

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

**Construct basic garden edge
retaining walls as a BCATS
project**

Unit Standard – 12939

Level 2, Credit 4





Teaching and assessment tips

Intent – The intent of the unit standard is that the learner is able to construct a garden edge retaining wall including:

- calculating quantities and preparing an order,
- excavating the foundations,
- constructing and
- finishing the wall.

Unit standard interpretation

A garden edge retaining wall is interpreted as a retaining wall with a height of between 350 millimetres and 1 metre, and a total length of not less than 1.2 metres. It does not necessarily need to restrain a garden but it must be able to hold up against the pressure of back fill.

It is expected that each student will have evidence of a retaining wall that they completed that is not less than 1.2 metres long.

The skills required for this unit standard are assessed using the Assessor Observation form, a copy of the learner's order form, and evidence of the completed garden edge retaining wall.

Calculations of the quantities of materials required and an order for them are required. 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.

Photos to verify that the garden edge retaining wall has been finished must also be attached to the Assessor Observation sheet.

Assessment



Assessment of this unit standard consists of:

- Completion of an order, including calculations of materials quantities and
- Completion of the Assessor Observation sheet and
- Completion of retaining wall

Examples of oral assessment questions

1. What types of retaining walls require a building consent?

Walls over 1.5 metres high.

Walls lower than 1.5 metres but carrying extra loading on top, such as a driveway, a building or a steeply sloping bank.

2. What drainage material should be used behind a retaining wall?

300mm minimum clean free-draining gravel

Slotted drainage pipe or weep holes at the base of the wall

3. What information does the manufacturer's instructions for precast concrete blocks provide?

Foundation type.

Instructions for constructing the wall.

Maximum height.

The amount each course is stepped back.

4. Describe the construction of a timber post and rail retaining wall.

Poles or posts are securely embedded in the ground and inclined toward the area to be retained. Horizontal rails are then fixed to the inside of the posts.

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

The uncut end, as the cut end has untreated timber exposed.

6. What does the maximum height for a crib wall depend on?

Type of ground to be retained.

Type of backfill used.

Condition of site drainage.

7. Name 3 factors that affect the quality and quantities of materials required for a retaining wall.

Construction method being used.

Design drawings and specifications.

Finished height and length of the wall.

Any allowance for wastage; for example, if a material is only available in a fixed length.

Assessor Observation Sheet – Retaining wall

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Student Name:
Project Location:

Assessor observation:

Assessment criteria: <i>This unit standard requires building a retaining wall with a height of between 350 millimetres and 1 metre, and a total perimeter length of not less than 1.2 metres.</i>		Comments and/or notes
Calculations of material quantities attached	<input type="checkbox"/>	
Order form for materials attached	<input type="checkbox"/>	
Set out, excavate, construct and finish retaining wall	<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"/>	
Photo(s) to verify finished project attached	<input type="checkbox"/>	
Assessor name:	RESULT: A = Achieved, N = Not Yet Achieved	
Assessor signature: Date:		

Assessment Schedule

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Evidence for credit in this unit standard must be gathered for a retaining wall with a height of between 350 millimetres and 1 metre, and a total perimeter length of not less than 1.2 metres.

Outcome 1	Calculate quantities and prepare an order for materials for basic garden edge retaining walls.	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 materials 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	Construct basic garden edge retaining walls.	Assessment evidence and judgement (please take photos to verify)
ER 2.1	Retaining wall foundation is set out and excavated in accordance with working drawings and job specifications.	Evidence gathered from retaining wall project and the assessor observation sheet showing; <ul style="list-style-type: none"> • Set out and excavation is neat and accurate.
ER 2.2	Retaining wall is constructed and finished in accordance with working drawings and job specifications.	Evidence gathered from retaining wall project and the assessor observation sheet showing; <ul style="list-style-type: none"> • Retaining wall is constructed and 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 retaining wall 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 retaining wall 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.