

Use measurement to solve problems

Level 1

Credits 3

Purpose This is a unit standard to assess aspects of numeracy. People credited with this unit standard are able to use measurement to solve problems. They will be able to undertake measurements such as length and capacity, calculate area and volume, and interpret location and direction, using their knowledge of the metric system, conversions, and estimation.

Subfield Core Generic

Domain Work and Study Skills

Status Proposed

Status date dd MMMM yyyy

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Entry information Open.

Accreditation Evaluation of documentation by NZQA.

Standard setting body (SSB) NZQA National Qualifications Services

Accreditation and Moderation Action Plan (AMAP) reference 23 (Core Skills, BSAS)

This AMAP can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Special notes

- 1 This is a unit standard to assess aspects of numeracy. For the purposes of this unit standard, *numeracy* is defined as: the bridge between mathematics and daily life. It includes the knowledge and skills needed to apply mathematics to everyday family and financial matters, learning, work and community tasks, social and leisure activities.

Numeracy standards are not the same as mathematics standards.

This standard is one of three unit standards for numeracy. The other two are:

- Unit AAA *Use number to solve problems*
- Unit CCC *Use statistics and probability to solve problems*

- 2 This unit standard must be assessed on the basis of naturally occurring evidence from real contexts and obtained over a period of time. Assessment for this standard must not be one-off assessment events designed specifically for this purpose.

Naturally occurring evidence is derived from activities within a learning programme and/or from a candidate's actual work performance and/or everyday life. It is important the candidate is made aware that evidence of competence may be gathered while undertaking their study or work and that this does not create undue stress for them. The assessor must be satisfied that the naturally occurring evidence can be attributed to the candidate. Naturally occurring evidence may take the form of a portfolio where the evidence has been verified. A verifier's checklist is acceptable if accompanied by evidence that includes examples from the candidate's performance.

Real contexts are part of the candidate's everyday life and may include their classroom, their workplace, other contexts.

Evidence gathered from:

- their classroom may be sourced from different subjects or courses, or from different topics or aspects of the same course
- their workplace may be sourced from an employment focus (ie relating to employment documentation and conditions) or from a job-performance focus (ie regular work tasks)
- other contexts may be sourced from their involvement in their family, sport, leisure, or community.

- 3 The assessor must be satisfied that the candidate can demonstrate an understanding of, or competency against, the standard as a whole.

- 4 Problems must:

- be in an authentic context for the learner/candidate, which may be part of their educational and/or workplace and/or "life" (refer definition above) experience
- involve a one-step solution. A one-step solution is one in which the solution is reached after a single calculation. Where more than one calculation is required to solve a problem, each will be counted as a one-step solution.

- 5 Methods used to solve problems must involve using appropriate measuring tools/devices and units of measurement to the level of accuracy required. Solutions must also demonstrate:

- total of four calculations, derived from the measurements taken e.g. length used to calculate area and volume; length and time to calculate speed
- underpinning knowledge of, and conversions within, the metric system and estimation
- location defined in terms of: directions and distances
- use of scales.

At least one piece of evidence is required for the four calculations, estimation, conversions and interpretations.

Competence can be demonstrated orally, visually or in a written form.

- 6 Calculators, computers or other appropriate technology are permitted for assessment for this unit standard.

- 7 Definitions
Effective methods means that the methods used to solve problems result in a reasonable solution.
A problem is a question that can be solved using numeracy skills.

Elements and performance criteria

Element 1

Use measurement to solve problems.

Range measurement includes at least 4 of – length, capacity, mass, angle, temperature, time.

Performance criteria

- 1.1 Effective methods are selected and used to solve problems.
- 1.2 The methods used are described in terms of their appropriateness to the problems.

Please note

Providers must be accredited by NZQA, or an inter-institutional body with delegated authority for quality assurance, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be accredited by NZQA before they can register credits from assessment against unit standards.

Accredited providers and Industry Training Organisations assessing against unit standards must engage with the moderation system that applies to those standards.

Accreditation requirements and an outline of the moderation system that applies to this standard are outlined in the Accreditation and Moderation Action Plan (AMAP). The AMAP also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact NZQA National Qualifications Services nqs@nzqa.govt.nz if you wish to suggest changes to the content of this unit standard.