



## Higher National Unit specification

### General information for centres

**Unit title:** Horticultural Practices

**Unit code:** F1JA 34

**Unit purpose:** This Unit is designed to enable candidates to identify and apply the main skills required in the horticulture and landscaping employment sectors and in particular to develop hand tool skills. This Unit provides candidates with knowledge of career routes and opportunities within horticulture and landscaping. Candidates will need to develop the key skills required for these sectors. Candidates will acquire skills to minimum identified levels using professionally accepted techniques and standards. Where candidates have prior practical experience instruction will be provided if skills are not to an appropriate standard. Candidates with prior experience will be encouraged to expand their knowledge of the range of horticultural techniques and species of plants used in horticulture.

On completion of the Unit the candidate should be able to:

- 1 Investigate skill requirements for major horticultural sectors.
- 2 Propagate a range of plants.
- 3 Cultivate and maintain a range of plants in nursery, field or amenity/landscape situations.

**Credit points and level:** 2 HN credits at SCQF level 7: (16 SCQF credit points at SCQF level 7\*)

*\*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.*

**Recommended prior knowledge and skills:** Candidates should have appreciation of plants and their role in enhancing the environment as well as providing food. It would be beneficial if candidates have some work experience but it is not essential. Where candidates have had previous practical horticulture experience the Unit will provide opportunity to reflect on career opportunities, practice new skills and/or develop existing skills.

**Core Skills:** There are opportunities to develop the Core Skill of *Problem Solving* at SCQF level 6 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

**Context for delivery:** If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

**Assessment:** Outcome 1 could be assessed by a written report or assignment covering the visits to horticultural enterprises/organisations. Outcome 2 and 3 could be assessed by observation of practical activities using an observation checklist supported by oral questioning.

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

**Unit title:** Horticultural Practices

**Unit code:** F1JA 34

The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

### **Outcome 1**

Investigate skill requirements for major horticultural sectors

#### **Knowledge and/or Skills**

- ◆ The role of staff within the main horticulture sectors
- ◆ Key skill requirements within each sector

#### **Evidence Requirements**

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ investigate the types of enterprise/organisation in the horticultural sector within which they fall
- ◆ outline the role for horticulture staff within each enterprise/organisation
- ◆ identify the major horticultural skills that would be required to work successfully in each sector of horticulture visited

#### **Assessment Guidelines**

Evidence for the knowledge in this Outcome may be presented as a report based on visits to horticultural enterprises/organisations covering the major horticultural sectors. Candidates will need evidence to show that they can, with reference to particular situations provide an accurate and clear explanation of the aims of enterprises investigated, the role of horticulturists within the enterprises and the skills required for a horticulturist to work effectively within the enterprise. The report should be built up on visits to employers within the main horticulture sectors, amenity/landscape, production and retail horticulture.

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

**Unit title:** Horticultural Practices

### Outcome 2

Propagate a range of plants

#### Knowledge and/or Skills

- ◆ Sowing seeds
- ◆ Preparation of cuttings
- ◆ Specialist means of vegetative propagation including:
  - Micro-propagation
  - Twin-scaling
  - Layering
  - Division
  - Grafting
- ◆ Relevant Health and Safety requirements
- ◆ Environmental impacts

#### Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ sow seeds either into trays/modules or outdoors beds
- ◆ prepare cuttings
- ◆ undertake two of the following specialist means of propagation:
  - micro-propagation
  - twin-scaling
  - layering
  - division
  - grafting
- ◆ describe the health and safety requirements
- ◆ describe the impact on the environment

#### Assessment Guidelines

This Outcome could be assessed by a practical observation using a checklist during propagation for the first three bullet points listed in the Evidence Requirements above. The final two bullet points could be assessed by responses to oral questioning.

