National 3 Course Specification

National 3 Biology Course Specification

Valid from August 2013

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Please refer to the note of changes at the end of this Course Specification for details of changes from previous version (where applicable).

Course outline

Course title: National 3 Biology

SCQF: level 3 (18 SCQF credit points)

Course code: to be advised

Mandatory Units

Cell Biology (National 3)	**6 SCQF credit points**
Biology: Multicellular Organisms (National 3)	**6 SCQF credit points**
Biology: Life on Earth (National 3)	**6 SCQF credit points**

Recommended entry

Entry to this Course is at the discretion of the centre. However, learners would normally be expected to have attained the skills, knowledge and understanding required by the following or equivalent qualifications and/or experience:

- National 2 Science in the Environment

In terms of prior learning and experience, relevant experiences and outcomes may also provide an appropriate basis for doing this Course.

Progression

This Course or its Units may provide progression to:

- other qualifications in Biology, Environmental Science, Science, or related areas
- further study, employment and/or training

Further details are provided in the Rationale section.

Equality and inclusion

This Course Specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence. For further information, please refer to the *Course Support Notes.*

Rationale

All new and revised National Courses reflect Curriculum for Excellence values, purposes and principles. They offer flexibility, provide more time for learning, more focus on skills and applying learning, and scope for personalisation and choice.

In this Course, and its component Units, there will be an emphasis on skills development and the application of those skills. Assessment approaches will be proportionate, fit for purpose and will promote best practice, enabling learners to achieve the highest standards they can.

This Course provides learners with opportunities to continue to acquire and develop the attributes and capabilities of the four capacities as well as skills for learning, skills for life and skills for work.

All Courses provide opportunities for learners to develop breadth, challenge and application, but the focus and balance of the assessment will be appropriate for the subject area.

Relationship between the Course and Curriculum for Excellence values, purposes and principles

Biology affects everyone and aims to find solutions to many of the world's problems. Biology, the study of living organisms, plays a crucial role in our everyday existence, and is an increasingly important subject in the modern world. Advances in technologies have made this varied subject more exciting and relevant than ever.

The National 3 Biology Course encourages the development of skills and resourcefulness, which lead to becoming a confident individual. Successful learners in biology think creatively, analyse and solve problems. Biology aims to produce responsible citizens, through studying of relevant areas of biology, such as health, environment and sustainability.

An experimental and investigative approach is used to develop knowledge and understanding of biology concepts.

Purpose and aims of the Course

The purpose of the Course is to develop learners' interest and enthusiasm for biology in a range of contexts. The skills of scientific inquiry and investigation are developed, throughout the Course, by investigating the applications of biology. This will enable learners to become scientifically literate citizens, able to review the science-based claims, which they will meet.

The Course covers relevant and contemporary areas of biology, while allowing learners to develop an understanding of the underlying themes. The concepts of biodiversity, interdependence, body systems and cells and inheritance are developed through the Course.

In addition, learners will recognise the impact biology makes on their lives, on the lives of others, on the environment and on society. The Course allows flexibility and personalisation by offering choice in the contexts studied.

Throughout the Course, learners will be able to develop their communication and collaborative working skills and other relevant skills for everyday life and employment.

The aims of the Course are to enable learners to:

- develop basic knowledge and understanding of biology
- develop an understanding of biology's role in scientific issues and relevant applications of biology in society and the environment
- develop scientific inquiry and investigative skills
- develop scientific analytical thinking skills in a biology context
- develop the use of technology, equipment and materials, safely, in practical scientific activities
- develop problem solving skills in a biology context
- use scientific literacy in everyday contexts
- establish the foundation for more advanced learning in biology

Information about typical learners who might do the Course

The Course is suitable for learners who have experienced learning across the sciences experiences and outcomes.
The Course may be suitable for those wishing to study biology for the first time.

This Course has a skills-based approach to learning. It takes account of the needs of all learners and provides sufficient flexibility to enable learners to achieve in different ways.

Biology Courses are offered from SCQF level 3 to SCQF level 7. Vertical progression is possible through these levels, while lateral progression is possible to other qualifications in the sciences. This Course can also assist entry to employment, training and further education.

