



Environmental Science Assignment (National 4)

SCQF: level 4 (6 SCQF credit points)

Unit code: H24T 74

Unit outline

This is the Added Value Unit in the National 4 Environmental Science Course. The general aim of this Unit is to enable learners to provide evidence of added value for the National 4 Environmental Science Course through the successful completion of an assignment which will allow the learner 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 environmental science issue, using knowledge and skills selected from *Living Environment/Earth's Resources/Sustainability* key areas.

Learners will use a variety of approaches and will consider applications of environmental science and the impact on the environment/society. They will communicate information related to their method used or their 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 environmental science and its impact on the environment/society

This Unit is a mandatory Unit of the National 4 Environmental Science 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 standards in this Unit is given in *Unit Assessment Support*.

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 Environmental Science Course:

- ◆ Environmental Science: Living Environment (National 4)
- ◆ Environmental Science: Earth's Resources (National 4)
- ◆ Environmental Science: Sustainability (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 environmental science and its impact on the environment/society by:**
 - 1.1 Choosing, with justification, a relevant issue in environmental science
 - 1.2 Researching the issue
 - 1.3 Presenting appropriate information/data
 - 1.4 Explaining the impact, in terms of the environmental science 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. The assignment offers challenge by requiring skills, knowledge and understanding to be applied in a context that is one or more of the following:

- ◆ unfamiliar
- ◆ familiar but investigated in greater depth
- ◆ integrates a number of familiar contexts

The assignment involves research of a topical issue and communication of the findings. These may be carried out in two stages, Stage 1: a research stage and Stage 2: a communication stage, which may be carried out sequentially or concurrently.

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 the environment/society.
- ◆ The assignment topic will be agreed between the learner and the teacher/lecturer.

Conducting the assessment

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

- ◆ It is recommended that learners will gather information over several weeks and that no more than 8 hours should be spent on the whole assignment.
- ◆ During Stage 1: the research stage, learners may have access to a wide range of resources
- ◆ During Stage 2: the communication stage, learners should have access to the material they have generated in Stage 1: the research stage.
- ◆ 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

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 environmental science	A clear statement of the issue being investigated. A brief statement why the issue is relevant to the environment/society.
Researching the issue	Select/collect appropriate information/data from at least two relevant recorded sources.
Presenting appropriate information/data	Present gathered information/data in at least one format from: table, graph, chart, map, key, diagram, flow chart or other appropriate format.
Explaining the impact in terms of the environmental science involved	A description which includes the environmental science of the issue and an explanation of its impact on /the environment/society
Communicating the findings of the investigation	The communication must be clear, concise, relevant and appropriately structured

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 *Unit Assessment Support*. 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 Environmental Science Course

The following gives mandatory skills, knowledge and understanding for the National 4 Environmental Science 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 of environmental science by making statements, describing information, providing explanations
- ◆ applying knowledge of environmental science to familiar situations, interpreting information and solving problems
- ◆ planning and safely carrying out practical investigations/experiments to illustrate effects
- ◆ applying information handling skills including selecting, presenting and processing information
- ◆ evaluating information to solve problems and make decisions
- ◆ making generalisations based on evidence/information
- ◆ drawing valid conclusions and giving explanations supported by evidence
- ◆ suggesting improvements to an practical investigations/experiments
- ◆ communicating findings/information

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

The following table provides further detail of the key areas for the National 4 Environmental Science Course.

Environmental Science: Living Environment
Interdependence Adaptation for survival The impact of population growth and natural hazards on biodiversity The nitrogen cycle The environmental impact of fertilisers
Environmental Science: Earth's Resources
The responsible use and conservation of non-renewable and renewable resources The formation and use of fossil fuels The derivation and uses of materials derived from crude oil The risks and benefits of different energy sources, including those produced from plants The carbon cycle Processes involved in maintaining the balance of gases in the air and the causes and implications of changes in the balance

Environmental Science: Sustainability

The sustainability of key natural resources and possible implications for human activity

The interaction between humans and the environment and the impact of human activity on an area

The role of agriculture in the production of food and raw material and its environmental impacts and sustainability

Society's energy needs

The impact of developments in transport infrastructure in a selected area and development of sustainable systems

Administrative information

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Superclass: QA

History of changes

Version	Description of change	Authorised by	Date
1.1	Evidence Requirements section: wording added to clarify assessment conditions; Further mandatory information section: amendment to wording to clarify skills list	Qualification Development Manager	June 2013

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