

<b>Title</b>	<b>Demonstrate knowledge of bacterial structure</b>		
<b>Level</b>	<b>5</b>	<b>Credits</b>	<b>3</b>

<b>Purpose</b>	People credited with this unit standard are able to describe: the morphology and external structures of bacteria; the ultrastructure of bacteria; and the formation and function of bacterial endospores.
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<b>Classification</b>	Science > Microbiology
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<b>Available grade</b>	Achieved
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## Guidance Information

### Glossary

*Ultrastructure* refers to the detailed structure of bacteria that can be observed by electron microscopy. It refers to the cellular structures that are too small to be seen with an optical microscope.

*Morphology* refers to cell shape and cell arrangements.

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## Outcomes and performance criteria

### Outcome 1

Describe the morphology and external structures of bacteria.

### Performance criteria

1.1 Bacteria groups are described in terms of morphology.

Range cocci, bacilli, spirillum.

1.2 External structures are described in terms of their function.

Range cell wall, fimbriae, flagella, glycocalyx, pili.

1.3 Gram positive and Gram negative bacteria walls are compared in terms of their chemical composition.

Range lipopolysaccharide, peptidoglycan, mycolic acid, teichoic acid.

1.4 Gram positive and Gram negative bacteria walls are compared in terms of their physical composition.

**Outcome 2**

Describe the ultrastructure of bacteria.

**Performance criteria**

2.1 The ultrastructure of bacteria is described in terms of the ultrastructure function.

Range ultrastructure includes – bacterial chromosome, cytoplasmic membrane, inclusion granules, plasmids, periplasm, ribosomes.

**Outcome 3**

Describe the formation and function of bacterial endospores.

**Performance criteria**

3.1 Factors are identified, and the process described for the formation of bacterial endospores.

3.2 Endospore function is described in terms of its chemical and structural properties.

<b>Planned review date</b>	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**Status information and last date for assessment for superseded versions**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
Revision	2	19 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

<b>Consent and Moderation Requirements (CMR) reference</b>	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](mailto:nqs@nzqa.govt.nz) if you wish to suggest changes to the content of this unit standard.