

Achievement Standard

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|----------------------------|---|-------------------------------|------------------|
| Subject Reference | Mathematics and Statistics 2.13 | | |
| Title | Investigate a situation involving elements of chance using a simulation | | |
| Level | 2 | Credits | 2 |
| | | Assessment | Internal |
| Subfield | Statistics and Probability | | |
| Domain | Probability | | |
| Status | Registered | Status date | 17 November 2011 |
| Planned review date | 31 December 2018 | Date version published | 5 February 2015 |

This achievement standard involves investigating a situation involving elements of chance using a simulation.

Achievement Criteria

| Achievement | Achievement with Merit | Achievement with Excellence |
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| <ul style="list-style-type: none"> Investigate a situation involving elements of chance using a simulation. | <ul style="list-style-type: none"> Investigate a situation involving elements of chance using a simulation, with justification. | <ul style="list-style-type: none"> Investigate a situation involving elements of chance using a simulation, with statistical insight. |

Explanatory Notes

- This achievement standard is derived from Level 7 of *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007; and is related to the achievement objective
 - investigate situations that involve elements of chance
 - calculating probabilities using such tools as simulations and technology.
 in the Statistics strand of the Mathematics and Statistics Learning Area. It is also related to material in the *Teaching and Learning Guide for Mathematics and Statistics*, Ministry of Education, at <http://seniorsecondary.tki.org.nz>.

This standard is also derived from *Te Marautanga o Aotearoa*. For details of *Te Marautanga o Aotearoa* achievement objectives to which this standard relates, see the [Papa Whakaako](#) for the relevant learning area.

- 2 *Investigate a situation involving elements of chance using a simulation* involves showing evidence of using each component of the simulation process.

Investigate a situation involving elements of chance using a simulation, with justification involves linking components of the simulation process to the context, explaining relevant considerations made in the design of the simulation, and supporting findings with statements which refer to evidence gained from the simulation.

Investigate a situation involving elements of chance using a simulation, with statistical insight involves integrating statistical and contextual knowledge throughout the simulation process, which may involve reflecting about the process, or considering other variables.

- 3 The process of carrying out a simulation involves:
- designing a simulation for a given situation by
 - identifying tools to be used
 - defining a trial and deciding the number of trials
 - determining data recording methods
 - carrying out the simulation and recording outcomes
 - selecting and using appropriate displays and measures
 - communicating findings in a conclusion.

- 4 Conditions of Assessment related to this achievement standard can be found at <http://ncea.tki.org.nz/Resources-for-Internally-Assessed-Achievement-Standards>.

Replacement Information

This achievement standard and AS91267 replaced AS90289 and unit standard 5250.

Quality Assurance

- 1 Providers and Industry Training Organisations must have been granted consent to assess by NZQA before they can register credits from assessment against achievement standards.
- 2 Organisations with consent to assess and Industry Training Organisations assessing against achievement standards must engage with the moderation system that applies to those achievement standards.

Consent and Moderation Requirements (CMR) reference

0233