Achievement Standard

Subject Reference	Mathematics 1.2				
Title	Sketch and interpret graphs				
Level	1	**Credits**	3	**Assessment**	External
Subfield	Mathematics				
Domain	Algebra				
Status	Registered	**Status date**	21 October 2003		
Planned review date	28 February 2007	**Date version published**	17 November 2006		

This achievement standard involves sketching, and interpreting features of, linear or quadratic graphs.

Note: Students cannot use credit for both this achievement standard and AS90800, CAS Mathematics 1.2, towards a national qualification including a National Certificate of Educational Achievement.

	Achievement Criteria	**Explanatory Notes**
Achievement	• Sketch, and interpret features of, graphs.	• Assessment will be based on a selection from: – linear equations of type $y = mx + c$, $x = a$, $y = b$ – quadratics, which will be written in factored form and only have a coefficient of ± 1 for x^2, or in the form $y = \pm x^2 + c$.
Achievement with Merit	• Sketch, and interpret features of, graphs. • Write equations for linear graphs.	• Assessment will be based on: – Linear equations written in any form – Quadratic equations, which may have coefficients of x^2 other than ± 1.

	Achievement Criteria	Explanatory Notes
Achievement with Excellence	• Determine and apply an appropriate model for a situation involving graphs.	• Assessment may involve: – writing equation(s) from a graph to solve a problem (For writing quadratic equations, a combination of two different types of transformations only is expected, eg $y = 2x^2 + 3$, or $y = (x-2)^2 + 1$) – drawing a graph to find the solution to a problem.

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. 148, 154
- suggested learning experiences, pp. 149, 155
- sample assessment activities, pp. 150, 156
- mathematical processes, pp. 26, 28.

2 Features could include x and y intercepts, maxima and minima, axes of symmetry, and gradients of straight lines (rates of change).

3 Hyperbola, circle and exponential graphs are included in the Level 2 achievement standard where graphs can be used as models in practical situations.

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