



National Unit specification

General information

Unit title: Green Woodworking

Unit code: H69Y 46

Superclass: WK

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Unit purpose

This Unit will provide the learner with the knowledge and understanding of green woodworking and the production of added value to small scale woodland timber harvesting. It will also establish the associated practical and organisational skills which will empower the learner to apply knowledge and skills to set up and operate a green woodworking production area.

Outcomes

- 1 Plan and set up green woodworking operations.
- 2 Maintain and set up the tools and equipment required for green wood working.
- 3 Operate tools and equipment to produce green wood products.

Credit points and level

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

Recommended entry

While entry is at the discretion of the centre, learners would normally be expected to have attained one of the following, or equivalent: practical skills at SCQF level 5 in Forestry, other land use areas or joinery courses would be desirable.

National Unit specification: General information (cont)

Unit title: Green Woodworking

Core Skills

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

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.

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.

Further advice can be found on our website www.sqa.org.uk/assessmentarrangements.

National Unit specification: statement of standards

Unit title: Green Woodworking

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

Plan and set up green woodworking operations.

Performance Criteria

- (a) Prepare a risk assessment for a given green wood working site.
- (b) Create a work plan for a coppice/green wood work site.
- (c) Organise and prepare green wood materials for processing and the creation of green wood products.
- (d) Work safely within industry best practice guidelines.

Outcome 2

Maintain and set up the tools and equipment required for green wood working.

Performance Criteria

- (a) Carry out maintenance and repair of appropriate hand tools used in green wood working.
- (b) Create and erect pole lathes for green wood turning.
- (c) Set up work area for the production of green wood.
- (d) Work safely within industry best practice guidelines.

Outcome 3

Operate tools and equipment to produce green wood products.

Performance Criteria

- (a) Prepare and dress coppice material for green wood production.
- (b) Operate green wood working equipment to produce green wood products.
- (c) Present green wood products for market.
- (d) Work safely within industry best practice guidelines.

National Unit specification: statement of standards (cont)

Unit title: Green Woodworking

Evidence Requirements for this Unit

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

Outcome 1

Written and/or oral evidence of knowledge and understanding of the planning and setting up of a green wood working operation.

Evidence should include:

- ◆ Site specific risk assessment for green woodworking.
- ◆ Identification of site features suitable for setting up a green woodworking operation.
- ◆ Specifications for green woodworking devices.
- ◆ Preparation of a safe site for green woodworking.
- ◆ Measures taken to comply with current Health and Safety, environmental and codes of practice.

Outcome 2

Practical skills used to maintain tools and set up the equipment required for green woodworking.

Evidence should include:

- ◆ Carry out safety checks on tools and devices.
- ◆ Sharpening techniques appropriate to the tools in use.
- ◆ Assembly and repair of tools used in green woodworking.
- ◆ Health and safety checks to ensure all tools are fit for purpose.
- ◆ Selection of suitable materials for the building of green woodworking devices.
- ◆ Research and provision of suitable specifications for selected green woodworking devices.
- ◆ Assembly and placement of green woodworking devices in suitable working area.

Outcome 3

Practical skills in the operation of green wood working tools and devices to produce materials worked to given specifications.

Evidence should include:

- ◆ Design products and specifications suited to the materials on the given site.
- ◆ Selection of suitable materials for the planned products.
- ◆ Safe working practices appropriate to the products.
- ◆ Working to a schedule that minimises waste and maximises production.
- ◆ Assembling products to meet specifications.
- ◆ Maintaining Health and Safety standards for yourself and others in compliance with current legislation.



National Unit specification: support notes

Unit title: Green Woodworking

Unit Support Notes are offered as guidance and 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 will be aligned to National Occupational Standards:

- LANTw 55 Build and maintain tools and devices used to process coppice and green wood products
- LANTw 56 Process coppice materials for green wood products
- LANTw 57 Design a green wood product or parts of a product
- LANTw 58 Construct a green wood product to client specification

Green woodworking has a vital role in the maintenance and expansion of managed coppice woodlands. Although not exclusively associated with coppice materials green woodworking has very strong links with coppice woodland management. Green woodworking has been practised for thousands of years and has been the means of production of articles for farming and domestic use, eg shelters, sheep hurdles, baskets, chairs and bowls.

