

Clues for Thirsty Plants

Use repeated observations to explain a change and test a solution.

6.5.A "identify and apply patterns to understand and connect scientific phenomena or to design solutions;"

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline repeated observations, circle the conditions linked to them, and number the mulch-test steps in order so you can trace a pattern from evidence to solution.

A Garden Pattern

- ① At Cedar Middle School, a vegetable bed received water each morning. By the end of hot, sunny days, the soil near the surface was dry and bean leaves hung downward. After cool, cloudy days, the same soil stayed damp and the leaves remained firm. Students checked the bed for two weeks. They noticed that the drying and drooping happened together most often on days with stronger sunshine than in nearby shaded spots around the garden.
- ② Sunlight warms the soil and plant leaves, especially when the air is warm and dry. Warm surfaces cause liquid water to evaporate into the air. Plants also release water vapor through tiny openings in their leaves. As water leaves the soil and plants faster, less water is available to keep leaf cells full. The repeated pattern connected sunny conditions with faster water loss and temporary drooping. The plants recovered later as the air cooled overnight.
- ③ To reduce water loss, the students planned a test. They covered half of the bed with a layer of straw mulch and left the other half uncovered. Both halves received the same amount of morning water. During the next hot week, they compared the soil and leaves. If mulch slows evaporation, the covered soil should stay damp longer and its leaves should droop less often. This pattern would support using mulch to help plants keep water during sunny weather.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What repeated pattern did the students observe among sunshine, soil moisture, and bean leaves?

2 How does the passage connect stronger sunshine to drooping leaves?

3 What part of the mulch test helps the students compare the two halves fairly?

4 If the covered soil stays damp longer and its leaves droop less often, what solution does that pattern support?

3 YOUR TURN _____ Your own words

Create a pattern from three observations involving temperature, light, or water. Then describe one solution that uses the pattern and state what result would support your solution.

PART 1 • READ AND MARK

Underline repeated observations, circle the conditions linked to them, and number the mulch-test steps in order so you can trace a pattern from evidence to solution. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What repeated pattern did the students observe among sunshine, soil moisture, and bean leaves?	On sunnier days, the soil dried and the bean leaves drooped. On cool, cloudy days, the soil stayed damp and the leaves remained firm.
2	How does the passage connect stronger sunshine to drooping leaves?	Sunlight warms the soil and leaves, causing faster evaporation and water loss. With less water available, leaf cells are less full, so leaves droop.
3	What part of the mulch test helps the students compare the two halves fairly?	Both halves of the bed received the same amount of morning water. The main difference was that one half had straw mulch and the other did not.
4	If the covered soil stays damp longer and its leaves droop less often, what solution does that pattern support?	It supports using straw mulch to help plants keep water during sunny weather.

PART 3 • YOUR TURN (SAMPLE ANSWER)

On Monday, Tuesday, and Wednesday afternoons, ice near a sunny window melted faster than ice across the room. I would move ice cups away from the window to slow melting. If the moved cups melt more slowly, the pattern supports the solution.

Accept scientifically reasonable repeated observations, a solution that responds to the stated pattern, and a measurable result that could support the solution. Students may use a different phenomenon than the sample.