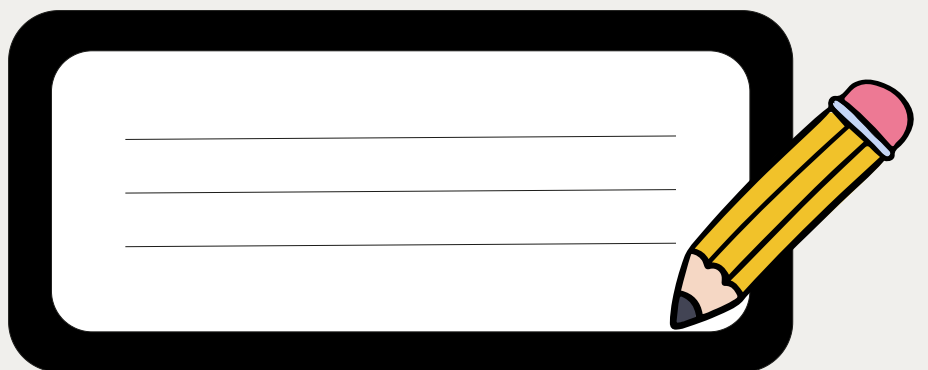


TURTLES IN SCHOOLS

TERM 1 WORKBOOK



Photo credit: Ricky Spencer





TURTLES IN SCHOOLS

Produced by the
1 Million Turtles Community
Conservation Program
and funded by
The Foundation for National
Parks and Wildlife.

In the pages that follow, you will find a comprehensive set of lesson plans.

Our initiative is not just about imparting knowledge but fostering a deep connection between students and their natural environment and instilling a sense of responsibility and awareness of freshwater turtles and their conservation.

As we embark on this educational venture, we extend our gratitude to educators, students, and all those who champion the cause of conservation. The Turtles in Schools Program is not just a curriculum; it is a movement to inspire the next generation of environmental custodians.

Thank you,

**1 Million Turtles Community
Conservation Program**

7 LESSONS

TERM ONE

WETLAND OBSERVATIONS

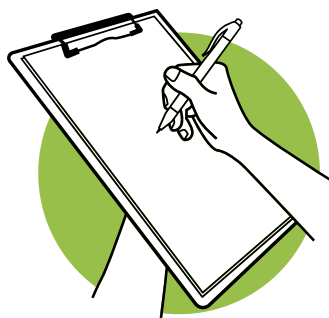
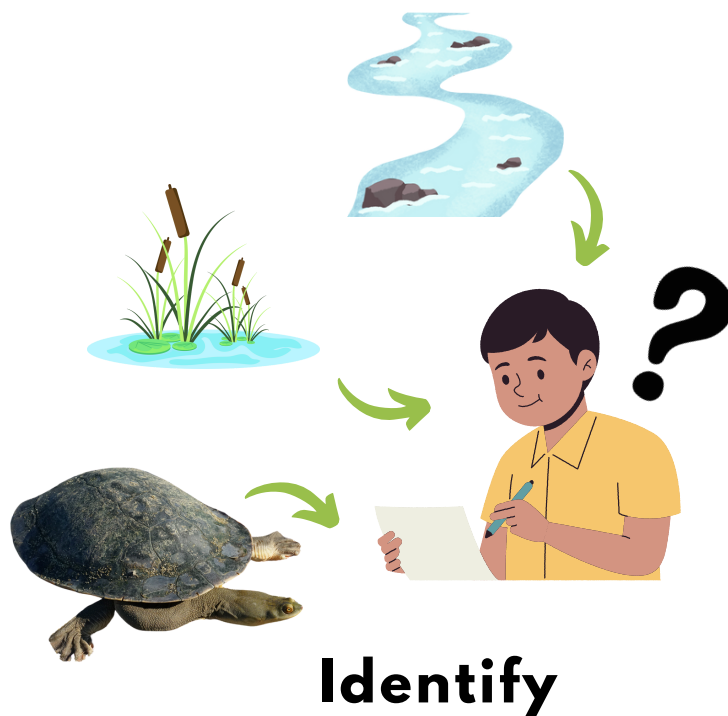
- Learning Intentions
- Background
- Activities
- Curriculum Mapping

Photo credit: Marilyn Connell



Learning Intentions

- (1) Identify in real-time, habitats used by freshwater turtles.
- (2) Collect data on the distribution and abundance of flora at your local wetland using a transect.
- (3) Assess the health of the wetland based on observations.



Collect



Assess

Background Information

Abundance, Distribution and Diversity

Abundance: refers to the number of individuals of a species in a particular area or ecosystem. It can be measured in various ways, such as counting the number of individuals per unit area (density) or estimating the total number of individuals in a population. Monitoring abundance helps scientists understand population dynamics and species interactions.



