Use statistics and probability 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 statistics and probability to solve problems. They will be able to describe and interpret a data set; use statistics to solve problems and draw conclusions; and use probability to solve problems and make predictions.

Subfield	Core Generic
Domain	Work and Study Skills
Status	Proposed
Status date	dd MMMM yyyy
Date version published	dd MMMM yyyy
Planned review date	dd MMMM yyyy
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 is one of three unit standards for numeracy. The other two are:

- Unit AAA *Use number to solve problems*
- Unit BBB *Use measurement 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 experience.

5 Students are not required to collect their own data.

6 Solutions to probability problems may involve:

- the use of relative frequency to provide an estimate of the probability of an event
- the use of fractions, ratios and/or percentages to express probabilities

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

8 Evidence of competence is required from three different contexts and can be demonstrated orally, visually (graphs or tables) or in a written form.

9 A *problem* is a question that can be solved using numeracy skills.

Elements and performance criteria

Element 1

Describe and interpret a data set.

Performance criteria

1.1 The general features of a data set are described and interpreted in terms of the requirements of a problem.

Range general features may include but are not limited to four of – measures of mean, median, range; trends, unusual features, (eg extreme values).

Element 2

Use statistics to solve problems and draw conclusions.

Performance criteria

2.1 Conclusions are based on evidence from the data provided.

2.2 The conclusions drawn are appropriate to the problems.

Element 3

Use probability to solve problems and make predictions.

Performance criteria

3.1 Predictions are based on evidence from the data provided.

3.2 The predictions made are appropriate 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.