

**SUBJECT: CHEMISTRY**

**AWARD RECEIVED: HIGHER**

### **ENTRY LEVEL**

Students should ideally have N5 Chemistry, at A or B. It could be possible for a student without previous experience of Chemistry to follow this course, in which case they should speak to Mrs McDowell (Principal Teacher of Biology & Chemistry) for advice.

### **COURSE CONTENT**

The Course is split up into 4 Units, with the Key Areas covered in each outlined below:

#### **Unit 1 - Chemical Changes and Structure**

This Unit covers the Key Areas of:

##### **Controlling the rate of reactions; Periodicity; Structure and bonding.**

This Unit covers the knowledge and understanding of controlling reaction rates and periodic trends, and strengthens the learner's ability to make reasoned evaluations by recognising underlying patterns and principles. Learners will investigate collision theory and the use of catalysts in reactions. Learners will explore the concept of electro-negativity and intra-molecular and intermolecular forces. The connection between bonding and a material's physical properties is investigated.

#### **Unit 2 - Researching Chemistry**

This Unit covers the key skills necessary to undertake research in chemistry. Learners will research the relevance of chemical theory to everyday life by exploring the chemistry behind a topical issue. Learners will develop the key skills associated with collecting and synthesising information from a number of different sources. Equipped with the knowledge of common chemistry apparatus and techniques, they will plan and undertake a practical investigation related to a topical issue.

#### **Unit 3 - Nature's Chemistry**

This Unit covers the Key Areas of:

##### **Esters, fats and oils; Proteins; Chemistry of cooking; Oxidation of food; Soaps, detergents and emulsions; Fragrances; Skin care.**

This Unit covers the knowledge and understanding of organic chemistry within the context of the chemistry of food and the chemistry of everyday consumer products, soaps, detergents, fragrances and skincare. The relationship between the structure of organic compounds, their physical and chemical properties and their uses are investigated. Key functional groups and types of organic reaction are covered.

#### **Unit 4 - Chemistry in Society**

This Unit covers the Key Areas of:

##### **Getting the most from reactants; Equilibria; Chemical energy; Oxidising or reducing agents; Chemical analysis.**

This Unit covers the knowledge and understanding of the principles of physical chemistry which allow a chemical process to be taken from the researcher's bench through to industrial production. Learners will calculate quantities of reagents and products, percentage yield and the atom economy of processes. They will develop skills to manipulate dynamic equilibria and predict enthalpy changes. Learners will investigate the ability of substances to act as oxidising or reducing agents and their use in analytical chemistry through the context of volumetric titrations. Learners will use analytical chemistry to determine the purity of reagents and products.

## **ASSESSMENT**

To gain an overall Award for this Course, students need to pass the:

- **Unit Assessments** for each of the Units – these are marked internally in school;
- **Course Assessment**, which is marked by the SQA and includes an:
  1. **Assignment** (20 marks)
  2. **Exam** (100 marks)

The Course assessment is graded A–D. The grade is determined on the basis of the total mark for all components of the course assessment.

## **HOMEWORK**

Homework is an essential part of the course. Homework will include practise problems, questions from a textbook and regular revision of all the material covered in the course.

## **TRANSFERABLE SKILLS**

There are many very useful and valuable transferable skills gained by studying Higher Chemistry, including: researching, ICT, reporting, numeracy, literacy, graphing, investigating, practical experimental skills, analysing, presentation, evaluating, to name a few.

## **PROGRESSION**

There is very good progression from this Course on to Advanced Higher Chemistry.