultation.

1 Aims and Learning Outcomes

As these criteria are essentially for the awarding bodies, rather than for teachers there would appear to be a strong argument for formulating a common set of Aims and Learning Outcomes, with additional course-criteria-specific outcomes listed separately. We believe that consistency will aid clarity and that inconsistency may create ambiguity. We are concerned that How Science Works appears to have been diluted. The key issue as highlighted by Ofqual and SCORE appears to be with the way How Science Works is assessed and we believe that this dilution will not be helpful.

2 Progression beyond GCSE

There is nothing in these statements or the criteria as a whole that indicates a need for specifications to align with Key Stage 5 Programmes of Study in science. We would like the statement in paragraph 5 of the criteria for Additional Science to make it clear that it is a route to further study in Biology, Chemistry and Physics.



President Lord Rees of Ludlow OM
Executive Secretary Stephen Cox CVO

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3 Mathematics

We would like to see the criteria specify more and higher level mathematics. More specific guidance on the content of mathematics within science GCSE courses has been compiled by SCORE and could usefully be included as an appendix to each of the criteria in a similar way to its inclusion in the current A-Level science criteria.

4 Disability and discrimination

It is not obvious how the new Act has been taken into account in formulating the draft criteria. But it is essential that the interpretation of the new Act does not result in reducing practical work which is an essential part of the learning of science.

5 Assessment objectives

We are concerned at the weightings given to AO1 given that it concentrates even more on recall in these new criteria. There is a need for knowledge, understanding and practical work to be covered adequately. There is also a concern that the separate areas of science are not specifically highlighted across all the assessment objectives. Assessment objectives for mathematical skills should be more explicit – see 3.

6 Subject content

This aspect of the subject criteria is best left to science experts. However, as a general observation, it is clear that, as with the Aims and Learning outcomes, there are wording and sentence inconsistencies between the six criteria currently being reviewed that might usefully be resolved. It would be more helpful to structure the content so that it identifies the different subject areas.

7 Grade descriptions

We are disappointed that these are not available.

We hope these comments are helpful but would be happy to discuss them in more detail. Please do not hesitate to contact us.

Yours sincerely



Professor Dame Nancy Rothwell DBE FRS