

Achievement Standard

Subject Reference Biology 1.8

Title Describe biological ideas relating to how humans use and are affected by micro-organisms

Level 1 **Credits** 2 **Assessment** External

Subfield Science

Domain Biology

Status Registered **Status date** 5 November 2007

Planned review date 28 February 2009 **Date version published** 5 November 2007

This achievement standard involves the description of biological ideas relating to how humans use and are affected by micro-organisms.

Note: Students cannot use credit for both this achievement standard and AS90188, Science 1.3, towards a national qualification including a National Certificate of Educational Achievement.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none"> Describe biological ideas relating to how humans use and are affected by micro-organisms. 	<ul style="list-style-type: none"> Explain biological ideas relating to how humans use and are affected by micro-organisms. 	<ul style="list-style-type: none"> Discuss biological ideas relating to how humans use and are affected by micro-organisms.

Explanatory Notes

- This achievement standard is derived from *Science in the New Zealand Curriculum*, Learning Media, Ministry of Education, 1993, p. 64; *Biology in the New Zealand Curriculum*, Learning Media, Ministry of Education, 1994, p. 14; and *Pūtaiao i roto i te Marautanga o Aotearoa*, Learning Media, Ministry of Education, 1996, p. 28.
- Micro-organisms* will be selected from bacteria, fungi and viruses.
- How humans use and are affected by micro-organisms* could include: nutrient cycling, food production, sewage treatment, food poisoning, disease in living things, microbial attack on everyday materials (helpful and harmful), antibiotics, and resistance to antibiotics.

- 4 *Biological ideas* relating to how humans use and are affected by micro-organisms will be selected from:
- structure of micro-organisms
 - culturing micro-organisms
 - life processes of micro-organisms
 - factors that affect the life processes of micro-organisms.
- 5 *Life processes* of micro-organisms will be selected from: nutrition, growth, respiration, reproduction and excretion by bacteria and fungi, and the reproduction of viruses.
- 6 The student will be expected to be familiar with the following terms: inoculate, extracellular digestion, enzyme, parasite, pathogen, saprophyte, decomposer, aerobic, anaerobic, hyphae, binary fission, spores, sporangium, and toxin.
- 7 Terms:
- *Describe* requires the student to define, use annotated diagrams, give characteristics of, or an account of.
 - *Explain* requires the student to provide a reason as to how or why something occurs.
 - *Discuss* requires the student to show understanding by linking biological ideas. It may involve students in elaborating, applying, justifying, relating, evaluating, comparing and contrasting, and analysing.
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Quality Assurance

- 1 Providers and Industry Training Organisations must be accredited by NZQA before they can register credits from assessment against achievement standards.
- 2 Accredited providers and Industry Training Organisations assessing against achievement standards must engage with the moderation system that applies to those achievement standards.

Accreditation and Moderation Action Plan (AMAP) reference

0226