



National Unit specification: general information

Unit title: Horticulture and Greenkeeping Tools and Machinery: An Introduction (SCQF level 4)

Unit code: H1TN 10

Superclass: SE

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Summary

This Unit introduces the candidate to the operation and maintenance of a range of basic tools and machinery used in either greenkeeping or horticulture. Candidates will learn about health and safety which is essential, before, during and after using greenkeeping/horticultural tools and machinery. Candidates will develop skills enabling them to select the correct tools and machinery for a given task and they will learn how to carry out pre-use checks and operate a range of machinery and handle tools safely, in accordance with health and safety regulations, and manufacturers' instructions.

The Unit is suitable for a range of candidates with an interest in carrying out greenkeeping or horticultural duties using appropriate tools and machinery safely.

Candidates may study other greenkeeping or horticulture Units at SCQF level 4 or may progress to SCQF level 5 Units in the National Certificate in Horticulture at SCQF level 5 or the National Certificate in Greenkeeping at SCQF level 5.

Outcomes

- 1 Describe machinery and tools and their uses in carrying out horticultural or greenkeeping activities.
- 2 Describe health and safety requirements for the safe use of horticultural or greenkeeping tools and machinery.
- 3 Select appropriate tools and machinery for specified tasks.
- 4 Carry out pre-use checks on tools and machinery under supervision.
- 5 Operate, clean and store horticultural or greenkeeping tools and machinery under supervision.

General information (cont)

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Recommended entry

Entry is at the discretion of the centre.

Credit points and level

1 National Unit credit at SCQF level 4: (6 SCQF credit points at SCQF level 4*)

**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

Achievement of this Unit gives automatic certification of the following Core Skills component:

Complete Core Skill None

Core Skill component Critical Thinking at SCQF level 4

There are also opportunities to develop aspects of Core Skills which are highlighted in the Support Notes of this Unit specification.

National Unit specification: statement of standards

Unit title: Horticulture and Greenkeeping Tools and Machinery: An Introduction (SCQF level 4)

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 machinery and tools and their uses in carrying out horticultural or greenkeeping activities.

Performance Criteria

- (a) Identify machinery used to carry out either horticultural or greenkeeping tasks and describe their uses.
- (b) Identify tools used to carry out either horticultural or greenkeeping tasks and describe their uses.
- (c) Describe the main differences between 2 stroke, 4 stroke, diesel and electric powered machinery.

Outcome 2

Describe health and safety requirements for the safe use of horticultural or greenkeeping tools and machinery.

Performance Criteria

- (a) Identify the risks associated with checking, operating, cleaning and storing tools and machinery used to carry out greenkeeping or horticultural tasks.
- (b) Describe health and safety regulations for the safe operation and storage of greenkeeping or horticultural tools and machinery.
- (c) Describe personal responsibilities for the safe operation and storage of tools and machinery.

Outcome 3

Select appropriate tools and machinery for specified tasks.

Performance Criteria

- (a) Assist in identifying which tools and machinery are suitable for greenkeeping or horticultural tasks.
- (b) Select tools and machinery for specified tasks.
- (c) Identify the major components of each machine to be used.
- (d) Describe one advantage and one disadvantage of each machine.

National Unit specification: statement of standards (cont)

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Outcome 4

Carry out pre-use checks on tools and machinery under supervision.

Performance Criteria

- (a) Select appropriate Personal Protective Equipment for each task.
- (b) Carry out pre-use checks, under supervision, according to manufacturer's instructions and health and safety regulations.

Outcome 5

Operate, clean and store horticultural or greenkeeping tools and machinery under supervision.

Performance Criteria

- (a) Operate a range of tools and machines safely while under supervision.
- (b) Clean tools and machines after use, in accordance with instructions given and manufacturers' guidelines.
- (c) Carry out post-use checks, under supervision, and in accordance with manufacturers' guidelines.
- (d) Store tools and machinery using safe working practices and in accordance with manufacturers' guidelines.
- (e) Complete tools and machinery log and report any faults.
- (f) Adhere to health and safety regulations at all times while handling tools and operating machinery.

National Unit specification: statement of standards (cont)

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Evidence Requirements for this Unit

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

Candidates will be given tasks to carry out which are suitable for this level of Unit. Candidates must not be asked to operate a chainsaw or similar machinery.

Outcome 1

Open-book supervised written and/or oral evidence which includes:

- ◆ the identification of tools used to carry out a minimum of four different horticulture or greenkeeping operations
- ◆ candidates will describe the use of each tool identified
- ◆ the identification of types of machinery used in a minimum of four different horticulture or greenkeeping operations
- ◆ an accurate description of the difference between 2 stroke, 4 stroke, diesel and electric powered machinery

Outcome 2

Open-book supervised written and/or oral evidence which includes:

- ◆ the identification of risks associated with checking, operating, cleaning and storing tools and machinery identified in Outcome 1
- ◆ an accurate description of the health and safety regulations covering the safe operation, cleaning and storage of the tools and machinery identified, which must include an accurate description of the candidate's own responsibilities for the safe operation and storage of tools and machinery

Outcome 3

Candidates are provided with a brief, which specifies a minimum of four tasks to be carried out.

