

## Achievement Standard

<b>Subject Reference</b>	Processing Technologies 2.62		
<b>Title</b>	Demonstrate understanding of advanced concepts used in preservation and packaging for product storage		
<b>Level</b>	2	<b>Credits</b>	4
		<b>Assessment</b>	Internal
<b>Subfield</b>	Technology		
<b>Domain</b>	Processing Technologies		
<b>Status</b>	Registered	<b>Status date</b>	17 November 2011
<b>Planned review date</b>	31 December 2019	<b>Date version published</b>	17 November 2016

This achievement standard involves demonstrating understanding of advanced concepts used in preservation and packaging for product storage.

### Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none"> <li>Demonstrate understanding of advanced concepts used in preservation and packaging for product storage.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate in-depth understanding of advanced concepts used in preservation and packaging for product storage.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate comprehensive understanding of advanced concepts used in preservation and packaging for product storage.</li> </ul>

### 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 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 advanced concepts used in preservation and packaging for product storage involves:*
- describing the links between preservation and packaging techniques and types of decay
  - describing legal and marketing requirements for labelling in a national environment
  - describing how a specific product could be effectively preserved, packaged and stored to maintain product integrity in a national environment.
- Demonstrate in-depth understanding of advanced concepts used in preservation and packaging for product storage involves:*
- explaining the links between preservation and packaging techniques and the types of decay
  - explaining why a particular combination of preservation and packaging techniques was chosen for storage in a national environment.
- Demonstrate comprehensive understanding of advanced concepts used in preservation and packaging for product storage involves:*
- comparing and contrasting preservation and packaging techniques for a product in a national environment
  - discussing why labelling is legally required and how labelling for marketing is used in a national environment.
- 3 *Preservation techniques* may include but are not limited to: freeze drying, heat sterilisation, decreasing water activity, ultra-violet irradiation, vacuum packing, and fermenting.
- 4 *Packaging techniques* may include but are not limited to: co-extruded barrier films, gable-top cartons, PET bottles, bag in box, cans and retort pouches, cardboard cartons, pallets, bulk packaging, and intermediate bulk containers.
- 5 Products may include but are not limited to: fermented and non-fermented foods and beverages, fresh horticultural products, biologically active products, composts, household chemicals, and toiletries and cosmetics.
- 6 Types of decay include but are not limited: microbiological growth, separation, loss of colour, loss or gain of moisture, loss of viability, loss of nutritional content, quality loss due to enzymatic action, vibration, and shock and crushing during transport and handling.
- 7 National environments refer to a sequence of locations and transport modes within a country. For example, a carton of biscuits that moves through a supply chain from factory through retail outlet to end user.
- 8 Legal labelling requirements may include but are not limited to the standards required to meet national regulations, such as those set by Food Standards Australia New Zealand (FSANZ).
- 9 Marketing requirements for packaging and labelling may include but are not limited to: product recognition, brand name and communication of product values and image, and promotion of product claims and point of difference (eg eco, heart tick).

- 10 Conditions of Assessment related to this achievement standard can be found at <http://ncea.tki.org.nz/Resources-for-Internally-Assessed-Achievement-Standards>.
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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