

## Achievement Standard

**Subject Reference** Biology 2.4

**Title** Investigate an interrelationship or pattern in an ecological population or community

**Level** 2 **Credits** 3 **Assessment** Internal

**Subfield** Science

**Domain** Biology

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This achievement standard involves the collection and recording of field data from an ecological population or community, the processing of this field data, and the description of an interrelationship or pattern shown in the data.

### Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none"><li>Record and process sufficient field data to show an interrelationship or pattern.</li><li>Describe an interrelationship or pattern with reference to an environmental factor or the biology of an organism.</li></ul>	<ul style="list-style-type: none"><li>Appropriately record and process sufficient field data to show an interrelationship or pattern.</li><li>Explain an interrelationship or pattern with reference to an environmental factor or the biology of an organism.</li></ul>	<ul style="list-style-type: none"><li>Appropriately record and process sufficient field data to show an interrelationship or pattern.</li><li>Discuss an interrelationship or pattern with reference to an environmental factor and the biology of an organism.</li></ul>

### Explanatory Notes

- 1 This achievement standard is derived from *Biology in the New Zealand Curriculum*, Learning Media, Ministry of Education, 1994, pp. 20-26, achievement objective 7.1(a).

- 2 This investigation is to be carried out with supervision and must involve the student in the collection of primary data.
- 3 A community interrelationship or pattern could include: succession, zonation, stratification, distribution of different species, competition, predation, parasitism, or mutualism.
- 4 A population interrelationship or pattern could include: age structure, density, distribution of a species, habitat preference, adaptations or intra-specific competition.
- 5 If a community interrelationship or pattern is being investigated, students are required to provide detail on only one species from the community in their description, explanation, or discussion.
- 6 *Appropriate recording* involves including the field data itself with all the information that allows the field data to be used or the investigation to be repeated by another person. The information with the field data could include the location of sample sites in a stream transect, areas where samples are taken in a distribution study, or where measurements of size are taken in an age structure, or quadrat size in a density study.
- 7 *Appropriate processing* of field data means showing accuracy using a processing method that is suitable for the type of field data, and clearly showing the relationship or pattern. Suitable formats for showing the relationship or pattern could be a kite diagram, a bar graph, a pie chart, a profile diagram, or a table. Only one format is required to show an interrelationship or pattern.
- 8 *Biology of the organism* refers to any adaptation of an organism that relates to the interrelationship or pattern being investigated.
- 9 Terms:
  - *Describe* requires the student to recognise, name, draw, 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 of links between environmental factors, the biology of the organism, and the interrelationship or pattern shown in the data. It may involve justifying, relating, comparing and contrasting, or analysing.

## **Quality Assurance**

- 1 Providers and Industry Training Organisations must be accredited by the Qualifications Authority 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