

# PILL BUG PALS

## BENCHMARKS and TASKS

**SC.B.1.1.5** The student knows that every human action requires energy that comes from food.

**SC.D.2.1.1** The student understands that people influence the quality of life of those around them.

**SC.G.2.1.1** The student knows that if living things do not get food, water, shelter, and space, they will die.

**SC.G.2.1.2** The student knows that the activities of humans affect plants and animals in many ways.

- The student recognizes that plants and animals need water, energy, air, shelter, and space.
- The student recognizes that care must be taken to know the needs of living things and how to provide for them.
- The student explains how human behavior can affect the quality of life.

## KEY QUESTIONS

What kind of **environment** does a pill bug prefer?

What kind of food does a pill bug prefer?

## BACKGROUND INFORMATION

**Sow bugs** are land **isopods**, members of the crustacean family. They have exoskeletons like crabs and lobsters. Although they live on land, sow bugs breathe through **gills**, which must be kept moist. Therefore, they are always found in damp places (under trash, boards, leaves, etc.). Their bodies are oval-shaped and light gray in color with seven pairs of legs. Sow bugs usually eat decaying vegetable matter and can do considerable damage to tender young plants in gardens.

A close relative of the sow bug is the **pill bug**. It is darker gray in color and rolls itself into a ball when disturbed; otherwise, it is like the sow bug.

Sow bugs can move about freely in a large plastic container, making them easy to study and maintain in the classroom. The bottom of the container should be covered in soil, and one part of the soil should be kept moist, but not wet, at all times. Decaying wood and leaves may be placed on top of the soil for hiding places. Add raw potato or carrot occasionally for food.

## MATERIALS

### Teacher

scissors  
clear plastic container with lid (to hold pill bugs)  
soil  
leaves  
potato slices and carrot slices  
stamp pad

### Per pair of students

pill bug (at least two)  
pencils/crayons  
*My Pill Bug House* chart  
2 egg carton cups  
clear plastic cup  
pie pan containing a slice of potato, a green leaf, and a slice of carrot

## TEACHING TIPS

1. Order pill bugs or sow bugs from a science supply dealer if you are unable to collect enough locally for the activities.
2. Cut out two egg carton cups for each pair of students to use. Cut a hole in the top of one egg cup for each student. The edge of each cup will also need to be notched, so the pill bugs can crawl inside (see diagram on *My Pill Bug House Chart*).
3. The plastic container for pill bugs needs dead leaves, some soil, and potato slices. (Some pill bugs may die, so order at least two pill bugs per pair of students.)
4. Before going outside to look for pill bugs on campus in **EXTEND/APPLY**, locate places that will be suitable for the children to look (e.g., areas with rocks, bricks, wood).

## ENGAGE

1. Have students sit in a circle. Pass the container of pill bugs around the circle so the children can observe them.
2. Ask:  
*What do you think is in the container?*  
*Have you ever seen a pill bug?*  
*How would you describe the pill bug?*  
*What should we do to take care of the pill bugs?*  
*Do you think a pill bug needs a special place to live?*  
*Where do you think pill bugs live?*
3. Show the students the two types of egg carton houses. Explain that one provides light and one provides darkness.

## EXPLORE

1. Give each pair of students two pill bug houses and discuss the differences between them.
2. Have each student predict and record on *My Pill Bug House Chart* whether the pill bug will prefer the dark house or the house with an opening for light.
3. Ask students to indicate their prediction by making a fingerprint pill bug on *My Pill Bug House* prediction chart under the appropriate heading.  
**To make fingerprint pill bugs:** Let students press one of their fingertips on a stamp pad, lift, then press down on the record sheet in the chosen column. Pill bug details can be added with a pencil or a crayon. (Pencil smudge fingerprints may not be dark enough to show up on the paper.)
4. Distribute a plastic cup containing two pill bugs to each pair of students.
5. Remind students that pill bugs are living things and should be treated humanely.
6. Give the students time to observe and name their pill bugs.
7. Have students place the pill bug between the two houses.
8. Ask students to observe and wait quietly to find out which kind of house – light or dark – the pill bug prefers.

## **EXPLAIN**

1. Ask:  
*What happened when you first placed the pill bug in the container?*  
*Where did your pill bug go?*  
*Which house does your pill bug like best?*  
*Why do you think your pill bug chose that house?*  
*Where do you think you might find pill bugs outside?*
2. Have students refer to the chart. Ask students to record the results of the experiments by making a fingerprint pill bug under the results section on the chart.
3. Compare predictions and results on the chart.

## **EXTEND/APPLY**

1. Set up an experiment to find out what pill bugs like to eat. Give each small group of students a pie pan containing a slice of potato, a green leaf, and a slice of carrot. Ask them to predict which food more pill bugs will like. Be sure they put their pill bugs in the middle of the pan with the foods spread out around the pan. Let them observe the pill bugs and discuss the results.
2. Ask:  
*Why do pill bugs need food?*  
*What else needs to eat food?*  
*Why do animals need food?*  
*Why do humans need food?*  
*Do you think that food gives us energy?*  
*Why do we need energy?*  
*What else do pill bugs need besides food?*
3. Plan another experiment to determine which conditions a pill bug prefers. Have students follow the same procedure as in the first experiment. Ask them to observe to see if a pill bug prefers a dry house or a damp house. Record the results on a chart.

## **EXTENSIONS**

1. Take students outside to search for pill bugs.
2. Ask:  
*Where do they live?*  
*Is their natural habitat dark and damp or light and dry?*  
*Do people destroy pill bugs' houses? How and why?*  
*Do people take away their food source?*  
*What could happen if they could not find a suitable home, food or water?*

## **ASSESSMENT**

Teacher observation. Look for the following:

- Do students handle pill bugs respectfully?
- Do they use the magnifiers correctly to obtain information?
- Can they identify where you would most likely find a pill bug living in the environment?



# My Pill Bug House Chart



**Predict: Which house will my bug like best?**

**Light House**

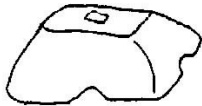


**Dark House**



**Results: Which house did my bug choose?**

**Light House**



**Dark House**

