Pitfall Traps Lesson Plan

Grades: 3-6
Time: 15 minutes (each session)

Students will discover the types of invertebrates and their preferred habitats. Students will create and place pitfall traps in chosen location on their school grounds. After specific intervals, students will assess the pitfall traps and record the number and types of invertebrates they find.

Materials:

- Pitfall Traps – clear Plastic cups, Tupperware or coffee cans (one per group)
- Lids - Flat pieces of wood, cardboard to cover the trap (one per group)
- Trowels (one per group)
- **Bugs of Washington and Oregon field guides** (Optional-10 Available for loan from LCEP)

Learning Objectives:

1. Students will observe how different habitats support different invertebrates

2. Students will make predictions and test their hypothesis

3. Students will record and graph data

Vocabulary: invertebrate, hypothesis, variable

Introduction and background discussion:

- Bug is a catchall name for small invertebrate organisms like insects, spiders, millipedes, centipedes, slugs, snails, etc. Bugs are found all over and often in surprising places. They are a crucial part of the food chain even in cities. Like us they need water, food, and shelter to survive.
- Hypothesis - Where do you think most bugs live in our school yard? (gardens, grass, under trees, etc.) Explain that scientists ask themselves questions like this and then make predictions called hypothesis (I think most bugs live in the flower garden). Discuss different variables (locations) they could use.

Pit Traps (15 minutes)

- One excellent way to catch bugs is to create a pitfall trap. Many bugs hide under rocks and leaves as they search for food. Create a pitfall trap by placing a container in the ground and covering it with a rock/board. Bugs will be attracted to the shelter of the rock but fall into the cup once they go beneath it.
- Group up students based on their hypothesis. They will need a trowel to dig, a container, and a lid/rock for the top.
- Have students dig a hole in their desired area and place their cup inside, deep enough that the lip of the cup is level with the ground. After placing a few small rocks around the cup students will then lay the lid on top of them leaving room for bugs to crawl under the lid and fall into the trap.

Pitfall trap

Lid   Small rocks
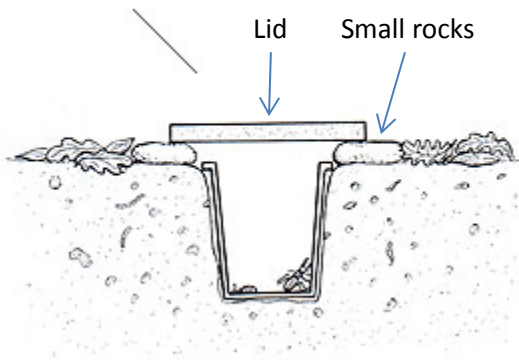
*A second cup placed inside the first makes it easy to take out captured bugs and count them

Ongoing data collection:

- Students visit the traps at specific intervals (daily, weekly) to observe pitfall traps. Students record the number of bugs caught and then release them.
- A running tally can be kept on the board or in science journals to graph the data each observation session. This allows the data to be easily analyzed after sessions.
- For older students, other variables can also be tracked such as weather and temperature to see if that affects the number of bugs caught.
- After sufficient data is collected, students will discover where most of the invertebrates can be found on the school grounds and new questions can arise such as "Why are there so many more bugs in the garden than the grass?"