Achievement Standard

Subject Reference Mathematics and Statistics 1.13

Title Investigate a situation involving elements of chance

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

Subfield Statistics and Probability

Domain Probability

Status Registered **Status date** 9 December 2010

Planned review date 31 December 2014 **Date version published** 9 December 2010

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

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
• Investigate a situation involving elements of chance.	• Investigate, with justification, a situation involving elements of chance.	• Investigate, showing statistical insight, a situation involving elements of chance.

Explanatory Notes

1   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 Probability thread of the Mathematics and Statistics learning area:
   • Compare and describe the variation between theoretical and experimental distributions in situations that involve elements of chance.
   • Investigate situations that involve elements of chance:
      – comparing discrete theoretical distributions and experimental distributions, appreciating the role of sample size
      – calculating probabilities in discrete situations.

2   *Investigate a situation* involves using the experimental probability process.

   Investigate, with justification involves linking aspects of the investigation to the situation and making supporting statements which refer to evidence such as summary statistics, probabilities, trends or features of visual displays.

Investigate, showing statistical insight involves integrating contextual information and knowledge with an understanding of applications of probability and may involve considering the possible effects of other related variables or factors.

3   Students need to be familiar with the process of experimental probability, which involves:

- posing a question to explore a situation involving elements of chance
- planning an experiment to explore the situation (discussing and defining the set of possible outcomes and deciding the sample size)
- gathering data by performing the experiment
- selecting and using appropriate displays including experimental probability distributions
- identifying and communicating patterns in the data
- comparing discrete theoretical distributions and experimental distributions as appropriate
- communicating findings in a conclusion.

4   Conditions of Assessment related to this achievement standard can be found at www.tki.org.nz/e/community/ncea/conditions-assessment.php.

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