

Practical Woodworking: Flat-frame Construction

SCQF: level 5 (6 SCQF credit points)

Unit code: J2CV 75

Unit outline

The general aim of this Unit is for learners to develop practical skills in the use of woodworking tools and the production of flat-frame woodworking joints and assemblies. The ability to read and interpret drawings and diagrams is developed in this Unit. Learners will also develop their knowledge and understanding of woodworking materials, recycling and sustainability issues, as well as an appreciation of safe working practices in a workshop environment.

Learners who complete this Unit will be able to:

- 1 Prepare for flat-frame woodworking tasks
- 2 Construct a range of flat-frame woodwork joints
- 3 Assemble a flat-frame with four or more joints

This Unit is available as a free-standing Unit. The Unit Specification should be read in conjunction with the *Unit Support Notes*, which provide advice and guidance on delivery, assessment approaches and development of skills for learning, skills for life and skills for work. Exemplification of the standards in this Unit is given in the *National Assessment Resource*.

Recommended entry

Entry to this Unit is at the discretion of the centre. However, learners would normally be expected to have attained the skills, knowledge and understanding required by the following or equivalent qualifications and/or experience:

- ◆ National 4 Practical Woodworking Course or relevant Units

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. For further information, please refer to the *Unit Support Notes*.

Standards

Outcomes and assessment standards

Outcome 1

The learner will:

1 Prepare for flat-frame woodworking tasks by:

- 1.1 Selecting woodworking tools, equipment and materials appropriate for tasks
- 1.2 Confirming that woodworking tools and equipment are in good condition and safe working order before, during and after use
- 1.3 Adjusting tools where necessary, following safe working practices
- 1.4 Using correct names and terminology when referring to woodworking tools, equipment, materials and processes

Outcome 2

The learner will:

2 Construct a range of flat-frame woodwork joints by:

- 2.1 Preparing timber by planing, or similar, to within specified tolerance
- 2.2 Marking out joints to within specified tolerance
- 2.3 Constructing joints such that joint gaps do not exceed specified tolerance
- 2.4 Using tools and equipment safely and correctly

Outcome 3

The learner will:

3 Assemble a flat-frame with four or more joints by:

- 3.1 Checking materials supplied against a cutting list
- 3.2 Marking out the component parts in accordance with working drawings and within specified tolerance
- 3.3 Assembling the component parts, such that joint gaps and overall sizes are within specified tolerance
- 3.4 Working in accordance with recognised procedures and safe working practices
- 3.5 Carrying out good practice in terms of sustainability and recycling

Evidence Requirements for the Unit

Assessors should use their professional judgement, subject knowledge and experience, and understanding of their learners, to determine the most appropriate ways to generate evidence and the conditions and contexts in which they are used.

Evidence may be presented for individual Outcomes, or gathered for the Unit. If the latter approach is used, it must be clear how the evidence covers each Outcome.

For this Unit, learners will be required to provide evidence of:

- ◆ knowledge and understanding of practical woodworking tools, equipment, materials and processes
- ◆ practical skills in flat-frame construction
- ◆ knowledge and understanding of sustainability issues and good practice in recycling in practical woodworking activities and environments
- ◆ the ability to work in accordance with recognised procedures and safe working practices

For Outcome 1, woodworking tools and equipment includes those for:

- ◆ marking out
- ◆ bench work
- ◆ cramping

For Outcome 1, woodworking materials include:

- ◆ a variety of common softwoods and hardwoods, as available
- ◆ a variety of manufactured boards, as available
- ◆ adhesives and sundry fixings

For Outcome 2, learners must produce a range of eight basic joint types: the three mandatory joints; and five from the other joint types list:

Mandatory joint types	Other joint types
<ul style="list-style-type: none">◆ mitred corner joint◆ bridle joint◆ haunched mortise and tenon	<ul style="list-style-type: none">◆ corner joints other than mitre◆ 'T' joints◆ cross halving joints◆ stub mortise and tenon◆ through mortise and tenon◆ butt joints◆ dowel joints

For Outcome 3, learners must produce a flat-frame with four or more joints, using one or more of the basic joint types from the above lists, but excluding butt joints.

It is assumed that the joints and flat-frames in this Unit are readily portable. The specified tolerances referred to in the Assessment Standards are:

Operation	Tolerance
Marking out	±1mm
Planing or similar	±1mm
Constructing — joint gaps not to exceed	±1mm
Flat-frame — overall sizes within	±3mm

Exemplification of assessment for this Unit is provided in the *Unit Assessment Support*. Advice and guidance on possible approaches to assessment is provided in the *Unit Support Notes*.

