

40555 Measure and calculate to solve problems for a BCATS project

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| Kaupae Level | 2 |
| Whiwhinga Credit | 3 |
| Whāinga Purpose | <p>This skill standard is for people intending to develop basic skills and knowledge relevant to various building, construction, and allied trades contexts.</p> <p>This skill standard recognises the skills to measure and calculate to solve problems in 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 2) [Ref: 3844].</p> |

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

| Hua o te ako Learning outcomes | Paearu aromatawai Assessment criteria |
|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| 1. Measure and calculate to solve problems for a BCATS project. | a. Appropriate mathematical methods are chosen for the project context and problems to be solved. |
| | b. Mathematical methods are used to measure and calculate solutions that are consistent with the problems. |
| | c. Information and results are presented appropriately for the project. |

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

Assessment specifications:

Candidates must demonstrate competence for this skill standard while undertaking at least one project. Projects at this level can be prescribed, with a focus on industry entry skills, using a range of techniques and tools to achieve the project requirements.

Mathematical methods for assessment must include numerical calculations and measurement, and geometry. Geometry may include trigonometry.

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

Ngā momo whiwhinga | Grades available

Achieved / Merit / Excellence.

| Paetae Achieved | Kaiaka Merit | Kairangi Excellence |
|--------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------|
| Measure and calculate to solve problems for a BCATS project. | Measure and calculate effectively to solve problems for a BCATS project. | Measure and calculate skilfully to solve problems for a BCATS project. |

Kaiaka | Merit: Effectively refers to consistent selection of measurements and calculation methods to solve problems related to project requirements.

Kairangi | Excellence: Skilfully refers to fluency of applying measurements and calculation methods with precision to solve problems related to project requirements.

Ihirangi waitohu | Indicative content

Mathematical concepts

- Interpretation of symbols and abbreviations on plans, drawings, and specifications.
- Working to appropriate tolerances.
- Cost estimates and costings.
- Different types of measuring equipment and their uses.

Mathematical methods

- Mathematical methods applicable to BCATS projects (including Pythagoras' theorem).
- Solve centres and spacings, running measurement, cutting requirements.
- Conversion between measurements (for example, mm to m).
- Finding 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

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| 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 24361. | | |
| 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.