

## Achievement Standard

<b>Subject Reference</b>	Generic Technology 3.13				
<b>Title</b>	Undertake development and implementation of a green manufacturing process				
<b>Level</b>	3	<b>Credits</b>	6	<b>Assessment</b>	Internal
<b>Subfield</b>	Technology				
<b>Domain</b>	Generic Technology				
<b>Status</b>	Registered	<b>Status date</b>	4 December 2012		
<b>Planned review date</b>	31 December 2020	<b>Date version published</b>	17 November 2016		

This achievement standard involves undertaking development and implementation of a green manufacturing process.

### Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none"> <li>Undertake development and implementation of a green manufacturing process.</li> </ul>	<ul style="list-style-type: none"> <li>Undertake in-depth development and implementation of a green manufacturing process.</li> </ul>	<ul style="list-style-type: none"> <li>Undertake comprehensive development and implementation of a green manufacturing process.</li> </ul>

### Explanatory Notes

- This achievement standard is derived from Level 8 of the Technology learning area in *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007; and is related to the material in the *Teaching and Learning Guide for Technology*, Ministry of Education at <http://seniorsecondary.tki.org.nz>.

Further information can be found at <http://www.technology.tki.org.nz/>.

Appropriate reference information is available in *Safety and Technology Education: A Guidance Manual for New Zealand Schools*, Ministry of Education at <http://technology.tki.org.nz/Curriculum-support/Safety-and-Technology-Education>, and the Health and Safety at Work Act 2015.

This standard is also derived from *Te Marautanga o Aotearoa*. For details of *Te Marautanga o Aotearoa* achievement objectives to which this standard relates, see the [Papa Whakaako](#) for the relevant learning area.

- 2 *Undertake development and implementation of a green manufacturing process involves:*
- explaining how green considerations impact on design decisions relating to manufacturing processes and products
  - analysing a technological outcome to determine its suitability for green manufacture
  - making design changes as required for the technological outcome guided by good design judgement criteria
  - establishing specifications, including tolerances, required of the outcome that is to be manufactured within the constraints and opportunities of the manufacturing location
  - selecting a green manufacturing process and quality control procedures to enable units to meet the established specifications and tolerances
  - organising resources and ensuring procedures are carried out accurately in keeping with relevant codes of practice
  - overseeing the manufacturing process and discussing its success in meeting green considerations.

*Undertake in-depth development and implementation of a green manufacturing process involves:*

- discussing how green considerations are having an increasing influence on technological outcomes and their manufacture
- monitoring the manufacturing process and refining as required
- evaluating the success of the manufacturing process in meeting green considerations.

*Undertake comprehensive development and implementation of a green manufacturing process involves:*

- discussing how and why quality management procedures have been important in changing manufacturing practices to better support green considerations
- justifying the level of success the manufacturing process has attained in meeting green considerations.

- 3 A *green manufacturing process* prioritises green considerations in keeping with judgement criteria used to determine good design. Green considerations include optimising the use of energy and resources.
- 4 Good design judgement criteria may include: sustainability, accessibility, functionality, quality of manufacture, emotional resonance, endurance, social benefit, aesthetic quality, ergonomic fit, affordability.
- 5 A manufacturing process enables the multi-unit production of a technological outcome. Technological outcomes may include technological products that are components of another product, or the product as a whole.
- 6 Conditions of Assessment related to this achievement standard can be found at <http://ncea.tki.org.nz/Resources-for-aligned-standards/Technology/Level-3-Technology>.

**Replacement Information**

This achievement standard replaced unit standard 14374 and AS90792.

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**Quality Assurance**

- 1 Providers and Industry Training Organisations must have been granted consent to assess by NZQA before they can register credits from assessment against achievement standards.
- 2 Organisations with consent to assess and Industry Training Organisations assessing against achievement standards must engage with the moderation system that applies to those achievement standards.

Consent and Moderation Requirements (CMR) reference

0233