

# WATER QUALITY TESTING

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Photo credit: Dr Donald McKnight



# 2 LESSONS

TERM THREE



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### **LEARNING OBJECTIVES**

Here you will find the learning objectives for this lesson

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### **WETLAND ACTIVITIES**

There are two activities for this lesson

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## **PAGE 3**

### **BACKGROUND INFORMATION**

Learn about environmental DNA (eDNA) sampling

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### **CURRICULUM**

See how this lesson maps with the Australian curriculum

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# Learning Objectives

At the end of the lesson, students will be able to:

- (1) Conduct water quality testing;
- (2) Collect water samples for eDNA analysis.

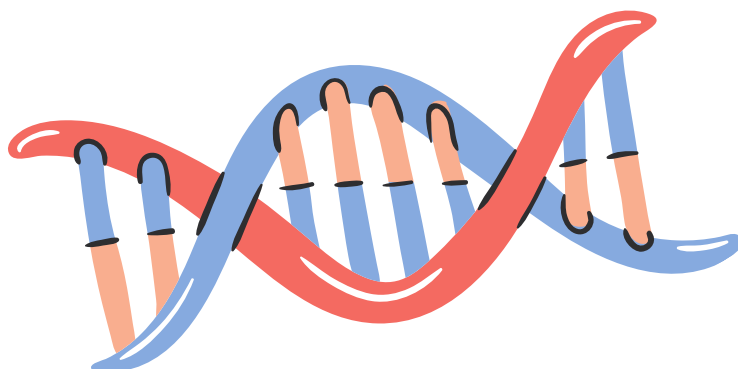
## Background Information

### eDNA Testing

Environmental DNA (eDNA) refers to genetic material (DNA) shed by organisms into their environment. Its analysis allows for the detection of species presence without the need to directly observe or capture the organisms.

#### Sampling Process:

- Water samples are typically collected from different locations within the wetland using clean and sterile containers.
- The water is then filtered to capture the suspended eDNA particles. Filters with small pore sizes are used to collect genetic material.
- DNA is extracted and subsequent laboratory processes are employed to amplify and sequence specific DNA regions.



# Wetland Activity

## ACTIVITY 1 - Water Quality Testing

(1) Divide the class into groups and conduct water quality testing at pre-selected locations (from lesson 1) around the wetland.

### Equipment:

- Clipboards with recording sheets
- GPS
- Gloves
- Water quality test kits
- Measuring cylinder with Seechi disk pattern
- Waterproof thermometer.



## ACTIVITY 2 - eDNA Testing (optional)

(1) Students collect a sample of water from the wetland to be sent for eDNA analysis.

Students should wear gloves when collecting the sample to prevent cross-contamination.



# Australian Curriculum addressed in this Lesson



## Science

### Strand: Science inquiry (Year 5)

#### Sub-strand: Planning and conducting

**AC9S5I03:** use equipment to observe, measure and record data with reasonable precision, using digital tools as appropriate.

### Strand: Science inquiry (Year 6)

#### Sub-strand: Planning and conducting

**AC9S6I03:** use equipment to observe, measure and record data with reasonable precision, using digital tools as appropriate.