

Achievement Standard

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| Subject Reference | Mathematics and Statistics 1.12 | | |
| Title | Demonstrate understanding of chance and data | | |
| Level | 1 | Credits | 4 |
| | | Assessment | External |
| Subfield | Statistics and Probability | | |
| Domain | Statistics | | |
| Status | Registered | Status date | 9 December 2010 |
| Planned review date | 31 December 2014 | Date version published | 9 December 2010 |

This achievement standard involves demonstrating understanding of chance and data.

Achievement Criteria

| Achievement | Achievement with Merit | Achievement with Excellence |
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| <ul style="list-style-type: none"> Demonstrate understanding of chance and data. | <ul style="list-style-type: none"> Demonstrate understanding of chance and data, justifying statements and findings. | <ul style="list-style-type: none"> Demonstrate understanding of chance and data, showing statistical insight. |

Explanatory Notes

- This achievement standard is derived from Level 6 of *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007, and is related to the material in the *Teaching and Learning Guide for Mathematics and Statistics*, Ministry of Education, 2010 at <http://seniorsecondary.tki.org.nz>. The achievement standard is aligned to the following achievement objectives taken from the Statistical Literacy and Probability threads of the Mathematics and Statistics learning area:
 - evaluate statistical investigations or probability activities undertaken by others, including data collection methods, choice of measures, and validity of findings
 - calculate probabilities, using fractions, percentages, and ratios
 - evaluate statistical reports in the media by relating the displays, statistics, processes, and probabilities used to the claims made
 - investigate situations that involve elements of chance: calculating probabilities in discrete situations.
- Demonstrate understanding of chance and data* involves using appropriate concepts and terms to demonstrate statistical and probability literacy in a range of situations.

Justifying statements and findings involves providing supporting evidence such as summary statistics, probabilities, data values, trends or features of visual displays, and could involve reference to the context and the population.

Showing statistical insight involves integrating statistical and contextual information and knowledge to show a deeper understanding. This may involve critical reflection on the validity of the processes and conclusions given in contexts involving probability or statistics.

The phrase 'a range of situations' indicates that evidence of demonstrating statistical and probability literacy in at least three different situations is required. A situation involves a combination of concepts and context.

- 3 Students need to be familiar with:
 - the statistical enquiry cycle
 - reading and interpreting statistical tables, graphs and associated text
 - analysing statistical investigations
 - multivariate, bivariate and time series data
 - probability concepts.
 - 4 Assessment Specifications for this achievement standard can be accessed through the Mathematics and Statistics Resources page found at <http://www.nzqa.govt.nz/qualifications-standards/qualifications/ncea/ncea-subject-resources/>.
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Quality Assurance

- 1 Providers and Industry Training Organisations must be accredited by NZQA 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

0233