Clues in Leaves

Use observations to explain how surroundings affect plants.

3-LS3-2 "Use evidence and reasoning to support the explanation that traits can be influenced by the environment. (SEP: 6; DCI: LS3.A, LS3.B; CCC: Cause/Effect)"

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline what happened to the dry plants' leaves before and after Jules watered them, then circle the action that may have caused the change.

What Changed the Leaves?

1. A trait is a feature of a living thing, such as the color or shape of its leaves. Some traits are passed from parents to young. A plant's surroundings can affect how its traits look, too. To find out if the surroundings matter, gardeners can grow the same kind of plant in different conditions. Then they can look for changes and compare what happened.

2. Jules grew four young bean plants in matching cups. Each cup held the same soil. All four cups stood by the same sunny window. Jules gave two plants water each day. For three days, Jules gave the other two no water. The watered plants had firm leaves that pointed out. The leaves on the dry plants drooped. The cups had the same light, but different amounts of water.

3. Next, Jules watered the dry plants. By the next morning, their leaves were firm and pointed out again. This change is a clue that water affected how the leaves looked. The bean plants did not turn into a new kind of plant. Their leaves changed when the water around their roots changed. Jules did not change the soil or move the cups away from the window.

2 ANSWER WITH EVIDENCE

Use the passage

1. What evidence from the first three days suggests that water affected the leaves?

2. How does giving the plants the same soil and light help Jules explain the difference in their leaves?

3. What happened after Jules watered the dry plants? How does that support an explanation about water?

4. A classmate says the dry plants' drooping leaves must have come from their parents. What evidence could you use to question that idea?

3 YOUR TURN

Your own words

Two bean seedlings have the same soil and water. One grows by a sunny window and has green leaves; the other grows in a dark cupboard and has pale leaves. Write two sentences explaining how their surroundings may have affected leaf color. Use evidence from this new case.

ANSWER KEY

Clues in Leaves

GRADE 3 · 3-LS3-2

PART 1 · READ AND MARK

Underline what happened to the dry plants' leaves before and after Jules watered them, then circle the action that may have caused the change. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What evidence from the first three days suggests that water affected the leaves?	**The watered plants had firm leaves that pointed out, while the plants without water had drooping leaves.**
2	How does giving the plants the same soil and light help Jules explain the difference in their leaves?	**Because the soil and light were the same, the difference in water is a likely cause of the difference in the leaves.**
3	What happened after Jules watered the dry plants? How does that support an explanation about water?	**Their leaves became firm and pointed out again, which supports the explanation that water affected how the leaves looked.**
4	A classmate says the dry plants' drooping leaves must have come from their parents. What evidence could you use to question that idea?	**The leaves stopped drooping after Jules watered the plants, so their appearance changed when the amount of water changed.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

The seedling by the sunny window had green leaves, but the seedling in the dark cupboard had pale leaves. Because they had the same soil and water, the difference in light may have affected leaf color.

Accept explanations that connect a difference in the surroundings to a change in leaf appearance and cite the observations. Students need not claim that the evidence proves a single cause.