



National Unit specification: general information

Unit title: Carpentry and Joinery: Workshop Practice and Hand Skills (SCQF level 6)

Unit code: H0RS 12

Superclass: TG

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Summary

This Unit is suitable for candidates working towards a Modern Apprenticeship in Carpentry and Joinery and is designed to introduce candidates to the use of a range of woodworking hand tools and workshop equipment. The Unit requires the candidates to manufacture a range of woodworking joints and a joinery component, together with producing scaled drawings to indicate exploded details of manufactured joints and a basic introduction to the production of a cutting list for a timber component. It is also designed to enable candidates to develop their skills and understanding in Carpentry and Joinery terminology, techniques and practices, ironmongery and production of working drawings.

Outcomes

- 1 Demonstrate knowledge and understanding of the practical applications of a range of woodworking hand tools, equipment and terminology.
- 2 Demonstrate knowledge and understanding of the design and use of woodworking joints.
- 3 Demonstrate knowledge and understanding of the uses of a range of ironmongery.
- 4 Produce a workshop rod and cutting list, for the production of a joinery component.
- 5 Use hand tools and equipment to manufacture and fit a range of woodworking joints, and joinery component.

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 Apprenticeship which includes being employed in the relevant craft industry.

General information (cont)

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Credit points and level

2 National Unit credits at SCQF level 6: (12 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

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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 the practical applications of a range of woodworking hand tools, equipment and terminology.

Performance Criteria

- (a) Identify and describe the practical applications of a range of woodworking hand tools.
- (b) Identify and describe the practical applications of a range of workshop equipment.
- (c) Correctly define related woodworking terminology.

Outcome 2

Demonstrate knowledge and understanding of the design and use of woodworking joints.

Performance Criteria

- (a) Draw the proportions of woodworking joints accurately in relation to material dimensions.
- (b) Correctly identify and select woodworking joints for specific purposes.
- (c) Describe retention methods for woodworking joints correctly.

Outcome 3

Demonstrate knowledge and understanding of the uses of a range of ironmongery.

Performance Criteria

- (a) Identify and describe a range of ironmongery/hardware.
- (b) Identify and describe the applications of a range of ironmongery/hardware.

National Unit specification: statement of standards (cont)

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Outcome 4

Produce a workshop rod and cutting list, for the production of a joinery component.

Performance Criteria

- (a) Set out a workshop rod for a joinery component in accordance with a given workshop drawing.
- (b) Correctly proportion and annotate all joints and parts.
- (c) Accurately mark out a joinery component from the workshop rod.
- (d) Produce a legible and accurate cutting list to include all sawn and finished dimensions.
- (e) Calculate amount of material required for timber components outer and inner frames.
- (f) Correctly allow for wastage.

Outcome 5

Use hand tools and equipment to manufacture and fit a range of woodworking joints and a joinery component.

Performance Criteria

- (a) Correctly manufacture a range of woodworking joints to a given specification.
- (b) Correctly manufacture a joinery component to a given specification.
- (c) Correctly fit and hinge an inner frame to an outer frame using butt hinges.

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 which demonstrates that the candidate has achieved Outcomes 1, 2, and 3 to the standards specified in the Performance Criteria. Candidates will be required to demonstrate their knowledge and understanding of terminology and practical applications of a range of woodworking hand tools, equipment, ironmongery, joints and retention methods. The evidence for these Outcomes will take the form of a question paper carried under closed-book supervised conditions.

Product and performance evidence supplemented with an assessor observation checklist should be used to show that the candidate has achieved Outcomes 4 and 5 to the standards specified in the Performance Criteria.

Evidence for Outcome 4, evidence should take the form of an accurate workshop rod and cutting list for the production of a joinery component.

National Unit specification: statement of standards (cont)

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Evidence for Outcome 5 will be gathered in the observation checklist. The candidate will be observed showing that they can mark out, construct and assemble the following by hand:

- ◆ five angle; one widening; and one corner dovetail joint, and a joint with an advanced shoulder — two of which must be produced from timber hand dressed by the candidate
- ◆ workshop rod for a joinery component
- ◆ a joinery component comprising of an inner frame hinged to an outer frame

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

National Unit specification: support notes

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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 80 hours.

Guidance on the content and context for this Unit

This Unit has been developed as a mandatory Unit in the PDA Carpentry and Joinery at SCQF level 6.

The successful completion of this Unit will provide candidates with the required underpinning knowledge and skills relating to workshop practices and hand skills including the correct use of hand tools and the correct procedures in manufacturing a range of woodworking joints.

This Unit would be offered to candidates from the construction and related services industries. The skills and knowledge and understanding are transferable within different working environments but the Unit is primarily aimed at candidates who are new to the industry but whose normal place of work would be a site, workshop, or similar environment.

The Unit deals with the theory and practice associated with developing workshop practice and hand skills. It is recommended that this Unit be delivered at the outset of a structured programme of training and orientated to the context of the candidate's work and area of responsibility.

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. Safe working practices should be looked at in accordance with current 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.

The following additional range of information will prove useful for this Unit:

Woodworking Tools

Saws; rip saw, cross-cut saw, panel saw, disposable hard point saw, tenon saw, dovetail saw, pad saw and coping saw.

Hand Planes; smoothing plane, block plane, bull nose plane, shoulder plane, rebate plane, bench rebate plane, side rebate plane and plough plane.

Chisels; firmer chisels, bevel edge chisels, mortise chisels and gouges.

Boring and drilling tools; flat bit, forstner bit, screwdriver bit and twist drills.

Driving and fixing tools; claw hammer, mallet, fixed screwdrivers, ratchet screwdriver, bradawl and nail punch.