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

**Unit title:** Horticultural Practices

### **Outcome 3**

Cultivate and maintain a range of plants in nursery, field or amenity/landscape situations

#### **Knowledge and/or Skills**

- ◆ Plant cultivation techniques
- ◆ Preparation of soil
- ◆ Non-chemical weed control methods
- ◆ Relevant Health and Safety
- ◆ Environmental impacts

#### **Evidence Requirements**

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ pot up/on container grown plants
- ◆ stand down plants
- ◆ plant out into field
- ◆ lift field grown plant material
- ◆ prune a range of plants
- ◆ prepare soil to establish a range of species
- ◆ use non-chemical weed control methods
- ◆ maintain a range of plants
- ◆ identify the health and safety requirements
- ◆ identify the impact on the environment

#### **Assessment Guidelines**

This Outcome could be assessed by a practical observation using a checklist during propagation for the first eight bullet points listed in the Evidence Requirements above. The final two bullet points could be assessed by responses to oral questioning.

## Administrative Information

**Unit code:** F1JA 34  
**Unit title:** Horticultural Practices  
**Superclass category:** SA  
**Original date of publication:** March 2007  
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### History of changes:

Version	Description of change	Date
02	Minor amendment to Outcome 2	28/01/09

**Source:** SQA

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## Higher National Unit specification: support notes

### Unit title: Horticultural Practices

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 160 hours.

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

Throughout this Unit, a broad range of horticulture and related skills to industry standard will be covered. The related skills include set up, cleaning tools and clearing away.

The Unit is primarily intended for candidates who are new to horticulture, either coming straight from school or as a career change. Its objective is thus to identify the breadth of career opportunities available in horticulture and related industries and to introduce skills that a candidate can develop on future employment. As a result, candidates are likely to visit enterprises/organisations in sectors of the industry that are significant employers and to develop the major hand tool skills. Nevertheless it is also applicable to those who have work experience in the industry. In this case it will enable skills to be learnt that previously have not been applicable in their work place. Alternatively it could be that skills could be applied to a wider range of plants or situations than previously encountered. Assessment, however, will be common to all candidates so that all successful candidates attain a minimum skill level.

**Outcome 1** looks at who employs horticulturists, identifies career prospects and the practical skills which employers would seek from an employee. Essentially it puts the subjects to be taught into context within the Group Award and encourages candidates to develop a skills profile. One approach would be for candidates to go on a series of planned visits, possibly working in groups, to identify the horticulture components of the site visited, employment opportunities for horticulturists and the skills that a future employer would be looking for in an employee. It will be important to brief the host of the visit about the candidates' aims while on site so that each visit is structured. Candidates could build this information up into a personal profile sheet as the assignment. This should be in a wider context than the hand held tools covered in the remainder of the Unit. Candidates would be encouraged to identify core skills in craft, management, mechanisation and other related areas. This would then form the basis of a job profile with skills and knowledge to be attained by the candidate within the whole subject group.

In **Outcome 2**, candidates will receive instruction in propagation techniques. The nature of horticulture does not allow all techniques to be practised. The candidates should be instructed in the propagation techniques most commonly required by industry:

- ◆ sowing seeds into seed trays
- ◆ sowing seeds outdoors, which could be linked to planting preparation in Outcome 3
- ◆ preparation of leafy stem cuttings
- ◆ preparation of leafless winter stem cuttings
- ◆ undertake one type of layering
- ◆ undertake the division of herbaceous perennial plants
- ◆ propagate by one type of grafting, for example a splice graft or chip bud

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

### Unit title: Horticultural Practices

Within the time constraints of the Unit candidates should be exposed to as wide a range of propagation methods and systems as possible. The bullet points above should be seen as a minimum. Propagation systems relate to the aftercare of the propagules, for example rooting leafy cuttings under mist, plastic or fog and leafless cuttings from outdoor beds to the Malling Bin.

Candidates will be instructed in the aftercare and establishment of their propagules and as much as possible involved in the practical care of the plants.

Candidates with experience in propagation should be encouraged to learn techniques with which they are unfamiliar or to propagate plant groups with which they have not previously worked. However, the assessment for the Outcome must be the same for all candidates, so that they all have minimum propagation skills once the Unit is completed.

