

Title	Conduct a scientific experiment with guidance		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to, with guidance: form a hypothesis and plan a scientific experiment; perform the scientific experiment; and analyse, interpret and report on the experimental results.
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Classification	Science > Science - Core
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Available grade	Achieved
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Guidance Information

- 1 All work must be carried out in accordance with the quality management system, documented protocol system or Standard Operating Procedures acceptable in a commercial or research laboratory.
- 2 Health and Safety practices must conform to Australian/New Zealand Standard AS/NZS 2243 – Safety in Laboratories Parts 1, 2, 3, 7, and 10 available at <http://www.standards.co.nz> and <http://infostore.saiglobal.com/store>.
- 3 Legislation applicable to this unit standard includes:
Health and Safety at Work Act 2015;
Hazardous Substances and New Organisms Act 1996.
- 4 The term *with guidance* could include:
 - a setting guidelines for the hypothesis;
 - b setting guidelines for aspects of the experiment;
 - c answering queries on aspects of the experiment by giving a range of suggested approaches or suggesting appropriate resources for helpful information;
 - d verifying whether experiment could lead to validity;
 - e alerting candidate to potential problems;
 - f suggesting appropriate statistical analyses;
 - g setting guidelines for scientific documentation.

The candidate may receive this guidance and support from their teacher, tutor, or from their peers.

- 5 Prior approval must be obtained from a registered animal ethics committee for any experimentation involving animals.
- 6 Glossary
Sufficient refers to the data required to test the statistical uncertainty of the experiment.

7 Recommended for entry: Unit 26117, *Work safely in a science laboratory*.

Outcomes and performance criteria

Outcome 1

Form a hypothesis and plan a scientific experiment.

Performance criteria

- 1.1 The hypothesis formed can be tested in accordance with scientific method.
- 1.2 The experiment is designed in accordance with scientific method.
- 1.3 Materials are identified and prepared in terms of the experiment design and scientific method.

Outcome 2

Perform the scientific experiment.

Performance criteria

- 2.1 Experiment is performed in accordance with experimental design.
- 2.2 Data is gathered and recorded in accordance with experimental design.
- 2.3 Data gathered is sufficient to test the hypothesis of the experiment.
Range quantity, accuracy, precision, repeatability.

Outcome 3

Analyse, interpret, and report on the experimental results.

Performance criteria

- 3.1 Data is interpreted in terms of the experimental design and hypothesis.
 - 3.2 Data is analysed in terms of the experimental design.
 - 3.3 Conclusions are justified using data analysis in relation to the hypothesis.
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Planned review date	31 December 2023
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	24 September 1996	31 December 2014
Revision	2	19 February 1998	31 December 2014
Review	3	23 November 1999	31 December 2014
Review	4	21 May 2010	N/A
Rollover	5	27 January 2015	N/A
Review	6	27 September 2018	N/A

Consent and Moderation Requirements (CMR) reference

0113

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact NZQA National Qualifications Services nqs@nzqa.govt.nz if you wish to suggest changes to the content of this unit standard.