National Unit specification: support notes (cont)

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Setting out tools; four fold rule, retractable tape, try square, combination square, sliding bevel, marking knife, marking gauge, mortise gauge, compasses and trammel points.

Miscellaneous tools; cutting gauge, spirit level, scraper, sanding block, files, rasps, replaceable blade knife, saw set and pliers.

Equipment; sash cramp, G-clamp, fast cramp, joiners workbench, vices, saw stool, bench hook, mitre box, mitre block, box squares, mitre square and dovetail template.

Timber Joints

Angle joints; tee halving, tee dovetailed halving, corner halving, cross halving, mitre, mortise and tenon, haunched mortise and tenon, bridle joint, square housing, stopped housing, corner housing, through dovetail, lapped dovetail and butt.

Widening joints; butt, tongued and grooved, slip feather, tongued, grooved and veed, slot screwed and doweled.

Advanced shoulder joints; transom to jamb of a window, top bottom or mid rail to a stile of a door

Range of ironmongery/hardware

Nails; wire, oval brads, lost head, cut nail, annular shank and panel pins.

Screws; countersunk, round headed, raised headed, coach screw and self tapping.

Bolts; coach bolt, handrail bolt.

Hinges; edge, back flap, tee, hook and band, easy clean and cranked butt.

Locks and latches; dead, rim, mortise cylinder and padlock.

Fittings; slip bolts (barrel), slip bolts (flush), casement stay, casement fastener, hasp and staple, door furniture and letter plate.

National Unit specification: support notes (cont)

Unit title: Carpentry and Joinery: Workshop Practice and Hand Skills (SCQF level 6)

Guidance on learning and teaching approaches for this Unit

The learning environment for this Unit will be a combination of classroom and workshop based learning. The knowledge element of this Unit would be taught in a classroom environment and put into practice in the workshop in conjunction with practical Outcomes.

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, DVD's, e-learning, reference books, 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, cutting and assembly of various woodworking joints and joinery component. This teaching approach should ensure the candidate is acquiring the underpinning knowledge and skills required for this Unit.

Outcome 1

The candidate should be introduced to an extensive range of woodworking tools and equipment when the tutor/trainer could demonstrate the correct use of each tool and piece of equipment. It is imperative that the candidate is made fully aware of the exacting demands required to produce components of a high quality. Correct procedures and attitudes cannot be overstressed. Correct terminology should be used throughout with safe practices in the use of woodworking tools and workshop equipment being clearly emphasised.

Outcome 2

The candidate should be introduced to an extensive range of woodworking joints by means of technical literature and visual aids. The reasons for the design proportions of specific joints should be explained. Application of adhesives, cramping techniques and method of physical retention should be fully explored. The candidates will be required to be introduced to basic drawing skills and equipment in order that detailed scale drawing can be produced to an acceptable standard.

National Unit specification: support notes (cont)

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Outcome 3

The candidate should be introduced to an extensive range of ironmongery by means of technical literature and visual aids. The reasons for selection and uses should be explained. Methods of fitting specific items should be explained and or demonstrated where and when applicable.

Outcome 4

The candidates should be introduced to the purpose and requirements of the setting out of a workshop rod. It is imperative that the candidates are made fully aware of the accuracy and attention to detail that is required within its production.

The candidates should be introduced to the importance and accuracy of a cutting list, by providing a greater insight into the production process of a joinery component from the marking out of a workshop rod, taking off accurate dimensions from the rod incorporating a suitable waste allowance, through to calculating and the final costing.

Outcome 5

The candidate should become proficient in the use of woodworking tools and equipment by continuity of their use. Once the candidates have displayed a degree of competence in the safe use of woodworking tools, then the tutor/trainer may give practical demonstrations on the grinding and sharpening to a range of hand tools. At the appropriate time for a summative assessment, the candidate will be provided with appropriate materials and a workshop drawing for each joint.

Guidance on approaches to assessment for this Unit

Section 2 of the Carpentry and Joinery Training and Assessment Programme (TAP) provides 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 practice as possible, prior to being set assessment tasks.

For Outcomes 1, 2, and 3 the candidates' knowledge and understanding of terminology and practical applications of a range of woodworking hand tools, equipment, ironmongery, joints and retention methods will be assessed through a question paper and scaled drawings which indicate specific joint details. This must be conducted under controlled, supervised conditions.

Candidates will be required to produce a cutting list and mark out, construct and assemble a range of woodworking joints and a joinery component by hand to meet the requirements of Outcomes, 4, and 5. Evidence will be gathered through observation that the candidates have met the given standards and tolerances during the practical activity. An assessor observation checklist 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

There are opportunities for the Core Skill of *Problem Solving* to 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 tools, appropriate materials, safety issues, safety equipment and sustainability. Individual discussions with assessors and the use of role play will enhance the evaluation of efficient working practices. Problem Solving may also be developed throughout practical tasks as candidates should be expected to adopt a suitable construction and assembly sequence for the manufacture of individual timber joints and joinery component.

There are opportunities for candidates to develop the Core Skill of *Working with Others* at SCQF level 4, particularly in Outcomes 4 and 5, as these are practical assessments. Candidates can agree on the utilisation of tools, materials and workshop equipment, together with providing support and information to each other during the individual practical activities.

Opportunities may also arise for candidates to develop the Core Skill of *Information and Communication Technology (ICT)* at SCQF level 3 by researching Health and Safety legislation affecting their area of work, also the use of spreadsheets to develop cutting lists, e-learning and e-assessment.

The Core Skill of *Numeracy* at SCQF level 4 could be developed through the interpretation of information from 3-dimensional working drawings and the practical use of calculation and measuring scales.

Candidates will have the opportunity to develop the Core Skill of *Communication* 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.

National Unit specification: support notes (cont)

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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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