

## Advance Information for Summer 2022

### GCSE (9–1)

### Chemistry B (Twenty First Century Science)

### J258

We have produced this advance information to help support all teachers and students with revision for the Summer 2022 exams.

#### Information

- The format/structure of the papers remains unchanged.
- This notice covers all examined components.
- For each paper, the main list shows the major focus of the content of the exam.
- Topics **not** assessed, either directly or synoptically, have also been listed.
- The information is presented in specification order, **not** in question order.
- Assessment of practical skills, maths skills, and Working Scientifically skills will occur throughout all of the papers.
- You are **not** permitted to take this notice into the exam.
- This document has **5** pages.

#### Advice

- It is advised that teaching and learning should still cover the entire subject content in the specification, so that students are as well prepared as possible for progression.
- Topics not explicitly given in either list may appear in low tariff questions or via synoptic questions (e.g., questions where students are asked to bring together knowledge, skills and understanding from across the specification).
- Students will still be expected to apply their knowledge to unfamiliar contexts.

If you have any queries about this notice, please call our Customer Support Centre on **01223 553998** or email [general.qualifications@ocr.org.uk](mailto:general.qualifications@ocr.org.uk).

**J258/01 Breadth in Chemistry, Foundation Tier**

- Section 1.1 How has the Earth's atmosphere changed over time, and why?
- Section 1.2 Why are there temperature changes in chemical reactions?
- Section 2.2 What does the Periodic Table tell us about the elements?
- Section 3.3 What are electrolytes and what happens during electrolysis?
- Section 3.4 Why is crude oil important as a source of new materials?
- Section 4.1 How is data used to choose a material for a particular use?
- Section 4.5 What happens to products at the end of their useful life?
- Section 5.3 How are the amounts of substances in reactions calculated?
- Section 6.2 How do chemists control the rate of reactions?

**Required practical skills that will be assessed:**

- Practical Activity Group 2: Using apparatus to set up and use electrochemical cells.
- Practical Activity Group 5: Tests to identify aqueous cations and aqueous anions
- Practical Activity Group 6: Using apparatus to make and record measurements accurately during titrations.
- Practical Activity Group 7: Using a range of equipment to purify and separate chemical mixtures.

**Topics not assessed** in this paper:

- Section 1.4 How can scientists help improve the supply of potable water?
- Section 2.5 What are the properties of transition metals?
- Section 3.1 How are the atoms held together in a metal?
- Section 4.4 Why are nanoparticles so useful?
- Section 6.4 How are chemicals made on an industrial scale?

**J258/02 Depth in Chemistry, Foundation Tier**

- Section 1.1 How has the Earth's atmosphere changed over time, and why?
- Section 1.2 Why are there temperature changes in chemical reactions?
- Section 1.3 What is the evidence for climate change, why is it occurring?
- Section 2.3 How do metals and non-metals combine to form compounds?
- Section 3.2 How are metals with different reactivities extracted?
- Section 4.3 How do bonding and structures affect properties of materials?
- Section 4.4 Why are nanoparticles so useful?
- Section 5.3 How are the amounts of substances in reactions calculated?

Required practical skills that **will be assessed**:

- Practical Activity Group 2: Tests to identify gases
- Practical Activity Group 3 and 7: Using a range of equipment to purify and separate chemical mixtures
- Practical Activity Group 8: Using apparatus to measure and record volumes of gases

Topics **not assessed** in this paper:

- Section 1.4 How can scientists help improve the supply of potable water?
- Section 2.1 How have our ideas about atoms developed over time?
- Section 2.5 What are the properties of transition metals?
- Section 3.1 How are the atoms held together in a metal?
- Section 3.3 What are electrolytes and what happens during electrolysis?

**J258/03 Breadth in Chemistry, Higher Tier**

- Section 1.1 How has the Earth's atmosphere changed over time, and why?
- Section 1.2 Why are there temperature changes in chemical reactions?
- Section 2.3 How do metals and non-metals combine to form compounds?
- Section 3.3 What are electrolytes and what happens during electrolysis?
- Section 3.4 Why is crude oil important as a source of new materials?
- Section 4.1 How is data used to choose a material for a particular use?
- Section 5.3 How are the amounts of substances in reactions calculated?
- Section 5.4 How are the amounts of chemicals in solution measured?
- Section 6.2 How do chemists control the rate of reactions?

Required practical skills that **will be assessed**:

- Practical Activity Group 1: Using appropriate apparatus and making suitable observations to explore chemical changes and trends in reactivity of Group 7 elements
- Practical Activity Group 2: Using apparatus to set up and use electrochemical cells.
- Practical Activity Group 6: Using apparatus to make and record measurements accurately during titrations.

Topics **not assessed** in this paper:

- Section 1.4 How can scientists help improve the supply of potable water?
- Section 2.1 How have our ideas about atoms developed over time?
- Section 2.5 What are the properties of transition metals?
- Section 3.1 How are the atoms held together in a metal?
- Section 4.4 Why are nanoparticles so useful?
- Section 6.3 What factors affect the yield of chemical reactions?
- Section 6.4 How are chemicals made on an industrial scale?

## J258/04 Depth in Chemistry, Higher Tier

- Section 1.1 How has the Earth's atmosphere changed over time, and why?
- Section 1.2 Why are there temperature changes in chemical reactions?
- Section 1.3 What is the evidence for climate change, why is it occurring?
- Section 2.3 How do metals and non-metals combine to form compounds?
- Section 3.4 Why is crude oil important as a source of new materials?
- Section 4.3 How do bonding and structures affect properties of materials?
- Section 5.1 How are chemicals separated and tested for purity?
- Section 5.3 How are the amounts of substances in reactions calculated?
- Section 5.4 How are the amounts of chemicals in solution measured?
- Section 6.1 What useful products can be made from acids?

Required practical skills that **will be assessed**:

- Practical Activity Group 2: Tests to identify gases
- Practical Activity Group 3 and 7: Using a range of equipment to separate and purify chemical mixtures
- Practical Activity Group 8: Using apparatus to record appropriate observations during chemical reactions including measurements of volumes and masses.

Topics **not assessed** in this paper:

- Section 1.4 How can scientists help improve the supply of potable water?
- Section 2.1 How have our ideas about atoms developed over time?
- Section 2.5 What are the properties of transition metals?
- Section 3.1 How are the atoms held together in a metal?
- Section 4.1 How is data used to choose a material for a particular use?

## END OF ADVANCE INFORMATION

---

**OCR**  
Oxford Cambridge and RSA

### Copyright Information

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website ([www.ocr.org.uk](http://www.ocr.org.uk)) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact The OCR Copyright Team, The Triangle Building, Shaftesbury Road, Cambridge CB2 8EA.

OCR is part of Cambridge University Press & Assessment, which is itself a department of the University of Cambridge.