Although such traditional uses have survived the more recent expansion of green woodworking has been to meet the demands created by the re-population of more rural areas by people seeking a more natural life style, the rise of gardening and garden centres, the increase in allotment working. In addition to this re-generation of rural areas and self-sufficiency there has been the development of interest in sustainable development with the use of more natural sustainable materials. In many ways it reflects the importation of traditional rural crafts and products into a suburban and countrified society but one which is more environmentally conscious and supportive of the conservation of woodlands in a sustainable and low impact way. The demand for green woodworking products is driven by a market which is not necessarily conventional or traditional and which is being serviced by a more diverse industry with a wider range of products.

Many of the products of coppice woodlands and green woodworking can be produced in the woodlands themselves using traditional devices and tools in many instances built from the materials on the site. Modern transport infrastructures mean that purpose built workshops or home based work areas can be used for smaller products.

National Unit specification: support notes (cont)

Unit title: Green Woodworking

Outcome 1

Risk assessments are a primary element in ensuring a safe working site and it is important that a generic risk assessment for green woodworking is accompanied by a site specific risk assessment for each site used for green woodworking. This site specific risk assessment must be updated with the change to the operations, site conditions, weather conditions, tools and equipment and personnel.

The risk assessment should identify the risks posed by the complete range of activities and operations being undertaken and should include:

- ◆ Use of sharp tools for dressing up materials for working, making tools and devices.
- ◆ Trip hazards, eg cut stumps, coppice/woodland materials, rough terrain.
- ◆ Slipping on wet materials or surfaces.
- ◆ Falling trees or branches.
- ◆ Eye injuries from branches, handling materials, sawdust and shavings.
- ◆ Strike injuries from clefting, splitting and other operations.
- ◆ Injury from fires, effects of smoke and flammable liquids.
- ◆ Machinery related risks, eg chainsaws, ATV or transport vehicles.

They should also identify the likelihood of occurrence, the worst possible outcome and the measures taken to control the risks. Each risk should have a rating of probability, level and outcome. All risk assessments should be dated and signed and any change or modification also dated and signed by the responsible person.

All personnel must acknowledge receipt and understanding of the risks involved in the operations on the site and their role in ensuring the Health and Safety of themselves, other workers and the public.

Traditional crafts have their own long established methods and techniques and these must be assessed for risk using current criteria and best practice safety guidelines, eg personal protective equipment must meet current standards.

Green woodworking that is carried out in the woodland itself requires careful planning and organisation to insure both safety and cost efficiency. The products of green woodworking serve to promote traditional crafts, increase the productivity of small woodlands and conserve rich and diverse ecosystems.

National Unit specification: support notes (cont)

Unit title: Green Woodworking

In laying out the working area for green woodworking within a woodland there are a number of factors to be considered in setting out the work area including:

- ◆ Conservation designations within the woodland, ie no working area should be set up that has a negative impact on the species and habitats within the woodland (consult Biodiversity Action Plans).
- ◆ Access to the working site is a primary factor and each work site should be set up with access and transportation of products in mind.
- ◆ The size of the area required will be dependent upon the number of products to be made on site and the devices required to be constructed and operated on site.
- ◆ Shelter is an important aspect of green woodworking to ensure the health, welfare and safety of the woodworkers.
- ◆ The number of woodworkers on the site will be a determinant of the size of area(s) required.
- ◆ Trip hazards should be minimised therefore any natural clearances within the woodland should be used or alternatively edge of wood open spaces should be utilised.
- ◆ Dressing out of materials should be done out with the woodworking area in order to reduce waste materials and potential trip or slip hazards.
- ◆ Aspect — the work area should be set out to maximise the natural shelter and light for ease and comfort of working.
- ◆ Sloping areas should be avoided to prevent increased likelihood of slips, trips and accidents involving the use of tools and devices.

Operations to be provided for will include:

- ◆ Sawing — for the conversion of dressed out materials to product size. This will require the construction and setting up of sawhorses to be used for hand or chainsaw conversion of materials.
- ◆ Peeling — some green wood products require the partial or whole removal of bark, eg ash poles for hay rakes. Peeled bark can be composted and used for future mulching.
- ◆ Cleaving — traditionally used for dividing poles lengthways and quicker than sawing. Cleaving is done in halves — half the pole and then half again until such time as the cleft wood is the correct dimension for the item to be produced. The area for cleaving should be able to contain a supply of whole poles, the cleft materials and the waste products. Cleaving might involve the splitting of large logs with sledgehammer and splitting wedges and/or the setting up of a cleaving horse for hammer and froe cleaving of smaller poles.
- ◆ Turning — pole lathe turning has been a feature of green woodworking for over 2,000 years and the skills and craftsmanship of pole lathe working remain central to green woodworking in its current manifestation. The number of lathes and turners will determine the size of the area with a safe working distance required to ensure minimum risk. Whilst the pole lathe is a safe device to operate there is a requirement to ensure that operators do not invade each other's safe working area.
- ◆ Assembly areas — hurdle making within woodlands requires a well laid out area that can accommodate dressed up hurdle materials, assembling area with hurdle mould and storage area for finished product. Woven products will have a separate working area and will include work bench and space for materials, weaving and storage of product.
- ◆ Access for transport vehicles, eg ATV with trailer.

