

Pill Bug Detectives

Follow a scientist's question, sources, investigation, and explanation.

SC.4.N.1.1 "Raise questions about the natural world, use appropriate reference materials that support understanding to obtain information (identifying the source)..."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline the testable question, circle the name of the reference source, and number 1 through 4 the four sentences that describe the team's investigation steps.

A Question Under the Log

- ① During recess, Maya found pill bugs under a damp log. She wondered, "Do pill bugs choose dark places more often than bright places?" This was a testable question because she could observe where the pill bugs moved. Maya first watched one pill bug crawl across a tray with a shaded half and a lighted half. She recorded its location every minute.
- ② To learn how to handle pill bugs safely, Maya used a library book called *Small Animals in Soil*. The book explained that pill bugs need moisture and should be returned where they were found. She wrote the book title in her notes, so others would know her source. Next, Maya joined three classmates. They made one plan: use the same tray, light, and timing for each trial.
- ③ Each student tested one pill bug for five minutes. They kept the tray and light in the same places, but changed which side was shaded. This helped make the test fair. After four trials, the group compared notes. Three pill bugs spent more minutes on the shaded side, and one spent more minutes on the lighted side. The group explained that their results suggest pill bugs often chose shade in this investigation.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What testable question did Maya raise?

2 What reference source did Maya use, and how did she identify the source in her notes?

3 Name two things the group kept the same and one thing they changed during the trials.

4 What explanation did the group make, and what evidence supported it?

3 YOUR TURN _____ Your own words

Choose a natural-world question you could investigate safely at school. Write a testable question, identify one reference source you would use, describe two fair test steps, and state what result would support an explanation.

PART 1 • READ AND MARK

Underline the testable question, circle the name of the reference source, and number 1 through 4 the four sentences that describe the team's investigation steps. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What testable question did Maya raise?	Do pill bugs choose dark places more often than bright places?
2	What reference source did Maya use, and how did she identify the source in her notes?	She used a library book called <i>Small Animals in Soil</i>. She wrote the book title in her notes.
3	Name two things the group kept the same and one thing they changed during the trials.	They kept the tray, light, and timing the same. They changed which side was shaded.
4	What explanation did the group make, and what evidence supported it?	The group explained that pill bugs often chose shade in this investigation. Three of four pill bugs spent more minutes on the shaded side.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Do earthworms move toward moist soil more often than dry soil? I would use the Britannica Kids website article about earthworms to learn about their habitat. I would put equal amounts of moist and dry soil in a tray and record each worm's location every minute for five minutes. I would repeat with four worms, switching the moist side each time. If most worms stayed longer in moist soil, the results would support the explanation that earthworms often choose moist soil.

Accept equivalent wording that accurately identifies the question, source, fair-test methods, and evidence-based explanation. For Your Turn, accept a safe, testable question, a named source, two reasonable controlled steps, and a result linked to an explanation.