

### Why Chemistry?

Chemistry is vital to everyday life. No matter what you look at, a chemist has probably been involved in manufacturing or developing it. Chemistry is a very practical subject and you will have the opportunity to carry out experiments and practical investigations. You will learn to think in a scientific and analytical way.

Chemistry is an important subject in many careers, such as medicine, pharmaceuticals, the food industry and the manufacture of plastics.

### Course Outline

You will learn about how we use the Earth's resources, the chemistry of everyday products and environmental analysis. You will find out how chemistry affects our environment and our everyday lives. This will help you to make your own decisions on contemporary issues where scientific knowledge is constantly developing.

## CHEMISTRY NATIONAL 4

### Details of Course Components

The course has three compulsory units, plus an added value unit that assesses your practical skills.

#### Chemical Changes and Structure

In this unit you will:

- develop scientific skills and knowledge of chemical reactions
- investigate rates of reaction, energy changes of chemical reaction, and the reactions of acids and bases and their impact on the environment
- research atomic structure and bonding related to properties of materials.

#### Nature's Chemistry

In this unit you will:

- research the Earth's rich supply of natural resources
- investigate how fossil fuels are extracted and processed for use, including the chemistry of using fuels and their effect on the environment
- explore plants as a source of fuels, carbohydrates and consumer products
- find out how chemists use plants in the development of everyday products.

#### Chemistry in Society

In this unit you will:

- investigate the chemical reactions, properties and applications of metal and alloys
- compare and contrast the properties and applications of plastics and new materials
- investigate the use of fertilisers, the formation of elements, and the presence of background radiation
- research the use of chemical analysis for monitoring the environment.

#### Added Value Unit:

In this unit you will:

- carry out an investigation using the skills and knowledge you developed in the other three units
- investigate a topical issue in Chemistry from a selection
- produce a written summary of the research and development ideas that inspired your work.

#### ASSESSMENT

Your work will be assessed by your teacher on an ongoing basis throughout the course. Items of work might include:

- practical work - such as practical experiments
- written work - research assignments and reports
- projects
- class-based exams.

A National 4 course award is achieved by passing all the units including as well as completing the Added Value Unit.



## FACULTY OF SCIENCE

#### Biology Staff :

Mr Alan Stickle, Miss Rowan Cannell,  
Miss Sue Rodwell

#### Chemistry Staff:

Mr Stephen McNeil, Miss Kat Barnard,  
Mrs Maryann Blakeborough

#### Physics Staff:

Mrs Abi Gibbon, Mr Steven Dempsey

#### Career Areas:

careers in a chemistry-based discipline or related area, or in a wide range of other areas, such as oil and gas exploration, renewable energy development, engineering, technology, pharmaceuticals, environmental monitoring, forensics, research and development, management, civil service and education

#### Courses in Turriff Academy

National 4 Environmental Science  
National 4 Chemistry  
National 4 Physics  
National 5 Biology  
National 5 Chemistry  
National 5 Physics  
Higher Biology  
Higher Chemistry  
Higher Physics  
Scientific Technologies NPA  
Advanced Higher Biology  
Advanced Higher Chemistry  
Advanced Higher Physics

#### Useful websites to help you with your choices:

[www.myworldofwork.co.uk](http://www.myworldofwork.co.uk)  
[www.skillsdevelopmentscotland.co.uk](http://www.skillsdevelopmentscotland.co.uk)

*Further advice and information on these options is available from your subject teacher, guidance teacher and careers adviser.*