

## Achievement Standard

|                            |                                |                               |                 |
|----------------------------|--------------------------------|-------------------------------|-----------------|
| <b>Subject Reference</b>   | Mathematics and Statistics 3.8 |                               |                 |
| <b>Title</b>               | Investigate time series data   |                               |                 |
| <b>Level</b>               | 3                              | <b>Credits</b>                | 4               |
|                            |                                | <b>Assessment</b>             | Internal        |
| <b>Subfield</b>            | Statistics and Probability     |                               |                 |
| <b>Domain</b>              | Statistics                     |                               |                 |
| <b>Status</b>              | Registered                     | <b>Status date</b>            | 4 December 2012 |
| <b>Planned review date</b> | 31 December 2016               | <b>Date version published</b> | 4 December 2012 |

This achievement standard involves investigating time series data.

### Achievement Criteria

| Achievement   | Achievement with Merit  | Achievement with Excellence   |
|---|---|---|
| <ul style="list-style-type: none"> <li>Investigate time series data.</li> </ul> | <ul style="list-style-type: none"> <li>Investigate time series data, with justification.</li> </ul> | <ul style="list-style-type: none"> <li>Investigate time series data, with statistical insight.</li> </ul> |

### Explanatory Notes

- This achievement standard is derived from Level 8 of *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007; and is related to the achievement objective:
  - Carry out investigations of phenomena, using the statistical enquiry cycle:
    - using existing data sets
    - finding, using, and assessing appropriate models (including additive models for time-series data), seeking explanations, and making predictions
    - using informed contextual knowledge
    - communicating findings and evaluating all stages of the cycle
 in the Statistics strand of the Mathematics and Statistics Learning Area. It is also related to the material in the *Teaching and Learning Guide for Mathematics and Statistics*, Ministry of Education, 2012, at <http://seniorsecondary.tki.org.nz>.
- Investigate time series data* involves showing evidence of using each component of the statistical enquiry cycle.

*Investigate time series data, with justification* involves linking components of the statistical enquiry cycle to the context, and referring to evidence such as statistics, data values, trends, or features of visual displays in support of statements made.

*Investigate time series data, with statistical insight* involves integrating statistical and contextual knowledge throughout the statistical enquiry cycle, and may include

reflecting about the process; considering other relevant variables; evaluating the adequacy of any models; or showing a deeper understanding of models.

- 3 Using the statistical enquiry cycle to investigate time series data involves:
    - using existing data sets
    - selecting a variable to investigate
    - selecting and using appropriate display(s)
    - identifying features in the data and relating this to the context
    - finding an appropriate model
    - using the model to make a forecast
    - 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](http://www.tki.org.nz/e/community/ncea/conditions-assessment.php).
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### Replacement Information

This achievement standard replaced unit standard 5257 and AS90641.

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### 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