Garden Mystery

Use observations to form testable questions and clear problems.

4.1.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 each observation about the bean cups. Circle words that tell what is different, so you can use evidence to ask a question or state a problem.

Bean Cups in Different Places

1. During the first week of a class garden project, students planted bean seeds in identical cups of soil. They gave every cup the same amount of water. After seven days, most cups had short green shoots. One cup near a sunny window had a taller shoot, while a cup on a back shelf had no shoot at all. The students recorded what they saw.

2. To begin an investigation, scientists look closely at observations and information. They ask questions that can be investigated, rather than questions that only ask for an opinion. A useful question names what will be compared or measured. Scientists also state a problem clearly. A problem tells what they need to find out and uses evidence they have noticed.

3. Before choosing a test, the class could check for other differences between the cups, such as seed depth, soil moisture, and temperature. They could use their notes to decide which difference to study first. A fair investigation changes one condition and keeps other conditions as alike as possible. Clear questions and problems help students plan what evidence to collect.

2 ANSWER WITH EVIDENCE

Use the passage

1. Write one observation from the bean-cup notes. Do not explain why it happened.

2. Based on the different cup locations, write one question the class could investigate.

3. State the problem the class needs to solve before planning its investigation.

4. Name two other differences the class should check before choosing a test.

3 YOUR TURN

Your own words

Think of a change you have observed outdoors or at school. Write one observation, one question you could investigate, and one problem you need to solve.

ANSWER KEY

Garden Mystery

GRADE 4 · TEKS 4.1.A

PART 1 · READ AND MARK

Underline each observation about the bean cups. Circle words that tell what is different, so you can use evidence to ask a question or state a problem. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Write one observation from the bean-cup notes. Do not explain why it happened.	**Answers may include: One cup near the sunny window had a taller shoot, or one cup on the back shelf had no shoot.**
2	Based on the different cup locations, write one question the class could investigate.	**Answers may include: Does the amount of light affect how bean shoots grow?**
3	State the problem the class needs to solve before planning its investigation.	**The class needs to find out whether the cups' locations, including the light they receive, affect bean seed sprouting or shoot growth.**
4	Name two other differences the class should check before choosing a test.	**Any two: seed depth, soil moisture, and temperature.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Observation: The puddle on the blacktop disappeared before the puddle in the grass. Question: Does the surface under a puddle affect how fast the water disappears? Problem: I need to find out whether blacktop or grass makes puddle water disappear faster.

Accept accurate observations paired with a question that can be investigated and a problem that states what the student needs to find out. The student's question and problem may use a different reasonable observable event.