



Biology Assignment (National 4) Added Value Unit

SCQF: level 4 (6 SCQF credit points)

Unit code: to be advised

Unit outline

This is the Added Value Unit in the National 4 Biology Course. The general aim of this Unit is to enable learners to provide evidence of added value for the National 4 Biology Course through the successful completion of an assignment which will allow them to demonstrate breadth, challenge and/or application.

Learners will have the opportunity to demonstrate challenge and application in skills of scientific inquiry, investigation, analytical thinking and knowledge and understanding.

Learners will investigate a topical issue in biology, using knowledge and skills selected from *Cell Biology/Multicellular Organisms/Life on Earth* key areas.

Learners will use a variety of approaches and consider applications of biology and the impact on society/the environment. They will communicate information related to the method used or record of process and findings, which will allow demonstration of scientific literacy skills.

Learners who complete this Unit will be able to:

- 1 Apply skills and knowledge to investigate a topical issue in biology and its impact on society/the environment

This Unit is a mandatory Unit of the National 4 Biology Course and is also available as a free-standing Unit. The Unit Specification should be read in conjunction with the *Course Support Notes*, which provide advice and guidance on delivery and assessment approaches. Exemplification of the assessment in this Unit is given in the *National Assessment Resource*.

Recommended entry

Entry to this Unit is at the discretion of the centre. It is recommended that the learner should be in the process of completing, or have completed, the following Units in the National 4 Biology Course:

- ◆ Cell Biology (National 4)
- ◆ Biology: Multicellular Organisms (National 4)
- ◆ Biology: Life on Earth (National 4)

Equality and inclusion

This Unit 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*.

Standards

Outcomes and assessment standards

Outcome 1

The learner will:

- 1 Apply skills and knowledge to investigate a topical issue in biology and its impact on society/the environment by:**
 - 1.1 Choosing, with justification, a relevant issue in biology
 - 1.2 Researching the issue
 - 1.3 Presenting appropriate information/data
 - 1.4 Explaining the impact, in terms of the biology involved
 - 1.5 Communicating the findings of the investigation

Evidence Requirements for the Unit

This Unit will be assessed through controlled assessment which meets the Evidence Requirements below.

The assessment method for this Unit will be an assignment in which the learner will draw on and apply the skills and knowledge they have learned during the Course. They will carry out an in-depth investigation on an unfamiliar and/or integrated context.

The assignment is:

- ◆ set by centres within the SQA guidelines described below
- ◆ conducted under some supervision and control

Evidence will be internally marked by centre staff in line with SQA guidelines.

All assessment is subject to quality assurance by SQA.

Setting the assessment

The assignment will be set by centres within the following guidelines:

- ◆ Learners will select and investigate a topical issue from a key area of this Course.
- ◆ The topical issue could have either a positive or negative impact on society/the environment. This could be from an unfamiliar context or from a familiar context investigated in greater depth or from integrating aspects of one or more Units.
- ◆ The assignment topic will be agreed between the learner and the teacher/lecturer.
- ◆ Learners will gather information over several weeks but no more than 8 hours should be spent on this.

Conducting the assessment

The assignment will be conducted under some supervision and control, as follows:

- ◆ The maximum amount of time to be spent on conducting the assessment should be no more than two hours.
- ◆ The assessment should be carried out under open-book conditions.

- ◆ The teacher/lecturer will provide overall guidelines for the assignment, which will lead the learner through the assignment in clear stages.
- ◆ The teacher/lecturer may also give learners support and guidance to help them progress through each stage of the assignment.

Judging the evidence/markings

Evidence will be internally marked and verified by centre staff in line with SQA guidelines.

All assessment is subject to quality assurance by SQA.

Evidence can be drawn from a variety of sources and presented in a variety of formats. The table below describes the evidence for the Assessment Standards which require exemplification.

Assessment Standard	Evidence required
Choosing, with justification, a relevant issue in biology	A clear statement of the issue being investigated. An explanation of the reason for the choice of issue.
Researching the issue	Selection/collection of appropriate information/data from at least two relevant sources.
Presenting appropriate information/data	Present gathered information/data in at least one format from: table, graph, chart, key, diagram, flow chart or other appropriate format.
Explaining the impact in terms of the biology involved	A description which includes the biology of the issue and an explanation of its impact on society/the environment.
Communicating the findings of the investigation	The method used/record of process. The findings. Learners should have flexibility in how they communicate. This can include one or more of the following: <ul style="list-style-type: none"> ◆ a written report ◆ an oral presentation, which may be supplemented by additional material ◆ an audio/visual or digital presentation using ICT ◆ a learning log or journal, which may be in electronic or digital form

Re-assessment

In relation to Unit assessment, SQA's guidance on re-assessment for Units applies.

Further information is provided in the exemplification of assessment in the *National Assessment Resource*. Advice and guidance on possible approaches to assessment is provided in the *Course Support Notes*.

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

Please refer to the *Course Specification* for information about skills for learning, skills for life and skills for work.

Further mandatory information on Course coverage for the National 4 Biology Course

The following gives details of mandatory skills, knowledge and understanding for the National 4 Biology Course. Assessment of this Added Value Unit will involve selecting appropriate skills, knowledge and understanding from those listed below, in line with the Evidence Requirements above. This list of skills, knowledge and understanding also provides the basis for the assessment of all of the Units in the Course:

- ◆ demonstrating knowledge and understanding by making statements, describing information, providing explanations
- ◆ applying knowledge of biology to familiar situations, interpreting information and solving problems
- ◆ planning and carrying out straightforward experimental procedures safely to illustrate particular effects
- ◆ applying information handling skills including selecting, presenting and processing information
- ◆ making generalisations based on evidence/information
- ◆ drawing valid conclusions and giving explanations supported by evidence
- ◆ suggesting improvements to an experiments/investigations
- ◆ communicating findings/information

These skills will be assessed, across the Course, in the context of the key areas.

The following table provides further details of the key areas for the National 4 Biology Course.

Cell Biology
<ul style="list-style-type: none">◆ Cell division and its role in growth and repair◆ DNA, genes and chromosomes◆ Therapeutic use of cells◆ Properties of enzymes and use in industries◆ Properties of microorganisms and use in industries◆ Photosynthesis — limiting factors◆ Factors affecting respiration◆ Controversial biological procedures
Biology: Multicellular Organisms
<ul style="list-style-type: none">◆ Sexual and asexual reproduction and their importance for survival of species◆ Propagating and growing plants◆ Commercial use of plants◆ Genetic information◆ Growth and development of different organisms◆ Biological actions in response to internal and external changes to maintain stable body conditions
Biology: Life on Earth
<ul style="list-style-type: none">◆ Animal and plants species depend on each other◆ Impact of population growth and natural hazards on biodiversity◆ Nitrogen cycle◆ Fertiliser design and environmental impact of fertilisers◆ Adaptations for survival

Administrative information

Published: April 2012 (version 1.0)

Superclass: to be advised

History of changes

Version	Description of change	Authorised by	Date

© Scottish Qualifications Authority 2012

This specification may be reproduced in whole or in part for educational purposes provided that no profit is derived from reproduction and that, if it is reproduced in part, the source is acknowledged. Additional copies of this Unit can be downloaded from SQA's website at **www.sqa.org.uk**.

Note: readers are advised to check SQA's website: www.sqa.org.uk to ensure they are using the most up-to-date version of the Unit Specification.