Math_L3 Problem-solve using calculations in a construction environment

Kaupae | Level	3
Whiwhinga | Credit	3
Whāinga | Purpose	This skill standard recognises the skills to use number, spatial, and measurement calculations to solve familiar construction problems. It contributes to qualification pathways across construction trades.

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

Hua o te ako | Learning outcomes	**Paearu aromatawai |** Assessment criteria
1. Problem-solve using calculations in a construction environment.	a. Suitable methods are accurately applied to solve-problems.
	b. The answer is within acceptable tolerances relevant to the construction context and the specific problem.

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

Assessment specifications:

Candidates must be able to consistently solve familiar problems involving number, spatial, and measurement calculations relevant to a construction trade environment.

Familiar problems are those frequently encountered in a specific construction trade that require application of at least two steps (processes) to solve. *For example, quantity of coating required is calculating the surface area first then dividing by the spreading rate.*

Evidence must include material quantification for specific construction materials.

Acceptable tolerances refers to rounding answers appropriate to industry best practice.

A *construction environment* may be any environment involved in the modification, construction or maintenance of buildings, structures, or infrastructure assets.

Technology, including phones, apps, and calculators, may be used.

Ngā momo whiwhinga \| *Grades available*

Achieved

Ihirangi waitohu \| Indicative content

Mathematical methods

- Timings and time management.
- Spatial geometry.

- Angles, measuring for square, and principles of triangles.
- Linear measurements, centres and spacings.
- Surface area, volume, and ratios.
- Calculating and converting percentages, fractions, and decimals.

Applying mathematical processes

- Optimal solutions.
- Appropriate rounding.
- Consecutive measurements and calculations.
- Conversions of measurements and calculation.
- Identification of variable information, for example, increasing in temperature and effect on drying times.
- Material quantification.
- Preparation of cutting lists.
- Mathematical problems common to a construction trade.
- Use of technology for common calculations in construction.

Rauemi | Resources

Refer to the Core Construction Skills Guidance document which includes resources, definitions, and other information of relevance to this standard, available from qualifications@waihangaararau.nz.

Pārongo Whakaū Kounga | 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 > Core Construction
Ko te tohutoro ki ngā Whakaritenga i te Whakamanatanga me te Whakaōritenga | CMR	0048

Hātepe | Process	**Putanga |** Version	**Rā whakaputa |** Review Date	**Rā whakamutunga mō te aromatawai |** Last date for assessment
Rēhitatanga | Registration	1	dd mm 2024	N/A
Rā arotake | Planned review date	31 December 2029		

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.