Achievement Standard

Subject Reference Mathematics 1.3

Title Solve problems involving measurement of everyday objects

Level 1 **Credits** 3 **Assessment** Internal

Subfield Mathematics

Domain Measurement

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This achievement standard focuses on the solution of problems involving measurement of everyday objects, including simple geometrical shapes and solids.

	Achievement Criteria	**Explanatory Notes**
Achievement	• Solve a problem(s) involving measurement of everyday objects.	• Students are required to choose, and make, appropriate measurements. Appropriate use of equipment is implied by a reasonable measurement. Students are expected to use their measurements in solving a problem. • Everyday objects will be based on circles, triangles, rectangles, cuboids, cylinders and triangular prisms. Combinations of these may be assessed.
	• Solve measurement problems.	• Problems will be based on a representative selection involving perimeter and circumference, area (including surface area), volume, mass, capacity and time (including 24-hour clock time).
Achievement with Merit	• Use models to solve measuring problems in practical contexts.	• Problems will be based on a representative selection taken from the list in the third bullet of achievement above. Problems may include: – conversion between units, eg m^2 to ha, cm^3 to litres – interpretation of scales – calculation and interpretation of rates – estimation – understanding of the precision (limits of accuracy) of a measurement.

	Achievement Criteria	Explanatory Notes
Achievement with Excellence	• Devise, use and evaluate models to solve a complex measurement problem.	• The evaluation could include comment on the: – limitations – effectiveness – rationale for the choice of the model. • An extended sequence of measurement calculations will be required.

General Explanatory Notes

1 This achievement standard is derived from *Mathematics in the New Zealand Curriculum*, Learning Media, Ministry of Education, 1992:
- achievement objectives, pp. 74, 78
- suggested learning experiences, pp. 75, 79
- sample assessment activities, pp. 76, 80
- mathematical processes, p. 24.

2 Students should indicate appropriate units when these are not implied in the problem, but will not be penalised for occasional omissions.

3 Students are expected to select the appropriate formula from a list.

Quality Assurance

1 Providers and Industry Training Organisations must be accredited by the Qualifications Authority before they can register credits from assessment against achievement standards.

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

Accreditation and Moderation Action Plan (AMAP) reference 0226