
MATHEMATICAL STUDIES
Use surveying techniques and
mathematics to solve problems relating
to maps or plans

level:	2
credit:	3
final date for comment:	December 2006
expiry date:	December 2007
sub-field:	Mathematics
purpose:	People credited with this unit standard are able to survey an area or a group of related objects, and apply mathematics to solve problems associated with surveyed information.
entry information:	Open.
accreditation option:	Evaluation of documentation by NZQA.
moderation option:	A centrally established and directed national moderation system has been set up by NZQA.
special notes:	<p>1 Learning Programme This unit standard can be used to assess parts of a learning programme based on achievement objectives from <i>Mathematics in the New Zealand Curriculum</i>, Ministry of Education, (Wellington: Learning Media, 1992), Mathematical Processes, Level 7, pages 23 to 29 or from <i>Tauaki Marautanga Pāngarau</i>, Ministry of Education, (Wellington: Learning Media, 1994), Taumata 7.</p> <p>The skills of this unit standard are some of those that could satisfy requirements for Unit 5243, <i>Apply mathematical processes and skills in problems</i>.</p>

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2 Assessment

Instruments used for assessment tasks need be no more sophisticated than simple plane tables, clinometers and measuring tapes or trundle wheels.

The standard must be met in any two of: transverse (measuring perpendicular distances from a base line), intersection (fixing a position from two sightings from a base line), or radial (taking bearings and distances from a fixed point) mappings. The mathematics used involves the solution of triangles.

Calculators and computers can be used in achievement of credit for this unit standard.

Elements and Performance Criteria

element 1

Survey an area or a group of related objects.

performance criteria

- 1.1 The survey method chosen is appropriate to the situation.
- 1.2 Measurements taken are to an accuracy consistent with the instruments used.
- 1.3 A description of the survey includes a map or plan that is consistent with the area or objects surveyed.

element 2

Apply mathematics to solve problems associated with surveyed information.

performance criteria

- 2.1 Mathematics applied is appropriate for the surveyed information.

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2.2 Solutions are interpreted in terms of the problem.

Comments on this unit standard

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

Please Note

Providers must be accredited by the Qualifications Authority or a delegated inter-institutional body before they can register credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be accredited by the Qualifications Authority 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 providers wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

This unit standard is covered by AMAP 0226 which can be accessed at <http://www.nzqa.govt.nz/site/framework/search.html>.