Curricular Area: Science		Subject: Biology	
National 4 (SCQF Level 4)	National 5 (SCQF Level 5)	Higher (SCQF Level 6)	Advanced Higher (SCQF L7)
Course Content	**Course Content**	**Course Content**	**Course Content**
Cell Biology - cell division, DNA, genes and chromosomes, enzymes, microorganisms, and photosynthesis. **Multicellular Organisms** - sexual and asexual reproduction, propagating and growing plants; commercial use of plants, genetic information and growth and development of different organisms, homeostasis. **Life on Earth** - interdependence, impact of population growth on biodiversity, the nitrogen cycle, fertiliser design, impact fertilisers have on the environmental, adaptations for survival and learned behaviour in response to stimuli. **Added Value Unit: Biology Assignment** - carry out an investigation on a biological topic, drawing on the skills you have learned from the other units and present your findings in an assignment.	**Cell biology -** cell structure; transport across cell membranes; DNA and the production of proteins; proteins; genetic engineering; and respiration. **Multicellular organisms -** producing new cells; control and communication; reproduction; variation and inheritance; transport systems — plants; transport systems — animals; and absorption of materials. **Life on Earth -** ecosystems; distribution of organisms; photosynthesis; energy in ecosystems; food production; and evolution of species.	**DNA and the genome -** the structure and replication of DNA; gene expression; cellular differentiation; the structure of the genome; mutations; evolution; genomic sequencing. **Metabolism and survival** -metabolic pathways; cellular respiration; metabolic rate; metabolism in conformers and regulators; metabolism and adverse conditions; environmental control of metabolism; genetic control of metabolism. **Sustainability and interdependence -** food supply, plant growth and productivity; plant and animal breeding; crop protection; animal welfare; symbiosis; social behaviour; components of biodiversity; threats to biodiversity.	**Cells and Proteins** - laboratory techniques for biologists, proteins, membrane proteins, communication and signalling, protein control of cell division. **Organisms and Evolution** - field techniques for biologists, evolution, variation and sexual reproduction, sex and behaviour, parasitism. **Investigative Biology** - scientific principles and process, experimentation, reporting and critical evaluation of biological research.
How will the course be assessed?	**How will the course be assessed?**	**How will the course be assessed?**	**How will the course be assessed?**
Your work will be assessed by your teacher on an ongoing basis throughout the course. Items of work might include: • practical work - such as experiments • written work - research assignments and lab reports • projects • class-based exams. You must pass all the units including the practical assignment to gain the course qualification.	The course assessment has **two** components **worth 120 marks**: • Component 1: question paper – worth 100 marks (two sections, section 1 worth 25 marks and section 2 worth 75 marks) • Component 2: assignment – worth 20 marks.	The course assessment has **three** components **totalling 140 marks**: • Component 1: question paper 1 (multiple choice) – worth 25 marks • Component 2: question paper 2 – worth 95 marks • Component 3: assignment – worth 20 marks	The course assessment consists of **two** components **totalling 130 marks**: • Component 1 - Question paper (100 marks) • Component 2 - Project (30 marks).
Career Pathways			
There are many career opportunities connected with biology, including medicine, nursing, dentistry, physiotherapy, food science, sport science, pharmacology and beauty therapy.			