

<b>Title</b>	<b>Construct a simple electronic product from a supplied circuit schematic</b>		
<b>Level</b>	<b>2</b>	<b>Credits</b>	<b>6</b>

<b>Purpose</b>	People credited with this unit standard are able to: <ul style="list-style-type: none"> <li>– construct a prototype of a simple electronic product;</li> <li>– modify the prototype of a simple electronic product; and</li> <li>– construct a simple electronic product.</li> </ul>
----------------	--

<b>Classification</b>	Electronic Engineering > Electronics Technology
-----------------------	---

<b>Available grade</b>	Achieved
------------------------	----------

### Guidance Information

#### 1 Definitions

*Effectively soldered* – components are mechanically supported, no ‘dry’ joints, no short circuits, no heat damage to component and copper tracks.

*Simple electronic product* – is a finished battery-operated product that has a useful function, utilises two or more transistors or one or more integrated circuits, or a microcontroller, and packaged in a metal or plastic container. Typical examples – bicycle flashers, simple burglar alarm, electronic doorbell, timer.

#### 2 Health and safety precautions relevant to any chemicals used and to the type of operation performed must be strictly observed at all times during assessment of this unit standard. This applies to activities such as soldering, use of chemicals, cutting and drilling of PCB to minimise exposure to fibreglass dust and particles.

Refer to *Safety in Technology Education – A Guidance Manual for New Zealand Schools*, from <https://technology.tki.org.nz/Technology-in-the-NZC/Safety-in-Technology-Education>.

#### 3 Range

- a Evidence of one simple electronic product is required.
- b Circuit schematics and modification brief may be supplied. The modification brief specifies required changes in function or output but does not specify how to achieve it.
- c Final construction of the product is preceded by the construction and modification of a prototype.

### Outcomes and performance criteria

#### Outcome 1

Construct a prototype of a simple electronic product.

**Performance criteria**

- 1.1 Select components to match the circuit and construction requirements and adequate rating.
- 1.2 Construct a prototype according to the circuit schematic.
- 1.3 Use measurements and functional testing to confirm error-free construction and viability of the design.

**Outcome 2**

Modify the prototype of a simple electronic product.

Range typical modification may include but is not limited to – changes of amplitude, frequency, period, output voltage.

**Performance criteria**

- 2.1 Prepare a plan and/or circuit which achieves the required changes, and describe the components needed with reasons for choosing them.
- 2.2 Modify the prototype in accordance with the plan.
- 2.3 Use measurements and functional testing to confirm the success of the modifications.

**Outcome 3**

Construct a simple electronic product.

**Performance criteria**

- 3.1 Construct a simple electronic product, and confirm it functions as intended.

Range wiring, components, and terminals are effectively soldered, printed circuit or strip boards and other components are firmly mounted in their containers, wiring is tidy and held in place, the product is finished and labelled, the product functions as intended.

<b>Planned review date</b>	31 December 2025
----------------------------	------------------

**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	30 April 2001	31 December 2012
Revision	2	12 March 2002	31 December 2012
Revision	3	17 March 2004	31 December 2012
Review	4	25 May 2007	31 December 2024
Rollover and Revision	5	15 March 2012	31 December 2024
Revision	6	15 January 2014	31 December 2024
Rollover and Revision	7	27 January 2015	31 December 2024
Review	8	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](mailto:reviewcomments@skills.org.nz) if you wish to suggest changes to the content of this unit standard.