Open-book supervised written and/or oral evidence which includes:

- ◆ candidate providing suggestions as to which tools and machinery are suitable for horticultural or greenkeeping tasks, from the information given
- ◆ correct selection of tools and machinery for four specified tasks
- ◆ identification of the major components of each machine to be used
- ◆ one advantage and one disadvantage for a minimum of two machines selected for the specified tasks

National Unit specification: statement of standards (cont)

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Outcome 4

Performance evidence which includes:

- ◆ the selection of correct PPE for carrying out the specified tasks
- ◆ carrying out pre-use checks, under supervision, in accordance with manufacturer's guidelines and current health and safety regulations

Outcome 5

Performance evidence which includes:

- ◆ the safe operation of two hand tools and two types of machinery, while under supervision, for specified tasks
- ◆ cleaning tools and machinery after use, under supervision, according to instructions given and manufacturer's guidelines
- ◆ carrying out post checks of tools and machinery, under supervision, according to instructions given and manufacturer's guidelines
- ◆ storing tools and machinery, using safe working practices and in accordance with manufacturer's guidelines
- ◆ completing a tools and machinery log accurately and reporting any faults
- ◆ adhering to current health and safety regulations, at all times, while handling tools and operating machinery

National Unit specification: support notes

Unit title: Horticulture and Greenkeeping Tools and Machinery: An Introduction (SCQF level 4)

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 designed to suit all candidates and centres. It should be taught as an introduction to machinery selection, operation and maintenance.

The types of machines are those that would be used to build or maintain a garden or an area of green and may include mowers, strimmers, rotovators, cement mixers, vibro-plates and hedge cutters but **not** chainsaws. Given the obvious dangers involved in using powered machinery, all relevant Health and Safety requirements and procedures must be emphasised and strictly adhered to throughout this Unit.

Guidance on learning and teaching approaches for this Unit

Outcome 1

In this Outcome candidates will be given a range of horticultural/greenkeeping situations and the type of tools and machinery that they would normally be expected to use in a work situation. The candidate will be expected to assist in selecting the appropriate tools and machines for an operation, taking into consideration the size of the area, health and safety considerations, topography of site and the area the tools and machines can cover per hour/minute.

Outcome 2

The candidates will discuss in pairs and with the tutor, the risks associated with the tools and machinery they have already identified in Outcome 1. They will also be instructed in the health and safety requirements for working with tools and machinery in a range of horticulture and greenkeeping operations. They could be given various accident scenarios or 'what if' situations to help reinforce the learning.

National Unit specification: support notes (cont)

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Outcome 3

Candidates will be given a variety of work situations and they should discuss in pairs or groups which tools and machinery are best suited to each task. The machines may be taken from the list below, which is not an exhaustive list, but must **not** be expanded to include chainsaw or similar machinery. Candidates will learn about different machine components and what advantages and disadvantages there are in using the different machines for horticulture and greenkeeping operations;

- ◆ rotovator
- ◆ hedge cutter
- ◆ mower
- ◆ cement mixer
- ◆ vibro-plate
- ◆ leaf blower

Outcome 4

Candidates will be introduced to the safety equipment and PPE required, when working with tools and machinery and the risks associated with them. They should carry out pre-start checks on a range of horticultural tools and machinery as per the operator's manual and while under supervision. Assistance should be given until candidates become familiar with each piece of machinery. The pre-start check should include selecting the correct fuel for each machine as well as the correct storage, transport and filling. Candidates will become accustomed to adhering to the health and safety rules and regulations as well as following tutor and manufacturer's instructions at all times.

Outcome 5

This is the most practical Outcome and candidates will have the opportunity to use different machinery and tools under supervision. They will be shown how to clean machinery and tools and how to carry out post checks and then store the machinery and tools according to manufacturer's guidelines. They will also be introduced to the importance of maintaining logs when working with tools and machinery and how they can be used to record faults and ensure that proper maintenance is carried out regularly.

At all times candidates must be made aware of the risks involved in using the different machines and tools and they must be properly inducted into wearing PPE and using the safety equipment required. Candidates should be instructed in the importance of behaving in a safe manner and the possible danger to self and others if they fail to do so.

National Unit specification: support notes (cont)

Unit title: Horticulture and Greenkeeping Tools and Machinery: An Introduction (SCQF level 4)

Guidance on approaches to assessment for this Unit

There is a mix of practical and theoretical activities in this Unit.

The underpinning knowledge may be assessed in open-book supervised exercises, either written oral or recorded.

Questions which require lengthy responses should be avoided where possible. Assessments using illustrations or multiple choice or 'drag and drop' are to be encouraged at this level. The practical activities in this Unit should be assessed by means of performance by each candidate and evidence can be gathered using checklists with the assessor observing and recording candidates carrying out the various tasks as detailed in the Evidence Requirements. There are clear opportunities to integrate assessment of this Unit across the five Outcomes. Health and safety knowledge, understanding and application should be assessed by both questions and observation of the candidate carrying out practical activities by the assessor.

If this Unit is delivered in conjunction with other SCQF level 4 Units as part of a National Certificate, there may be opportunities to integrate the assessment of this Unit with other practical Units in the Horticulture or Greenkeeping level 4 Awards. This will allow candidates to apply the use of the machines to real horticultural or greenkeeping activities.

Opportunities for the use of e-assessment

There may be some opportunities for assessing the theoretical aspects of the Unit, for example the health and safety aspects and the machine components and the advantages and disadvantages of using different machines for different horticulture and greenkeeping operations. The completion of a tools and machinery log may also be suited to 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 Skill components in this Unit, however there may be opportunities to develop the Core Skills of *Problem Solving* and *Working with Others* both at SCQF level 4, through the practical aspects of this Unit.

National Unit specification: support notes (cont)

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This Unit has the Critical Thinking component of Problem Solving embedded in it. This means that when candidates achieve the Unit, their Core Skills profile will also be updated to show they have achieved Critical Thinking 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

History of changes to Unit

Version	Description of change	Date
02	Core Skills Component Critical Thinking at SCQF level 4 embedded.	08/10/2012

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