



# Stage 6 – Investigating Science

## Cause & Effect (Microplastics)

### Terrigal Lagoon

#### Program Overview

This program will focus on microplastics. It includes a practical investigation that will collect a range of qualitative and quantitative primary data on the impact of microplastics on our coastal lagoons.

Field work activities include:

- use of a transect and quadrat to collect data
- classification of microplastics into size classes and polymer types
- collecting data on macroplastics and litter
- conducting water quality testing to identify other sources of pollution
- discussion of impacts and sources of microplastics in the local area.

#### Key Questions

1. What is the occurrence of microplastics and macroplastics in the environment?
2. How is water quality measured to provide a snapshot of the environmental health of the lagoon?
3. What are the impacts and sources of microplastics in the local area?
3. What are some of the pressures that affect the long term sustainability of this ecosystem?

## Learning Experiences & Content

### Working Scientifically

Students will undertake Investigations include activities such as collecting primary data through fieldwork, processing and analysing data, reaching a conclusion and communicating results.

### Microplastic survey

Students will lay out a transect line along the strandline and mark out a belt transect with flags. The top 2cm of sand will be removed from a random quadrat and sieved. Contents will then be transferred to a tray, viewed through a microscope and sorted into categories of microplastic.

### Macroplastic collection

Students will walk along the belt transect and collect macro debris. This will be recorded using a Tangaroa Blue data sheet.

### Water quality

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

### Human Impacts

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





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### Outcomes

#### Investigating Science - Stage 6

A Student:

- ✿ **SINS11/12-1** develops and evaluates questions and hypotheses for scientific investigation.
- ✿ **INS11/12-3** conducts investigations to collect valid and reliable primary and secondary data and information.
- ✿ **INS11/12-4** selects and processes appropriate qualitative and quantitative data and information using a range of appropriate media.

#### Content

Students:

- carry out a practical investigation to record both quantitative and qualitative data from observations.
- carry out the planned practical investigation to collect primary data.
- apply conventions for collecting and recording observations to qualitatively and quantitatively analyse the primary data, including tabulation.
- draw conclusions from the analysis of the primary data collected in the practical investigation.

