Lizards in Change

Trace how trait variation can shape a population over generations.

8.13.C "describe how variations of traits within a population lead to structural, behavioral, and physiological adaptations that influence the likelihood of survival and reproductive success of a species over generations."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline each trait variation in the passage. Write S, B, or P beside it to show whether it is structural, behavioral, or physiological, then number the sentences that explain how a trait could become more common.

Island Lizards and Survival

1. On a rocky island, side-blotched lizards in one population are not identical. Some have brown patterns that blend with dark lava, while others are lighter. Pattern color is a structural trait, a body feature. Hawks notice lizards that stand out more easily. During years when most ground is dark, brown-patterned lizards are more likely to avoid being eaten. Survivors have more chances to find mates and produce offspring, so their color trait may be passed to many young.

2. Other variations affect what lizards do. At midday, some individuals stay under rock ledges longer before hunting insects. This behavior can lower their exposure to heat and hawks. If food remains available in the cooler evening, ledge-staying lizards may survive long enough to breed. Their offspring can inherit tendencies that influence behavior, although experience and surroundings also shape an individual's actions. Over generations, a behavior linked to greater survival and successful mating can become more common in the population.

3. A third variation involves physiology, the way internal body processes work. Some lizards lose water more slowly through their skin and waste. In a long drought, they can remain active with less drinking water than lizards that lose water quickly. This physiological trait can help them survive, reach breeding season, and raise more offspring. If droughts continue, the water-conserving trait may be inherited by a larger share of the next generations. The population changes, but individual lizards do not change their inherited traits because they need them.

2 ANSWER WITH EVIDENCE

Use the passage

1. How could brown pattern color increase a lizard's likelihood of survival and reproductive success on dark lava?

2. What behavior varies among the lizards, and how could that behavior help a lizard reproduce?

3. How does the passage distinguish a structural trait from a physiological trait? Give one lizard example of each.

4. Why can the lizard population change over generations even though an individual lizard does not change its inherited traits when conditions change?

3 YOUR TURN

Your own words

Invent a population of desert gerbils facing frequent droughts. Complete all three rows with one different trait variation, its survival or reproductive benefit, and how it could become more common over generations.

TRAIT TYPE	TRAIT VARIATION	BENEFIT DURING DROUGHT	CHANGE OVER GENERATIONS

ANSWER KEY

Lizards in Change

GRADE 8 · TEKS 8.13.C

PART 1 · READ AND MARK

Underline each trait variation in the passage. