

13 July 2023

Dear Sir Keir,

Following your presentation of Labour's five missions for a better Britain, I am writing to recommend that the Labour party adopt evidence-based recommendations to improve science education, which will underpin at least four of these missions. As Chief Executive of the Royal Society of Biology (RSB), I particularly welcomed the message in your speech in Gillingham, of equity to create a fairer society, and a commitment to review and reform the National Curriculum.

An excellent science education is essential to equip the population for life in the modern world, as well as to ensure that students from all backgrounds have the opportunity to progress through the sciences post-16, to pursue science-based careers and contribute to the workforce needed to drive economic growth, make Britain a clean energy superpower, build an NHS fit for the future and break down barriers to opportunity at every stage.

Children from disadvantaged backgrounds disproportionately have limited access to opportunities and have poorer aspirations. Specialised teachers can change that, especially in the sciences, where it might be their only opportunity to engage with the subject.<sup>i</sup>

To tackle inequalities in science education, training and career structures the RSB urges the next UK Government to:

- **Champion qualifications for the sciences that are fit for purpose, equitable and ensure parity of esteem between academic, technical and vocational pathways<sup>ii</sup>**
- **Deliver a single route through the sciences at GCSE: a double GCSE award with the following features: biology, chemistry and physics identifiable and graded separately, timetabled distinctly, taught by subject-specialist teachers deployed within their specialism.**
- **Ensure that all young people benefit from an unbroken chain of experts teaching the science disciplines<sup>iii</sup>. This requires investment in subject-specific support for teachers, with subject specialism being at the heart of any new or redeveloped teacher retention and recruitment strategies.**

The current system of dual GCSE qualification pathways in England (three separate sciences or Combined Science) leads to inequitable access. We advocate a more equitable approach similar to that for mathematics and English, where every student has the entitlement to pursue the same route. As part of a broad and balanced education, our proposed double GCSE award would help to maintain space in the timetable for students to pursue sports, arts and digital subjects to age 16 whilst ensuring a solid grounding across STEM.

There remains, especially in deprived areas, a shortage of specialist science teachers<sup>iv</sup>, with many biology teachers expected to teach outside their specialism<sup>v</sup>. This frequently limits engagement and ambition and is a huge disservice to pupils.

The RSB urges Labour to adopt these recommendations to champion the cause of excellence in science teaching and education, as a cornerstone of its missions for a better Britain.

We would be keen to meet with you to discuss these issues further.

Yours sincerely,



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Chief Executive  
Royal Society of Biology

The RSB is committed to supporting and encouraging the study of biology at primary, secondary and tertiary levels across the UK, together with our member organisations and the broader scientific community.

A report commissioned by the Science Education Policy Alliance (SEPA): Association for Science Education, Institute of Physics, Royal Society, Royal Society of Biology and Royal Society of Chemistry) highlighted concerns regarding timetabling and teacher deployment in the sciences, and significant challenges in science education across schools:

- 78% of schools reported that teachers are required to teach outside their main field at GCSE; this rose to 85% in schools that offered only Combined Science.
- 51% of schools did not timetable GCSE Combined Science separately for each discipline (i.e. biology, chemistry and physics), meaning the characteristics of the individual disciplines are less clear to students.
- Only 13% of schools allowed students a completely free choice of either Combined Science or separate sciences; the majority of the remaining schools used at least one measure of attainment in allocating students to each pathway, such as the student's set for science, a science assessment or exam, or the student's ability on entering the school.

These findings underscore the need for improvements in science education to ensure quality teaching and equitable opportunities for all students.

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<sup>i</sup> <https://cms.wellcome.org/sites/default/files/science-education-tracker-2019-calls-to-action.pdf>

<sup>ii</sup> [https://www.rsb.org.uk/images/doc/RSB\\_manifesto\\_2023.pdf](https://www.rsb.org.uk/images/doc/RSB_manifesto_2023.pdf)

<sup>iii</sup> [https://www.rsb.org.uk/images/RSB\\_Education\\_Priorities\\_2023-2028\\_Final.pdf](https://www.rsb.org.uk/images/RSB_Education_Priorities_2023-2028_Final.pdf)

<sup>iv</sup> <https://www.suttontrust.com/our-research/teacher-recruitment-gap/>

<sup>v</sup> <https://www.gatsby.org.uk/education/latest/itt-reform-more-reflection-needed>

<sup>vi</sup> <https://www.iop.org/sites/default/files/2019-06/shift-learning-science-timetable-models-research.pdf>