

National Certificate in Building, Construction and Allied Trades Skills (BCATS)
Teacher Information & Resources

**Construct a timber pergola as a
BCATS project**

Unit Standard – 12937

Level 2, Credit 5





Teaching and assessment tips

Intent – The intent of the unit standard is that the learner is able to construct a timber pergola including:

- Calculating quantities and preparing an order,
- excavating the holes,
- fixing the beams and joists and
- positioning the poles,
- placing the posts,
- finishing the pergola.

Unit standard interpretation

“Finish”, in the context of this unit standard, refers to the surface and/or edge treatment detailed in the project plan; eg. planed, sanded, arris or bevelled edges, painted, stained etc.

Calculation of quantities and the order form must include; posts, beams, joists, and fixings.

An order form template may be sourced from the internet or you can design your own or use a facsimile of your school or business order form. The completed order must be attached to the Assessor Observation sheet.

Evidence to show that the timber pergola has been finished must also be attached to the Assessor Observation form. This may be a in the form of a verified photo.

Assessment



Assessment of this unit standard consists of:

- Completion of an order, including calculations of materials and
- Completion of the assessor observation sheet
- Completion of a timber pergola and photos to verify it

Examples of oral assessment questions

1. Name six items that need to be included on an order with a supply merchant for building material.

Date of order.

Customer's name and billing address.

Customer account number.

Job identification or number.

Order number.

Supply merchant's name.

Description of goods required and quantity.

Address where the order should be delivered.

Date and time required.

Any other delivery details.

Authorised purchaser's signature.

2. What level of timber treatment should be used for any exterior timber not in contact with the ground?

H3.2.

3. What tool can be used to cut curves on the ends of rafters?

Jigsaw.

4. Calculate the length of bearers required for a freestanding pergola 2.5m wide, with a 200mm overhang.

$$\begin{aligned}\text{Bearers} &= \text{pergola width} + \text{overhang} \\ &= 2.500 + 0.400 \\ &= 2.900\end{aligned}$$

5. Which end of a post should go in the post hole and why?

Uncut end as the cut end has untreated timber exposed.

6. What precaution should be taken when nailing a bearer to the posts?

The nails must be well clear of where the bolts are to be positioned.

Assessor Observation Sheet – Pergola

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Student Name:
Project Location:

Assessor observation:

Assessment criteria: <i>This unit standard requires the completion of a timber pergola.</i>		Comments and/or notes
Calculations of material quantities (including posts, beams, joists and fixings) attached	<input type="checkbox"/>	
Order form for materials (including posts, beams, joists and fixings) attached	<input type="checkbox"/>	
Post positions are set out, holes excavated and posts placed	<input type="checkbox"/>	
Beams and joists are set out, cut, fixed and finished	<input type="checkbox"/>	
Work is in accordance with job specifications	<input type="checkbox"/>	
All operations completed safely and according to site/workplace practices	<input type="checkbox"/>	
Tools are looked after and put away correctly	<input type="checkbox"/>	
Verified photos showing finished project attached	<input type="checkbox"/>	
Assessor name:	RESULT: A = Achieved, N = Not Yet Achieved	
Assessor signature: Date:		

Assessment Schedule

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Outcome 1	Calculate quantities and prepare an order for materials for a timber pergola.	Assessment evidence and judgement
ER 1.1	Quantities of materials are calculated from working drawings and job specifications.	Evidence gathered from student's calculations and the assessor observation sheet showing; <ul style="list-style-type: none"> Quantities of posts, beams, and joists timber and fixings are calculated correctly.
ER 1.2	An order for materials is prepared in accordance with workplace practice.	Evidence gathered using order list. <ul style="list-style-type: none"> Order is legible and correct measurement units are used.
Outcome 2	Set out and construct a timber pergola.	Assessment evidence and judgement (please take photos to verify)
ER 2.1	Post positions are set out and holes excavated in accordance with working drawings and job specifications.	Evidence gathered from the pergola project and the assessor observation sheet showing; <ul style="list-style-type: none"> Set out and excavation is neat and accurate.
ER 2.2	Posts are placed in accordance with working drawings and job specifications.	Evidence gathered from the pergola project and the assessor observation sheet showing; <ul style="list-style-type: none"> Posts are placed correctly with uncut end in ground.
ER 2.3	Beams and joists are set out, cut and fixed in accordance with working drawings and job specifications.	Evidence gathered from the pergola project and the assessor observation sheet showing; <ul style="list-style-type: none"> Beam and joists are set out, cut and fixed correctly.
ER 2.4	Pergola is finished in accordance with working drawings and job specifications.	Evidence gathered from the pergola project and the assessor observation sheet showing; <ul style="list-style-type: none"> Pergola is finished correctly.
Outcome 3	Complete work operations.	Assessment evidence and judgement
ER 3.1	All operations are safely completed in accordance with workplace practice.	Evidence gathered from the pergola project and the assessor observation sheet showing; <ul style="list-style-type: none"> Appropriate PPE selected and used. Tools used correctly and safely. Personal safety and safety of others observed.
ER 3.2	Workplace, tools, plant and equipment are cleaned, and tools, plant and equipment stored in accordance with workplace practice.	Evidence gathered from the pergola project and the assessor observation sheet showing; <ul style="list-style-type: none"> Work area cleaned. Waste disposed of. Tools, plant and equipment cleaned and stored correctly.