

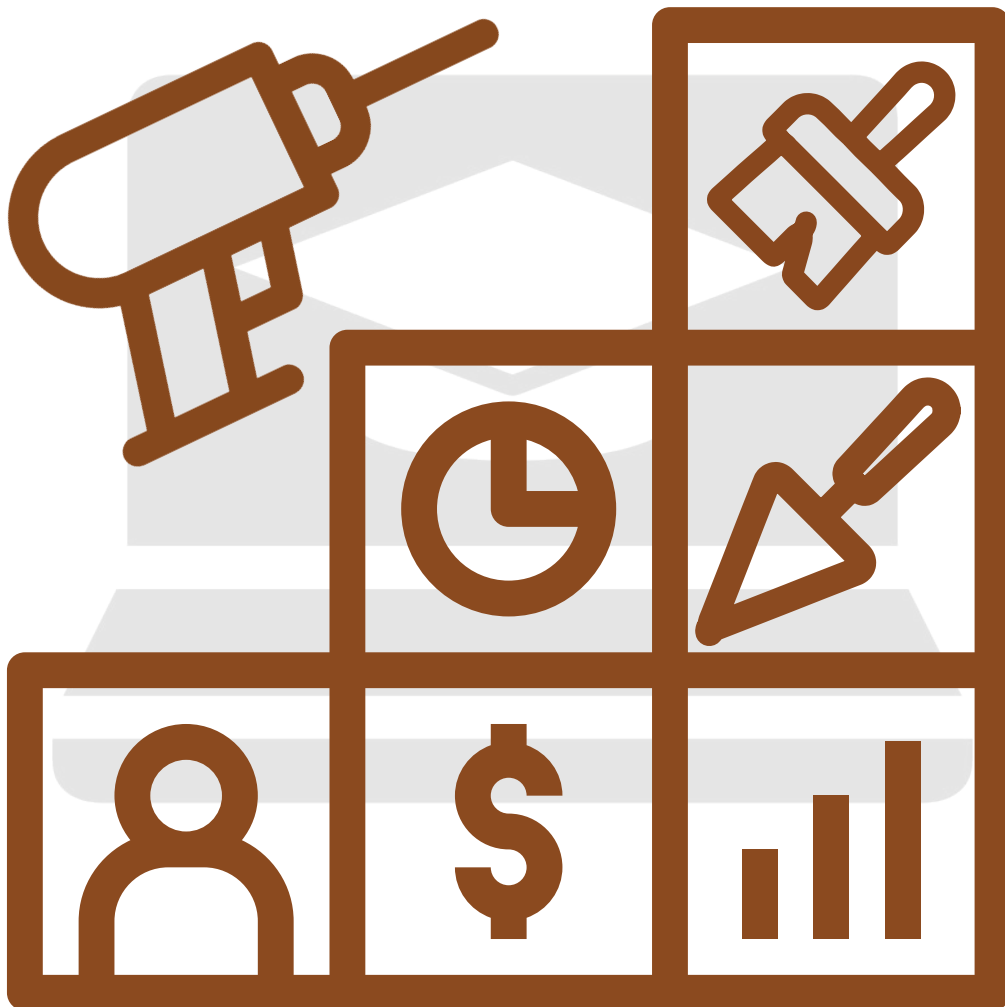


BCATS

BUILDING, CONSTRUCTION
AND ALLIED TRADE SKILLS

Complete a project

Teacher/Tutor resource



Unit Standard 31812 (v1), Level 2

Complete a BCATS project.

6 CREDITS

BCITO
buildingpeople

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Teaching and assessment tips

Purpose

This unit standard provides students and teachers with the freedom to create a Level 2 BCATS project that is not already named as a project in other BCATS assessment standards. Candidates are required to complete one BCATS project as evidence for assessment against this unit standard.

The project cannot be one already specified in other BCATS unit standards or be one that an achievement standard is also awarded for.

Students must use project documentation to:

- calculate the quantities of materials required for the project and complete an order for them
- guide how each stage of the project is undertaken
- select the required hand and power tools, equipment, and machinery and use them to meet the project's requirements.

They must also:

- successfully apply their knowledge of materials
- do everything safely
- keep the site, tools, plant, and equipment clean and tidy.

Unit Interpretation

Students must complete one BCATS project that meets Level 2 criteria and that could not be assessed using other project-specific BCATS standards or for projects undertaken for achievement standards. Please see the Assessment Schedule for more detailed requirements.

You may wish to give your students a work diary to help them record the processes and problem solving that occurs throughout their project. Work diary and order form templates are available in the 'Level 2 generic resources' folder on www.bconstructive.org.nz and in the teacher resources on www.myBCITO.nz. You can alternatively source or design your own.

