

A Local Ecosystem

Stage 6 Biology



Program Overview

The focus of the day is to undertake a scientific investigation of the mangrove ecosystem at Bobbin Head. During the full day program, the students will work collaboratively in small groups and use scientific equipment to study the flora and fauna of the ecosystem.

Learning Experiences

Mangrove Investigation

Students will study the two species of mangroves at Bobbin Head to understand their features and adaptations. Using this information, they will then identify and measure the abundance and distribution of plants across the intertidal zone using quadrats and transects and then relate this to the abiotic factors measured at certain points.

Crabs Investigation

Crabs are an integral part of the mangrove ecosystem at Bobbin Head.

Using ethical techniques, students will capture and classify crabs and identify their adaptations. Students will then complete a quadrat study to measure crab abundance and relate to abiotic factors such as soil pH, air humidity and soil moisture

Organism Interactions

Working collaboratively, the students will identify examples of allelopathy, parasitism, mutualism and commensalism in the mangrove ecosystem and also explain trophic interactions between organisms in the mangrove ecosystem using food chains, food webs and pyramids of biomass and energy

Human Impacts and Management Strategies

Students will have an opportunity to observe past and current human use of the area to understand the effect on the health of the mangrove ecosystem. They will also have an opportunity to discuss current and potential management strategies

Key Syllabus Outcomes and Content

Biology

students:

- choose equipment or resources and undertake a field study of a local terrestrial or aquatic ecosystem to identify data sources and:
 - measure abiotic variables in the ecosystem being studied
 - estimate the size of a plant population and an animal population in the ecosystem using.....
 - collect, analyse and present data to describe the distribution of the plant and animal species.....
 - describe two trophic interactions

- identify data sources and gather, present and analyse data by:
 - ▶ tabulation of data collected in the study
 - ▶ calculation of mean values with ranges
 - ▶ graphing changes with time
 - ▶ evaluating variability.....
- gather information from first-hand and secondary sources to construct food chains and food webs to illustrate the relationships between member species in an ecosystem
- process and analyse information and present a report of the investigation of an ecosystem in which the purpose is introduced, the methods described and the results shown graphically and use available evidence to discuss their relevance