In **Outcome 3** candidates should work as near to commercial nursery conditions as possible. Instruction should be given in hand potting technique for a range of plant material (in terms of bare root or containerised, size and plant types) to give candidates experience in adapting their potting technique accordingly and requiring to be stood down in a variety of growing environments.

Candidates should be instructed in planting techniques appropriate for plants of various sizes. This may involve working individually, in pairs or in groups. It should be ensured that each candidate completes each element of a practical task. Row planting, beds or square designs could be used but the candidates will be instructed on the planting design and how to set up the lines for planting. Candidates could prepare the ground for planting which would be relevant to assessments in Outcome 3 but this is not a requirement of the assessment and if a large number of plants have to be planted then soil preparation should be by machine.

Candidates should be instructed when to lift field grown material bare-root and when it should be root-balled. They should gain experience in both types of lifting. Methods of preventing root desiccation should be shown for moving plants from the field. Subsequent storage may be in outdoor temporary planting, ambient temperature stores, or cold stores.

Some background knowledge should be given on the purpose of formative and routine pruning and the plant specifications aimed at by pruning explained. It is also important to show candidates the different aims of pruning for plant production and pruning in an amenity or landscape situation. Pruning practice will be given for a range of plants at different growth stages. It is suggested that trees and shrubs are included and as well as giving instruction on the growing stock, stock beds for propagation material could also be included. Support and tying-in of plants should also be practised on a range of plant material from glasshouse crops to trees and shrubs.

Candidates will gain experience in skills related to planting and maintaining an amenity or landscape area. Candidates may gain experience by planting and maintaining a single amenity area or a range of amenity sites. Candidates will gain most benefit if they can work with as wide a range of plant material as possible. Skills in digging, forking and raking will be covered when candidates prepare an area for the establishment of a range of plants. This may incorporate the sowing of seed for a lawn or hardy annual display but should also include planting more mature plant material. This could be followed by the use of mulches and hoeing to control weed growth, alternatively separate sites could be used for the different tasks.

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

### Unit title: Horticultural Practices

Pruning practice should be gained on a range of planting situations, for example hedges, shrub borders, rose beds, trees — using secateurs and/or shears as appropriate.

The candidates should practice supporting and tying-in wall shrubs and/or climbers and the deadheading of annual flowers or roses.

### Guidance on the delivery and assessment of this Unit

The key to teaching this Unit will be in developing the major skills that can then be used in a wider range of contexts. For example, in the propagation of leafy stem cuttings and leafless stem cuttings the use of a knife and secateurs should be included. These skills could then be applied by the candidate to other cuttings like leaf or root cuttings. Similarly, with pruning it will be important for candidates to learn precision pruning, for example pruning tree branches to a bud, but more general pruning, for example hedges or deciduous shrubs prior to potting should also be learnt. This will ensure that the Unit remains a manageable size and that candidates have a useful range of skills to develop on completion of the Unit.

The following information is provided in relation to **Outcome 2**:

- ◆ prepare either a seed/module tray or an outdoor seedbed correctly prior to sowing seeds, sow seeds to the correct density, cover and water as required. If sowing into seed/module trays, the candidate will show that s/he can organise the work area for the efficient sowing of a batch of seeds. Appropriate care for propagules from propagation to establishment must be described or demonstrated.
- ◆ select suitable cutting material, prepare either a cutting/module tray or an outdoor area for sticking the cuttings, prepare and grade cuttings efficiently to acceptable commercial standards depending on the species to be propagated and insert cuttings to the correct density. Appropriate care for propagules from propagation to establishment must be described or demonstrated.
- ◆ undertake the correct layer method depending on the plant material provided. Appropriate care for propagules from propagation to establishment must be described or demonstrated.
- ◆ divide the plant material provided to a suitable size of propagule for the purpose required. The purpose may be either to replant a border of a garden or to propagate for sale. Propagules should be either replanted or potted correctly as required. Appropriate care for propagules from propagation to establishment must be described or demonstrated.
- ◆ undertake a suitable graft for the plant material provided. This will include making the cuts, joining the plants together and tying in to give every chance of success and completing the graft as required. Appropriate care for propagules from propagation to establishment must be described or demonstrated.