Photographic or other evidence to show that the BCATS project has been successfully completed must also be attached to the Assessor Observation Sheet.

Assessment

Information to support assessment decisions should, wherever possible, be collected naturally as the BCATS project progresses.

Assessment of this unit standard consists of:

- **calculations for quantities of materials and a completed order form and**
- **completion of an appropriate BCATS project and**
- **completion of the Assessor Observation Sheet.**

Level 2 project criteria

The chosen BCATS project must be consistent with the knowledge, skills, and application dimensions of Level 2 of the New Zealand Qualification Framework's Level Descriptors. For your convenience, these are attached as Appendix 1.

Complexity of the project

Projects at Level 2 consist of tasks of limited complexity in which the learner follows instructions under general supervision.

When considering whether or not the proposed project is at an appropriate level, it may be useful to think of the range of materials, tools, equipment, machinery, and techniques involved for the project-specific unit standards and the amount of active teaching required.

Also think about how long it may take to complete the project. NZQA considers 1 credit to be nominally worth 10 learning hours, so the 6 credits for this unit standard would equate to approximately 60 hours, in total, for the project.

You could alternatively think of how long it realistically takes for students to complete other 6 credit projects, such as their cupboard with a drawer (US 25921), two minor concrete works (US 12933) or the most-complex timber garden furniture project for US 12932. This could help you judge whether or not the proposed project may be too large or complex. If so, you may be able to adapt it or, if it is an individual project that would take significantly longer, consider whether or not it should involve more than one student.

Another consideration could be the student's motivation and interest. Having the freedom to design their own project may motivate them to put in more effort than the unit standard's minimum requires. For example, the student could consider learning how to cut glass and to cut and join aluminium to make a small seed-raising aluminium-framed greenhouse would be well worth any extra time and effort.

Last but not least, teachers/tutors who have already offered Level 3 BCATS projects and/or attended BCITO's cluster moderation workshops will already be familiar with proposed projects that would be good Level 2 projects instead of Level 3 and of why this is so. Apply this knowledge when considering projects your students propose or when thinking of group projects for your class.

Individual vs group projects

The word “project” automatically brings visions of a student completing something in its entirety by oneself, which in many cases is exactly what students will opt to do. However, as with the Level 3 unit standard 29684, *Undertake a Stage 3 BCATS project*, the Level 2 project can be either an individual project or a group project.

For example, some of the teacher feedback that resulted in the creation of this Level 2 generic project unit standard was a need to recognise students for demolishing or gutting a classroom and preparing as much of the resulting material as possible for re-use in preparation for re-building it as their Stage 3 BCATS project the following year. This is far outside what the school, class, or employer can offer each individual and so the larger project can be broken down into a number of projects where different individuals are allocated the overall responsibility for.

Alignment with other unit standards

Developing programmes that integrate teaching and learning helps to provide students with meaningful and manageable learning opportunities. The following unit standards are not an exhaustive list of which you could include in your programme and nor should one feel obligated to offer all as linked units. Other unit standards you include will depend on your overall programme of study and what best meets your learners' needs.

Examples of other unit standards that may align nicely with the Level 2 project are:

12927: *Demonstrate knowledge of, select, maintain, and use hand tools for BCATS projects*

24350: *Identify, select, maintain and use portable power tools for BCATS projects*

24351: *Identify, select, maintain and use specified fixed machinery in the construction of BCATS projects*

Their project for 31812 can be one of the two projects required for each of these standards. Hand and power tools - and likely fixed machinery - will be needed for the students to complete their project. While students may not necessarily complete the theory aspects of the above unit standards while focusing on their project, they should be encouraged to document evidence of the tools and machinery they selected and used.

24360: *Demonstrate knowledge of timber and other construction materials used in BCATS projects*

Students are required to apply their knowledge of materials to achieve 31812. 24360 can provide this underpinning knowledge, especially if their project requires timber and at least three other materials.

22607: *Read and interpret plans, working drawings and specifications for BCATS projects*

Knowledge of how to read and interpret plans, working drawings, and specifications will help them determine what - and in what quantities - materials are needed and to break the project into stages.

24354: *Demonstrate knowledge of health and safety legislation and apply safe working practices in the construction of a BCATS project*

US 24354's requirement to apply safe working practices complements US 31812's requirement to complete all operations safely. In addition, no unit standard can be achieved without applying safe working practices.

24357: *Receive instructions and communicate information in relation to BCATS projects*

Projects where students need to work together to successfully complete them provide many opportunities to demonstrate they can receive instructions and communicate well. It would be difficult for even individual projects to not require them to communicate with at least three other parties. Their Level 2 project can therefore contribute to the achievement of US 24357.