Assessment standard thresholds

If a candidate successfully meets the requirements of the specified number of Assessment Standards they will be judged to have passed the Unit overall and no further re-assessment will be required.

The specific requirements for this Unit is as follows:

- ◆ 9 out of 13 Assessment Standards must be achieved.

It should be noted that there will still be the requirement for candidates to be given the opportunity to meet all Assessment Standards. The above threshold has been put in place to reduce the volume of re-assessment where that is required.

Development of skills for learning, skills for life and skills for work

It is expected that learners will develop broad, generic skills through this Unit. The skills that learners will be expected to improve on and develop through the Unit are based on SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work* and drawn from the main skills areas listed below. These must be built into the Unit where there are appropriate opportunities.

2 Numeracy

2.2 Money, time and measurement

4 Employability, enterprise and citizenship

4.3 Working with others

5 Thinking skills

5.3 Applying

5.5 Creating

Amplification of these is given in SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work*. The level of these skills should be at the same SCQF level of the Unit and be consistent with the SCQF level descriptor. Further information on building in skills for learning, skills for life and skills for work is given in the *Unit Support Notes*.

Appendix: unit support notes

These support notes provide advice and guidance on approaches to delivering and assessing this unit. They are intended for teachers and lecturers who are delivering this unit. They should be read in conjunction with:

- ◆ the *unit specification*
- ◆ the *unit assessment support packs (UASP)*

Measuring and marking out	<p>Rule, tape measure, try- square, marking gauge, templates, marking knife, mortise gauge, cutting gauge, sliding bevel, dove-tail template, outside calipers.</p> <p>Units of measurement</p>
Reading and interpreting drawings and documents	<p>Working drawings, pictorial drawings, diagrams, cutting lists</p> <p>Knowledge and understanding of orthographic projection scale, dimensioning (linear, angular (45°) and ratio dimensioning, radial and diameter) and basic drawing conventions including: line types, centre lines and hidden detail.</p>
Materials	<p>Softwoods (white and red pine, cedar and larch)</p> <p>Hardwoods (ash, oak, beech, mahogany/meranti)</p> <p>Manufactured boards and veneered manufactured boards (chipboard, plywood, MDF and blockboard)</p>
Bench work	<ul style="list-style-type: none"> ◆ saws (tenon, coping, rip, cross-cut and panel) ◆ chisels (bevelled edge, mortise and firmer) ◆ mallet ◆ hammers ◆ pincers ◆ planes (jack, smoothing, plough, bull-nose, rebate, combination) ◆ hand drills and braces ◆ screwdrivers ◆ sawing board/bench hook ◆ hand router ◆ spoke shave ◆ bradawl ◆ other common bench tools <p>Knowledge and understanding of tool care and maintenance: reporting faults, setting a plane, honing a chisel, honing a plane iron.</p>
Cramping	<ul style="list-style-type: none"> ◆ cramps (sash, G, quick release, mitre, band) ◆ string and block ◆ other cramping devices

Flat-frame jointing techniques	<p>Flat-frame joints:</p> <ul style="list-style-type: none"> ◆ butt ◆ various corner (including mitre) ◆ various 'T' joints ◆ various halving joints (including cross) ◆ mortise and tenon (stub, through and haunched) ◆ dowel ◆ bridle <p>Selecting appropriate joint types for given scenarios</p>
Mechanical fixing and adhesive bonding	<ul style="list-style-type: none"> ◆ Common nails (round and oval brad), pins, screws (roundhead and countersunk) ◆ Proprietary flat-frame fixings ◆ Knock down fixings ◆ Proprietary wood adhesives and glues (interior and exterior)
Safe working practices	<p>Good practices and safe systems for general workshop and individual activities as appropriate</p> <p>Personal Protective Equipment</p>
Recycling and sustainability	<p>Best practice in selecting materials appropriate for use</p> <p>Understanding and following workshop recycling practices and processes</p>

Administrative information

Published: July 2019 (version 2.0)

Superclass: WK

History of changes to National Unit Specification

Version	Description of change	Authorised by	Date
1.1	Assessment standard thresholds added Unit Support Notes added.	Qualifications Manager	September 2018
2.0	Unit code updated	Qualifications Manager	July 2019

This specification may be reproduced in whole or in part for educational purposes provided that no profit is derived from reproduction and that, if reproduced in part, the source is acknowledged. Additional copies of this Unit can be downloaded from SQA's website at www.sqa.org.uk.

Note: readers are advised to check SQA's website: www.sqa.org.uk to ensure they are using the most up-to-date version of the Unit Specification.

© Scottish Qualifications Authority 2018