

Achievement Standard

Subject Reference	Earth and Space Science 2.1		
Title	Carry out a practical Earth and Space Science investigation		
Level	2	Credits	4
		Assessment	Internal
Subfield	Science		
Domain	Earth and Space Science		
Status	Registered	Status date	17 November 2011
Planned review date	31 December 2014	Date version published	17 November 2011

This achievement standard involves carrying out a practical Earth and Space Science investigation.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none"> • Carry out a practical Earth and Space Science investigation. 	<ul style="list-style-type: none"> • Carry out an in-depth practical Earth and Space Science investigation. 	<ul style="list-style-type: none"> • Carry out a comprehensive practical Earth and Space Science investigation.

Explanatory Notes

- 1 This achievement standard is derived from *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007, Level 7 Nature of Science achievement objectives: Investigating in Science and Understanding about Science; and is related to the material in the *Teaching and Learning Guide for Science*, Ministry of Education, 2010 at <http://seniorsecondary.tki.org.nz>.
- 2 Procedures outlined in *Safety and Science: A Guidance Manual for New Zealand Schools*, Learning Media, Ministry of Education, 2000, should be followed. Investigations should comply with the Animal Welfare Act 1999, as outlined in *Caring for Animals: A Guide for Teachers, Early Childhood Educators, and Students*, Learning Media, Ministry of Education, 1999.
- 3 *A practical Earth and Space Science investigation* involves:
 - a statement of purpose arising from a scientific context
 - developing a method that describes:
 - ranges for key variables
 - how key variables are measured
 - the management of some other variables
 - the collection of raw data

- collecting raw data consistent with the method
- recording and processing raw data relevant to the purpose
- interpreting the processed data to draw a conclusion related to the purpose of the investigation
- describing the Earth and Space Science related to the investigation
- reporting on the investigation.

An in-depth practical Earth and Space Science investigation is further developed by:

- confirming the original method or refining the method to increase the validity and reliability of collected data by the:
 - development of valid ranges for the key variables
 - valid measurement of key variables
 - valid management of other variables
 - reliable collection of raw data
- interpreting the processed data to draw a valid conclusion related to the purpose of the investigation
- explaining the Earth and Space Science related to the investigation.

A comprehensive practical Earth and Space Science investigation is further developed by:

- explaining how the method allowed for reliable data to be collected
- explaining in detail the Earth and Space Science related to the investigation by linking the results, interpretation and conclusion to the relevant science.

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

Replacement Information

This achievement standard replaced unit standard 6360, unit standard 6361, and AS90312.

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