

<b>Title</b>	<b>Perform basic calculations used in a given trade situation</b>		
<b>Level</b>	<b>2</b>	<b>Credits</b>	<b>2</b>

<b>Purpose</b>	<p>This unit standard is intended for the training and assessment of people working in or intending to work in a trade and covers knowledge of mathematics used in such environments.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> <li>– use mathematics in a given trade situation</li> <li>– measure and calculate using metric measurement systems in a given trade situation</li> <li>– solve formulae-based problems in a given trade situation</li> <li>– convert metric units in a given trade situation</li> <li>– interpret information from tables.</li> </ul>
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<b>Classification</b>	Construction Trades > Core Construction
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 This unit standard has been developed for learning and assessment off-job.
- 2 The knowledge covered by this unit standard is expected to be at an introductory level, with the objective of introducing relevant terminology, fundamental principles, which includes the relevant mathematics for first time tuition for people intending to work in a trade.
- 3 Definitions
  - m* – metre.
  - mm* – millimetres.
  - Pa* – pascals.
  - W* – watts.
  - J* – joules.
  - Trade* – may include but is not limited to – carpentry, cranes, drainlaying, electrical, elevated platforms, gasfitting, motor industry, rigging, roofing.
- 4 Range
  - a Use of a calculator during assessment is permitted.
  - b Candidates are expected to express calculated values in the relevant Système International (SI) units, including multiples and sub-multiples (pico, nano, micro, milli, kilo, mega, etc) and be able to convert between them.
  - c Charts of colour codes may be referred to during assessment.

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## Outcomes and performance criteria

### Outcome 1

Use mathematics in a given trade situation.

#### Performance criteria

- 1.1 Complete mathematical calculations.  
Range includes but is not limited to – add, subtract, multiply, divide.
- 1.2 Convert fractions to decimals and percentages and vice versa.
- 1.3 Use calculator functions to solve problems from given data.  
Range includes but is not limited to – square, square root.
- 1.4 Round decimal numbers appropriately for a range of practical situations.

### Outcome 2

Measure and calculate using metric measurement systems in a given trade situation.

#### Performance criteria

- 2.1 Measure distances.  
Range may include but is not limited to – units of millimetres (mm) and metres (m).
- 2.2 Calculate area.  
Range square millimetres (mm<sup>2</sup>), square metres (m<sup>2</sup>).
- 2.3 Calculate volume.  
Range cubic millimetres (mm<sup>3</sup>), cubic metres (m<sup>3</sup>).

### Outcome 3

Solve formulae-based problems in a given trade situation.

#### Performance criteria

- 3.1 Use formulae to solve problems in a trade context.  
Range minimum of two formulae.

**Outcome 4**

Convert metric units in a given trade situation.

**Performance criteria**

4.1 Convert metric units.

Range may include but is not limited to – convert metres (m) to millimetres (mm) and vice versa;  
convert square metres (m<sup>2</sup>) to square millimetres (mm<sup>2</sup>) and vice versa;  
convert cubic metres (m<sup>3</sup>) to litres (l) and vice versa;  
convert grams (g) to kilograms (kg) and vice versa;  
convert pascals (Pa) to kilo pascals (kPa) and vice versa;  
convert watts (W) to kilowatts (kW) and megajoules (MJ) and vice versa;  
convert joules (J) to megajoules (MJ) and vice versa;  
evidence of five conversions, in both directions, is required.

**Outcome 5**

Interpret information from tables.

Range may include but is not limited to – codes, standards, manufacturer instructions.

**Performance criteria**

5.1 Interpret textual information from tables.

5.2 Interpret textual information from tables when there is more than one variable.

<b>Planned review date</b>	31 December 2027
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**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	23 November 2017	31 December 2024
Review	2	30 June 2022	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0048
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

**Comments on this unit standard**

Please contact Waihanga Ara Rau Construction and Infrastructure Workforce Development Council [qualifications@waihangaararau.nz](mailto:qualifications@waihangaararau.nz) if you wish to suggest changes to the content of this unit standard.