National Unit specification: support notes (cont)

Unit title: Green Woodworking

In preparing and setting out materials for green woodworking it is essential that the production process is understood and that each phase is organised logically to ensure the smooth transition from one phase to the next. All materials should be laid out to ensure that they are aligned in a way that reduces the need to manhandle materials and which requires the minimum of space. With well laid out materials the risk of accidents is reduced and productivity is not hampered.

Dressing out of materials should be done prior to the production process to ensure continuity of materials and production.

All dressed out materials should be laid out in sufficient quantities to ensure ease of access and working.

The preparation of materials for processing should be carried out safely and using the correct tools and equipment. All appropriate PPE should be worn.

Outcome 2

The use of tools and devices made from materials drawn from the woodland being managed and worked is a long standing tradition in coppicing and green woodworking.

Tools and devices made from such materials will include:

- ◆ Shelter or hovel — shelter from inclement weather — rain and wind — is essential to increase the likelihood of continuity of work within a restricted time window, ie conservation factors on the site may reduce working time to winter months.
- ◆ Sawhorses — for cutting materials to size for processing. These horses can be static or movable depending on site characteristics.
- ◆ Chopping block for pointing and starting splitting or cleaving. The splitting block should be at an ergonomic working height to minimise skeletal stress.
- ◆ Mould — for holding uprights or sales of hurdles. This can be made from a cleft tree trunk with the sales placed in the flat cleft surface.
- ◆ Rod horse for organising your rods at a convenient working height to ensure minimum of movement and maximum productivity.
- ◆ Splitting post — a 'V' shaped post — cleft oak — driven into the ground and used to split or cleave rods to be used in hurdle making.
- ◆ Cleaving horse — for use with a mallet and froe. This is designed to create a safe working height and a secure position for cleaving small to medium sized poles.
- ◆ Shaving horse — for use with draw knives to shape green wood products, eg chair legs, brush handles. This is designed for safe and secure working from a seated position which makes for easier and more comfortable working.
- ◆ Pole lathes — these are traditional devices used for turning and can be ready made and transported to a working site, constructed from site materials and erected on site or a combination of the two with the lathe pre-manufactured and the pole constructed on site. The availability of materials will determine which of the options is most suited to a particular site or woodland.
- ◆ Beetles or mauls are wooden mallets or hammers that are used in the splitting of wooden materials and can be fashioned from wood materials from the woodland using suitable species of timber, eg ash, hazel and holly.

National Unit specification: support notes (cont)

Unit title: Green Woodworking

Specific manufactured tools are also essential to the craftsmanship in green woodworking and these tools should include:

- ◆ Froe — specialised tool for cleaving wood — small to medium sized poles.
- ◆ Billhook — used for harvesting coppice, dressing out green wood materials and splitting/cleaving rods for hurdle making and similar sized materials.
- ◆ Side axe — for reducing wood to smaller dimensions rather than cutting coppice materials.
- ◆ Adze — universal tool for shaping wood particularly chair bottoms and giving a traditional finish to specific products, eg oak beams.
- ◆ Drawknife — tool for shaping cleft wood prior to turning on a pole lathe.
- ◆ Turning chisels — various sizes and shapes for use in making turned products, eg bowls, chair legs.
- ◆ Spoke shave for finer shaping of wood products eg chair seats.
- ◆ Drills and augers — for jointing with dowels or bolts.
- ◆ Twybil or morticing tool — a specialised tool for removing material from morticing when making oak fencing or framing.

Care and maintenance of these tools has some general requirements including sharpening to the correct angle for the particular tool, making sure the wooden handles are without damage or undue wear, are tight, secure and fit for purpose, oiled and rust free. All tools should be transported safely in a secure container and be subject to a tracking and issuing system.

The making of tools and devices should follow traditional specifications and designs and should be part of the process of setting up the work area. Chopping blocks, splitting poles, cleaving and shaving horses should all be designed and constructed as part of this process. All such structures and tools should be risk assessed and only used when assessed as safe to use.

