

Maths skills in GCSE sciences

Maths skills are now included in the assessment of all GCSE science qualifications. A minimum percentage of marks must be allocated to assessing mathematical skills at an appropriate level of difficulty, in line with new rules and guidance from the Department for Education.

DfE requirements

The new weighting requirements are:

- Biology: 10%
- Chemistry: 20%
- Physics: 30%
- Combined science trilogy and synergy: 20% (1:2:3 ratio for biology, chemistry and physics). So for each single mark attributed to maths in biology, there must be two marks in chemistry and three marks in physics.

The DfE requirements also state the following:

- all the skills must be covered at each level of demand over the lifetime of the specification
- in Foundation Tier papers the level of maths will not be lower than that expected at Key Stage 3
- in Higher Tier papers the level of maths will not be lower than that of questions and tasks in assessments for the Foundation Tier in a GCSE qualification in Mathematics.

Resources

We've created the resources below to help you integrate maths skills into your teaching and learning. These include:

- a teaching guide for each skill or set of skills
- a set of PowerPoint slides to use across the ability range, to ensure a differentiated approach.

These materials have been developed in conjunction with Teachit and our maths GCSE advocates, and reviewed by our subject experts.

We'll be adding to our range of teaching guides as more are developed.

Standard form and order of magnitude calculations

- [Teaching guide \(http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-1A1B2H-SFOM.PDF\)](http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-1A1B2H-SFOM.PDF)
- [Teaching slides \(http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-1A1B2H-SFOM.PPTX\)](http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-1A1B2H-SFOM.PPTX)

Estimates and significant figures

- [Teaching guide \(http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-1D2A-ESF.PDF\)](http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-1D2A-ESF.PDF)
- [Teaching slides \(http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-1D2A-ESF.PPTX\)](http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-1D2A-ESF.PPTX)

Averages

- [Teaching guide \(http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-2B2F-MMM.PDF\)](http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-2B2F-MMM.PDF)
- [Teaching slides \(http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-2B2F-MMM.PPTX\)](http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-2B2F-MMM.PPTX)

Simple probability

- [Teaching guide \(http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-2E-SP.PDF\)](http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-2E-SP.PDF)
- [Teaching slides \(http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-2E-SP.PPTX\)](http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-2E-SP.PPTX)

Algebra skills

- [Teaching guide \(http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-3ABCD-A.PDF\)](http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-3ABCD-A.PDF)
- [Teaching slides \(http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-3ABCD-A.PPTX\)](http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-3ABCD-A.PPTX)

Graphs

- [Teaching guide \(http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-4ABCDEF-G.PDF\)](http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-4ABCDEF-G.PDF)
- [Teaching slides \(http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-4ABCDEF-G.PPTX\)](http://filestore.aqa.org.uk/resources/science/AQA-SCIENCE-GCSE-TG-4ABCDEF-G.PPTX)


Additional resources

We've also included some more general resources – including external – to help you adapt to the new assessment objectives.

- Support for practicals and maths: [webcast \(http://aqa.adobeconnect.com/p1qtbcn4e4m/\)](http://aqa.adobeconnect.com/p1qtbcn4e4m/) | [slides \(http://filestore.aqa.org.uk/resources/science/AQA-GCSE-SCIENCE-SFPM.PDF\)](http://filestore.aqa.org.uk/resources/science/AQA-GCSE-SCIENCE-SFPM.PDF)
- [ASE – the language of Mathematics \(http://www.ase.org.uk/resources/maths-in-science\)](http://www.ase.org.uk/resources/maths-in-science)
- [STEM \(http://www.stem.org.uk/\)](http://www.stem.org.uk/)
- [Teachit: maths skills in science posters \(http://www.teachitscience.co.uk/maths-skills-in-science-posters\)](http://www.teachitscience.co.uk/maths-skills-in-science-posters)
- [Sample questions: maths in science \(http://filestore.aqa.org.uk/resources/science/AQA-GCSE-SCIENCE-SQ.PDF\)](http://filestore.aqa.org.uk/resources/science/AQA-GCSE-SCIENCE-SQ.PDF)

Specifications that use this resource:

- [GCSE Chemistry 8462 \(https://www.aqa.org.uk/subjects/science/gcse/chemistry-8462\)](https://www.aqa.org.uk/subjects/science/gcse/chemistry-8462)
- [GCSE Combined Science: Synergy 8465 \(https://www.aqa.org.uk/subjects/science/gcse/combined-science-synergy-8465\)](https://www.aqa.org.uk/subjects/science/gcse/combined-science-synergy-8465)
- [GCSE Biology 8461 \(https://www.aqa.org.uk/subjects/science/gcse/biology-8461\)](https://www.aqa.org.uk/subjects/science/gcse/biology-8461)
- [GCSE Combined Science: Trilogy 8464 \(https://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464\)](https://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464)
- [GCSE Physics 8463 \(https://www.aqa.org.uk/subjects/science/gcse/physics-8463\)](https://www.aqa.org.uk/subjects/science/gcse/physics-8463)

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Document URL

<https://www.aqa.org.uk/resources/science/gcse/teach/maths-skills-in-GCSE-sciences>

Last updated 27 Oct 2017

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