

Title	Construct simple electronic products from supplied circuit schematics		
Level	2	Credits	6

Purpose	<p>This unit standard is intended for use in high school or pre-employment electronics courses, or in the training of electronics technicians. It covers the construction of complete and usable simple electronic products from supplied circuit schematics.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – construct prototypes of simple electronic products from supplied circuit schematics; – modify prototypes of simple electronic products given a brief; and – construct simple electronic products.
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Classification	Electronic Engineering > Electronics Technology
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Available grade	Achieved
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Explanatory notes

1 For the purpose of this unit standard, *simple electronic products* are finished products that have a useful function, utilise two or more transistors or one or more integrated circuits, are battery operated, and packaged in a metal or plastic container. Typical examples – bicycle flashers, simple burglar alarm, electronic door bell, 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.

Refer to the publication *Safety and Technology Education – A Guidance Manual for New Zealand Schools*, 1998 edition published for the Ministry of Education by Learning Media Ltd, PO Box 3293, Wellington,
<http://technology.tki.org.nz/Curriculum-support/Safety-and-Technology-Education>

In addition, cutting and drilling of fibreglass printed circuit board must be such as to minimise exposure to fibreglass dust and particles.

3 Range

Evidence of two simple electronic products is required, one using two or more transistors, and one using one or more integrated circuits. Final construction of each of these products is preceded by construction and one modification of a prototype. exposure to fibreglass dust and particles.

Outcomes and evidence requirements

Outcome 1

Construct prototypes of simple electronic products from supplied circuit schematics.

Evidence requirements

- 1.1 Components are selected to match the circuit and construction requirements, and are adequately rated.
- 1.2 Prototypes are constructed according to the circuit schematics.
- 1.3 Measurements and functional testing confirm error-free construction and viability of the designs.

Outcome 2

Modify prototypes of simple electronic products given a brief.

Range brief – specifies required change in function or output but does not specify how to achieve it;
typical modifications – changes of amplitude, frequency, period, output voltage.

Evidence requirements

- 2.1 Proposals to achieve the required changes outline the components to be adjusted and the reasons for the choice.
- 2.2 Prototypes are modified in accordance with the proposals.
- 2.3 Measurements and functional testing confirm the success of the modifications.

Outcome 3

Construct simple electronic products.

Evidence requirements

- 3.1 Wiring, components, and terminals are effectively soldered.

Range effectively soldered – components mechanically supported, no 'dry' joints, no short circuits, no heat damage to component and copper tracks.
 - 3.2 Printed circuit or strip boards and other components are firmly mounted in their containers, and wiring is tidy and held in place.
 - 3.3 The products are finished and labelled, and function as intended.
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Planned review date	31 December 2014
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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	N/A
Rollover and Revision	5	15 March 2012	N/A
Revision	6	15 January 2014	N/A

Consent and Moderation Requirements (CMR) reference	0003
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

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.