

## Chemistry National 4

### **AWARD RECEIVED:**

You will either be presented for National 4 Chemistry at the end of the year on passing the required units.

### **ENTRY LEVEL: What do I need to do it?**

Ideally you will have studied Chemistry or Science in S2/3 or Science, but this is not essential.

### **COURSE CONTENT: What will I learn?**

The Course develops skills in a chemistry context. Learners will gain an understanding of chemistry, and develop this through a variety of approaches, including practical activities. The Course has four mandatory Units including the Added Value Unit. The first three Units listed below are designed to provide progression to the corresponding Units at National 5.

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

In this Unit, learners will develop scientific skills and knowledge of the chemical reactions in our world. Through practical experience learners will investigate rates of reaction, energy changes of chemical reaction, and the reactions of acids and bases and their impact on the environment. Focusing on these reactions, learners will work towards the concept of chemical equations. Learners will research atomic structure and bonding related to properties of materials.

#### **Unit 2 Nature's Chemistry**

In this Unit, learners will research the Earth's rich supply of natural resources which are used by each and every one of us. Learners will investigate how fossil fuels are extracted and processed for use. They will investigate: the chemistry of using fuels, their effect on the environment and the impact that renewable energy sources can have on this; plants as a source of fuels, carbohydrates and consumer products; and how chemists use plants in the development of products associated with everyday life.

#### **Unit 3 Chemistry in Society**

In this Unit, learners will focus on the chemical reactions, properties and applications of metal and alloys. The chemistry of metals in chemical cells is explored. Through research, learners will compare and contrast the properties and applications of plastics and new materials. Learners will investigate the use of fertilisers, the formation of elements, and the presence of background radiation, and will research the use of chemical analysis for monitoring the environment.

#### **Added Value Unit: Chemistry Assignment**

In this Unit, learners will draw on and extend the skills they have learned from across the other Units, and demonstrate the breadth of knowledge and skills acquired, in unfamiliar contexts and/or integrated ways.

#### **ASSESSMENT: How will I be assessed?**

There is no external examination for this course. Units 1 to 3 are internally assessed using a closed book assessment that requires learners to be able to:

apply skills of scientific inquiry and draw on knowledge and understanding of the key areas of this Unit to carry out an experiment

draw on knowledge and understanding of the key areas of this Unit and apply scientific skills

The Added Value Unit Learners will draw on and apply the skills and knowledge they have learned during the Course. They will carry out an in-depth investigation on an unfamiliar and/or integrated context and complete a structured report.

#### **HOMEWORK:**

Regular homework contains numeracy, literacy and problem-solving tasks and aims to develop skills and consolidate knowledge and understanding. It may also include revision of class work, completion of unfinished work and opportunities to complete small projects at home on selected areas of the curriculum. You will be given the chance to present your findings to your peers.

#### **PROGRESSION IN THE SENIOR PHASE:**

National 5 Chemistry or National 5 Laboratory Sciences.

#### **COSTS:**

Pupils may be asked for replacement costs for lost or broken equipment.