

Achievement Standard

Subject Reference	Generic Technology 2.6		
Title	Demonstrate understanding of the role of material evaluation in product development		
Level	2	Credits	4
		Assessment	External
Subfield	Technology		
Domain	Generic Technology		
Status	Registered	Status date	17 November 2011
Planned review date	31 December 2016	Date version published	12 December 2013

This achievement standard involves demonstrating understanding of the role of material evaluation in product development.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none"> Demonstrate understanding of the role of material evaluation in product development. 	<ul style="list-style-type: none"> Demonstrate in-depth understanding of the role of material evaluation in product development. 	<ul style="list-style-type: none"> Demonstrate comprehensive understanding of the role of material evaluation in product development.

Explanatory Notes

- This achievement standard is derived from Level 7 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 in Employment Act 1992.

- Demonstrate understanding of the role of material evaluation in product development* involves:
 - explaining the relationship between the performance properties of materials selected and the performance specifications of a product

- describing different material evaluation procedures undertaken to determine the suitability of materials for use in the development of a product
- describing the knowledge and techniques underpinning the material evaluation procedures that were used to support the material selection decisions in the development of a product.

Demonstrate in-depth understanding of the role of material evaluation in product development involves:

- explaining why different material evaluation procedures were undertaken to determine the suitability of materials for use in the development of a product
- explaining how knowledge and techniques underpinning material evaluation procedures were used to support the material selection decisions in the development of a product.

Demonstrate comprehensive understanding of the role of material evaluation in product development involves:

- discussing how the relationship between the evaluation of materials and a product's design (including maintenance and disposal considerations) influenced material selection decisions during the development of the product.

- 3 Knowledge underpinning material evaluation procedures may include but is not limited to: a material's composition and structure; how a material's properties can be changed; the material's expected performance specifications; and the social, cultural and environmental factors associated with where the product is to be situated.
- 4 Techniques underpinning material evaluation procedures may be objective or subjective:
 - objective techniques may include but are not limited to testing for: tensile strength, compressive strength, sheer strength, pH, shock loading, crease resistance, malleability, durability, absorbency, UV and water resistance, chemical stability, chemical resistance, oxidation, aeration, coagulation, emulsification, nutritional value, and conductivity
 - subjective techniques may include but are not limited to: sensory tests (all senses), and opinion and preference surveys.
- 5 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.