



## **National Unit specification: general information**

**Unit title:** Geodiversity and Landscape in Scotland: An Introduction (SCQF level 5)

**Unit code:** FV36 11

**Superclass:** QA

**Publication date:** September 2011

**Source:** Scottish Qualifications Authority

**Version:** 01

## **Summary**

This Unit will provide candidates with an introduction to Scotland's Geodiversity and how this creates the basic structure of Scottish landscapes. Candidates will be introduced to the concept of landscape and the main factors which contribute to the development of Scotland's landscapes, enabling candidates to describe the development of a landscape.

The Unit is suitable for anyone who would like to gain an understanding of the natural heritage, landscapes and the factors influencing their development.

This Unit is a mandatory Unit in the National Certificate in *Countryside Management* (SCQF Level 5) and is also available for candidates wishing to study the Unit on its own.

## **Outcomes**

- 1 Describe rock types and geological structures.
- 2 Describe geomorphological processes and formations.
- 3 Describe the components of landscape.
- 4 Investigate the development of a given landscape.

## **Recommended entry**

Entry is at the discretion of the centre.

## **National Unit specification: general information (cont)**

**Unit title:** Geodiversity and Landscape in Scotland: An Introduction (SCQF level 5)

### **Credit points and level**

1 National Unit credit at SCQF level 5 (6 SCQF credit points at SCQF level 5).

*\*SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

### **Core Skills**

Opportunities to develop aspects of Core Skills are highlighted in the Support Notes of this Unit Specification.

There is no automatic certification of Core Skills or Core Skill component in this Unit.

## **National Unit specification: statement of standards**

**Unit title:** Geodiversity and Landscape in Scotland: An Introduction  
(SCQF level 5)

Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

### **Outcome 1**

Describe rock types and geological structures.

#### **Performance Criteria**

- (a) Describe principal rock types and their formation.
- (b) Describe simple geological structures.

### **Outcome 2**

Describe geomorphological processes and formations.

#### **Performance Criteria**

- (a) Describe geomorphological processes.
- (b) Identify erosional and depositional geomorphological formations.

### **Outcome 3**

Describe the components of landscape.

#### **Performance Criteria**

- (a) Identify the natural and artificial elements of landscape.
- (b) Identify factors which affect the development of landscapes.
- (c) Describe how different factors and elements combine to produce a given landscape.

### **Outcome 4**

Investigate the development of a given landscape.

#### **Performance Criteria**

- (a) Carry out a field investigation into a given landscape.
- (b) Carry out a desk study for a given investigation.
- (c) Report the findings of a landscape investigation.

## **National Unit specification: statement of standards (cont)**

**Unit title:** Geodiversity and Landscape in Scotland: An Introduction (SCQF level 5)

### **Evidence Requirements for this Unit**

Evidence is required to demonstrate that all Outcomes and Performance Criteria have been met.

Written and/or oral and diagrammatical evidence is required for this Unit.

The assessment for all Outcomes is open-book.

#### **Outcome 1**

Candidates must produce evidence to demonstrate that they can provide a:

- ◆ description of the three principal rock types and how they are formed which must include:
  - igneous rocks
  - sedimentary rocks
  - metamorphic rocks
- ◆ description of the formation of simple geological structures which must include:
  - faults
  - folds
  - igneous intrusions

#### **Outcome 2**

Candidates must produce evidence to demonstrate that they can provide:

- ◆ a description of geomorphological processes which must include:
  - weathering
  - erosion
  - transport
  - deposition
- ◆ an identification of a minimum of three geomorphological formations produced by erosion
- ◆ an identification of a minimum of three geomorphological formations produced by deposition

## National Unit specification: statement of standards (cont)

**Unit title:** Geodiversity and Landscape in Scotland: An Introduction (SCQF level 5)

### Outcome 3

Candidates must produce evidence to demonstrate that they can provide:

- ◆ an identification of a minimum of six natural and six artificial landscape elements
- ◆ an identification of a minimum of four factors which affect the development of landscapes
- ◆ a description of how the different factors identified above and elements combine to produce a given landscape

### Outcome 4

Evidence must include the field investigation which must include:

- ◆ identification of landscape elements
- ◆ identification of factors contributing to landscape
- ◆ an accurately labelled field sketch of a given landscape
- ◆ an initial field description of a given landscape

The field study will provide reference points for further exploration during the desk study. Resources accessed during the desk study must include:

- ◆ maps
- ◆ internet
- ◆ text

The report on the findings of a landscape investigation must include:

- ◆ a labelled field sketch
- ◆ a basic landscape description which identifies natural and artificial features and factors that contribute to a given landscape
- ◆ a description of the development of the given landscape including:
  - geodiversity
  - changes in climate
  - ecological history
  - cultural/human impacts

## National Unit specification: support notes

**Unit title:** Geodiversity and Landscape in Scotland: An Introduction (SCQF level 5)

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

### Guidance on the content and context for this Unit

This Unit is aligned to the following LANTRA National Occupational Standards (NOS):

- ◆ EC2 Survey and report on the condition of the environment
- ◆ EC22 Monitor and report on environmental change

Together geology and geomorphology make up our geodiversity and this forms the basic structure of Scotland's landscapes. It is the varied rock types and geological features such as faults, folds and igneous intrusions which create the underlying structure and form of the land of Scotland today. The variation in hardness of different rock types leads to preferential erosion and rates of weathering, which in turn lead to the creation of the varied topography of Scotland — the high points and low lying areas seen in the landscape.

