



Lesson 3

Timeframe

As many trips as possible to your class's site

Materials

- Field equipment — available for checkout
- Water Quality and/or Macroinvertebrate lesson plans for the field
- Pencils
- Datasheets

Objectives

- Gather and record data
- Make observations into a field journal
- Understand the importance of water quality monitoring
- Learn the appropriate techniques to sample water quality
- Perform in-stream water quality tests measuring for pH, turbidity, temperature, and dissolved oxygen
- Understand the important role macroinvertebrates play in the aquatic ecosystem
- Collect, record numbers of, and study macroinvertebrates

Heading Into the Field

Teacher Background

For information on water quality and macroinvertebrates, refer to: A Citizen's Guide to Understanding and Monitoring Lakes and Streams, <http://water.usgs.gov/edu/waterproperties.html>; and Water Quality and Macroinvertebrate Field Studies, found in the “Resources” section for individual Kits: <http://seagrant.oregonstate.edu/education/streamwebs-educator-kits/streamwebs-kit-descriptions>

Description

In this lesson, students will be heading out into the field to do a watershed investigation that includes collecting water quality and macroinvertebrate data. You can find lessons for leading your students in the field around these focus areas at www.streamwebs.org. Students should collect data that will help them answer their investigative questions and save their data so they can follow up in the classroom at a later date.

Preparation

If you do not already have gear available to use, you may be able to borrow equipment through your local watershed council, STEM hub, etc. You will also need to make sure students have their datasheets, and remind them to be thinking about their investigative question while gathering data.

Visit the site ahead of time to determine safe spaces for students to work, and to determine boundaries. Each group will need to access appropriate spaces in the field to collect their necessary data. Create and share a site schedule and field-day plans with students ahead of time. Arrange for parent, partner, or community volunteers to help with the trip.

Activity Introduction

Have students gather in a predetermined spot, such as an open area in a field or by the bus in the parking lot, to orient them to the space and to reiterate the day's activities, procedures, and schedule. Once students are gathered, ask them to group with their field team.

- Instruct students to be aware and careful while conducting their activities.
- Choose access sites to the stream or water that will cause the least disturbance, especially considering erosion of stream banks.
- Remind students to be respectful of nature (do not remove plants, handle organisms carefully, return them as close to the location they were found as possible, etc.).
- Remind students to make good observations and to record them.
- Remind students to take pictures and/or video for final projects.

Please see the water quality and macroinvertebrate lesson-plan links under supplies for more information on field activities and data-gathering techniques.



Activity

1. Students will work within field teams to gather data using StreamWebs water quality and macroinvertebrate tools and datasheets. The goal for students should be to gather information that pertains to their investigative question in order to try answering it, and to have data for their final presentations in Lesson 7.
2. Remind student groups studying and collecting macroinvertebrate data to be sure to gather species from different habitats, such as pools and riffles, if possible.



Activity cont.

3. Remind teams to safely store their datasheets until their return to the classroom. Or collect datasheets at the end of the trip.
4. For each field event, students should enter their data into StreamWebs as soon as possible so that it will be available for interpretation, data analysis, and presentations.

Activity Wrap Up

When students are done collecting their field data, discuss what they found. Let them know they are going to follow up with the data back in the classroom to get a better idea of the health of the watershed. If you are planning to visit the site again, you can let them know this and discuss how more data will provide them with a better picture of what is going on in the watershed.



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