

Evidence Detectives

See how observations and evidence guide scientific work.

SC.4.N.1.3 "Explain that science does not always follow a rigidly defined method ("the scientific method") but that science does involve the use of observations and empirical evidence."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline two details that are observations or evidence, and circle one sentence that shows science can happen in different ways.

Pill Bugs in the Garden

- ① During recess, Maya noticed pill bugs under damp leaves beside the school garden. She wondered whether they chose dark places or simply stayed where the ground was wet. Her group made two small habitats with the same damp soil. One had a cover that made shade, and the other stayed uncovered. They gently placed equal numbers of pill bugs in each habitat.
- ② After ten minutes, the group counted the pill bugs in each habitat. Most were under the cover. The students wrote the numbers in a notebook and repeated the test the next day. Again, more pill bugs were in the shaded habitat. Their counts were empirical evidence because the numbers came from what the group observed and measured.
- ③ The group did not begin with a fixed list of steps. Maya's observation led to a question, but another scientist might begin by finding a surprising pattern in old data. Scientists may change a test when new observations raise a better question. What matters is using careful observations and evidence to support an explanation, not following one exact order every time.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What observation made Maya curious about pill bugs?

2 What evidence did the group collect during its test?

3 Why are the group's counts empirical evidence?

4 According to the passage, what matters more than following one exact order of steps?

3 YOUR TURN _____ Your own words

Choose a safe classroom question you could investigate. Write three sentences that tell an observation or question, how you would collect evidence, and one way new observations might cause you to change your plan.

PART 1 • READ AND MARK

Underline two details that are observations or evidence, and circle one sentence that shows science can happen in different ways. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What observation made Maya curious about pill bugs?	Maya noticed pill bugs under damp leaves beside the school garden.
2	What evidence did the group collect during its test?	The group counted the pill bugs in each habitat, wrote the numbers down, and repeated the counts the next day.
3	Why are the group's counts empirical evidence?	The counts came from what the students observed and measured.
4	According to the passage, what matters more than following one exact order of steps?	Using careful observations and evidence to support an explanation matters more.

PART 3 • YOUR TURN (SAMPLE ANSWER)

I notice that one kind of paper towel seems to soak up water faster than another kind. I will put the same amount of water on equal-sized sheets and measure how much water is left after one minute. If the sheets tear, I can change my test by using smaller amounts of water and record the new observations.

Accept reasonable, safe investigations that include an observation or question, a way to gather observable or measurable evidence, and a possible change based on new observations. Students may use different scientific starting points or test plans.