National Certificate in Building, Construction and Allied Trades Skills (BCATS)

Teacher Information & Resources

Use joints for a BCATS project

Unit Standard – 25920

Level 1, Credit 3

Teaching and assessment tips

Intent – The intent of the unit standard is that the learner can identify and describe eleven different types of joints and use at least two in a BCATS project.

The skills required for this unit standard are assessed using the worksheet, the assessor observation sheet and evidence of a completed project.

This unit fits perfectly as a shared assessment project, particularly in conjunction with unit standard 25921 (*Make a cupboard for a BCATS project*) and Unit Standard 12932 (*Construct timber garden furniture and items of basic construction equipment as a BCATS project*), but almost any other BCATS suitable project can incorporate the use of two joints that meet the requirements of this unit.

Only two types of joints need to be used from the following list: mitre, dovetail, housing, mortise and tenon, rebated, halving, dowelled, biscuit, welded, soldered, riveted. Students must be able to identify them all, however.

Evidence to show that a project has been finished must also be attached to the assessor observation sheet. This may be a in the form of a verified photo.

Assessment

Assessment of this unit standard consists of:

- Completion of a worksheet
- Completion of an assessor observation sheet and
- Completion of a BCATS project (verified photo to be attached).

Worksheet US 25920

Student Name:

1. What are two checks you can make on timber you have selected for a project?

2. What is the name of the joint used to join mouldings around a rectangular doorway and what is the angle of the cut?

3. Give two reasons why lap dovetail joints are used for drawer fronts.

4. What is the name of the housing joint where the trench does not extend right across the face of the vertical board?

5. What are the specific names of the following mortise and tenon joints?

a) Stops a rail from twisting

b) Does not penetrate right through the stile

c) Passes all the way through the stile

6. Why is it necessary to be accurate when setting out a dowel joint?

7. What is the name of the portable power tool used make a biscuit joint?

8. Name three of the five basic welded joints.

9. What are the two most common gases used in gas welding?

10. What is the key to producing a quality project?

Worksheet Model Answers

1. What are two checks you can make on timber you have selected for a project?

Check for any defects and blemishes.

Check the grain patterns so they can be used to their best advantage.

2. What is the name of the joint used to join mouldings around a rectangular doorway and what is the angle of the cut?

Mitre joint

45 deg

3. Give two reasons why lap dovetail joints are used for drawer fronts.

They are strong and able to stand up to repeated use.

The joint is hidden on the front face of the drawer.

4. What is the name of the housing joint where the trench does not extend right across the face of the vertical board?

Stopped housing

5. What are the specific names of the following mortise and tenon joints?

a) Stops a rail from twisting — *haunched mortise and tenon*

b) Does not penetrate right through the stile — *stopped mortise and tenon*

c) Passes all the way through the stile — *through mortise and tenon.*

6. Why is it necessary to be accurate when setting out a dowel joint?

So that the joint lines up accurately when assembled.

7. What is the name of the portable power tool used make a biscuit joint?

Biscuit or plate jointer.

8. Name three of the five basic welded joints.

Any three of the following:

Butt,

Corner,

Tee,

Lap,

Edge

9. What are the two most common gases used in gas welding?

Oxygen and acetylene

10. What is the key to producing a quality project?

Preparing and following the working drawings and specifications

Examples of oral assessment questions

1. What are the two metals that make up solder?

Lead and tin.

2. What is another name for resistance welding?

Spot welding.

3. When cramping a joint together what can be done to keep the surface of the joint straight?

Alternate the cramps over and under the work.

4. What is the recommended thickness of the tenon in a mortise and tenon joint?

No more than one third the thickness of the piece of timber.

5. What is a hazard?

A hazard is something that can cause harm

6. Why may it be necessary to reinforce a mitre joint?

Because end grain has poor holding power when glued.

7. When assembling a butt joint, what can be done to prevent cramps marking the timber?

Place a batten or packing piece between the work and the cramp heads.

8. Where a drawer or box construction will not be subjected to a lot of stress, name the type of joint that can used instead of a dovetail joint?

A rebate joint.

9. What can be done to the metal parts of tools to prevent corrosion while they are in storage?

Thoroughly cleaned and then wiped with an oily rag.

10. On a construction site or in a school workshop what document identifies the methods for managing hazards?

A site specific safety plan.

Assessor Observation Sheet – Joints

US 25920 Use joints for a BCATS project (Level 1, Credit 3)

Student Name:
Project:
Joints used:

Assessor observation:

Assessment criteria: *This unit standard requires the completion of a BCATS project that uses at least **2** of the following joints – mitre, dovetail, housing, mortise and tenon, rebated, halving, dowelled, biscuit, welded, soldered, riveted.*		***Comments and/or notes***
Worksheet completed correctly	☐	
Two methods of jointing are selected and correctly used for a completed project	☐	
Work is in accordance with job specifications	☐	
All operations completed safely and according to site/workplace practices	☐	
Tools are looked after and put away correctly	☐	
Verified photo of finished project attached	☐	

Assessor name: ..... Assessor signature: ..... Date:	**RESULT:** A = Achieved, N = Not Yet Achieved

Assessment Schedule

US 25920 Use joints for a BCATS project (Level 1, Credit 3)

Outcome 1	**Identify and describe types of joints and select jointing methods for a BCATS project.**	**Assessment evidence and judgement**
ER 1.1	Types of joints are identified and described in terms of purpose and method of construction.	• Worksheet
ER1.2	Job specifications are obtained, and verified with the supervisor, in accordance with workplace practice	• Assessor observation sheet
ER 1.3	Jointing requirements are identified from job specifications.	• Assessor observation sheet
ER 1.4	Jointing methods are selected in accordance with job specifications.	• Assessor observation sheet
Outcome 2	**Use joints for a BCATS project.** **Range: two of – mitre, dovetail, housing, mortise and tenon, rebated, halving, dowelled, biscuit, welded, soldered, riveted.**	**Assessment evidence and judgement**
ER 2.1	Joints are set out and cut in accordance with job specifications and workplace practice.	• Assessor observation sheet
ER 2.2	Joints are assembled and fixed in accordance with job specifications and workplace practice.	• Assessor observation sheet • Verified photo(s)
Outcome 3	**Complete work operations**	**Assessment evidence and judgement**
ER 3.1	All operations are safely completed in accordance with workplace practice.	The learner • Correctly uses personal protective equipment as they work • Uses machine safety guards and dust extraction facilities and adjusts them appropriately • Uses the correct machine settings • Follows safe working practises and the job is safely completed
ER 3.2	Workplace, tools, plant and equipment are cleaned, and tools, plant and equipment are stored in accordance with workplace practice.	The learner • Cleans the tools, plant and equipment they used as part of the job • Stores tools plant and equipment in accordance with workplace practice • Leaves a clean work area on completion