Outcome 3

All practical skills sessions should be woodland based activities and conducted under industry best practice whilst working to a written specification of materials and products. The use of tools, equipment and devices should be related to the risk assessments. Factors to be considered should include:

- ◆ Selection of correct tools and devices.
- ◆ Correctly sharpened and maintained tools.
- ◆ Safe working environment, ie site suitability and hygiene.
- ◆ Operational safety signs to be displayed as appropriate to the site.
- ◆ Exclusion zones suitably identified and marked out.
- ◆ Well- constructed and safe devices and equipment.
- ◆ Correct techniques for each operation to be used.
- ◆ Safe working distance to be maintained at all times.
- ◆ Working methods to ensure ergonomic and productive efficiency.
- ◆ Products to meet specification and quality standards.
- ◆ Products to be presented to meet market requirements.

National Unit specification: support notes (cont)

Unit title: Green Woodworking

All teaching of practical skills should be carried out in a controlled teaching environment with close supervision of activities.

Guidance on approaches to delivery of this Unit

This Unit is a blend of practical skills and operational planning and thus will benefit from a blend of teaching and learning methodologies. The introduction to green woodworking could be through the use of instructional technique videos which give detailed descriptions of traditional crafts such as hurdle making, chair making and fencing and also gives clear descriptions of traditional tools and how to use them. The instructional videos can be reinforced by the use of social media wherein video clips and discussion forums explore green woodworking skills and experiences.

Workshop sessions are used for an introduction to tools and equipment and for the teaching of maintenance and repair of hand tools and devices through demonstration and supervised practice.

Practical skills development is achieved through demonstration and instruction with supervised experiential learning. The planning of the green woodworking area is introduced through site analysis and digital mapping to create a clear site plan matched to the production system appropriate to the site and the end products from the woodland.

The creation of an active green woodworking site is a central objective of this Unit and the planning and practical skills should be woodland based.

Guidance on approaches to assessment for this Unit

Evidence can be generated using different types of assessment. The following are suggestions only. There may be other methods that would be more suitable to learners.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

This Unit will be assessed combining the requirement to demonstrate understanding of planning and processes as well as practical skills competencies. The site layout will be assessed by the production of a site map and operational plan which sets out the details of a green woodworking production process. The practical skills dimension will be assessed by the demonstration and recording of practical skills in maintenance, setting up and operation of green wood working equipment, devices and tools. Green wood production will be based on quality checks against specification and standards.

National Unit specification: support notes (cont)

Unit title: Green Woodworking

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 learner evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at www.sqa.org.uk/e-assessment.

Given the practical nature of this Unit it does not easily lend itself 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 e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all learner 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:

Problem Solving (SCQF level 6)

Working with Others (SCQF level 6)

Information and Communication Technology (ICT) (SCQF level 5)

Communication (SCQF level 6)

There will be opportunities for all learners to develop skills in either extended writing or presentational skills at SCQF level 6 *Communication*. Within the practical skills part of the Unit there will be opportunities to develop *Working with Others* and *Problem Solving* Skills in the organisation and planning of the management of a green woodworking site and operation.

Information and Communication Technology (ICT) skills can be developed through the creation of a site plan and woodworking area and in the product specification and design.

Communication skills can be developed in the creation of a working plan for the green woodworking site and operation.

History of changes to Unit

Version	Description of change	Date

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General information for learners

Unit title: Green Woodworking

This section will help you decide whether this is the Unit for you by explaining what the Unit is about, what you should know or be able to do before you start, what you will need to do during the Unit and opportunities for further learning and employment.

On completion of this Unit you will have developed an understanding of how to plan and organise the setup of a green woodworking operations, including a risk assessment to ensure all Health and Safety requirements are met. You will also develop an understanding of the tools and equipment required for green woodworking and how they are maintained and repaired. Finally in this Unit you will have the opportunity to apply this knowledge as you develop the skills to produce a range of green wood products. Throughout the Unit there will be an emphasis on Health and Safety and industry best practice to ensure you can work safely and efficiently.

The Unit will be assessed through a combination of practical activities supported by the completion of documentation relevant to the work undertaken such as Work Plans and Risk Assessments.

In addition to the sector specific Knowledge and Skills developed in this Unit you may also have the opportunity to develop the Core Skills of *Problem Solving, Working with Others, Information and Communication Technology (ICT) and Communication*.