

International GCSE Chemistry

Please note that a number of minor amendments have been made to the Edexcel International GCSE Chemistry specification.

The changes clarify the demands of the specification, and demonstrate links to practical activities. The majority of these changes will **not** require you to revisit areas of the specification that you have already taught. However, a small number of changes involve the removal of material from Double Award into separate sciences; or the addition of new material. There is also a small change in the Assessment Objective weightings in the question papers, although the style of the question papers is unchanged. It has been necessary to make these changes immediately for first examination in the June 2013 series.

If you have any questions about these changes, please contact the Edexcel Science Advisor (ScienceSubjectAdvisor@edexcelexperts.co.uk) for all subject specific enquires. Alternatively, please contact your Regional Development Manager.

The mapping document below outlines the changes to the Chemistry specification. Please take the time to review this document. To assist you with the nature of the changes, they have been colour-coded as follows:

Changes in red show where the command word used in the specification has changed. This is unlikely to affect what you have already taught, but may help to indicate the depth of knowledge that an examination question will require.

Changes in blue show where a specification statement has been reworded to highlight a practical opportunity. This should not affect what you have already taught, as practical-based questions (AO3) could still be asked on any aspect of the specification.

Changes in green show where minor changes have been made to clarify the meaning or depth of a specification statement, or to improve its wording. There is unlikely to be any effect on what you have already taught.

Changes in pink show where new material has been added, or a deletion has occurred. In some cases, a specification statement has been removed from Science (Double Award) and will only appear in the separate science papers. These changes may require you to look back at areas that you have already taught to ensure that the entire specification has been covered; or that candidates for Science (Double Award) know which areas they will no longer be examined on.

NB - Please contact the Science Subject Advisor team for assistance if you do not have a colour version of this document.

Section 1: Principles of chemistry

- 1.2 "understand how the interconversions..."
- 1.3 "explain the changes in arrangement..."
- 1.4 "describe and explain experiments to investigate the small size..."
- 1.7 "describe experimental techniques for the separation of mixtures..."
- new
(1.8) "explain how information from chromatograms can be used to identify the composition of a mixture"
this has been highlighted as a clarification, rather than new material, as it has been regularly tested as an associated practical skill to 1.7
- 1.8 "understand that atoms consist of a central nucleus..."
- 1.36 delete "simple"**
- 1.40 "understand that substances with simple molecular structures..."
- 1.41 "...substances with simple molecular structures have low melting and boiling points..."
- 1.42 "explain the high melting and boiling points of substances..."
- 1.43 delete "simple"**
- 1.45 "understand that a metal can be described as a giant structure..."
- 1.47 "understand that an electric current is a flow of electrons..."
- 1.51 "understand that electrolysis involves the formation..."
- 1.52 "describe experiments to investigate electrolysis... ..lead (II) bromide and predict the products"
- 1.53 "describe experiments to investigate electrolysis... of aqueous solutions such as sodium chloride..."**

Section 2: Chemistry of the elements

- 2.5 "understand that the noble gases (Group 0) are a family..."
- 2.7 "describe the relative reactivities..."
- 2.13 "describe the relative reactivities..."
- 2.14 "describe experiments to demonstrate that a more reactive halogen..."
- 2.17 "explain how experiments... can be used to investigate the percentage..."
- 2.18 "...from hydrogen peroxide, using manganese(IV) oxide as a catalyst"
- 2.19 "describe the reactions of magnesium, carbon and sulfur with oxygen in air, and the acid-base character..."

- 2.22 "describe the properties of carbon dioxide..."
- 2.24 "recall the reactions of carbon dioxide and sulfur dioxide..."
this outcome has been removed, as it is tested within 2.19
- 2.25 "recall that sulfur dioxide and nitrogen oxides are pollutant gases..."
this outcome has been moved to Section 5(b)
- new "understand that carbon dioxide is a greenhouse gas and may contribute to (2.24) climate change"
- 2.30 "understand that metals can be arranged..."
- 2.35 "describe the conditions under which iron rusts"
- 2.38 remove "...simple..."
- 2.39 remove "...simple..."
- 2.40 remove "...simple..."

Section 3: Organic chemistry

- 3.5 "describe the substitution reaction of methane..."
- 3.7 "...(knowledge of cis- and trans- isomers is not required)"

Section 4: Physical chemistry

- 4.6 "understand the general rules..."
- 4.7 "describe experiments to prepare..."
- 4.8 "describe experiments to prepare..."
- 4.9 "describe experiments to carry out..."
- 4.10 "understand that chemical reactions..."
- 4.13 remove "...molar..."
- 4.15 "understand that the breaking of bonds..."
- 4.21 "explain that a catalyst speeds up a reaction..."
- 4.22 "understand that some reactions are reversible..."

Section 5: Chemistry in industry

- 5.6 "understand that crude oil is a mixture..."
- 5.7 "describe and explain how the industrial process..."
- 5.10 "understand that incomplete combustion..."

- 5.11 "understand that, in car engines, the temperature..."
- new the old outcome 2.25 ("understand that nitrogen oxides and sulfur
(5.12) dioxide...") is inserted here
- 5.12 "understand that fractional distillation of crude oil... and explain why this makes cracking necessary"
- 5.14 "understand that an addition polymer..."
- 5.15 "...and poly(chloroethene)"
this is removed from Science (Double Award) and so will only be tested in Chemistry
- new "describe some uses for polymers, including poly(ethene), poly(propene)
(5.18) and poly(chloroethene)"
- new "explain that addition polymers are hard to dispose of as their inertness
(5.19) means that they do not easily biodegrade"
- 5.17 "understand that some polymers, such as nylon, form by a different process called condensation polymerisation"**
- 5.18 "understand that condensation polymerisation produces a small molecule, such as water, as well as the polymer"**
- 5.19 this statement is deleted**
- 5.20 this statement is deleted**
- 5.21 "understand that nitrogen from the air..."
- 5.24 "describe the use of ammonia..."
- 5.27 "describe the use of sulfuric acid..."**
- 5.30 "describe important uses of sodium hydroxide..."**