

Water Ecology Lab: Nature Lab

Topics covered: Students learn field collecting techniques for sampling water, collecting aquatic invertebrates, and testing water quality of Mertie's Lake for parameters including pH, dissolved oxygen, temperature, and turbidity. Students then work in the lab area to investigate hypotheses and experiments for measuring and recording abiotic and biotic factors to describe the water quality of the lake using the Scientific Method, technology, and math skills.

Ages: 2nd – 8th

Purchase Details: \$8 per student

Programs can be reserved by phone: 901-636-2221
Tuesday - Friday, sessions by appointment

Objectives:

1. Use field techniques to take water samples.
2. Check water samples for parameters like pH level, dissolved oxygen, and temperature.
3. Use the Scientific Method.

Vocabulary: adjusted for specific grade levels

Scientific Method

pH

turbidity

abiotic

biotic

ecology

vertebrates

invertebrates

bioindicator

dissolved oxygen

eutrophication

runoff

point and non-point sources

Fun Facts:

- Sampling of aquatic macroinvertebrates is a way for scientists to gauge the quality of a given water source.
- Species like mayflies and dragonflies are not tolerant of water contamination so if scientists find them, they'll know the water is mostly free of contaminants. However, some species, like black flies and leeches, thrive in polluted water, so large populations of these species let scientists know that the water is likely contaminated.
- Fresh water makes up only around 2.5% of the earth's total water supply.

MoSH

Web Resources:

Tennessee Wildlife Resource Agency – www.tn.gov/twra.html

Tennessee Wildlife Federation – www.tnwf.org

Exhibit Information at Lichterman Nature Center – www.memphismuseums.org/lichterman-nature-center/

Water on Wheels (University of Memphis) – <https://caeser.memphis.edu/resources/education/>

Where: Lichterman Nature Center Labs

When: Year-round, Tuesday – Friday, sessions by appointment

- **Standards:**
 - **(Grade Level)** 5 - 8
- **Tennessee: (Life Science)**
 - LS (1-4), ESS3, ETS2
- **Mississippi: (Life Science)**
 - L (1-4), E10
- **Arkansas**
 - LS 1, 2, 3, 4