

Chemistry Curriculum Information

Years 7, 8 and 9

In years 7-9 we follow the Science National Curriculum scheme of work. Detailed information can be found on the qualifications and curriculum authority website:

www.qca.org.uk

Within each year group there are approximately 4 topics which are then subdivided into sub-topics. The contents are outlined below:

Year 7

- 7E Acids and alkalis
 - hazard warning symbols
 - common acids and alkalis
 - indicators (litmus and universal indicator)
 - pH scale
 - neutralisation
- 7F Bubbles, bangs and burning
 - chemical reactions
 - reactions of acids
 - burning
 - explosions
- 7G What a waste
 - states of matter
 - diffusion
 - dilution
 - pressure in gases
- 7H Materials from the Earth
 - erosion and transport
 - forming sedimentary rocks
 - evidence in the rocks

Year 8



- 8E Atoms and elements
 - elements
 - metal and non-metals
 - symbols
 - models of atoms
- 8F Compounds and mixtures
 - compounds
 - chemical reactions
 - physical changes
 - mixtures
- 8G Rocks and weathering
 - rock textures
 - weathering
 - erosion and transport
- 8H The Rock Cycle
 - sedimentary rocks
 - metamorphic rocks
 - igneous rocks
 - rock cycle

Year 9

- 9E Reaction of metals and metal compounds
 - using metal
 - metals and acids
 - metal oxides and hydroxides with acids
 - metal carbonates and acids
- 9F Patterns of reactivity
 - reactions of metals
 - Reactivity Series
- 9G Environmental chemistry
 - types of soil
 - rocks and building materials
 - acid rain



- global warming

We then introduce some key concepts from the GCSE specification.

- Atomic structure and Periodic Table
 - protons, electron and neutrons
 - electronic configuration
 - Periodic Table arrangement
 - Groups 1,7 and 0
 - transition metals

Years 10 and 11

Towards the end of Year 9 girls will have chosen to study either the three separate sciences or to work towards a double certificate in Science and Additional Science over the two years of their GCSE course. They will all still receive lessons in all three sciences. There are three units of study in GCSE level Chemistry. Girls taking separate award Chemistry do all three and the double certificate girls study units one and two. The three units are summarised below and further details are available on the examination board website :-

www.aqa.org.uk

GCSE Science A 4461

Unit 1

C1a Products from rocks

- How do rocks provide building materials?
- How do rocks provide metals and how are metals used?
- How do we get fuels from crude oil?

C1b Oils, Earth and Atmosphere

- How are polymers and ethanol made from oil?
- How can plant oils be used?
- What are the changes in the Earth and its atmosphere

GCSE Additional Science 4463



- How do sub-atomic particles help us to understand the structure of substances?
- How do structures influence the properties and uses of substances?
- How much can we make and how much do we need to use?
- How can we control the rates of chemical reactions?
- Do chemical reactions always release energy?
- How can we use ions in solutions?

GCSE Chemistry 4421

Only the girls studying all three separate sciences are required to cover this unit.

Unit 3

- How was the periodic table developed and how can it help us understand the reactions of elements?
- What are strong and weak acids and alkalis? How can we find the amounts of acids and alkalis in solutions?
- What is in the water we drink?
- How much energy is involved in chemical reactions?
- How do we identify and analyse substances?

Chemistry in the sixth form

A level Chemistry involves the study of six different units, three at AS level for girls entering Year 12 and a further three if they choose to continue at A2 in Year 13. Each unit is subdivided into modules. The specification is divided into major chemical topics each containing different key concepts of Chemistry.

The units are summarised below and further details, if required, are available on the examination board's website – www.ocr.org.uk

AS or Advanced Subsidiary GCE H034 (OCR)

Unit F321: Atoms, Bonds and Groups

- Atoms and Reactions
- Electrons, Bonding and Structure
- The Periodic Table



Unit F322: Chains, Energy and Resources

- Basic Concepts and Hydrocarbons
- Alcohols, Halogenoalkanes and Analysis
- Energy
- Resources

Unit F323: Practical Skills in Chemistry 1

- AS internal assessment

The last unit is internally assessed in the normal course of teaching the theoretical components of the course.

A2 or Advanced GCE H434 (OCR)

Unit F324: Rings, Polymers and Analysis

- Rings, Acids and Amines
- Polymers and Synthesis
- Analysis

Unit F325: Equilibria, Energetics and Elements

- Basic Concepts and Hydrocarbons
- Alcohols, Halogenoalkanes and Analysis
- Energy
- Resources

Unit F326: Practical Skills in Chemistry 2

- A2 internal assessment

As at AS practical tasks are set as directed by the OCR board and internally assessed.