24358: *Plan and monitor the construction of a BCATS project, and quality check the product*

As students are required to work off project documentation, calculate the materials required and prepare an order for materials, they are in a position to plan and monitor the stages of construction and perform the quality checks required for US 24358.

24361: *Apply mathematical processes to BCATS projects*

Students need to select mathematical methods to achieve project outcomes and use trigonometry and at least one of numerical calculations, measurement, and geometry to achieve US 24361. Depending on the chosen project, this mathematics unit standard could be easily achieved.

Assessment Schedule

US 31812 (v1) – Complete a BCATS project (Level 2, Credit 6)

This unit standard provides students and teachers with the freedom to create a Level 2 BCATS project that is not already named as a project in other BCATS assessment standards. Candidates are required to complete **one** BCATS project as evidence for assessment against this unit standard. The project cannot be one already specified in other BCATS unit standards or be one that an achievement standard is also awarded for.

Outcome 1	Calculate quantities and prepare an order for materials for a BCATS project	Assessment evidence and judgement
PC 1.1	Quantities of materials are calculated from BCATS project documentation.	Evidence gathered from the student's calculations and the Assessor Observation Sheet showing: <ul style="list-style-type: none"> quantities of the materials needed for the project are calculated correctly.
PC 1.2	An order for materials is prepared in accordance with workplace practice.	Evidence gathered from the order list: <ul style="list-style-type: none"> order list for project is correct.
Outcome 2	Undertake the BCATS project	Assessment evidence and judgement
PC 2.1	Each stage of the project is undertaken in accordance with BCATS project documentation.	Evidence gathered from the project and Assessor Observation Sheet showing: <ul style="list-style-type: none"> each stage of the project was undertaken as required
PC 2.2	Required hand and power tools, equipment, and machinery are used to meet the requirements of the BCATS project in accordance with project documentation and the BCATS environment's practices.	Evidence gathered from the project and Assessor Observation Sheet showing: <ul style="list-style-type: none"> appropriate hand and power tools and machinery were correctly used to meet the project's requirements appropriate equipment was used correctly used to meet the project's requirements.
PC 2.3	Knowledge of a range of materials is applied to successfully undertake the BCATS project.	Evidence gathered from the project and Assessor Observation Sheet showing: <ul style="list-style-type: none"> a range of appropriate materials were selected and used to meet the project's requirements.
Outcome 3	Complete work operations	Assessment evidence and judgement
PC 3.1	All operations are safely completed in accordance with workplace practice.	Evidence gathered from the project and/or Assessor Observation Sheet showing: <ul style="list-style-type: none"> appropriate PPE was selected and used all tools, equipment, machinery, and materials were used safely student demonstrated safe behaviours throughout the project.
PC 3.2	Workplace, tools, plant and equipment are cleaned, and tools, plant and equipment are stored in accordance with the BCATS environment's practices.	Evidence gathered from the project and/or Assessor Observation Sheet showing: <ul style="list-style-type: none"> work area was kept clean and tidy waste was disposed of tools, plant and equipment were cleaned and stored correctly.

Appendix – NZ Qualification Framework Level Descriptors

NZQF Level Descriptors – L1-3		
LEVEL 1	LEVEL 2	LEVEL 3
Qualifies individuals with basic knowledge and skills for work, further learning and/or community involvement.	Qualifies individuals with introductory knowledge and skills for a field(s)/areas of work or study.	Qualifies individuals with knowledge and skills for a specific role(s) within fields/areas of work and/or preparation for further study.
Graduates are able to:		
Demonstrate basic general and/or foundation knowledge	Demonstrate basic factual and/or operational knowledge of a field of work or study	Demonstrate some operational and theoretical knowledge in a field of work or study
Apply basic skills required to carry out simple tasks	Apply standard processes relevant to the field of work or study	Apply a range of standard processes relevant to the field of work or study
Apply basic solutions to simple problems	Apply known solutions to familiar problems	Select from and apply a range of known solutions, select and apply them to familiar problems
Apply literacy and numeracy skills for participation in everyday life	Apply literacy and numeracy skills relevant to the role in the field of work or study	Apply literacy and numeracy skills relevant to the role in the field of work or study
Work in a highly structured context (direct supervision)	Work under general supervision	Work under limited supervision (can include periods of direct and/or general supervision)
Demonstrate some responsibility for own learning	Demonstrate some responsibility for own learning and performance	Demonstrate major responsibility for own learning and performance
Interact with others	Collaborate with others	Contribute to group performance
		Apply a range of communication skills relevant to the role in the field of work or study
		Adapt own behaviour when interacting with others

