

Achievement Standard

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|----------------------------|---|-------------------------------|------------------|
| Subject Reference | Generic Technology 3.7 | | |
| Title | Demonstrate understanding of operational parameters in complex and highly complex technological systems | | |
| Level | 3 | Credits | 4 |
| | | Assessment | External |
| Subfield | Technology | | |
| Domain | Generic Technology | | |
| Status | Registered | Status date | 4 December 2012 |
| Planned review date | 31 December 2019 | Date version published | 17 November 2016 |

This achievement standard involves demonstrating understanding of operational parameters in complex and highly complex technological systems.

Achievement Criteria

| Achievement | Achievement with Merit | Achievement with Excellence |
|--|---|--|
| <ul style="list-style-type: none"> Demonstrate understanding of operational parameters in complex and highly complex technological systems. | <ul style="list-style-type: none"> Demonstrate in-depth understanding of operational parameters in complex and highly complex technological systems. | <ul style="list-style-type: none"> Demonstrate comprehensive understanding of operational parameters in complex and highly complex technological systems. |

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 *Demonstrate understanding of operational parameters in complex and highly complex technological systems* involves:
- explaining the concepts involved in establishing operational parameters and the implications of these for the design and development of a complex technological system
 - explaining the operational parameters of a complex technological system and how they enable the system's operation and maintenance in situ
 - describing a highly complex technological system and explaining the factors that influenced the establishment of its operational parameters.

Demonstrate in-depth understanding of operational parameters in complex and highly complex technological systems involves:

- explaining a highly complex technological system and discussing why factors influenced the establishment of its operational parameters.

Demonstrate comprehensive understanding of operational parameters in complex and highly complex technological systems involves:

- discussing how operational parameters impact on the design, development and maintenance of complex and highly complex technological systems.

- 3 Complex technological systems are those that are designed to change inputs to outputs through more than one transformation process.
- 4 Highly complex technological systems include self-regulatory and intelligent technological systems.
- 5 Factors influencing the establishment of operational parameters are those associated with both the technical feasibility and the social acceptability of the technological system.
- 6 Assessment Specifications for this achievement standard can be accessed through the Technology Resources page found at <http://www.nzqa.govt.nz/qualifications-standards/qualifications/ncea/subjects/>.

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