

TURTLES IN SCHOOLS

TERM 3 WORKBOOK

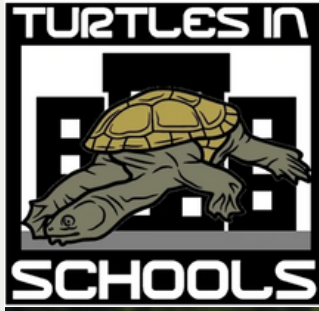


Photo credit: Bellinghen Riverwatch

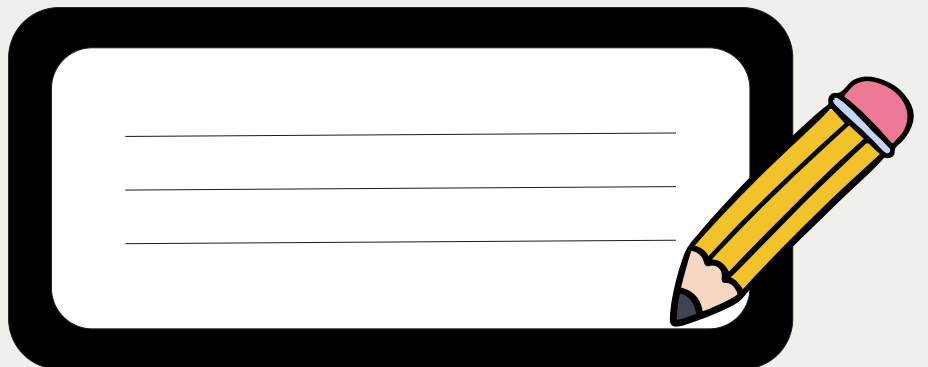




Photo credit: Dr James Van Dyke

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**

4 LESSONS

TERM THREE

MACROINVERTEBRATE SAMPLING

- Learning Intentions
- Background
- Activities
- Curriculum Mapping



Learning Intentions

- (1) Conduct water bug survey at your local wetland;
- (2) Identify macroinvertebrates from your local wetland.

Wetland Activity

ACTIVITY - Macroinvertebrate Sampling

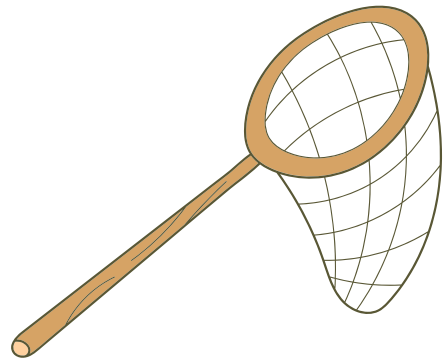
(1) In groups, conduct macroinvertebrate sampling from the same sites selected for water quality testing.

Equipment:

- Dip nets
- Buckets
- Large trays for sorting
- Ice cube trays for smaller sorting
- Spoons, pipettes
- Measuring ruler.
- Eppendorf tube (or similar) for collection of subset of water bugs for classroom activities.
- The Waterbug App for identification (downloaded

from Google Play or iTunes).

More information can be found on the National Waterbug Blitz website. <https://www.waterbugblitz.org.au/Get-Involved> (Copy and paste into browser).



Water bug Collection:

- Pour clean wetland water into a bucket near the water's edge.
- Stand at the water's edge and using circular sweeping motion, sweep the dip net through the water multiple times.
- Be sure to sample all habitat types.
- Rinse the sample until water runs clear and transfer collected water bugs to a bucket.
- Rinse any mud or silt from the dip net before re-sampling.
- Transfer water bugs into buckets into large sorting trays. Keep water bugs in the shade.

Wetland Activity

ACTIVITY - Macroinvertebrate Sampling (Continued)

Sorting Water bugs:

- Observe water bugs swimming in the large tray.
- Fill the ice cube trays with clean water.
- Transfer the water bugs into the ice cube trays using spoons, sorting the water bugs as they go.



Recording and Identification:

- Identify the types of water bugs collected using the Waterbug App.
- Document the abundance of each water bug using the ALT Waterbug Field Sheet (downloaded from the Waterbug Shop).

Link to field sheet:

<https://www.embraceecology.com.au/waterbugshop/alt-waterbug-field-sheet> (Copy and paste into browser).



