



National Unit specification: general information

Unit title: Woodworking Power Tool Skills (SCQF level 6)

Unit code: H0RD 12

Superclass: TG

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Summary

This Unit is suitable for candidates working towards a Modern Apprenticeship in Carpentry and Joinery and will develop the candidate's skills in the set up, safe use and maintenance of woodworking power tools including site saws and machinery. This Unit is designed to provide candidates with competence in setting up, maintaining and using a range of woodworking power tools and site machinery for specific operations. It is also designed to enable candidates to develop their knowledge and understanding of woodworking power tools, small machines and power tool functions.

Outcomes

- 1 Demonstrate knowledge and understanding of a range of woodworking power tools and site machinery.
- 2 Describe factors influencing the selection of tooling for specific tasks.
- 3 Set up and use a range of woodworking power tools and site machinery to produce components.

Recommended entry

While entry is at the discretion of the centre, candidates undertaking the Professional Development Award in Carpentry and Joinery at SCQF level 6 must meet the requirements of the Modern Apprentices which include being employed in the relevant craft industry.

General information (cont)

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Credit points and level

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

**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:

Complete Core Skill None

Core Skill component Critical Thinking @ SCQF level 5

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: Woodworking Power Tool Skills (SCQF level 6)

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

Demonstrate knowledge and understanding of a range of woodworking power tools and site machinery

Performance Criteria

- (a) Correctly identify woodworking power tools and site machinery.
- (b) Explain the function of each power tool and sit machine correctly
- (c) Correctly identify and explain the adjustable parts associated with setting up power tools and machines.

Outcome 2

Describe factors influencing the selection of tooling for specific tasks.

Performance Criteria

- (a) Correctly select tooling for specific tasks.
- (b) Correctly identify the factors influencing the choice of tooling.
- (c) Correctly sequence operations for specific tasks.
- (d) Comply with current health and safety regulations in all activities.

Outcome 3

Set up and use a range of woodworking power tools and site machinery to produce components.

Performance Criteria

- (a) Ensure the surrounding working area is cleared of any obstructions
- (b) Securely stack materials prior to commencement of work.
- (c) Isolate power tools and machines appropriately prior to setting up.
- (d) Correctly use power tools and site machinery to produce components in accordance with given specifications.
- (e) Comply with current health and safety regulations in all activities.

National Unit specification: statement of standards (cont)

Unit title: Woodworking Power Tool Skills (SCQF level 6)

Evidence Requirements for this Unit

Evidence is required to demonstrate that the candidate has achieved this Unit to the standard specified in all the Outcomes and Performance Criteria. All working practices must be in line with relevant and current Health and Safety legislation and regulations. A Risk Assessment and Method Statement must be completed prior to any practical activities taking place.

Written and/or oral evidence is required for Outcome 1 which demonstrates that the candidate can identify a range of woodworking power tools and machines and their functions. The minimum range of power tools is: drills, saws (chop saw mandatory) router, screwdrivers, sander, planer and site table saw (mandatory). The evidence for this Outcome will take the form of a question paper and will be obtained under closed-book supervised conditions.

Performance and product evidence for Outcomes 2 and 3, supplemented with an assessor observation checklist should be used to confirm the candidate has individually met the standards specified in the Performance Criteria and specification.

Setting up and operating power tools and site machinery operations must be correct in terms of:

- (1) Correct securing of tooling and adjustable parts including all guards.
- (2) Correct feed speed.
- (3) Appropriate use of jigs.
- (4) Correct sequencing of operations.
- (5) Demonstrating an understanding of maintenance procedures.
- (6) Satisfying current safety regulations.

The evidence for these Outcomes will be obtained under supervised conditions.

These Evidence Requirements will be met by the completion of the Carpentry and Joinery Training and Assessment Programme (TAP).

National Unit specification: support notes

Unit title: Woodworking Power Tool Skills (SCQF level 6)

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 has been developed as a mandatory Unit in the PDA in Carpentry and Joinery at SCQF level 6 which is a mandatory component of the Modern Apprenticeship in Carpentry and Joinery.

The content and context of this Unit is aimed at candidates who are pursuing a career in the craft of Carpentry and Joinery.

The successful completion of this Unit will provide candidates with the required underpinning knowledge and skills relating to, safe working practice as it relates to woodworking power tools and site machinery. An understanding of the safety features of each power tool, safety legislation maintenance of equipment, correct tooling for each power tool/machine with regard to operation and noise reduction and the need to sequence operations for the efficient use of time and materials.

This Unit would be offered to candidates from the construction and related services. The skills competences and underpinning knowledge gained in successfully completing this Unit are transferable within different working environments. The Unit is primarily aimed at candidates whose normal place of work would be a site, workshop, or similar environment.

The Unit deals with best current practice in setting up, operating and safety with regard to woodworking power tools used by the carpenter and joiner and is complemented by all other Units in the Carpentry and Joinery PDA at SCQF level 6. Units that could be integrated with *Woodworking Power Tool Skills* are *Door Construction*, *Timber Frames*, *Domestic Straight Flight Stairs and Pitched Roofs* at SCQF level 6. It should be delivered as part of a structured programme of training and orientated to the context of the candidate's work and area of responsibility.

A typical range of Power Tools/site machinery could be: drills, saws, router, screwdrivers, sander, planer, chop saw, site table saw, and Workshop equipment could be: jigs, holding devices, benches, transformers and extension cables.

