



Revision Guidance

Science

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Course Details.

Most students will be entered for GCSE combined science and will achieve a double GCSE grade (from 1-1 to 9-9). Some students will be put onto the separate science pathway and will achieve three GCSEs in biology, chemistry and physics.

Examination board and specification: AQA GCSE Combined Science: Trilogy (8464)

AQA GCSE Biology (8461)

AQA GCSE Chemistry (8462)

AQA GCSE Physics (8463)

GCSE combined science

Students have been taught biology, chemistry and physics topics and will take six examination papers as outlined below. The list of topics will be useful to students when revising.

Biology Paper 1

What's assessed

Biology topics 1–4: Cell Biology; Organisation; Infection and response; and Bioenergetics.

How it's assessed

- Written exam: 1 hour 15 minutes
- Foundation and Higher Tier
- 70 marks
- 16.7 % of GCSE

Questions

Multiple choice, structured, closed short answer, and open response.

Biology Paper 2

What's assessed

Biology topics 5–7: Homeostasis and response; Inheritance, variation and evolution; and Ecology.

How it's assessed

- Written exam: 1 hour 15 minutes
- Foundation and Higher Tier
- 70 marks
- 16.7 % of GCSE

Questions

Multiple choice, structured, closed short answer, and open response.

Chemistry Paper 1

What's assessed

Chemistry topics 8–12: Atomic structure and the periodic table; Bonding, structure, and the properties of matter; Quantitative chemistry; Chemical changes; and Energy changes.

How it's assessed

- Written exam: 1 hour 15 minutes
- Foundation and Higher Tier
- 70 marks
- 16.7 % of GCSE

Questions

Multiple choice, structured, closed short answer, and open response.

Chemistry Paper 2

What's assessed

Chemistry topics 13–17: The rate and extent of chemical change; Organic chemistry; Chemical analysis; Chemistry of the atmosphere; and Using resources.

How it's assessed

- Written exam: 1 hour 15 minutes
- Foundation and Higher Tier
- 70 marks
- 16.7 % of GCSE

Questions

Multiple choice, structured, closed short answer, and open response.

Physics Paper 1

What's assessed

Physics topics 18–21: Energy; Electricity; Particle model of matter; and Atomic structure.

How it's assessed

- Written exam: 1 hour 15 minutes
- Foundation and Higher Tier
- 70 marks
- 16.7 % of GCSE

Questions

Multiple choice, structured, closed short answer, and open response.

Physics Paper 2

What's assessed

Physics topics 22–24: Forces; Waves; and Magnetism and electromagnetism

How it's assessed

- Written exam: 1 hour 15 minutes
- Foundation and Higher Tier
- 70 marks
- 16.7 % of GCSE

Questions

Multiple choice, structured, closed short answer, and open response.

Tier of entry

A student's teacher will decide which tier of entry students are entered for in examinations. It is not possible to mix tiers of entry. We will make this decision based on the tier we think will give the student the highest grades.

Students on the foundation tier can be awarded grades of **1-1 to 5-5**.

Students on higher tier can be awarded grades of **4-4 to 9-9**. Students who do not achieve enough marks to achieve 4-4 will be recorded as U (unclassified).

Required practical work

The GCSE is 100% examination based BUT students will have completed twenty one required practical activities throughout the course. The examinations will test students' knowledge and understanding of these activities and their ability:

To support and consolidate scientific concepts (knowledge and understanding).

This is done by applying and developing what is known and understood of abstract ideas and models. Through practical work we are able to make sense of new information and observations, and provide insights into the development of scientific thinking.

To develop investigative skills. These transferable skills include:

- devising and investigating testable questions
- identifying and controlling variables
- analysing, interpreting and evaluating data.

To build and master practical skills such as:

- using specialist equipment to take measurements
- handling and manipulating equipment with confidence and fluency
- recognising hazards and planning how to minimise risk.

GCSE biology, GCSE chemistry and GCSE physics

Students on this pathway achieve three GCSEs – a separate GCSE for each science discipline. They also take six examinations but are examined on extra content. The format for these examinations, and topic lists, is found on the following pages. Most on this pathway will be entered for the higher tier examination papers.

Paper 1**What's assessed**

Topics 1–4: Cell biology; Organisation; Infection and response; and Bioenergetics.

How it's assessed

- Written exam: 1 hour 45 minutes
- Foundation and Higher Tier
- 100 marks
- 50 % of GCSE

Questions

Multiple choice, structured, closed short answer and open response.

**Paper 2****What's assessed**

Topics 5–7: Homeostasis and response; Inheritance, variation and evolution; and Ecology.

How it's assessed

- Written exam: 1 hour 45 minutes
- Foundation and Higher Tier
- 100 marks
- 50 % of GCSE

Questions

Multiple choice, structured, closed short answer and open response.

Paper 1:**What's assessed**

Topics 1–5: Atomic structure and the periodic table; Bonding, structure, and the properties of matter; Quantitative chemistry, Chemical changes; and Energy changes.

How it's assessed

- Written exam: 1 hour 45 minutes
- Foundation and Higher Tier
- 100 marks
- 50 % of GCSE

Questions

Multiple choice, structured, closed short answer and open response.

**Paper 2:****What's assessed**

Topics 6–10: The rate and extent of chemical change; Organic chemistry; Chemical analysis, Chemistry of the atmosphere; and Using resources.

How it's assessed

- Written exam: 1 hour 45 minutes
- Foundation and Higher Tier
- 100 marks
- 50 % of GCSE

Questions

Multiple choice, structured, closed short answer and open response.

Paper 1:**What's assessed**

Topics 1–4: Energy; Electricity; Particle model of matter; and Atomic structure.