Wetland Activity

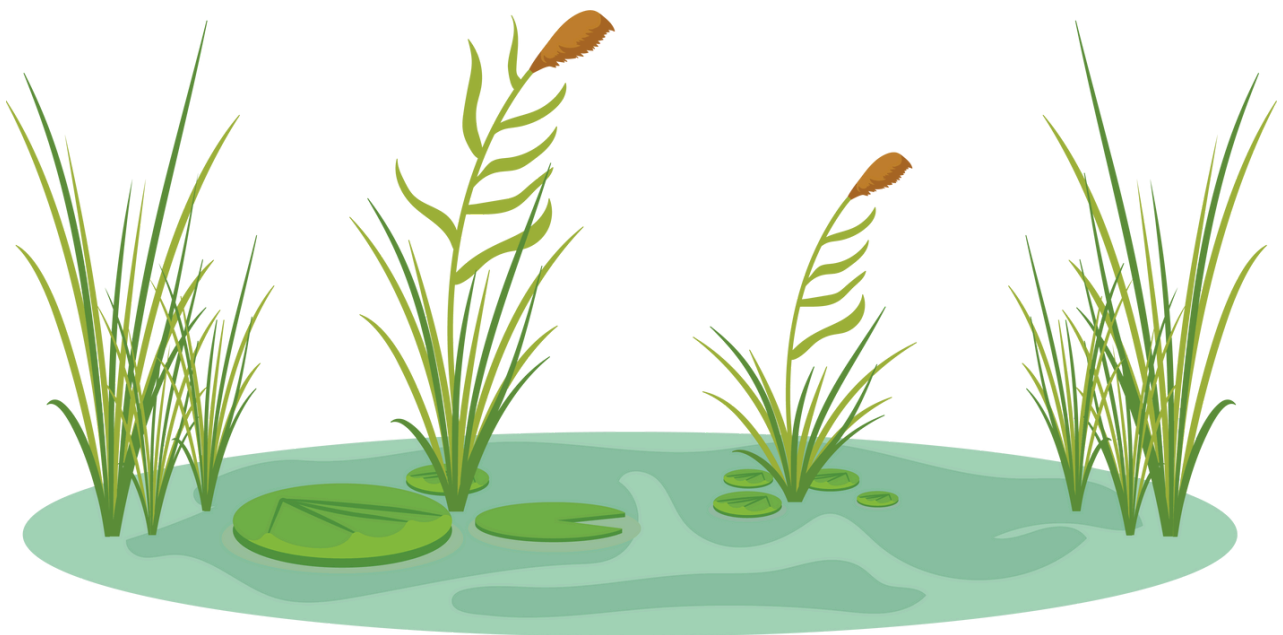
Viewing waterbugs:

- Use the camera on your mobile phone or iPad to capture an image of one of the macroinvertebrates. Teachers may decide to purchase a macro lens for their class to attach to their phones when taking photos.
- Draw a biological drawing of one of the water bugs. In your drawing, magnify the water bug so that your drawing is 3 times the actual size of the water bug.
- Label the parts of the water bug.



Pack up:

- Return water bugs to the location they were sampled from.
- Wash large sorting trays, ice cube trays and dip nets.



Macroinvertebrate Surveys

Aim:

Equipment:

- Dip nets
- Buckets
- Large trays for sorting
- Ice cube trays for smaller sorting
- Spoons, pipettes
- Eppendorf tube
- Water bug identification sheets



Method:

- Pour clean wetland water into a bucket near the water's edge.
- Stand at the water's edge and using an upward-sweeping motion, sweep the net through the water.
- After each sweep, check the dip net and transfer collected water bugs to a bucket.
- Rinse any mud or silt from the dip net before re-sampling.
- Transfer water bugs into large sorting trays for identification.

Macroinvertebrate

Name of macroinvertebrate:

Macroinvertebrate SIGNAL score:

Draw your chosen macroinvertebrate to 3 times its actual size.
Identify and name the body parts of your macroinvertebrate.

Classroom Activity

ACTIVITY 1 -

(1A) Revisit your experimental design and your research question.

(1B) Graph your data, based on your research question.