Tooling: Types of saw blades including types to reduce noise levels, TCT, negative rake blades, router cutters fixed and replaceable, planer blades, twist drills screwdriver bits and abrasive paper.

Health and Safety and Sustainability are integral and key to the Construction Industry therefore throughout the Unit emphasis will be placed where appropriate on the application of Health and Safety and Sustainability. Safety working practices should be looked at in accordance with current safety codes of practice and regulations. Sustainability should include reference to criteria affecting sustainability, impact of not implementing sustainability on the environment and the legislation promoting sustainability.

National Unit specification: support notes (cont)

Unit title: Woodworking Power Tool Skills (SCQF level 6)

Guidance on learning and teaching approaches for this Unit

The following information may be helpful with regard to specific Outcomes.

Outcome 1

The candidate will be presented with a range of woodworking power tools and site machinery, drawings and summary of standards of a work piece or model necessary to show required competences. The assessor will instruct the candidates on the required operations and which woodworking power tools require setting up.

The candidate should be fully aware of the need for safety in the use of the woodworking power tools, and the methods of holding the work piece or model. The work piece should be held in an appropriate and safe manner, in compliance of the safety legislation. The quality of the end product should also be highlighted.

Workshop safety and power tool safety can be explained with demonstrations given on the correct methods of setting up and maintaining each power tool. It is important to stress the need for strict adherence to the instructions and safety requirements applicable to each power tool. It is also necessary to explain and demonstrate the factors that affect surface finish. Safety in relation to emergency procedures should be in accordance with current safety legislation. Before any tasks commence a risk assessment should be done on each given task, also a sequence of operations incorporating all safe working practices relating to each machine should be adhered to, and correct terminology should be used throughout.

Outcome 2

The Assessor should outline the selection of tooling for each power tool for a variety of operations and explain the need to use a sequence procedure to ensure time and power tools are used efficiently when operating. It should be clear that the candidate displays the understanding of the related terminology with regard to the Performance Criteria.

Outcome 3

Following the guidance and instructions outlined for Outcome 1 the candidate should be provided with the necessary information and materials to allow power tool and site machinery operations to be undertaken and completed within the summary of standards.

In this demonstration of competence the candidate should show clear understanding of the safety requirements before, during and after setting up. Candidate should also show an understanding of the maintenance of equipment prior to during and after each use.

The achievement of skills and underpinning knowledge required for this Unit would be assisted by the provision of information sources which may be in the form of: oral or written instructions; sketches; drawings; schedules; specifications; technical literature; manufacturers' data; codes of practice; building standards; statutory regulations; slides; videos; computer software.

National Unit specification: support notes (cont)

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Assessors should demonstrate practical elements step-by-step until the candidate feels confident enough to attempt them on his/her own. The requirement to adopt safe working practices and comply with safety legislation should be emphasised throughout.

Where appropriate, opportunities should be taken throughout delivery of this Unit to meet the requirements of the generic Units of the Training and Assessment Programme including:

- ◆ *Conform to Productive Working Practices*
- ◆ *Conform to General Workplace Health, Safety and Welfare*
- ◆ *Move, Handle and Store Resources*
- ◆ *Confirm Work Activities and Resources for the Work*
- ◆ *Develop and Maintain Good Working Relationships*
- ◆ *Confirm the Occupational Method of Work*

The candidate should be given the opportunity to further develop their skills through visual aids, electronic presentations, DVDs e-learning, reference books, and classroom exercises and group discussions. The function of each component should be thoroughly demonstrated and practised by each candidate through elevations, sections, plans and detailed drawings. Construction methods should be demonstrated and attempted by candidates in order to show good techniques in measuring, drawing (including workshop rods), marking out, plumbing, levelling and nailing and fixing of components from manufacture to fitting. This teaching approach should ensure the candidate is acquiring knowledge and skills required for the Unit.

Guidance on approaches to assessment for this Unit

The Carpentry and Joinery Training and Assessment Programme (TAP) provide detailed assessment material for this Unit. It is advised to use the TAP which has been developed centrally by SQA. Any other instruments of assessment used must be comparable to the TAP and have been through prior verification. It is expected that candidates will be given as much practise as possible, prior to being set the assessment tasks contained within the TAP.

A suitable method of assessing the candidate's knowledge and understanding of the range and function of woodworking power tools would be through a question paper.

Evidence will be gathered for Outcomes 2 and 3 through observation that the candidates have met the given standards and tolerances during the practical activity. An assessor observation checklist/record can be used to record this evidence. Assessment should be conducted under controlled, supervised conditions.

National Unit specification: support notes (cont)

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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

The Core Skill of *Problem Solving* could be developed as candidates undertake this Unit. Candidates will need to take account of a range of factors in order to work efficiently and safely, such as the choice of tooling, appropriate materials, safety issues, safety equipment and sustainability.

The Core Skill of *Working with Others* at SCQF level 4 could be developed through discussions with assessors to enhance the evaluation of efficient working practices. Also during practical activities, which may be carried out in pairs, candidates can agree responsibilities and provide support and information to each other. After assessment, they should be encouraged to consider how effectively they supported each other.

Candidates will have the opportunity to develop *Communication* skills at SCQF level 4 throughout practical tasks, as they should be expected to communicate with others using the correct terminology, tone and style suited to the workplace.

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 5.

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

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