Abundance

Distribution: refers to the geographical range of a species. It describes where a species is found and how it is spread out across different habitats or regions. Species distribution can be influenced by factors such as climate, habitat availability and dispersal ability. Understanding species distribution is important for conservation efforts, biodiversity assessments, and predicting species responses to environmental changes.



Distribution

Diversity: refers to the variety of species in a particular area or ecosystem. It encompasses different aspects, including species richness (the total number of species present), species evenness (the relative abundance of each species), and species composition (the identity of species present). Ecosystems with high biodiversity can better withstand environmental disturbances and provide a wide range of ecological services.



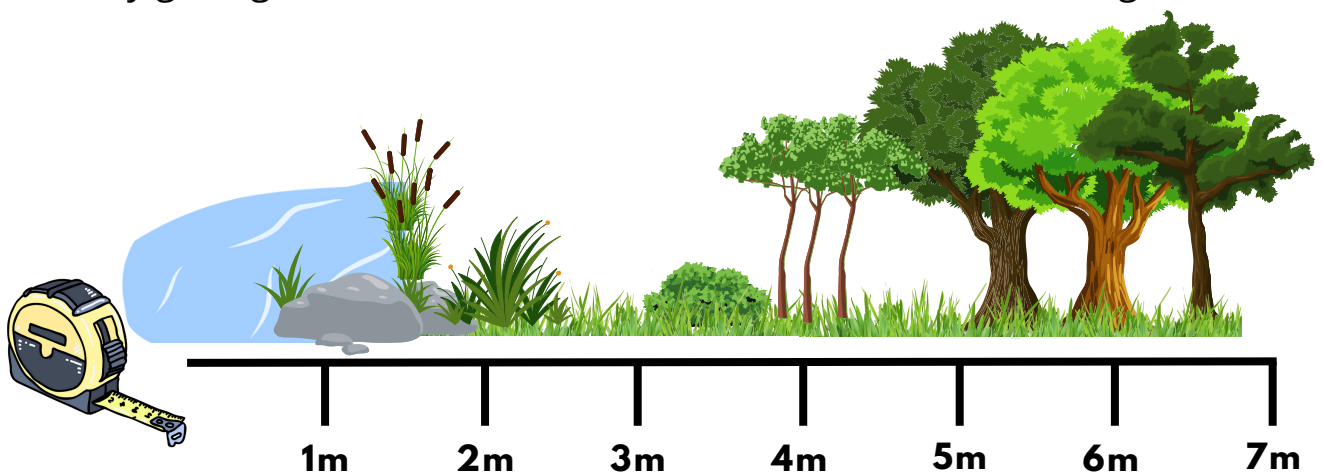
Diversity

Background Information

What is a Transect? a linear (i.e. straight line) sampling method used to study changes in plants and animals by recording observations along the linear path. Scientists use transects to see how different plants and animals are distributed in an area and their abundance. Transects are best used for animals which are mostly sessile (i.e. those that do not move!).

How is a Transect Done?

1. **Choosing a Line:** First, scientists pick a straight line that goes across the area they want to study. This line can be as long as they need, from just a few meters to even kilometres.
2. **Placing Markers:** Along this line, scientists place markers or stakes at regular intervals, for instance every metre. These markers help them keep track of where they are and where they're looking.
3. **Recording Organisms:** Then, starting from one end of the line, scientists carefully look at the organisms that are right next to the line. They write down what kinds of organisms they see and how many of each kind there are.
4. **Measuring Distances:** Sometimes, scientists also measure how far each organism is from the line. This helps them understand how they are spaced out in the area.
5. **Repeating the Process:** Scientists might do this many times, walking along the line and recording organisms at different points. This way, they get a good idea of the distribution and abundance of organisms.



Why Do Ecologists Use Transects?

1. Mapping Distribution: By using transects, scientists can make maps that show how different plants and animals are distributed in an area.
2. Studying Habitats: Transects also help scientists learn about different habitats, like wetlands. They can see how plants and animals change from one habitat to another along the transect line.
3. Monitoring Changes: Scientists can use transects to keep an eye on how plant and animal populations change over time. This is important for understanding how things like climate change or human activities might affect plants, animals and their habitats.



