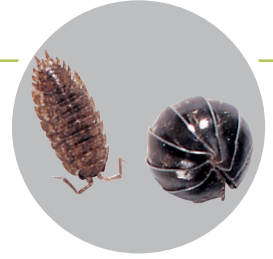


Pill Bug Behavior Choices

A Carolina Essentials™ Investigation

Student Worksheet



Overview

Pill bugs, also known as roly polies, are actually terrestrial crustaceans. Pill bugs (*Armadillidium vulgare*) have gills for respiratory organs like their aquatic cousins. Because pill bugs have gills, their habitat is restricted to damp places. It is common to find pill bugs under wood or leaf litter, on the bottom of flower pots, or in damp corners. They burrow into the ground and feed on leaf litter or pieces of fruit or vegetables like apples, potatoes, and carrots. An adult female can carry up to 200 eggs in a brood pouch on the ventral side of her thorax. The young hatch in the pouch and stay there for about 3 weeks. Young pill bugs are smaller in size and paler in color than adults. The young will molt 4 to 5 times as they grow.

Essential Question

Do environmental conditions affect animal behavior?

Investigation Objectives

1. Investigate how pill bugs respond to humidity levels in their environment.
2. Identify 2 other environmental factors that influence pill bug behavior.

Safety Precautions

Treat all animals with care and respect. Wear gloves and safety glasses.

Procedure

1. Place a clean sheet of filter paper or paper towel disk into each side of the choice chamber.
2. Using the dropping pipet, dampen the filter paper on 1 side of the chamber. Make sure the paper absorbs all excess water.
3. Use a plastic spoon to transfer 5 pill bugs to each side of the chamber.
4. Put the lids on the chamber.
5. Count and record on the data table the number of pill bugs on each side of the chamber every 30 seconds for 10 minutes. Continue to record data even if they all move to 1 side or stop moving.

Disposal

Return the pill bugs to the pail as your teacher instructs. Throw your filter paper in the trash. Clean out the choice chambers and return them to the designated place.

Continued on the next page.

SAFETY REQUIREMENTS



MATERIALS

- 1 cup of 10 pill bugs
- 2 pieces of filter paper or paper towel
- 1 cup of water
- 1 choice chamber with 2 chambers
- 1 plastic spoon
- 1 dropper
- 1 stopwatch or timer



Data Tables

Time (min:sec)	0:00	0:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00
# on damp side																					
# on dry side																					

Analysis and Discussion

- Graph your data for the damp side and the dry side of the chamber on the same axes. Title the graph and include the following information:
 - The independent variable is _____
 - The dependent variable is _____
 - Plot the independent variable on the x-axis and the dependent variable on the y-axis.

- Based on your graph and the introductory material, explain pill bug behavior with respect to humidity.

- Explain how the pill bug response to humidity may be advantageous.

- Identify 2 more environmental factors that may affect pill bug behavior.

- Design an experiment to test 1 of the environmental factors that may affect pill bug behavior.