

40572 Apply mathematical processes to a BCATS project

Kaupae Level	3
Whiwhinga Credit	5
Whāinga Purpose	<p>This skill standard is for people intending to develop underpinning skills and knowledge of building, construction, and allied trades.</p> <p>This skill standard recognises the skills to apply mathematical processes to a project for building, construction, and allied trades.</p> <p>This skill standard aligns with the New Zealand Certificate in Building, Construction, and Allied Trades Skills (Level 3) [Ref: 3845].</p>

Hua o te ako me Paearu aromatawai | Learning outcomes and assessment criteria

Hua o te ako Learning outcomes	Paearu aromatawai Assessment criteria
1. Apply mathematical processes to a BCATS project.	a. Required measurements and calculations are determined from BCATS project documentation, and appropriate mathematical methods are chosen.
	b. Measurements and calculations are completed accurately and are within allowable tolerances for the project.
	c. Information and results are applied appropriately for the project requirements.

Pārongo aromatawai me te taumata paearu | Assessment information and grade criteria

Assessment specifications:

Candidates must demonstrate competence for this skill standard while undertaking a project. Projects at this level should reflect a focus on industry entry-level skills and complexity, using a wide range of techniques and strategies, materials and equipment.

Candidates may complete the assessment requirements individually or as a group member working on a larger project. If participating in a group, candidates must demonstrate skill for all assessment criteria to be deemed competent.

Appropriate format for presentation of information and results may include material or cutting lists, formal quantity survey sheets, Excel spreadsheets, written calculations, photographs of written notes.

Technologies such as calculators and computers may be used in the assessment of this skill standard.

Project requirements may refer to progression of tasks, required quality checks and standard of finishing, project timelines, health and safety, and environmental considerations.

Ngā momo whiwhinga | Grades available

Achieved / Merit / Excellence.

Paetae Achieved	Kaiaka Merit	Kairangi Excellence
Apply mathematical processes to a BCATS project.	Apply mathematical processes efficiently to a BCATS project.	Apply mathematical processes skilfully to a BCATS project, optimising solutions.

Kaiaka | Merit: Efficiently refers to independent, fluent and accurate use of measurements and calculations to solve problems.

Kairangi | Excellence: Skilfully refers to adaptive application of mathematical processes to solve problems, that optimises project outcomes.

Ihirangi waitohu | Indicative content

Mathematical concepts

- Working to appropriate tolerances.
- Cost estimates and costings for the project.
- Cutting lists and ordering processes.
- Good practices when measuring and calculating (for example, checking your measurements, sharpening measuring and marking equipment before use).
- Math applications (software).
- Calculator use.

Mathematical methods

- Pythagoras Theorem.
- Area and volume for allied trades.
- Conversions between measurements (for example, mm to m).
- Solve centres and spacings, running measurement, cutting requirements.
- Find fractions, decimals, or percentages of amounts.
- Interpret scales, timetables, and charts.
- Communicate shape, space, and positioning.

Rauemi | Resources

BCATS Programme Guidance, available from qualifications@waihangaararau.nz.

Building Performance Guidance: Guide to tolerances, materials and workmanship in new residential construction (Ministry of Business, Innovation & Employment, May 2015), available from <https://www.building.govt.nz/projects-and-consents/sign-off-and-maintenance/completing-your-project/how-to-identify-defects/tolerances-materials-workmanship-new-residential-construction/>.

Pārongo Whakaū Kouna | Quality assurance information

Ngā rōpū whakatau-paerewa Standard Setting Body	Waihanga Ara Rau Construction and Infrastructure Workforce Development Council
Whakaritenga Rārangi Paetae Aromatawai DASS classification	Planning and Construction > Construction Trades > Building, Construction, and Allied Trades Skills
Ko te tohutoro ki ngā Whakaritenga i te Whakamanatanga me te Whakaōritenga CMR	0120

Hātepe Process	Putanga Version	Rā whakaputa Review Date	Rā whakamutunga mō te aromatawai Last date for assessment
Rēhitatanga Registration	1	29 May 2025	N/A
Kōrero whakakapinga Replacement information	This skill standard replaced unit standard 29681.		
Rā arotake Planned review date	31 December 2030		

Please contact Waihanga Ara Rau Construction and Infrastructure Workforce Development Council at qualifications@waihangaararau.nz to suggest changes to the content of this skill standard.