

Achievement Standard

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 2016	Date version published	4 December 2012

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 the Level 8 achievement objectives from 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, 2012 at <http://seniorsecondary.tki.org.nz>.

Appropriate reference information is available in *Safety and Technology Education: A Guidance Manual for New Zealand Schools*, Ministry of Education, the Health and Safety in Employment Act 1992; and in the Technology Curriculum Support, May 2010, that can be found at <http://www.technology.tki.org.nz/L3AS/tech-systems-index>.

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

- 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/ncea-subject-resources/>.
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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