Clues in Nature

Use observations to explain how surroundings can affect traits.

L.3.2.5 "Research to justify the concept that traits can be influenced by the environment (e.g., stunted growth in normally tall plants due to insufficient water, changes in an arctic fox's fur color due to light and/or temperature..."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the two traits that changed. Circle the environmental condition linked to each change.

What Makes a Difference?

1. A bean seed carries traits from its parent plant. Yet the place where it grows can affect how those traits appear. To find out how water affects growth, a class planted two groups of the same kind of bean seed. Both groups had the same soil, light, and pot size. The class watered one group each day and gave the other group much less water.

2. After three weeks, most plants watered each day were about 12 centimeters tall. Most plants given less water were about 5 centimeters tall. The plants started as the same kind of seed, but their heights were different. Water helped explain the difference. This test does not show that the plants' parents changed. It shows that an environmental condition can affect how tall a plant grows.

3. Flamingos offer another clue about the environment and traits. Young flamingos have gray feathers. As they grow, their feathers can turn pink because their food contains natural color makers called carotenoids. Flamingos get these from foods such as tiny shrimp and algae. If their food lacks enough carotenoids, their new feathers may look pale. Their food does not change what kind of bird they are.

2 ANSWER WITH EVIDENCE

Use the passage

1. What evidence shows that the amount of water affected the bean plants' height?

2. Why did the class give both groups the same soil, light, and pot size?

3. How can a flamingo's food affect the color of its new feathers?

4. How do the bean plants and flamingos both show that an environment can affect a trait?

3 YOUR TURN

Your own words

Design a test to find out whether light affects the height of bean plants. Write three sentences explaining what you would change, what you would keep the same, and what result would support your idea.

ANSWER KEY

Clues in Nature

GRADE 3 · L.3.2.5

PART 1 · READ AND MARK

Underline the two traits that changed. Circle the environmental condition linked to each change. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What evidence shows that the amount of water affected the bean plants' height?	**After three weeks, most plants watered each day were about 12 centimeters tall, while most given less water were about 5 centimeters tall.**
2	Why did the class give both groups the same soil, light, and pot size?	**Keeping those conditions the same helped the class tell whether water caused the difference in height.**
3	How can a flamingo's food affect the color of its new feathers?	**Food with carotenoids can make new feathers pink. Without enough carotenoids, new feathers may look pale.**
4	How do the bean plants and flamingos both show that an environment can affect a trait?	**The amount of water affected the bean plants' height, and food affected the flamingos' feather color. In both cases, an environmental condition affected a trait.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I would give one group of bean plants more hours of light each day than the other group. I would keep the kind of seed, soil, pots, and water the same for both groups. If the groups grew to different heights, that would be evidence that light affected their height.

Accept answers that use the passage's observations as evidence and connect each trait to water or food. For the light test, accept any plan that changes light, keeps other growing conditions the same, and compares plant heights.