

Title	Construct, and describe the performance of, a simple electronic programmable circuit		
Level	3	Credits	4

Purpose	<p>This unit standard is intended for use in a senior secondary school environment, pre-employment electronics courses, or for electronics technicians.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – construct, and describe the performance of, a simple electronic programmable circuit.
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Classification	Electronic Engineering > Electronics Technology
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Available grade	Achieved, Merit, and Excellence
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Criteria for Merit	The candidate must provide an in-depth description of the performance of the circuit, that includes a reference to the behaviour of the circuit in relation to the requirements of the given specification and provide reasons for possible differences.
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Criteria for Excellence	The candidate must provide a comprehensive description of the circuit that includes an evaluation of the performance of the circuit, suggestion for improvement, and the expected effect of improvements on the circuit.
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Guidance Information

- 1 Recommended unit standards for entry:
Unit 18240, *Demonstrate knowledge of basic electronic components*; and
Unit 18241, *Demonstrate knowledge of basic electronic systems*.
- 2 This unit standard can be awarded with Achieved, Merit, or Excellence. For the Achieved grade to be awarded, the outcome must be achieved as specified in the outcome statement. For Merit or Excellence to be awarded, the candidate must meet the Merit or Excellence criteria specified above.
- 3 Definitions
Key circuit values – voltage, current, resistance, power, frequency, amplitude, gain.
PCB – printed circuit board.
Simple electronic programmable circuit – for the purposes of this unit standard means a working electronic circuit comprising fewer than twenty components that

incorporates analogue and/or digital hardware with software control.

Specification – document that describes the requirements for hardware and software of the circuit including key circuit values.

- 4 Evidence presented for assessment against this unit standard must be based on a given specification provided by the assessor.
- 5 References
Health and Safety at Work Act 2015;
Safety in Technology Education – A Guidance Manual for New Zealand Schools, available from <https://technology.tki.org.nz/Technology-in-the-NZC/Safety-in-Technology-Education>;
and all subsequent amendments and replacements.
- 6 Range
- Circuit selection may include but is not limited to one of – greenhouse controller, alarm system, sound effects generator, electronic game.
 - All measurements must be expressed in Système International (SI) units, and, where required, converted from Imperial units into SI units.
 - It is recommended that a diary or log be kept for each stage of the process and may include – sketches, diagrams, schematics, photos, videos.

Outcomes and performance criteria

Outcome 1

Construct, and describe the performance of, a simple electronic programmable circuit.

Performance criteria

- 1.1 Construct a circuit on a PCB for a simple electronic programmable circuit to meet specifications.
- 1.2 Programme a microcontroller to meet specifications.
- 1.3 Describe the construction and performance of a simple electronic programmable circuit.

Range hardware, software, one or more key circuit values;
description may be based on the diary or log.

Planned review date	31 December 2025
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	16 April 2010	31 December 2012
Review	2	15 April 2011	31 December 2013
Rollover and Revision	3	15 March 2012	31 December 2024
Revision	4	15 January 2014	31 December 2024
Rollover and Revision	5	27 January 2015	31 December 2024
Review	6	24 June 2021	N/A

Consent and Moderation Requirements (CMR) reference

0003

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

Comments on this unit standard

Please contact The Skills Organisation reviewcomments@skills.org.nz if you wish to suggest changes to the content of this unit standard.