

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>.
- 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.

This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

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	31 December 2025
Rollover	5	27 January 2015	31 December 2025
Review	6	27 September 2018	31 December 2025
Review	7	30 November 2023	31 December 2025

Consent and Moderation Requirements (CMR) reference

0113

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