



National Certificate of Educational Achievement  
TAUMATA MĀTAURANGA Ā-MOTU KUA TĀEA

## **Exemplar for Internal Achievement Standard Technology Level 3**

This exemplar supports assessment against:

**Achievement Standard 91644**

Demonstrate understanding of combined preservation mechanisms  
used to maintain product integrity

An annotated exemplar is an extract of student evidence, with a commentary, to explain key aspects of the standard. It assists teachers to make assessment judgements at the grade boundaries.

New Zealand Qualifications Authority

To support internal assessment

	Grade: Excellence
1.	<p>For Excellence, the student needs to demonstrate comprehensive understanding of combined preservation mechanisms used to maintain product integrity.</p> <p>This involves discussing the use of combined preservation mechanisms in specific products in relation to the nature of the materials used in the product, user requirements, cost, storage life and environmental sustainability.</p> <p>There is no student work currently available at this grade.</p> <p>A student would typically discuss a range of raw materials that have been preserved into products that use different preservation and packing methods for a range of different reasons. The student could compare and contrast them on the basis of the nature of the materials used in the product and their required preservation mechanisms, and user requirements, cost, storage life and environmental sustainability.</p>

	Grade Boundary: Merit
2.	<p>For Merit, the student needs to demonstrate in-depth understanding of combined preservation mechanisms used to maintain product integrity.</p> <p>This involves:</p> <ul style="list-style-type: none"><li>• explaining why each preservation mechanism in a combination works for specific products</li><li>• explaining why materials are preserved in different ways in relation to cost, required storage life, and environmental sustainability.</li></ul> <p>There is no student work currently available at this grade.</p> <p>The student would typically examine a range of products that have been preserved using different mechanisms and explain why the mechanisms work.</p> <p>The student would typically describe how the preservation mechanism is applied and what factors it addresses to improve product integrity. The student should select a raw material that is preserved in different ways and give the reasons why this may be related to cost, length of storage, intended use, sustainability, wastage considerations, and ease of use in further manufacturing processes.</p>

	Grade Boundary: Achieved
3	<p>For Achieved, the student needs to demonstrate understanding of combined preservation mechanisms used to maintain product integrity.</p> <p>This involves:</p> <ul style="list-style-type: none"> <li>• explaining why combinations of preservation mechanisms are used to maintain the integrity of specific products</li> <li>• describing how each preservation mechanism in a combination works and how it contributes to overall product integrity</li> <li>• explaining why the same material may be preserved in different ways in relation to the situation of use.</li> </ul> <p>There is no student work currently available at this grade.</p> <p>A student would typically examine and describe a range of products that use a range of preservation mechanisms, how the preservation mechanism is applied and what factors it addresses to improve product integrity. Categories for preservation mechanisms could include, for example, high temperature, low temperature, reducing water activity, increasing acidity, oxygen control, fermentation, adding preservatives, hurdle technology, and packaging.</p> <p>The student would typically refer to different user requirements in terms of the situation/nature of use (for example, tramping, camping, ready to use, an ingredient as part of a recipe, everyday use, to use later for a special occasion) and relate these to preference for taste, acceptability of appearance and preference for the historical form of the product.</p>