

Evidence Detectives

Use observations and counts to explain a scientific idea.

SC.4.N.1.7 "Recognize and explain that scientists base their explanations on evidence."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each observation or count that is evidence. Circle the explanation that the evidence supports.

Where Do Pill Bugs Rest?

- ① Ms. Chen's class wondered why pill bugs often gather under damp logs. They made two small trays alike. Each tray had the same number of pill bugs, the same amount of food, and a dark cover. One tray held dry soil. The other held soil misted with water. The class planned to count where the pill bugs rested after ten minutes.
- ② After ten minutes, 18 of 20 pill bugs were on the damp soil. Only 2 were on the dry soil. The class repeated the test two more times with new pill bugs. Each time, most pill bugs were on the damp soil. The repeated counts were evidence, information collected through observations or measurements. The counts supported the idea that pill bugs prefer damp places.
- ③ The students did not say their counts proved that every pill bug always chooses damp soil. They knew a scientist's explanation should match the evidence and may change when new evidence is found. For example, a different test could change the amount of light while keeping the soil equally damp. New observations would help the class check whether light also affects where pill bugs gather.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What was the one important difference between the two trays?

2 Name two things the class kept the same in both trays. Why was that useful?

3 What counts were evidence, and what explanation did those counts support?

4 Why did the class repeat the test with new pill bugs?

3 YOUR TURN _____ Your own words

Choose a question about what an animal prefers. Describe a fair test, give made-up observations or counts as evidence, and write an explanation the evidence could support. Include one thing you would keep the same.

PART 1 • READ AND MARK

Underline each observation or count that is evidence. Circle the explanation that the evidence supports. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What was the one important difference between the two trays?	One tray had dry soil, and the other tray had damp, misted soil.
2	Name two things the class kept the same in both trays. Why was that useful?	They kept the number of pill bugs, amount of food, and dark cover the same. This helped them test the effect of soil moisture.
3	What counts were evidence, and what explanation did those counts support?	The counts showed that 18 of 20 pill bugs were on damp soil and 2 were on dry soil. The counts supported the explanation that pill bugs prefer damp places.
4	Why did the class repeat the test with new pill bugs?	They repeated it to see whether the same pattern happened again. Repeated observations provide stronger evidence.

PART 3 • YOUR TURN (SAMPLE ANSWER)

I wonder whether ants gather near sugar or plain crackers. I would place equal amounts of each food the same distance from an ant trail and count the ants after five minutes. If 14 ants gather near sugar and 3 gather near crackers, the evidence would support the explanation that these ants prefer sugar. I would repeat the test and keep the food amounts the same.

Accept equivalent evidence-based explanations that correctly connect the pill bug counts to damp soil. For Your Turn, accept any reasonable fair test with observations or counts, a controlled condition, and an explanation that matches the stated evidence.