Classroom Activities

ACTIVITY 1

Game: "Transect Explorers":

Materials Needed:

- Cut-out pictures of flora
- Scissors
- Measuring tape
- Stopwatch or timer
- Data recording sheets

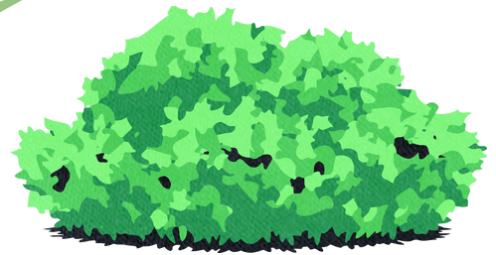
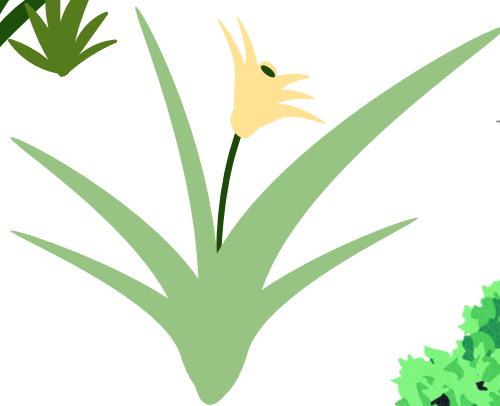
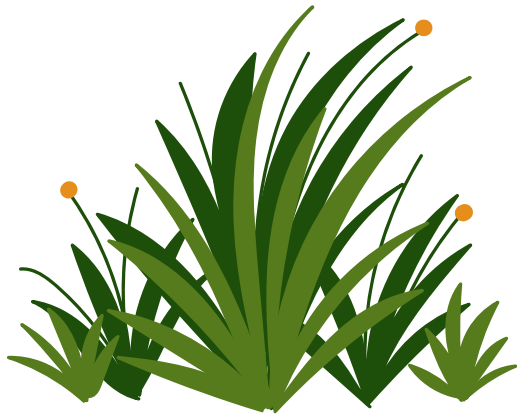
Instructions:

1. Flora Cutouts:
 - Cut-out different flora to use in the game. Flora cut-outs are available on the next page.
2. Setting Up the Transect:
 - Designate an area in the classroom where the transect will be placed.
 - Place the measuring tape along the length of the classroom. This will be your transect line.
 - Distribute your flora along the transect line.
 - Each flora should be placed at the nearest 1 metre interval marked on the measuring tape.
3. Data Collection:
 - Once all flora are in position, start the timer. You will have 5 minutes to observe and record all the flora present on the transect line.
 - Students should use their data recording sheets to note down the type of flora, its location in metres along the transect line and the number observed at each sampling location.
4. Discussion:
 - Discuss your findings as a class.

Classroom Activities

ACTIVITY 1 - Continued

Game: "Transect Explorers"



Wetland Activities

ACTIVITY 2

(2A) Walk around your local wetland and observe the riparian and aquatic zones, taking note of abiotic and biotic factors and habitats utilised by freshwater turtles.

(2B) Conduct a transect study and record the abundance and distribution of flora at the wetland. Set up a 10m transect and use field guides to identify plants along the transect.

(2C) Assess the health of the wetland by observing the following:

- Water quality
- Vegetation – diversity and abundance of both riparian and aquatic vegetation.
- Wildlife presence – birds, invertebrates, fish, turtles etc.
- Extent of erosion – observe the stability of bank of the wetland.
- Human disturbances – presence of litter or pollution.

Classroom Activities

ACTIVITY 3: *After visiting the wetland*

(3A) Create a visual representation of your data, such as bar graphs or pie charts, showcasing the distribution and abundance of flora along the transect.

(3B) Discuss the patterns you observed in your data and explain what these patterns might indicate about the wetland ecosystem.

(3C) Reflect on your wetland visit and write about what you observed. Propose one action you can take to contribute to wetland conservation.



Visualise



Reflect and Write

Wetland Worksheet

Fill in the information as you walk around your local wetland

Describe the water quality:

List potential habitats used by freshwater turtles:

Comment on the extent of erosion around the bank:

List and describe human disturbances observed:



Transect Data Recording Sheet

Distance from Wetland (m)	Plant species observed
1 m	
2 m	
3 m	
4 m	
5 m	
6 m	
7 m	
8 m	
9 m	
10 m	

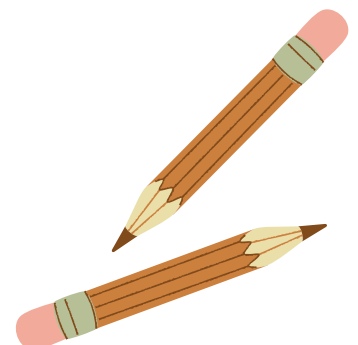
Transect Data Analysis

Create a visual representation of your data showcasing the distribution or abundance of flora along the transect.

Transect Data Analysis

Describe the patterns you observed in your transect data

Explain what the patterns above might indicate about the wetland ecosystem.



ALL OF MY observations



Write a short reflection piece on what you observed at the wetland. In the box below, propose one way you can contribute to wetland conservation