Course structure and conditions of award

Course structure

The Course consists of three mandatory Units. Each of the component Units is designed to provide progression to the related Unit at National 4.

Units are statements of standards for assessment and not programmes of learning and teaching. They can be delivered in a number of ways.

Units can be taught sequentially or in parallel to each other. However, learning and teaching approaches should provide opportunities to integrate skills, where possible.

Cell Biology (National 3)
In this Unit, learners will develop their scientific skills and carry out practical and other learning activities related to the investigation of the cell, including ethical and topical issues. This develops the concept of the cell as the basic unit of life. Learners will investigate the key areas of the structure and variety of cells and their functions; the function of DNA; the risks and benefits of DNA profiling, photosynthesis; different types of microorganisms and how their growth can be controlled.

Biology: Multicellular Organisms (National 3)
In this Unit, learners will develop their scientific skills and carry out practical and other learning activities related to the investigation of multicellular plants and animals. Learners will investigate the key areas of the structure and function of organs and organ systems and their role in sustaining life; the role of technology in monitoring health and improving quality of life; body defences against disease and role of vaccines; fertilisation and embryonic development and risks to embryo.

Biology: Life on Earth (National 3)
In this Unit, learners will develop their scientific skills and carry out practical and other learning activities related to the investigation of ecosystems and biodiversity. Learners will investigate the key areas of sampling and identifying living things from different habitats to compare their biodiversity and suggest reasons for their distribution; Different types of chemicals in agriculture, the alternatives and their impact on global food production.

Conditions of award

To achieve the National 3 Biology Course, learners must pass all of the required Units. The required Units are shown in the Course outline section.

National 3 Courses are not graded.

Skills, knowledge and understanding

Full skills, knowledge and understanding for the Course are given in the *Course Support Notes*. A broad overview of the subject skills, knowledge and understanding that will be covered in the Course is given in this section.

This includes:

- using, with guidance, biology knowledge and understanding
- solving simple problems and making decisions
- planning and safely carrying out experiments/practical investigations
- using, with guidance, information handling skills by selecting, presenting and processing information
- making basic generalisations from evidence/information
- drawing valid conclusions from evidence/information
- communicating findings/information

Skills, knowledge and understanding to be included in the Course will be appropriate to the SCQF level of the Course. The SCQF level descriptors give further information on characteristics and expected performance at each SCQF level (www.sqa.org.uk/scqf).

Assessment

Further information about assessment for the Course is included in the *Course Support Notes.*

Unit assessment

All Units are internally assessed against the requirements shown in the Unit Specification.

They can be assessed on a Unit-by-Unit basis or by combined assessment.

They will be assessed on a pass/fail basis within centres. SQA will provide rigorous external quality assurance, including external verification, to ensure assessment judgments are consistent and meet national standards.

The assessment of the Units in this Course will be as follows.

Cell Biology (National 3)
Learners who complete this Unit will 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/practical investigation
- draw on knowledge and understanding of the key areas of this Unit and apply scientific skills

Biology: Multicellular Organisms (National 3)
Learners who complete this Unit will 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/practical investigation
- draw on knowledge and understanding of the key areas of this Unit and apply scientific skills

Biology: Life on Earth (National 3)
Learners who complete this Unit will 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/practical investigation
- draw on knowledge and understanding of the key areas of this Unit and apply scientific skills

Exemplification of possible assessment approaches for these Units is provided in the *National Assessment Resource*.

Development of skills for learning, skills for life and skills for work

It is expected that learners will develop broad, generic skills through this Course. The skills that learners will be expected to improve on and develop through the Course are based on SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work* and drawn from the main skills areas listed below. These must be built into the Course where there are appropriate opportunities.

2 Numeracy

2.1 Number processes
2.2 Money, time and measurement
2.3 Information handling

5 Thinking skills

5.2 Understanding
5.3 Applying

Amplification of these skills is given in SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work*. The level of these skills will be appropriate to the level of the Course. Further information on building in skills for learning, skills for life and skills for work for the Course is given in the *Course Support Notes*.

Administrative information

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Superclass: to be advised

History of changes to National Course Specification

Course details	Version	Description of change	Authorised by	Date