

Specification updates – GCSE Sciences

Summary of updates for GCSE Science specifications for 2020 and 2021

The science suite specification (version 1.0) was printed in April 2016. We've updated the electronic versions to correct a number of typographical errors in the scheme of assessment and to add clarification to the subject content.

Updates have been made to the following specifications:

- GCSE Chemistry (8462)
- GCSE Combined Science: Trilogy (8464)
- GCSE Combined Science: Synergy (8465)
- GCSE Physics (8463)

The updated electronic versions of these specifications can be found at [aqa.org.uk/science](https://www.aqa.org.uk/science)

The page order may have changed in these specifications but the only changes to the content are listed in this update. No changes have been made to the GCSE Biology (8461) specification.

Clarification for 2020

We've clarified the expectation that knowledge and understanding of fundamental concepts and principles of chemistry may be examined in Chemistry Paper 2 of GCSE Chemistry and GCSE Combined Science: Trilogy. As this information was already outlined at the beginning of the specification subject content, this clarification will apply to exams sat in 2020 and onwards.

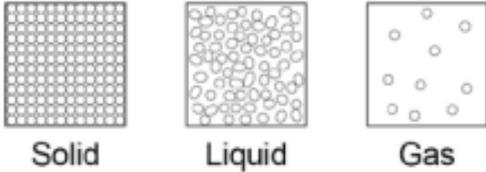
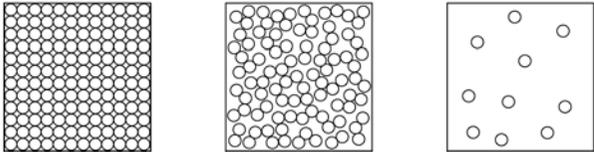
Changes for 2021

For exams due to be sat in 2021 and onwards, we've made a small number of changes to the content which are listed in the tables below, by specification.

Clarification to specifications for 2020 exams and onwards

Specification	Section	Amendment
GCSE Chemistry (8462) GCSE Combined Science: Trilogy (8464)	4 Subject content (introduction) 5 Chemistry subject content (introduction)	Amended to highlight content that may be examined in Paper 2: Fundamental concepts and principles in chemistry The concepts and principles in Sections 4.1, 4.2 and 4.3 are fundamental to an understanding of chemistry and underpin much of the content detailed in later sections of the specification. Students will be directly examined on these fundamental concepts in Paper 1. Students should be able to apply these concepts in their answers to some questions in Paper 2.
GCSE Chemistry (8462) GCSE Combined Science: Trilogy (8464)	2.2 Assessments 2.2 Assessments	Added into box for Paper 2: Questions in Paper 2 may draw on fundamental concepts and principles from Sections 4.1-4.3.

Changes to specifications for 2021 exams and onwards

Specification	Section	Amendment
GCSE Chemistry (8462) GCSE Combined Science: Trilogy (8464) GCSE Combined Science: Synergy (8465)	4.2.2.1 The three states of matter 5.2.2.1 The three states of matter 4.1.1.1 A particle model	Artwork for liquid improved from  <p style="text-align: center;">Solid Liquid Gas</p> to  <p style="text-align: center;">Solid Liquid Gas</p>
GCSE Chemistry (8462) GCSE Combined Science: Trilogy (8464) GCSE Combined Science: Synergy (8465)	4.3.1.2 Relative formula mass 5.3.1.2 Relative formula mass 4.5.2.3 Relative formula mass	Added paragraph to clarify maths requirement in context of specification content: Students should be able to calculate the percentage by mass in a compound given the relative formula mass and the relative atomic masses
GCSE Chemistry (8462)	4.7.3.2 Condensation polymerisation (HT only)	Corrected spelling from ethane diol to ethanediol.

Specification	Section	Amendment
GCSE Chemistry (8462)	4.7.3.2 Condensation polymerisation (HT only)	<p>Corrected artwork for formulae from</p> $n\text{HO}-\square-\text{OH} + n\text{HOOC}-\square-\text{COOH} \rightarrow$ $\left(\square-\text{OOC}-\square-\text{COO}\right)_n + 2n\text{H}_2\text{O}$ <p>to</p> $n\text{HO}-\square-\text{OH} + n\text{HOOC}-\square-\text{COOH} \rightarrow$ $\left(\text{O}-\square-\text{O}-\text{CO}-\square-\text{CO}\right)_n + 2n\text{H}_2\text{O}$
GCSE Chemistry (8462)	4.7.3.3 Amino acids (HT only)	<p>Correct formulae from</p> $\left(-\text{HNCH}_2\text{COO}-\right)_n \text{ and } n\text{H}_2\text{O}$ <p>to</p> $\left(\text{HNCH}_2\text{CO}\right)_n \text{ and } n\text{H}_2\text{O}$
GCSE Chemistry (8462)	8.2.7 Required practical 7	Corrected reference to safe use of a Bunsen burner to AT2 instead of AT1.
GCSE Physics (8463)	4.3.2.3 Changes of heat and specific latent heat	Corrected heading to: 4.3.2.3 Changes of state and specific latent heat
GCSE Physics (8463) GCSE Combined Science: Trilogy (8464) GCSE Combined Science: Synergy (8465)	Appendix A: Physics equations Appendix B: Physics equations Appendix A: Physics equations	<p>Corrected order of terms in the following equation to match symbol equation:</p> <p>potential difference across primary coil x current in primary coil = potential difference across secondary coil x current in secondary coil</p> $V_p I_p = V_s I_s$

Specification	Section	Amendment
GCSE Combined Science: Trilogy (8464) GCSE Combined Science: Synergy (8465)	6.2.4.3 The National grid 4.7.2.9 The National grid	<p>Clarified requirement for transformer power equation given on equations sheet (equation 7):</p> <p>(HT only) Students should be able to select and use the equation</p> <p>potential difference across primary coil x current in primary coil = potential difference across secondary coil x current in secondary coil</p> <p>as given on the equation sheet.</p> <p>Detailed knowledge of the structure of a transformer is not required.</p>
GCSE Combined Science: Synergy (8465)	4.1.1.5 Microscopy	<p>Amended text to:</p> <p>Carry out calculations involving magnification, real size and image size including numbers written in standard form.</p>
GCSE Combined Science: Synergy (8465)	4.7.1.8 Momentum (HT only)	<p>Corrected spelling of mass:</p> <p>momentum = mass x velocity</p>