Benthic Macroinvertebrates

South Sound GREEN

Background:

Benthic macroinvertebrates, or "stream bugs", are aquatic animals living at the bottom of the water that are big enough to see with the naked eye and do not have a backbone. These stream bugs are vitally important to the local ecosystem, from being the primary consumers of plankton and detritus to providing a food source for young salmon. Rivers, lakes, and ponds throughout our watershed contain dozens of different species of stream bugs, but they may be hard to spot if you don't know where to look!

In this activity, students will have the chance to **observe real stream bugs from local waterways**, either alive or preserved in resin. By observing these creatures, students will not only be able to **identify different invertebrates**, but be able to **determine the overall biotic health of the waterway**.

Next Generation Science Standards:

- MS-LS2-5: *Evaluate competing design solutions for maintaining biodiversity and ecosystem services.*

Learning Outcomes:

- Identifying stream bugs accurately and using a biotic index calculator can help determine the biological health of the bugs' native waterway.
- Students will be able to argue the importance of stream bugs in relation to nature and humans.
- Reducing stream bug abundance and biodiversity will negatively impact their aquatic ecosystem.
- The biotic index can describe the consequences of human actions on the environment but cannot prescribe the decisions humans take to fix them.

Grade Level: 6th-8th

Lesson Leader: SSG educator (Sept/Oct or Apr/May) or teacher w/ SSG training

Materials:

- Live stream bug sample (collected by SSG or teacher w/ collection permit), OR Resin bug kit
- Viewing equipment: containers, spoons, droppers, magnifiers/ microscopes, etc.
- Dichotomous key
- Biotic Index calculator

Career Connections

- Aquatic biologist
- Entomologist
- Research Technician

**NGSS Components:
Blue (Science and Engineering Practices) = Engaging in argument from evidence

Orange (Disciplinary Core Ideas) = Ecosystem dynamics, functioning, and resilience

Green (Crosscutting Concepts) = Stability and change; Science addresses questions about the natural and material world.

Interested in participating in a benthic macroinvertebrate lesson? Contact South Sound GREEN at SBishop@thurstoncd.com!