**Outcome 1** will provide the background knowledge and understanding of basic concepts in geology such as how the three principal rock types — sedimentary, metamorphic and igneous are produced and the conditions and processes which allow this. Igneous rock formation should consider both intrusive and extrusive rock types and the differences between them. The formation of metamorphic rocks should introduce how different settings create different variations in temperature and pressure, which lead to the development of different structures and characteristics in metamorphic rocks. Candidates should be aware of regional, contact and dynamic metamorphism. The formation of sedimentary rocks should introduce candidates to processes which enable the recycling of rock material at the earth's surface. The formation of sedimentary rocks could be linked with elements of Outcome 2 which explore the processes of weathering, erosions, transport and deposition, all of which are required in the accumulation of sediments which can become lithified through processes such as burial, compaction and cementation.

Internal or endogenic earth processes should be introduced to allow candidates to gain an insight into the dynamic nature of the earth and how movements in the earth's crust create conditions in which structures such as faults, folds and igneous intrusions can be created. The rock cycle could be covered to demonstrate how different rock types and the processes which create them are all linked through the dynamic nature of planet earth.

**Outcome 2** will build on the rock types and structures covered in Outcome 1 and begin to explore how processes active at the earth's surface (exogenic processes) affect the rock types and structures which arise from internal earth or endogenic processes. Processes of weathering, erosion, transport and deposition will be covered and how these processes affect fluvial, glacial and coastal environments. Depending on the area of study, one or more of these could be covered in more detail to reflect formations which contribute to local landscapes and others studied as part of this Unit.

## National Unit specification: support notes (cont)

**Unit title:** Geodiversity and Landscape in Scotland: An Introduction (SCQF level 5)

### Outcome 3

Landscape quality is a term used to describe the less tangible elements of landscape such as its aesthetic appeal. These are subjective qualities within landscapes and mean that the perception of any given landscape will vary depending on the individual observing the landscape and their own preferences and experiences. Group discussions based on specific landscapes will give candidates the opportunity to explore and gain an appreciation of the complexities involved in describing landscapes and for those who are employed to assess landscapes.

When considering factors which contribute to landscape, the following should be covered:

- ◆ physical factors such as geology and geomorphology
- ◆ biological factors such as natural and semi-natural habitats, ecological history, species present
- ◆ anthropogenic factors such as land use, cultural influences, built heritage
- ◆ aesthetic factors such as colour, form, enclosure, shape and texture

### Outcome 4

Carrying out a landscape investigation will allow candidates the opportunity to apply the knowledge and understanding that they have gained throughout the delivery of this Unit. Practicing the process on a number of landscapes throughout the Unit will enable candidates to develop skills in separating natural elements from artificial elements and also to experience first hand the influences of different factors on landscape, both tangible and intangible. Outcome 4 should form the basis of this Unit and will allow candidates to apply their knowledge as well as develop their skills in both field work and desk study/research. A field recording sheet could be used for the identification of landscape elements and the factors contributing to landscape.

## Guidance on learning and teaching approaches for this Unit

Wherever possible the delivery of this Unit should be based around landscapes which are familiar to candidates, providing them with opportunities to take a more in depth, focussed look at these landscapes as a whole. Classroom based introductions to the different Outcomes could be followed by field visits and studies which encourage candidates to engage with the landscapes that they see.

Throughout delivery of this Unit candidates should be reminded that the different Outcomes of the Unit are interconnected, where geodiversity provides the structure on which the natural habitats and artificial human influences have been overlain. Candidates should be encouraged to consider landscapes as dynamic systems where change is continually taking place. Furthermore, candidates should be encouraged to reflect on the positive and negative impacts of both natural and artificial elements of landscapes.

## National Unit specification: support notes (cont)

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Delivery of field work and studies should be supported by follow up sessions which provide opportunities for candidates to discuss their own experiences of landscapes and reflect on how others can perceive these same landscapes differently. Standardised checklists could be developed to record initial impressions of landscapes studied. Field sketches do not need to be works of art, but must be representative of the landscape studied — this can be enhanced by notes taken in the field to describe aspects and influences on the landscapes studied. Furthermore, candidates will be introduced to the benefits of complimentary field and desk studies to develop a better understanding of any landscape and its development.

### Guidance on approaches to assessment for this Unit

Outcome 1 could be assessed by a series of short answer questions covering the description of rock types and the processes which lead to their formation.

Outcome 2 could be assessed by a short report which could be based on the landscape to be investigated in Outcome 4. Alternatively, this Outcome could be assessed by short answer questions requiring the identification of geomorphological formations through the labelling of diagrams and short answer questions covering the geomorphological processes which led to their formation.

The assessment of Outcome 3 should be integrated with the assessment of Outcome 4 where the investigation into and description of a landscape will necessitate coverage of the criteria for Outcome 3 in relation to the components of landscape. The application of knowledge from Outcome 3 will be required to carry out the investigation required in Outcome 4.

### Opportunities for the use of e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

### Opportunities for developing Core Skills

Through studying this Unit, candidates will be presented with opportunities to enable them to develop Core Skills in *Communication, Problem Solving and Information and Communication Technology (ICT)* through investigative research.



## **National Unit specification: support notes (cont)**

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### **Disabled candidates and/or those with additional support needs**

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website [www.sqa.org.uk/assessmentarrangements](http://www.sqa.org.uk/assessmentarrangements)

## History of changes to Unit

Version	Description of change	Date

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