North Halifax Grammar School
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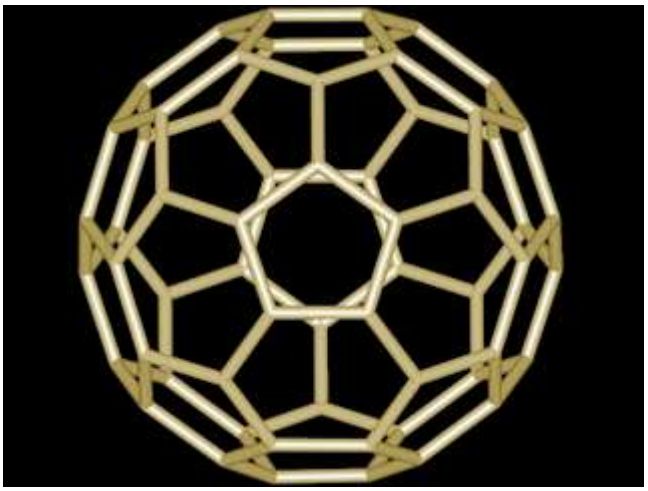
CHEMISTRY

A Level Subject Information



Chemistry Examining Board OCR

Introduction

Chemistry is the study of substances, what they are made of, how they interact, and what role they play in living things. In fact, it is the study of all materials and is often called the central science. It links with all other sciences and underpins many branches of technology from the silicon chip to brewing. The course provides a suitable foundation in the subject for those wishing to continue studying chemistry at a higher level, as well as for those intending to pursue other types of courses or to enter employment after A-level.

Method of Assessment

Chemistry A is split into six modules which, combined with the Practical Endorsement, constitute the full A Level.

- Paper 1 assesses the content from Modules 1, 2, 3 and 5
- Paper 2 assesses the content from Modules 1, 2, 4 and 6
- Paper 3 assesses the content from Modules 1 to 6.
- Paper 1 Periodic table, elements and physical chemistry. 37% of A Level marks. 2 ¼ hours
- Paper 2 Synthesis and analytical techniques. 37 % of A Level marks. 2 ¼ hours.
- Paper 3 Unified Chemistry. 26% of A Level marks. 1 ½ hours.

Practical Endorsement for Chemistry

Candidates complete a series of tasks to demonstrate practical competence.
Performance reported separately to the A Level grade.

Course Content

Studying the GCE in Chemistry should be a practical experience for students. This specification contains practical activities embedded within each unit, to reflect the nature of chemistry. This will increase the students' enjoyment and understanding of chemistry together with providing them with the skills needed to study science at higher levels.

Module 1: – Development of practical skills in chemistry

- Skills of planning, implementing, analysis and evaluation

Module 2 – Foundations in chemistry

Includes:

- Atoms, compounds, molecules and equations
- Amount of substance
- Acid–base and redox reactions
- Electrons, bonding and structure.

Module 3 – Periodic table and energy

Includes:

- The Periodic table and periodicity
- Group 2 and the halogens
- Qualitative analysis
- Enthalpy changes
- Reaction rates and equilibrium (qualitative).

Module 4 – Core organic chemistry

Includes:

- Basic concepts
- Hydrocarbons
- Alcohols and haloalkanes
- Organic synthesis
- Analytical techniques (IR, MS).

Module 5 – Physical chemistry and transition elements

Includes:

- Reaction rates and equilibrium (quantitative)
- pH and buffers
- Enthalpy, entropy and free energy
- Redox and electrode potentials
- Transition elements.

Module 6 – Organic chemistry and analysis

Includes:

- Aromatic compounds
- Carbonyl compounds
- Carboxylic acids and esters
- Nitrogen compounds
- Polymers
- Organic synthesis
- Chromatography and spectroscopy (NMR).

Why choose Chemistry?

Chemistry is a good choice if you want to keep your options open. Chemistry is listed as a preferred A-level subject for more degree courses than any other subject. Medicine, dentistry, veterinary science, food science, pharmacy, and many more specify Chemistry.

With a Chemistry qualification, the career opportunities are numerous and varied. Chemists are not just employed in the chemical industry.

For example:

• Forensic science needs chemists to investigate and detect crimes

• Sport needs chemists to enhance performance by developing new materials

• Art restoration needs chemists to analyse paint and produce equivalents.

A Chemistry qualification can also serve as a passport to many non-scientific careers such as accountancy, law and banking.

What qualities are needed to study Chemistry?

Students must be prepared to work hard and show persistence. Good grades in Science and Additional Science or Separate Sciences at GCSE level are essential. Chemistry has quite a large factual base and the ability to review and learn material regularly as the course progresses is essential. A good level of numerical skills, together with a methodical and organised approach are also important.

How to make a great start in A Level Chemistry.....

Don't forget GCSE!

Before you come back in September, get your old books out and remind yourself of some of the important topics you covered at GCSE. These could include:-

The Periodic Table	Electronic Structure
Ionic, Covalent and Metallic Bonding	Chemical Calculations
Writing Formulae	Balancing Equations

All these will come up in the first few weeks of your course, and they will be built on to demonstrate a greater depth of understanding.

Course Combinations

Chemistry can be studied with a suitable combination from Physics, Biology, Mathematics, Geology, Geography and Economics. It is also possible to combine chemistry with certain arts based subjects although this may reduce choice of courses at a later stage.

Further details:
Information can be obtained from the following resources on the internet:

www.chemguide.co.uk https://edu.rsc.org/student www.ocr.org.uk

Any A-Level chemistry textbook will contain the background information needed. Revision guides are also available from all good bookshops.

Further information can be obtained from **Mrs N Whitehill, Mr G Topham, Miss V Longbottom and Dr M Ashley.**