The following information is provided in relation to Outcome 3:

- ◆ pot on/up plants by hand, these may be propagules, bare-root plants or container grown plants. The candidate will show that s/he can grade, prepare and correctly pot plants. Grading and preparation requirements for the specific plants will be given to the candidate as will the size of pot to be used.
- ◆ prepare the standing area, either outdoors or under protection, prior to standing down the potted plants. Stand down plants at the required spacing and label batches of plants correctly.



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

### Unit title: Horticultural Practices

- ◆ set out a line on an area previously prepared for planting. Select the appropriate method of planting for the plant material provided. This may be seedlings, rooted propagules or more mature plants needing transplanted for growing on. The plants will be correctly planted, using a suitable planting technique for the plant material provided, to the required spacing within and between rows.
- ◆ lift field grown plants and store appropriately prior to re-planting or despatch. The candidate will either lift plants bare root or root-ball as appropriate. The candidate will lift leaving an appropriate size of root system or root-ball for the species being lifted, prevent unnecessary damage to roots, stem and branches. The lifted plants will be stored either outdoors or under protection in an appropriate manner to prevent damage to the plant.
- ◆ correctly prune a selection of plants. This may include shrubs, trees or hedges. The candidate will be given plants with which s/he has previous experience and prune appropriately to provide the structure that will produce a given specification. An observational checklist to record that the plants have been pruned correctly will be used.
- ◆ prepare an area of ground for either sowing or planting. Cultivation and soil preparation will be carried out using hand tools to a standard suitable for the planting purpose. The site may be for a new planting scheme or an area to be replanted, for example a herbaceous border. This may be assessed in conjunction with one assessment from Outcome 2 if seeds are to be sown directly into an amenity area or if herbaceous perennials are to be divided and replanted. An observational checklist may be used to record that seeds are correctly sown or plants planted correctly.
- ◆ a new or established planted area will be maintained weed free either by applying a mulch or hand weeding using a hoe. A mulch will be provided but the candidate must apply this to the correct depth. The use of the hoe must remove weed seedlings correctly without damaging planted material. An observational checklist may be used to record that the task is carried out correctly.
- ◆ plants will be maintained according to the requirements of the plants. Maintenance could include: Irrigation of a container-grown crop where candidates will assess water requirements and apply water by a suitable means; Support plants (and tie in if appropriate), using canes or other appropriate systems. These may be outdoors or in a glasshouse and could include climbing plants, trees or other suitable plant material; Deadhead flowering plants as appropriate on an amenity site. These may be outdoors or in a glasshouse and could include annuals, woody plants or houseplants. Evidence should be generated through assessment undertaken in controlled conditions. The assessments should be practical using a checklist to ensure that all aspects of the practical are correctly undertaken.

### *Opportunities for developing Core Skills*

There are opportunities to develop the Core Skill of *Problem Solving* at SCQF level 6 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

### **Open learning**

Due to the practical nature of this Unit it is not well suited to delivery by open learning.

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

**Unit title:** Horticultural Practices

### **Candidates with disabilities and/or additional support needs**

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* ([www.sqa.org.uk](http://www.sqa.org.uk)).

## **General information for candidates**

### **Unit title:** Horticultural Practices

This Unit is designed to enable you to identify and apply the main skills required in the horticulture and landscaping employment sectors and in particular to develop hand tool skills. This Unit provides you with knowledge of career routes and opportunities within horticulture and landscaping. You will begin to develop the key skills required for these sectors and acquire skills to minimum identified levels using professionally accepted techniques and standards.

On completion of this Unit you will be able to:

- 1 Investigate skill requirements for major horticultural sectors.
- 2 Propagate a range of plants.
- 3 Cultivate a range of plants in nursery conditions and amenity/landscape situations.

You will be assessed in this Unit by means of a report or assignment for Outcome 1 and by observation of practical tasks for Outcomes 2 and 3.