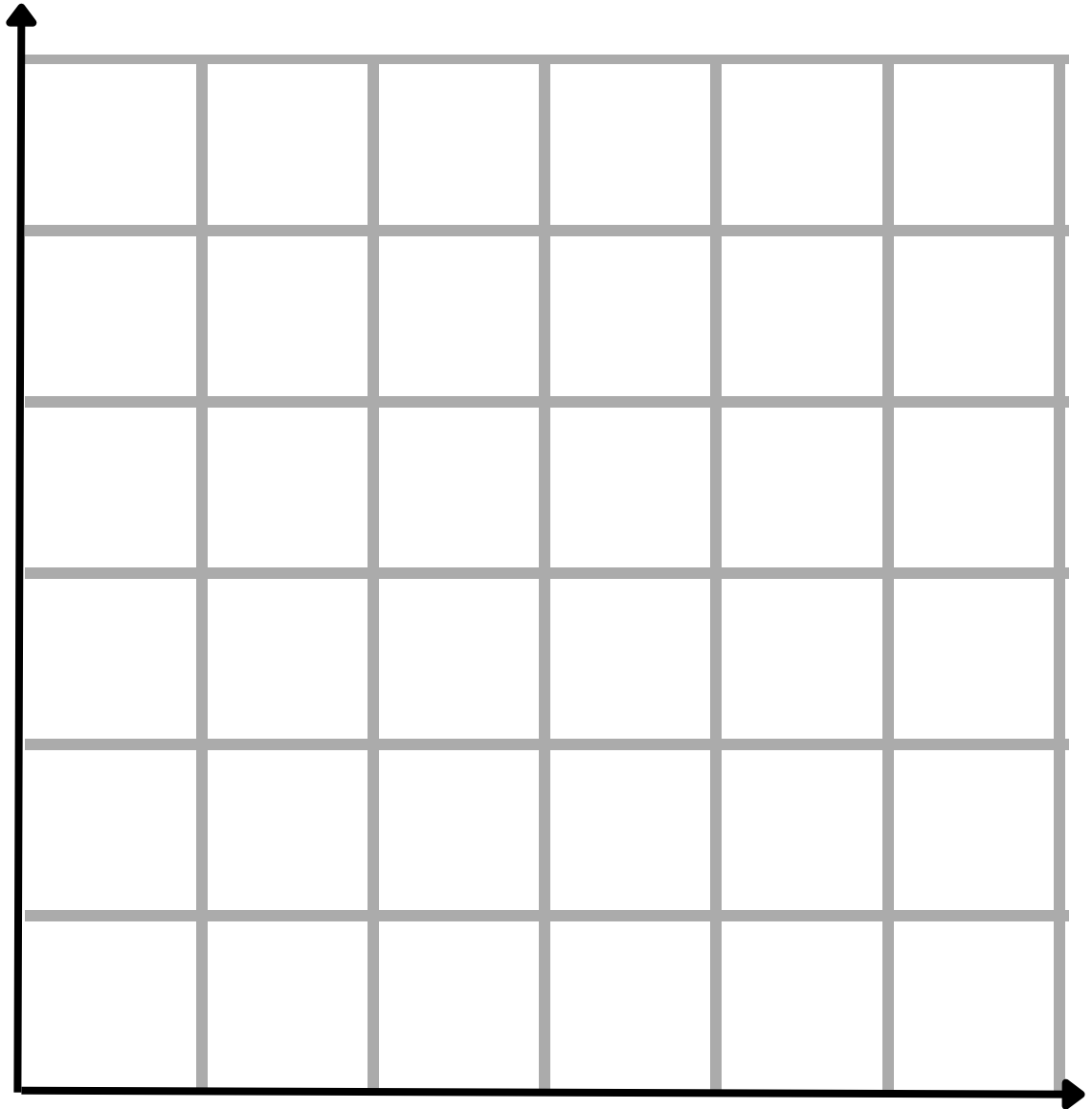
For instance, if you have sampled two sites and were interested in comparing the abundance of water bugs (from the ALT Waterbug Field Sheet) at the two sites, you may choose to create a bar graph of your data with one bar per site.

(1C) Interpret your findings and accept or reject your hypothesis based on your results.



Graph Your Data

Draw a graph of your macroinvertebrate data.



Interpret your findings

Interpret your graph and answer your research question based on your data.

Do you accept or reject your hypothesis? Explain why.