How it's assessed

- Written exam: 1 hour 45 minutes
- Foundation and Higher Tier
- 100 marks
- 50 % of GCSE

Questions

Multiple choice, structured, closed short answer and open response.

**Paper 2:****What's assessed**

Topics 5–8: Forces; Waves; Magnetism and electromagnetism; and Space physics.

Questions in Paper 2 may draw on an understanding of energy changes and transfers due to heating, mechanical and electrical work and the concept of energy conservation from [Energy](#) and [Electricity](#).

How it's assessed

- Written exam: 1 hour 45 minutes
- Foundation and Higher Tier
- 100 marks
- 50 % of GCSE

Questions

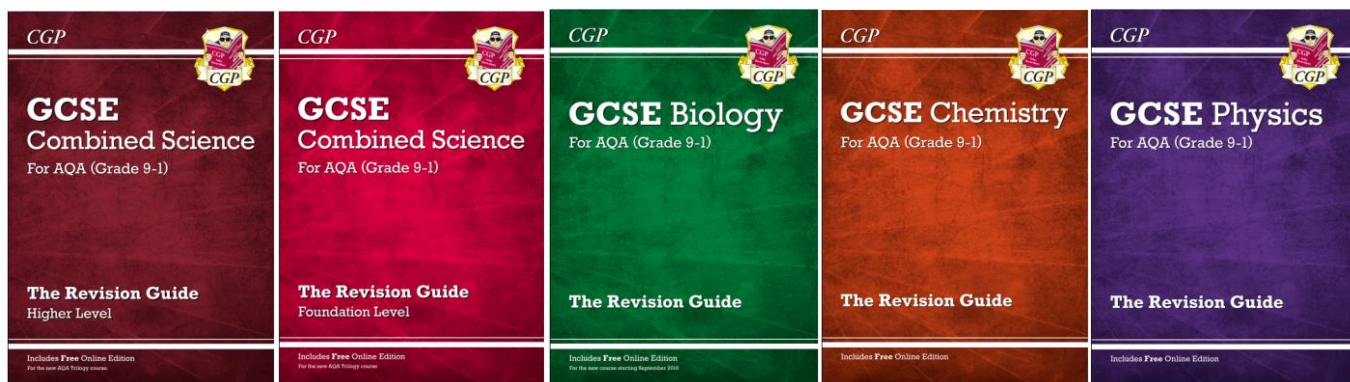
Multiple choice, structured, closed short answer and open response.

Textbooks and Revision Guides.

We have offered students the chance to purchase CGP revision guides. Again, the course specific guides contain all the content that students need to know for examinations.

Other revision guides are available but, as with any resource, how they are used that is often key. Simply purchasing a revision guide is the first step but students need to do active revision to be successful.

Read the section on revision techniques for tips and ideas on how to use a revision guide.



CGP revision guides

Effective Revision

Revising for science examinations can be daunting as there is a huge amount of content to recall and apply. In addition to the guidance you get on general revision, here are the science faculty's best tips and advice for revising science.

Get active

It is not enough to read notes. Students should **make lists** of important definitions and **learn** them. Get others involved! Make **flash cards** and test yourself regularly. It is amazing how much will be remembered. This is also really important for learning the **physics equations**.

Past paper questions

The **AQA** website has pdf files to download. Students should attempt the questions, using their notes, and then check the mark schemes. Mark schemes are very useful documents as students should note the phrases and language that the examiner wants to be used.

Exercise books

Students should use their exercise books – they will have many past paper questions and important notes in these books which will be invaluable.

Bromcom

Home learning tasks are set weekly on Bromcom which involve a variety of different revision strategies

GCSE bitesize for science

<https://www.bbc.co.uk/education/subjects/zrkw2hv> is a fantastic resource. It contains most the topics that students need to know in addition to short quizzes and video clips.

YouTube

There are **many** revision videos on YouTube and many can be an alternative way for students to revise. It is really important that students include *GCSE* in the search box to ensure the content is relevant.

Seneca Learning

Go to: <https://app.senecalearning.com/>. Students will have been given a class code by their class teacher, so they can work their way through the assignments set on a regular basis.

The course specification

This document can be found via the AQA website and it is aimed at teachers. However, it does contain statements for all the content that students will be examined on so some students may find it useful as a list to check that they have revised each topic.

List of content to revise

Combined science

Biology

1. Cell biology
2. Organisation
3. Infection and response
4. Bioenergetics
5. Homeostasis and response
6. Inheritance, variation and evolution
7. Ecology

Chemistry

8. Atomic structure and the periodic table
9. Bonding, structure, and the properties of matter
10. Quantitative chemistry
11. Chemical changes
12. Energy changes
13. The rate and extent of chemical change
14. Organic chemistry
15. Chemical analysis
16. Chemistry of the atmosphere
17. Using resources

Physics

18. Energy
19. Electricity
20. Particle model of matter
21. Atomic structure
22. Forces
23. Waves
24. Magnetism and electromagnetism

Separate sciences

Biology

1. Cell biology
2. Organisation
3. Infection and response
4. Bioenergetics
5. Homeostasis and response
6. Inheritance, variation and evolution
7. Ecology
8. Key ideas

Chemistry

1. Atomic structure and the periodic table
2. Bonding, structure, and the properties of matter
3. Quantitative chemistry
4. Chemical changes
5. Energy changes
6. The rate and extent of chemical change
7. Organic chemistry
8. Chemical analysis
9. Chemistry of the atmosphere
10. Using resources

Physics

1. Energy
2. Electricity
3. Particle model of matter
4. Atomic structure
5. Forces
6. Waves
7. Magnetism and electromagnetism
8. Space physics (physics only)

Note: the depth and breadth of content in science is huge. Use a revision guide to check the exact knowledge and understanding required.