



Module 3 Biological Diversity | Stage 6 | Year 11 Biology

| Summary | Total package |
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| <p>Outcomes</p> <p><i>A student:</i></p> <ul style="list-style-type: none"> › develops and evaluates questions and hypotheses for scientific investigation BIO11/12-1 › designs and evaluates investigations in order to obtain primary and secondary data and information BIO11/12-2 › communicates scientific understanding using suitable language and terminology for a specific audience or purpose BIO11/12-7 › describes biological diversity by explaining the relationships between a range of organisms in terms of specialisation for selected habitats and evolution of species BIO11-10 <p>Content</p> <p>Effects of the Environment on Organisms: Inquiry question: How do environmental pressures promote a change in species diversity and abundance?</p> <p>Students:</p> <ul style="list-style-type: none"> • predict the effects of selection pressures on organisms in ecosystems, including: (ACSBL026, ACSBL090)  – biotic factors – abiotic factors • investigate changes in a population of organisms due to selection pressures over time (ACSBL002, ACSBL094)    <p>Adaptations: Inquiry question: How do adaptations increase the organism’s ability to survive?</p> <p>Students:</p> <ul style="list-style-type: none"> • conduct practical investigations, individually or in teams, or use secondary sources to examine the adaptations of organisms that increase their ability to survive in their environment, including:    – structural adaptations – physiological adaptations – behavioural adaptations | <ul style="list-style-type: none"> • 1 mandatory pre-visit lesson (45-50 minutes) • 3 optional lessons that contribute to depth study (45-50 minutes) • On-site excursion – data collection 9.30am – 2pm (5 hours) <i>(times can be adjusted to suit school times)</i> • 3 optional post-visit lessons that contribute to depth study (45-50 minutes) <p>About Longneck Lagoon EEC</p> <p>Longneck Lagoon Environmental Education Centre is located in Scheyville National Park and includes a terrestrial environment (Cumberland Plain Woodland) and an aquatic environment (lagoon and creek).</p> <p>These lesson programs have been prepared by Department of Education teachers in line with the 2018 Stage 6 Biology syllabus.</p> |



| Inquiry questions | Excursion outline | Resources/links |
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| <p>Where is Longneck Lagoon?</p> <p>What is the ecosystem type at Longneck Lagoon?</p> <p>How healthy is the ecosystem?</p> <p>Is the ecosystem appropriate for threatened microbat species that live in the area?</p> | <p>Longneck Lagoon EEC staff introduction:</p> <ul style="list-style-type: none"> • Acknowledgement of Country. • Longneck Lagoon EEC/Scheyville National Park. • Microbats overview, what are they? Why are they important? • Outline of the day. • Check for completion of Student worksheets – page 2. <p>Field work conducted in 3 rotations</p> <p>a. Page 3 transect line/terrestrial testing</p> <p>Students will be taken to the start of the teaching transect line at Longneck Lagoon EEC. At site 1 Longneck staff will explain procedures and complete the terrestrial testing with the students and demonstrate how to complete a vegetation profile including the identification of major trees.</p> <p>Terrestrial testing at site 2 and site 3 on the transect line will be completed by students in their small teams. Each team will be responsible for a kit of equipment used for testing.</p> <p>From information gathered students can ascertain what terrestrial habitat is present at Longneck Lagoon.</p> | <p>Student worksheets available on Longneck Lagoon EEC website</p> |



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| | <p>b. Page 6 aquatic testing</p> <p>Students will be taken to the aquatic testing area at Longneck Lagoon EEC. Longneck staff will conduct a safety briefing and explain the testing and dipnetting techniques that will be used there. Students will work in their small teams to conduct the aquatic testing. Once completed and results recorded, students will dipnet for macroinvertebrates.</p> <p>Longneck staff will collect students together to assess macroinvertebrates captured during dipnetting and explain how to identify what has been caught as part of a biological indicators test and bat food source list.</p> <p>c. Pages 4 and 5 herbivory, roost sites and human impacts</p> <p>Students will be taken to an appropriate terrestrial testing site to conduct their herbivory study.</p> <p>Whilst in the field students will be asked to complete page 5 indicating if they see any potential microbat roosting sites and ticking any human impacts they have observed.</p> | |
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