

## Chemistry GCSE

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### Awarding Body: AQA

Chemistry is the science of the composition, structure, properties and reactions of matter, understood in terms of atoms, atomic particles and the way they are arranged and link together. It is concerned with the synthesis, formulation, analysis and characteristic properties of substances and materials of all kinds.

### The Themes of Chemistry in the specification will include:

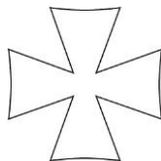
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- Atomic structure and the periodic table
- Bonding, structure, and the properties of matter
- Quantitative chemistry
- Chemical changes
- Energy changes
- The rate and extent of chemical change
- Organic chemistry
- Chemical analysis
- Chemistry of the atmosphere
- Using resources
- Key ideas

Students should be helped to appreciate the achievements of chemistry in showing how the complex and diverse phenomena of both the natural and man-made worlds can be described in terms of a small number of key ideas which are of universal application.

These ideas include:

- matter is composed of tiny particles called atoms and there are about 100 different naturally occurring types of atoms called elements
- elements show periodic relationships in their chemical and physical properties
- these periodic properties can be explained in terms of the atomic structure of the elements
- atoms bond by either transferring electrons from one atom to another or by sharing electrons
- the shapes of molecules (groups of atoms bonded together) and the way giant structures are arranged is of great importance in terms of the way they behave
- there are barriers to reaction so reactions occur at different rates
- chemical reactions take place in only three different ways:
  - proton transfer
  - electron transfer
  - electron sharing
- energy is conserved in chemical reactions so can therefore be neither created or destroyed.



### **Practical Work:**

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Practical work is at the heart of chemistry. Pupils will be assessed through the written exam on the practical work they have completed during the course. At least 15% of the marks in the exam will be available to demonstrate their competency at this. Many of the questions will also focus on investigative skills and how well students can apply what they know to practical situations often in novel contexts.

### **Mathematics requirements include:**

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1. Arithmetic and numerical computation
2. Handling data
3. Algebra
4. Graphs
5. Geometry and trigonometry

### **The format for the terminal exam is:**

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<b>Paper 1:</b>	<b>Paper 2:</b>
<b>What's assessed:</b> Topics 1–5: Atomic structure and the periodic table; Bonding, structure, and the properties of matter; Quantitative chemistry, Chemical changes; and Energy changes.	<b>What's assessed:</b> Topics 6–10: The rate and extent of chemical change; Organic chemistry; Chemical analysis, Chemistry of the atmosphere; and Using resources.
<b>How it's assessed:</b> <ul style="list-style-type: none"><li>• Written exam: 1 hour 45 minutes</li><li>• Higher and Foundation Tier</li><li>• 100 marks</li><li>• 50% of GCSE</li></ul>	<b>How it's assessed:</b> <ul style="list-style-type: none"><li>• Written exam: 1 hour 45 minutes</li><li>• Higher and Foundation Tier</li><li>• 100 marks</li><li>• 50% of GCSE</li></ul>
<b>Questions:</b> Multiple choice, structured, closed short answer and open response	<b>Questions:</b> Multiple choice, structured, closed short answer and open response