National 5 Biology

# Course Rationale

Biology – the study of living organisms – affects us all. You will find out how Biology is helping to find solutions to world problems. Advances in technology mean biologists are exploring the use of genetic modification to produce new plants and drugs, solving crimes by understanding crime scene material, and developing new sources of food for our growing population.

# Course Content

In national 5 Biology you will learn about living systems and their interdependence. You will find out about evolution of species, and how humans impact on the environment.

The course has **three main areas:**

**Cell Biology** - Key areas: cell structure; transport across cell membranes; DNA and the production of proteins; proteins and enzymes; genetic engineering and respiration.

**Biology: Multicellular Organisms** - Key areas: producing new cells, mitosis and stem cells; control and communication; reproduction; variation and inheritance; plant transport systems, absorption of materials and animal transport and exchange systems.

**Biology: Life on Earth -** Key areas: biodiversity and the distribution of life and energy in ecosystems; use of sampling techniques and measurement of abiotic and biotic factors, photosynthesis, food production, and evolution of species

# Skills

Biology develops your analytical thinking and helps you to solve problems through experiments and research. You will develop your practical and investigation skills by carrying out biological experiments, analysing your findings and evaluating your experimental procedures. In doing so you will develop your numeracy and literacy skills and enhance your abilities to work productively with others to complete tasks.

# Course Assessment

You will undertake a practical investigation on a biological topic, drawing on the skills you have learned from the other units and present your findings in an assignment, marked by the SQA. You will also sit a final course exam, assessing your knowledge and understanding and problem-solving skills across the course.

The Course assessment is graded A–D. Your grade will depend on the total final exam (80%) and the assignment (20%).

# Progression

# If you complete the course successfully, it may lead to Higher Biology or Higher Human Biology. It could also lead to further study, training or employment in science, health and medicine, biotechnology or areas associated with animals, land and the environment.

# Career Pathways

# Agricultural Engineer Audiologist Biochemist Biotechnologist Clinical Psychologist Countryside Ranger Dentist Dental Hygienist Doctor Environmental consultant Food scientist Geneticist Marine Biologist Microbiologist Midwife Nurse Occupational Therapist Optometrist Pharmacologist Speech and language therapist

# Teacher Paramedic Pharmacist Technical Brewer Vet Nurse Vet Zoologist