

Achievement Standard

Subject Reference	Agricultural and Horticultural Science 1.3				
Title	Demonstrate understanding of how soil properties are managed in a primary production system				
Level	1	Credits	5	Assessment	External
Subfield	Science				
Domain	Agricultural and Horticultural Science				
Status	Approved		Status date	September 2024	
Planned review date	December 2028		Date version published	December 2024	

Purpose Statement

Students are able to demonstrate understanding of how soil properties are managed in a primary production system.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none"><li>Demonstrate understanding of how soil properties are managed in a primary production system</li></ul>	<ul style="list-style-type: none"><li>Explain how soil properties are managed in a primary production system</li></ul>	<ul style="list-style-type: none"><li>Evaluate how soil properties are managed in a primary production system</li></ul>

Explanatory Notes

- 1Demonstrate understanding of how soil properties are managed in a primary production system involves:
  - describing the primary production system
  - describing soil properties
  - describing a management practice that modifies soil.
- Explain how soil properties are managed in a primary production system involves:
  - explaining how soil properties are managed by soil management practice in the primary production system.
- Evaluate how soil properties are managed in a primary production system involves:
  - evaluating how soil properties are managed using soil management practice to optimise production.

- 2 As part of the evidence provided, students must show understanding of a Māori concept in the context of management practices for soil in a primary production system.

Examples of a Māori concept include:

- tūhononga
- manaakitanga
- tiakitanga.

- 3 *Soil properties* refer to physical, chemical, or biological properties.

Examples of physical, chemical, biological properties include:

- physical properties – structure and composition, drainage and aeration, temperature
- chemical properties – nutrient retention, soil pH
- biological properties – those influenced by living organisms and organic matter, such as decomposition of organic matter and disease status.

- 4 A *soil management practice* is an action carried out by the grower to improve or modify plant growing conditions.

Examples include:

- fertiliser application
- liming
- adding compost material
- cultivation
- crop rotation
- drainage
- irrigation
- effluent application.

- 5 A *primary production system* is a sum of all components, including the growing environment and management practices, that work together in the production of a primary product.

Examples include:

- an orchard
- a family, community, or market garden
- a dairy farm.

- 6 Refer to the NCEA [glossary](#) for Māori, Pacific, and further subject-specific terms and concepts.

- 7 This achievement standard is derived from the Science Learning Area at Level 6 of *The New Zealand Curriculum*: Learning Media, Ministry of Education, 2007.

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**Replacement Information**

This achievement standard, AS91928, AS91929, and AS91931 replaced AS90155, AS90157, AS90160, and AS90918-AS90924.

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**Quality Assurance**

- 1 Schools and institutions must have been granted consent to assess by NZQA before they can register credits from assessment against achievement standards.
- 2 Schools and institutions with consent to assess must engage with the moderation system that applies to those achievement standards.

Consent and Moderation Requirements (CMR) reference 0233

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