National 4 Biology

# Course Rationale

Biology is the study of all living things. In this course you will learn about organisms that live on land and sea, the interactions between them, and their links with the physical world. You will also find out how Biology is helping to find solutions to world problems. Biology is a relevant qualification for many careers because it is recognised by employers as a valuable broad-based qualification.

# Course Content

In Nat 4 Biology you will learn about plants, animals and people. The course has **three** compulsory units plus an **added value** unit that assesses your investigative skills.

**Cell Biology** - Study cell division, DNA, genes and chromosomes, therapeutic use of cells, enzymes, micro-organisms, respiration and photosynthesis.

**Biology: Multicellular Organisms -** This covers key areas such as reproduction, survival of species, genetic information and growth and development of different organisms. You will also learn about propagating and growing plants, explore their commercial use and discover how organisms respond to internal and external changes in order to maintain stable body conditions.

**Biology: Life on Earth** -You will learn how animal and plant species depend on each other by studying the impact of population growth on biodiversity, explore the nitrogen cycle and fertiliser design and environmental impact. You will also explore adaptations for survival and learned behaviour in response to stimuli.

**Added Value Unit:** Here you carry out an investigation on a biological topic, drawing on the skills you have learned, and present your findings.

# Skills

Biology develops your skills of scientific enquiry and helps you to solve problems and make decisions. You will have opportunity to develop your numeracy and literacy abilities, as well as to develop your skills in carrying out biological experiments and investigations, analysing and presenting your findings.

# Course Assessment

Your work will be assessed by your teacher on an ongoing basis throughout the course. Assessed items include practical experiments (learning outcome 1), research assignments (the AVU) and class-based exams (unit tests). To pass each unit you must achieve a pass in the practical assessment (LO1) and unit test. You must pass all of the units including the Added Value Unit to gain the course qualification.

National 3 Biology is assessed similarly but does not require learners to pass an Added Value Unit.

# Progression

If you complete the National 4 course successfully, it may lead to National 5 Biology, National 4 courses in Chemistry or Physics, National Progression Awards (SCQF level 4 or 5) or further training and employment opportunities in e.g. the food industry, water industry, brewing, pharmacy, medical and laboratory services and any of the biotechnological industries.

If you pass the course at National 3 level, progression to National 4 may be possible.

# Career Pathways

# Agricultural Engineer Animal Care Worker Beauty therapist Care support worker Countryside Ranger Dental nurse Environmental consultant Food scientist Forestry worker Fish farm worker Gardener Game keeper Midwife Nurse Occupational Therapist Pharmacy technician Physiotherapy assistant

# Sports therapist Paramedic SSPCA inspector Technical Brewer Zoo keeper