

Clues to Questions

Use observations to ask testable science questions.

3.1.A "ask questions and define problems based on observations or information from text, phenomena, models, or investigations;"

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline observations Maya made, circle each question she asked, and write 1 next to the problem she decided to investigate.

Holes in Bean Leaves

- ① At the school garden, Maya noticed that one bean plant had round holes in several leaves. The plant beside it had no holes. Maya looked under both plants and saw tiny green caterpillars on the soil near the damaged plant. She did not know whether the caterpillars were eating the leaves, but her observations gave her something to investigate.
- ② First, Maya asked, "Do caterpillars eat bean leaves?" This question could be tested by watching caterpillars with bean leaves. Then she asked, "Why does only one plant have holes?" That question was too broad to test at first. Maya changed it to, "Are caterpillars found more often on bean plants with holes than on plants without holes?"
- ③ Maya defined her problem: she needed to find out whether bean plants with leaf holes had more caterpillars than bean plants without holes. To investigate, she planned to check six bean plants at the same time of day. For each plant, she would record whether leaves had holes and count any caterpillars she saw. Her results could help her answer her question.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 Which observations gave Maya a reason to ask whether caterpillars eat bean leaves?

2 Which question was too broad to test at first? What testable question did Maya make instead?

3 What problem did Maya define for her investigation?

4 What two kinds of information will Maya record for each bean plant?

3 YOUR TURN _____ Your own words

Think of something you observe outdoors, at school, or at home. Write one observation, one question you could test, and the problem you need to find out.

PART 1 • READ AND MARK

Underline observations Maya made, circle each question she asked, and write 1 next to the problem she decided to investigate. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Which observations gave Maya a reason to ask whether caterpillars eat bean leaves?	One bean plant had holes in its leaves, and Maya saw tiny green caterpillars near the damaged plant.
2	Which question was too broad to test at first? What testable question did Maya make instead?	The broad question was, "Why does only one plant have holes?" Maya changed it to whether caterpillars are found more often on bean plants with holes than on plants without holes.
3	What problem did Maya define for her investigation?	She needed to find out whether bean plants with leaf holes had more caterpillars than bean plants without holes.
4	What two kinds of information will Maya record for each bean plant?	She will record whether the leaves have holes and count any caterpillars she sees.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Observation: Ants gathered near a dropped apple slice, but not near an empty spot. Question: Are more ants found near food than near an empty spot? Problem: I need to find out whether food attracts more ants.

Accept many reasonable observations and testable questions. The problem should clearly state what the student needs to find out and should match the observation and question.