

## **RSS RESPONSE TO OFQUAL CONSULTATION ON PROPOSED CHANGES TO THE ASSESSMENT OF MATHEMATICS, PHYSICS AND COMBINED SCIENCE GCSES IN 2025, 2026 AND 2027**

17 October 2024

*This response has been submitted via an online form. Please find a copy of the questions we responded to below. Please refer to the government website for [full details about the proposed changes and consultation](#).*

### **Question 1. To what extent do you agree or disagree with the proposal that formulae sheets should be provided in the exams for GCSE mathematics in 2025, 2026 and 2027?**

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

### **Question 2. Do you have any comments on the proposal to provide formulae sheets in the exams for GCSE mathematics in 2025, 2026 and 2027?**

We agree with the proposal to provide formulae sheets. As we have outlined in our recommendations for teaching statistics in the UK curriculum (<https://rss.org.uk/news-publication/news-publications/2024/general-news/rss-publish-key-recommendations-for-the-teaching-o/>) and our response to 'Maths to 18' (<https://rss.org.uk/RSS/media/File-library/Policy/2023/RSS-Maths-to-18-proposals-final.pdf>), we call for assessment to better reflect problem-solving ability (rather than memorisation). We believe that knowing how to find and utilise provided formulae to answer questions correctly is a relevant skill that will equip students for future study and the world of work. We call for the DfE and Ofqual to be clear as to which skills are being assessed in these questions, given that it will not be memorisation of formulae.

We note that caution is needed around messaging that “there is no need to memorise formulae” more generally. This wording refers to a specific set of formulae, but not *all* formulae – pupils still need to know formulae for a square, parallelogram, triangle, sum of interior angles of a polygon etc. To avoid confusion, this distinction should be made clear. In addition, students still need to be familiar with and know how to *use* the formulae – their provision in the exam does not alter the need to have become familiar with them.

### **Question 7. Do you have any suggestions for how any potential negative impacts on particular groups of students could be mitigated?**

We believe that practice in the classroom is necessary to minimise any confusion that students (including students with SEND) may have with using the formulae sheets. This includes knowing which formulae will be provided, as well as how to use them.

Providing formulae can often help students with SEND who struggle to read, as this spares students from having to memorise formulae. However, there are issues regarding the advantage that this brings to these students versus students without difficulties with reading. While students without any difficulties reading can simply flick through the formulae sheet, for students with difficulties reading this is significantly more challenging – especially as the formulae sheets are usually not printed on coloured paper that may help them; students tend to only be allowed to bring in one coloured overlay (making it practically challenging to



continuously flick between the question and the formulae sheet); and exam support readers are not allowed to read operators, making it challenging to interpret the formulae that are being read out. We believe that alternatives for pupils who have difficulties reading need to be further explored to allow better parity. We would like to see the option for formulae to be printed on coloured paper revisited.

In the longer-term, we think there would be benefit from exam boards working together (as described above) to explore a format and presentation that would be consistent across subjects for all students. We believe this would be especially helpful across the sciences, mathematics and statistics, to help ensure that mathematical concepts and principles (along with their associated equations and formulae) can be taught in a joined-up and coherent manner.

We believe that knowing how to find and utilise formulae is a relevant skill readily applicable to the world of work and future study. We nevertheless call for any possible future impact of providing formulae during GCSEs to be considered, including at A level and in eg further education colleges.

**Question 8. Are there additional activities associated with providing students with formulae and equations sheets in their GCSE mathematics, physics and combined science exams that Ofqual has not identified above? [Yes or no]**

Yes

**Question 9. If yes, what are they?**

Teachers may adapt their lessons to ensure that students are aware that they do not need to memorise formulae. Students will need to know which formulae they do and do not need to memorise, and will need practice with checking and using the formulae sheet provided in the exam. We are aware of some schools who have reviewed how topics are taught and changed their approach to better match the wording/layout of the formulae sheet.

Some teachers may also benefit from support to teach students the skill of using reference material in an exam – this may not be overly familiar to teachers, who may have memorised the formulae through experience.

