

Title	Use digital tools and critical thinking to analyse data and identify solutions to problems		
Level	4	Credits	10

Purpose	<p>People credited with this unit standard are able to use digital tools and critical thinking to analyse data and identify solutions to problems.</p> <p>This unit standard has been developed primarily for assessment as an option within programmes leading to the New Zealand Certificate in Computing (Advanced User) (Level 4) [Ref: 2593].</p>
----------------	--

Classification	Computing > Generic Computing
-----------------------	-------------------------------

Available grade	Achieved
------------------------	----------

Guidance Information

- 1 Assessment, where applicable, will be conducted in and for the context of a real or realistic situation and/or setting, and be relevant to current and/or emerging practice. The assessor may gather evidence over time from a range of scenarios rather than using one assessment where the learner has to demonstrate all of the required skills. The assessment context for this unit standard must be suitable to meet the criteria for level 4 in the NZQF Level Descriptors, which are available by searching for “level descriptors” at www.nzqa.govt.nz.
- 2 Scenario, data files and/or unformatted text for use in the analysis, may be provided to the learner in a brief, either as part of the learner’s employment (in the case of workplace assessment) or in response to stakeholder specifications. For this standard, problems refer to more than one problem with different solutions, or one complex problem with multiple aspects to possible solution/s.
- 3 Definitions
A *brief* is a clear description of both the desirable outcomes sought and the constraints to be met by the solution.
Critical factors are a limited number of key variables or conditions that have an impact on how successfully and effectively goals or objectives may be met.
Critical thinking refers to clear, rational thinking involving critique. Critical thinking may involve actively seeking, using, and creating knowledge; reflecting on own learning; drawing on personal knowledge and intuitions; asking questions; and challenging the basis of assumptions and perceptions (bias).
Digital tools may be both hardware (digital devices) and software (applications and programs).

Statistical packages refer to software packages used for statistical analysis, data management, data mining, text analytics.

Success criteria are the standards by which solutions will be judged to have been successful in the eyes of the stakeholders.

- 4 Legislation relevant to this unit standard may include but is not limited to the:
 Copyright Act 1994
 Copyright (New Technologies) Amendment Act 2008
 Harmful Digital Communications Act 2015
 Health and Safety at Work Act 2015
 Privacy Act 2020
 Unsolicited Electronic Messages Act 2007
 and any subsequent amendments.
 Current legislation and regulations can be accessed at <http://legislation.govt.nz>.
- 5 Reference
ACC5637 Guidelines for Using Computers - Preventing and managing discomfort, pain and injury. Accident Compensation Corporation - Department of Labour, 2010; available from Worksafe New Zealand, at <https://www.worksafe.govt.nz/topic-and-industry/work-related-health/musculoskeletal-disorders/ergonomics/safely-using-computers-at-work/>.

Outcomes and performance criteria

Outcome 1

Use digital tools and critical thinking to analyse data and identify solutions to problems.

Range the problems must be of sufficient complexity to provide scope for the assessment evidence.

Performance criteria

- 1.1 The problems are defined in terms of key issues involved in a given scenario.
- 1.2 Critical thinking, problem solving and decision-making techniques are used to analyse the problem.
- Range critical thinking techniques may include but are not limited to – Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis; Plus Minus Interesting (PMI); brainstorming.
- 1.3 Critical factors, potential bias and risks, and success criteria for the solution to the problem are identified in the analysis.
- 1.4 Statistical analysis applications, and modelling tools, are used to analyse and evaluate information to make informed decisions and identify solutions for the problem.
- Range statistical analysis applications may include but are not limited to – statistical packages; spreadsheet statistical and database functions.

- 1.5 An interpretation of data is provided in the analysis which identifies potential solutions and describes how each solution meets the success criteria for the problem.
- 1.6 An informed solution to the problem is recommended, developed and justified.

Replacement information	This unit standard replaced unit standard 5948.
--------------------------------	---

Planned review date	31 December 2026
----------------------------	------------------

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	19 January 2017	31 December 2024
Review	2	28 April 2022	N/A

Consent and Moderation Requirements (CMR) reference	0099
--	------

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

Comments on this unit standard

Please contact Toi Mai Workforce Development Council qualifications@toimai.nz if you wish to suggest changes to the content of this unit standard.