



Outdoor Biology Instructional Strategies

ANIMALS IN A GRASSLAND

BACKGROUND

Lawns and other grasslands support many populations of small flying, hopping, and crawling animals. Because these animals are often well camouflaged, the casual observer usually fails to see them at all. A good tool for collecting hopping and flying lawn animals for observation is a sweep net or butterfly net. Flies, moths, leaf hoppers, wasps, ladybugs, and gnats are a few of the animals often sampled with sweep nets. However, animals that walk along the ground are rarely collected with sweep nets: ants, beetles, isopods, spiders, millipedes, and tiny springtails can be sampled with small pitfall traps. Vials buried with the tops flush to the ground surface make fine traps, especially if they are baited with a variety of foods.

CHALLENGE

FIND AS MANY DIFFERENT KINDS OF ANIMALS ON A LAWN AS POSSIBLE

The techniques outlined in this activity allow investigators to search out and observe some of the animals living in a lawn study site. Initially, youngsters will try to find animals without the aid of nets. Frequently this search is fruitless. If you then demonstrate the use of a sweep net, you can dazzle your investigators with the number and variety of animals you can catch. Next, participants use the nets to sample the site and hold their catch in plastic bags for observation. A question and discussion session helps develop appreciation of the diversity of animal life, and it may lead to a follow-through investigation of animals that are caught in pitfall traps.

MATERIALS

For the group:

- 1 data board for listing animals caught
- 1 marking pen

For each team of two:

- 1 sweep net (see "Sweep net" equipment card in Tool Box 1)
- 2 plastic bags
- 2 rubber bands
- 1 *Lawn Guide*

MATERIALS FOR THE FOLLOW THROUGH

For each team of two:

2 6cm. squares of aluminum foil (small jars or tin cans may be substituted)

1 trowel or dinner knife

Small pieces of bait such as peanut butter, lettuce, meat, bread, sugar, candy, hard egg, etc.

PREPARATION

Get the “Sweep net” equipment card from the OBIS toolbox folio. If you plan to make nets for your group, construct them in advance. If your participants are going to make their own nets, plan to devote an entire period for this activity, since it is time consuming.

Select a grassy area, preferably near some bushes.

If you intend to do the recommended follow-through section of this activity, don’t forget to organize some baits for the fall traps. Only tiny pieces of bait are necessary, and a wide variety is best.

ACTION

1. Present the challenge to the participants: “how many different kinds of animals can you find living in our study site?”
2. Distribute a plastic bag to each of the youngsters and encourage them to search on “all fours.” They probably will not have much success so interrupt them after five minutes and demonstrate how rapidly you can collect animals with your sweep net.
3. Distribute a sweep net to each team of two and let the teams collect. You should help those having trouble transferring animals from the nets to the plastic bags. (See the “Sweep net” equipment card.) Let the participants continue to sweep and add samples to their observation gabs for fifteen to twenty minutes. Encourage them to share discoveries they make while sweeping.
4. When sweeping is complete, gather the participants into a group and list the animals on the data board. Use names from guides or make up names for animals that can’t be identified.
5. Remind the students to look for interactions in the gabs. Are there any animals eating others? Is there water vapor in the bag? Is a spider spinning a web? Keep your eyes open.
6. Remember: return all animals to the grass when observations are complete.

WHAT DO YOU THINK?

- How many different animals did you find?
- What was the biggest animal you found? Smallest?
- What kind did you find the most of? Least?
- What colors? Shapes?
- Do all of the animals you found have anything in common? What?
- Did you find more of one type of animal than of another? Can you think of any explanations?
- What interactions between two animals, or an animal and plant, did you see?
- Are there animals living in the lawn that are not easily caught by sweep nets? If so, how could they be captured?

FOLLOW THROUGH

A. In order to observe animals that are not usually caught in sweep nets, set up some small pitfall traps. If you have the opportunity of meeting with your group again in a day or a week, present this second challenge: “How many additional animals can we find that we didn’t find with our nets?”

Follow Through Action:

1. Introduce the challenge
2. Prepare a map of the study area on your data board. Investigators can mark on this map exactly where they put their traps. This will enable them to relocate the traps.
3. Show the group how to make and place pitfall traps.
4. Place your thumb in the center of a square of aluminum foil and wrap the foil around your thumb to make an extra-long thimble. Punch a small pencil hole in the bottom of the foil thimble to allow water to drain. (Small jars or tin cans can be substituted for the foil traps.)
5. Tell the participants to dig holes in the lawn the same size as the traps and to press the traps into the holes. Flare or flatten the foil sticking out of the hole so little animals can easily walk into the traps from the surrounding grassland.
6. Drop a piece of bait into the trap.
7. Distribute trowels, vials, and bait and have students set up pitfall traps.
8. Have each student record the exact location of his or her pitfall trap on the map.
9. Leave the traps in the lawn for at least eight hours before making observations.
10. When you return, have each student record on the map the kinds and numbers of animals in his or her trap.
11. Review the “What Do You Think?” questions.

12. Conduct a night sweep netting activity. Compare the results of a night sweep to the results of a day sweep.
13. Observe the animals attracted to a light that is left burning at night in your study site.
14. Sweep net a lawn immediately after mowing or watering. Make comparisons.

WHAT TO DO NEXT

Invent an Animal

Sticklers

Bean Bugs

What Lives Here?