



# Stage 5 – Science, Living World

Tuggerah Lakes

## Program Overview

Students will undertake scientific investigations to measure and describe the characteristics of an ecosystem. This includes the use of scientific instruments, sampling techniques and classification keys. Students will discuss food webs of the estuary and adaptations of organisms.

The program involves fieldwork at either Picnic Point, The Entrance or Saltwater Creek, Long Jetty – followed by an investigation at The Entrance Channel.

(Note: Long Jetty option requires a bus to be available during the day).

## Key Questions

1. What are the characteristics of the Tuggerah Lakes estuary ecosystem?
2. How do abiotic factors and biological interactions affect the distribution of species in this environment?
3. What are some of the pressures that affect the long term sustainability of this ecosystem?

## Learning Experiences & Content

### Working Scientifically

Field work activities include:

- use of transects and quadrats
- wildlife observation with reference to field guides
- measurement of physical and chemical abiotic influences e.g soil, temperature, humidity, wind
- practical observations and discussion of adaptations of plant and animal species
- discussion of environmental pressures that promote a change in species diversity and abundance.

### Plant identification and adaptations

Students will investigate and identify the diversity of plants in the estuary foreshore using identification keys, transects and quadrats. They will also discuss their adaptations for survival.

### Water quality

Students will use scientific equipment to measure water quality in the estuary and consider how human activity in the catchment affect the health of the estuary.



### Food webs and estuary processes

Students will consider the food webs and natural cycles that contribute to the estuary functioning and describe interactions between organisms.

### Human Impacts

Students will review data, information and management of the estuary in order to consider human impacts and long-term sustainability.



# Stage 5 – Science, Living World

Tuggerah Lakes

## Outcomes

### Science - Stage 5

A Student:

- ✿ **SC5-6WS** undertakes first-hand investigations to collect valid and reliable data and information, individually and collaboratively.
- ✿ **SC5-7WS** processes, analyses and evaluates data from first-hand investigations and secondary sources to develop evidence-based arguments and conclusions.
- ✿ **SC5-14LW** analyses interactions between components and processes within biological systems.

### Content

Students:

- use simple keys to identify a range of plants and animals.
- outline the structural features used to group living things, including plants, animals, fungi and bacteria.
- explain how the features of some Australian plants and animals are adaptations for survival and reproduction in their environment.
- construct and interpret food chains and food webs, including examples from Australian ecosystems.
- describe interactions between organisms in food chains and food webs, including producers, consumers and decomposers (**ACSSU112**).
- predict how human activities can affect interactions in food chains and food webs, including examples from Australian land or marine ecosystems (**ACSSU112**).

