



## National Unit specification: general information

**Unit title:** Basic Botany

**Unit code:** H1JC 11

**Superclass:** RH

**Publication date:** May 2012

**Source:** Scottish Qualifications Authority

**Version:** 01

## Summary

The Unit is designed to meet the needs of candidates following a range of programmes and is particularly suitable for the land and environment sector. This Unit is intended to introduce candidates to the major groups of plants, the structure and function of the major parts of flowering plants and their requirements for growth.

## Outcomes

- 1 Identify the major groups of plants.
- 2 Identify the external and internal parts of flowering plants.
- 3 Describe the main processes of flowering plants.

## Recommended entry

While entry is at the discretion of the centre, candidates would normally be expected to have attained one of the following, or equivalent:

- ◆ Standard Grade Biology, Chemistry, Geography, Physics or Science at grade 3 or 4
- ◆ Intermediate 1 Growing Plants

## Credit points and level

0.5 National Unit credit at SCQF level 5: (3 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.*

## **General information (cont)**

**Unit title:** Basic Botany

### **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:** Basic Botany

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**

Identify the major groups of plants.

#### **Performance Criteria**

- (a) The groups of plants are accurately identified.
- (b) Describe the main characteristics of important horticultural plant groups.

### **Outcome 2**

Identify the external and internal parts of flowering plants.

#### **Performance Criteria**

- (a) The major external parts of flowering plants are identified.
- (b) The major internal parts of flowering plants are identified.

### **Outcome 3**

Describe the main processes of flowering plants.

#### **Performance Criteria**

- (a) The essential elements for growth are described.
- (b) The main processes of flowering plants are described.

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

**Unit title:** Basic Botany

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

Evidence is required to demonstrate that candidates have achieved all Outcomes and Performance Criteria.

For Outcome 1 candidates are required to produce written and/or recorded oral evidence to demonstrate their knowledge of plant groups including; algae, mosses and liverworts, ferns, conifers and angiosperms and examples of important horticultural plant groups.

For Outcome 2 candidates are required to produce written and/or recorded oral evidence to demonstrate their knowledge and understanding of the internal and external parts of flowering plants including; leaf, stem, root and flower structures.

For Outcome 3 candidates are required to produce written and/or recorded oral evidence to demonstrate their knowledge of plant processes; photosynthesis, respiration, transpiration and translocation including raw materials and products.

Evidence of an appropriate level of attainment must be generated with information covering all Performance Criteria.

## National Unit specification: support notes

**Unit title:** See Unit writer brief

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 20 hours.

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

#### Outcome 1

- a) Groups of organisms from the plant kingdom are known including: lichens, algae, mosses and liverworts, ferns, conifers and angiosperms (monocotyledons and dicotyledons).
- b) Groups of important horticultural plants should be identified including for example; herbaceous, woody plants, grasses, alpiners, climbers and ericaceous.

#### Outcome 2

- a) External features of flowering plants should be identified including roots, stems, flowers, nodes and internodes, buds, leaves, seeds and fruits.
- b) Internal features including: xylem, phloem, cambium, leaf structure (stoma, guard cells, palisade and mesophyll cells, cuticle). Flower structure including; male and female parts (anthers, filaments, stigma, style, ovary), petals and sepals.

#### Outcome 3

- a) The basic factors to sustain plant life should be known including; Oxygen, Carbon Dioxide, nutrients, light and uptake of water. Also other factors that influence growth: including competition, climate, pH and soil.
- b) The processes for Photosynthesis and Respiration should be covered, including a description of the raw materials and products. The Transpiration stream through the plant should be described. Translocation of the products of photosynthesis should be described.

### Guidance on learning and teaching approaches for this Unit

Although some formal teaching sessions may be required to introduce the principles of basic botany most of this Unit should involve a strongly candidate centred approach with the learning and teaching taking place in the work area. Candidates could produce a portfolio or poster detailing the plant anatomy with lectures, practical and research into plant processes. Candidates can work in groups to gather information and review peer work upon collation of their work. Use of ICT for research and presentation of work should be encouraged.

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

**Unit title:** Basic Botany

### **Guidance on approaches to assessment for this Unit**

Centres may use the instruments of assessment which are considered by teachers/lecturers to be the most appropriate. For Outcome 1 an integrated assessment in the form of a project or portfolio could be used to demonstrate knowledge and understanding.

Evidence for Outcome 2 could be from an identification test. Evidence for Outcome 3 could be generated from a closed-book, end-of-Unit test.

### **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 social software. 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**

There is no automatic certification of Core Skills or Core Skills components in this Unit, however there may be opportunities to develop the Core Skills of *Communication, Numeracy, Information and Communication Technology (ITC), Problem Solving and Working with Others* at SCQF Level 4.

### **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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