

Title	Describe soil microbiology		
Level	5	Credits	4

Purpose	People credited with this unit standard are able to describe: soil as a habitat for microorganisms; dynamics of microbial communities in the humification process; methods for measuring microbial activity and microbial biomass in soil; and to explain the role of microorganisms in cycling elements within the soil.
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Classification	Science > Microbiology
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Available grade	Achieved
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Guidance Information

Glossary

Soil refers to the portion of the earth's surface consisting of disintegrated rock and humus.

Humification refers to the transformation of organic matter into humus by microorganisms.

This includes catabolism and anabolism.

Outcomes and performance criteria

Outcome 1

Describe soil as a habitat for microorganisms.

Performance criteria

- 1.1 Soil properties are described in relation to the formation of a habitat for microorganisms.

Range soil properties – physical, chemical, biological.

Outcome 2

Explain the role of microorganisms in cycling elements within the soil.

Range carbon, nitrogen, phosphorus, sulfur.

Performance criteria

- 2.1 The contribution of the metabolic activity of microorganisms is explained in relation to the cycling of the element.

2.2 The chemical intermediates are identified in relation to the cycle.

2.3 Representative microorganisms are identified in relation to the cycle.

Outcome 3

Describe the dynamics of microbial communities in the humification process.

Performance criteria

3.1 A sequence of microbial communities is described in relation to the humification process.

3.2 Conditions for microbial communities are described as the environment changes in relation to the humification process.

Outcome 4

Describe methods for measuring microbial activity and microbial biomass in soil.

Range one method for each of – microbial activity, microbial biomass.

Performance criteria

4.1 The principles and limitations of the measurement are described in terms of the method.

Planned review date	31 December 2023
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	22 December 1996	31 December 2014
Review	2	24 February 1998	31 December 2014
Review	3	23 November 1999	31 December 2014
Review	4	21 May 2010	N/A
Rollover	5	27 January 2015	N/A
Review	6	27 September 2018	N/A

Consent and Moderation Requirements (CMR) reference	0113
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact NZQA National Qualifications Services nqs@nzqa.govt.nz if you wish to suggest changes to the content of this unit standard.