

## Achievement Standard

**Subject Reference** Generic Technology 1.12

**Title** Demonstrate understanding of basic concepts used in manufacturing

**Level** 1      **Credits** 4      **Assessment** Internal

**Subfield** Technology

**Domain** Generic Technology

**Status** Registered      **Status date** 20 January 2011

**Planned review date** 31 December 2020      **Date version published** 17 November 2016

This achievement standard requires demonstrating understanding of basic concepts used in manufacturing.

### Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none"> <li>Demonstrate understanding of basic concepts used in manufacturing.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate in-depth understanding of basic concepts used in manufacturing.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate comprehensive understanding of basic concepts used in manufacturing.</li> </ul>

### Explanatory Notes

- 1 This achievement standard is derived from Level 6 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 *Demonstrate understanding of basic concepts used in manufacturing* involves:
- describing different types of manufacturing systems
  - describing categories of manufacturing techniques used in a manufacturing process
  - developing a process flow diagram to communicate a manufacturing process
  - describing the yield of a manufacturing process and the role of quality control.

*Demonstrate in-depth understanding of basic concepts used in manufacturing* involves:

- explaining why particular types of manufacturing systems are used in specified contexts
- explaining key manufacturing techniques used in a manufacturing process
- explaining how yield is determined and how quality control is managed within a manufacturing process.

*Demonstrate comprehensive understanding of basic concepts used in manufacturing* involves:

- discussing why the manufacturing techniques were used in a manufacturing process
- discussing how yield prediction and its determination, and quality control mechanisms, may be affected by social and environmental change.

- 3 Types of manufacturing systems include but are not limited to:
- one-off custom manufacturing of a unique single product
  - batch, intermittent or short-run manufacturing – multiple copies of the same product or a single batch of a processed product
  - continuous (often called ‘assembly line’) manufacture
  - flexible manufacture and customisation.
- 4 The categories of manufacturing techniques may include but are not limited to – inspection, transport, storage, operation.
- 5 The nature of manufacturing may include but is not limited to – consideration of product need; resource availability; political, social and physical environments; advances in manufacturing systems and techniques.
- 6 Manufacturing processes are those undertaken to manufacture products that may include but are not limited to – milk powder, meat packing and freezing, carpet, urea, newsprint, oil, electronics, frozen fish fillets, moulded plastics, superphosphate, agricultural machinery, possum and merino yarn, boats, furniture, garments.
- 7 The contexts may be specified by the teacher or the student. If the student specifies the contexts then the teacher must ensure that they provide sufficient opportunity for the exploration of a range of manufacturing systems.
- 8 Conditions of Assessment related to this achievement standard can be found at <http://ncea.tki.org.nz/Resources-for-Internally-Assessed-Achievement-Standards>.

**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