

SCIENCE (CHEMISTRY)

Exam Board: AQA

Aims

Chemistry is taught in progressively greater depth over the course of Key Stage 3 and Key Stage 4. GCSE outcomes may reflect or build upon subject content which is typically taught at Key Stage 3. There is no expectation that teaching of such content should be repeated during the GCSE course where it has already been covered at an earlier stage. GCSE study in chemistry provides the foundations for understanding the material world. Scientific understanding is changing our lives and is vital to the world's future prosperity, and all students should be taught essential aspects of the knowledge, methods, processes and uses of science. They should be helped to appreciate how the complex and diverse phenomena of the natural world can be described in terms of a small number of key ideas relating to the sciences which are both inter-linked, and are of universal application.

These key ideas include:

- the use of conceptual models and theories to make sense of the observed diversity of natural phenomena
- the assumption that every effect has one or more cause
- that change is driven by differences between different objects and systems when they interact
- that many such interactions occur over a distance without direct contact
- that science progresses through a cycle of hypothesis, practical experimentation, observation, theory development and review
- that quantitative analysis is a central element both of many theories and of scientific methods of inquiry.

These key ideas are relevant in different ways and with different emphases in biology, chemistry and physics: examples of their relevance to chemistry are given below. The GCSE specification in chemistry should enable students to:

- develop scientific knowledge and conceptual understanding through chemistry
- develop understanding of the nature, processes and methods of science through different types of scientific enquiries that help them to answer scientific questions about the world around them
- develop and learn to apply observational, practical, modelling, enquiry and problem-solving skills, both in the laboratory, in the field and in other learning environments
- develop their ability to evaluate claims based on chemistry through critical analysis of the methodology, evidence and conclusions, both qualitatively and quantitatively.

Chemistry should be studied in ways that help students to develop curiosity about the natural world, insight into how science works, and appreciation of its relevance to their everyday lives. The scope and nature of such study should be broad, coherent, practical and satisfying, and thereby encourage students to be inspired, motivated and challenged by the subject and its achievements.

Assessment

Two exams to be taken at the end of the course. Assessment will be focused on AQA's three criteria:

A01) Demonstrate knowledge and understanding of: scientific ideas, scientific techniques and procedures

A02) Apply knowledge and understanding of: scientific ideas, scientific techniques and procedures

A03) Analyse information and ideas to: interpret and evaluate; make judgements and draw conclusions; develop and improve experimental procedures.



Papers

Chemistry Paper 1 (50% of grade)

Paper 1 covers a variety of topics such as atomic structure, periodic table, bonding, properties of matter, quantitative chemistry, chemical changes and energy changes. The questioning styles used on this paper is a mixture of multiple choice, structured, closed short answer, and open response and lasts 1 hour and 45 minutes.

Chemistry Paper 2 (50% of grade)

Paper 2 covers a variety of topics such as the rate and extent of chemical change, organic chemistry, chemical analysis, chemistry of the atmosphere and using resources. The questioning styles used on this paper is a mixture of multiple choice, structured, closed short answer, and open response and lasts 1 hour and 45 minutes. As well as assessments students will be carrying out required practicals to help further enhance their knowledge and skills.

Working Scientifically

This skillset flows throughout the course asking students to develop their understanding and knowledge of scientific thinking. These skills are broken down into the following categories:

1. Development of scientific thinking
2. Experimental skills and strategies
3. Analysis and evaluation
4. Scientific vocabulary, quantities, units, symbols and nomenclature

Lower School Teaching Staff

Danielle Taggart

Michael Stanley



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Programme of Study

Autumn Term 1 <ul style="list-style-type: none">● C1: Atomic Structure and the periodic table● C2: Bonding, Structure and Properties of Matter● C3: Quantitative Chemistry	Autumn Term 2 <ul style="list-style-type: none">● C4: Chemical Change● C5: Energy Changes
Spring Term 3 <ul style="list-style-type: none">● C6: The Rate and Extent of Chemical Change● C7 Organic Chemistry	Spring Term 4 <ul style="list-style-type: none">● C8: Chemical Analysis● C9: Chemistry of the Atmosphere● C10: Using resources
Summer Term 5 <ul style="list-style-type: none">● Exam Technique and revision	Summer Term 6 <p>n/a</p>

