Clue to Question

Use observations and information to frame an investigation.

6.1.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, circle each piece of information from the reading, and number the investigation question 1 and the defined problem 2.

Bean Seedlings and Light

1. During a class investigation, students planted bean seeds in identical cups of potting soil. They placed all cups near a sunny window and gave each cup the same amount of water. After one week, several seedlings near the window leaned toward the glass. Seedlings farther from the window grew more upright. The class wrote only what it could observe: plant position and stem direction. They did not yet know why the stems differed at all.

2. The students then read that plant stems can grow toward a light source. This response, called phototropism, may help leaves receive more light for photosynthesis. The reading did not tell the class whether light caused the leaning in their own cups. They could ask, "Does the direction of light affect the direction bean seedling stems grow?" A useful investigation question names something that can change and something that can be measured or compared over time.

3. Before testing, the class defined its problem: it needed to find out whether changing the light direction would change stem direction. To make the comparison fair, students planned to use similar cups, seeds, soil, water, and growing time. They would place one group beside a window and another group where light came from a lamp on the opposite side. They would record stem direction each day. Their observation led to a focused problem they could investigate.

2 ANSWER WITH EVIDENCE

Use the passage

1. What observation compares seedlings in two locations? Write the comparison.

2. Write the investigation question the class could ask after reading about phototropism.

3. What problem did the class define before it began testing?

4. What would the students change, and what would they record, to investigate their problem?

3 YOUR TURN

Your own words

Choose a safe everyday observation that could be investigated. Write one observation, one testable question, and a defined problem. Name one factor you would change and what you would measure.

ANSWER KEY

Clue to Question

GRADE 6 · TEKS 6.1.A

PART 1 · READ AND MARK

Underline each observation, circle each piece of information from the reading, and number the investigation question 1 and the defined problem 2. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What observation compares seedlings in two locations? Write the comparison.	**Seedlings near the window leaned toward the glass, while seedlings farther from the window grew more upright.**
2	Write the investigation question the class could ask after reading about phototropism.	**Does the direction of light affect the direction bean seedling stems grow?**
3	What problem did the class define before it began testing?	**The class needed to find out whether changing the light direction would change stem direction.**
4	What would the students change, and what would they record, to investigate their problem?	**They would change the direction or source location of light and record stem direction each day.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I noticed that ice cubes on two plates melted at different speeds, with one plate in sunlight and one in shade. Does sunlight affect how long an ice cube takes to melt? The problem is to find out whether sunlight changes ice melting time. I would change the light location and measure the minutes until each cube melts.

Accept equivalent wording that accurately identifies the observation, asks about light direction and stem direction, and defines a testable problem. For Part 3, accept safe, observable phenomena with a question, a clear problem, one changed factor, and a measurable result.