

Pill Bug Detectives

Plan, observe, and use data to support a conclusion.

SC.5.N.1.1 “Define a problem, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types such as: systematic observations...”

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline Maya’s problem question, circle the variable she changed, and number two conditions she kept the same. These marks show how a fair investigation is planned.

Damp or Dry?

- ① Maya wondered whether pill bugs choose a damp or dry place. She wrote her problem as a question: “Do pill bugs spend more time on a damp paper towel or a dry paper towel?” Before planning, she used a library book and a reliable science website. Both sources explained that pill bugs need moisture to avoid drying out.
- ② To test the question, Maya placed one damp towel and one dry towel in equal sides of a tray. She put ten pill bugs at the center. The towel type was the variable she changed. She kept the tray, number of pill bugs, observation time, and room conditions the same. Every minute, she counted bugs on each side.

PILL BUGS COUNTED EACH MINUTE

Minute	Damp side	Dry side
1	6	4
2	7	3
3	8	2
4	8	2

- ③ Maya organized her counts in the table. More pill bugs were on the damp side at every observation. She predicted that a longer test would probably still show more bugs on the damp towel. Her evidence supported the conclusion that, in this tray, pill bugs preferred the damp side. Repeating the test could make the conclusion stronger.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What problem did Maya investigate, and which two reference materials did she use before planning?

2 What variable did Maya change? Name two conditions she kept the same.

3 At minute 3, how many pill bugs were on each side? How does the table support Maya's conclusion?

4 What did Maya predict for a longer test, and what conclusion did her evidence support?

3 YOUR TURN _____ Your own words

Plan a fair investigation about which material absorbs the most water. Write a testable question, name one reference material you would use, identify one variable you would change and two conditions you would keep the same, tell what data you would collect, and make a prediction.

PART 1 • READ AND MARK

Underline Maya's problem question, circle the variable she changed, and number two conditions she kept the same. These marks show how a fair investigation is planned. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What problem did Maya investigate, and which two reference materials did she use before planning?	She investigated whether pill bugs spend more time on a damp paper towel or a dry paper towel. She used a library book and a reliable science website.
2	What variable did Maya change? Name two conditions she kept the same.	She changed the towel type, damp or dry. Accept any two of these controlled conditions: tray, number of pill bugs, observation time, and room conditions.
3	At minute 3, how many pill bugs were on each side? How does the table support Maya's conclusion?	At minute 3, 8 pill bugs were on the damp side and 2 were on the dry side. The damp side had more pill bugs at every observation.
4	What did Maya predict for a longer test, and what conclusion did her evidence support?	She predicted that more pill bugs would still be on the damp towel. Her evidence supported the conclusion that pill bugs preferred the damp side in this tray.

PART 3 • YOUR TURN (SAMPLE ANSWER)

My question is, "Which material absorbs the most water: cotton cloth, paper towel, or aluminum foil?" I would use a science book to learn about absorbent materials. The material type is the variable I would change. I would keep each square's size and the amount of water the same. I would record the amount of water each square absorbs in three trials. I predict the paper towel will absorb the most water.

Accept equivalent wording for the problem, variables, prediction, and conclusion when it matches the passage and table. For Your Turn, accept reasonable investigation plans that identify a testable question, a changed variable, two controlled conditions, data to collect, a reference material, and a prediction.