Name: **Date:**

HANDS-ON LAB

Pill Bug Behavior

Pill bugs (*Armadillidium vulgare*) are terrestrial crustaceans that feed on decaying plant and animal matter. As scavengers and composters, they even eat their exoskeleton when it sheds, to recycle the calcium. As crustaceans, they have two pairs of antennae, breathe through gills, and have seven pairs of legs on their abdomen and thorax.

In this investigation you will design an experiment to determine how manipulating a variable changes the behavior of pill bugs.

PREDICT

How does the behavior pattern of pill bugs change when their environment is manipulated?

_____

_____

_____

_____

MATERIALS

- foil (25-cm piece)
- graduated cylinder
- light source
- marker
- paper, dark-colored (1 sheet)
- paper, light colored (1 sheet)
- paper towels (4)
- pill bug (12)
- shoebox lid
- water (10 mL)

PROCEDURE

1. Formulate a question to ask about pill bug behavior by looking at the materials list and determining how you can manipulate their environment.

   Question:

   _____

   _____

2. Choose a variable to manipulate based on the question you have formulated. Use Data Table 1 to record your observations of pill bug behavior in the experimental manipulated environment. Remember to treat all living things carefully.

   Variable:

   _____

   _____

3. Determine a control setting, keeping in mind the variable you will be manipulating. Use Data Table 1 to record your observations of the pill bugs in the control environment.

4. Make a list of all the conditions you will hold constant in your experiment.

   Constants:

   _____

   _____

5. Formulate a hypothesis to your question.

   _____

   _____

6. Write up a procedure for your experiment.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

7. Have your teacher approve your experimental design.

8. Conduct your experiment. Record all observations in the data tables.

DATA TABLE 1: OBSERVED BEHAVIOR OF PILL BUGS

OBSERVATIONS	CONTROL	EXPERIMENTAL
Trial 1		
Trial 2		
Trial 3		

9. If time permits, conduct three trials, using a new set of pill bugs for each trial.

10. Wash your hands when you are done.

ANALYZE AND CONCLUDE

1. Compare your data to your hypothesis. Explain whether or not your data supported your hypothesis.

_____

_____

_____

_____

_____

_____

_____

2. What effect did manipulating the environment have on pill bug behavior?

_____

_____

_____

_____

3. Identify possible sources of unavoidable experimental error in your design.

_____

_____

_____

4. List possible reasons for inconsistent results you may have observed.

_____

_____

_____

_____

5. How might pill bug behavior be different in a more natural environment? Why might this occur?

_____

_____

_____

_____

_____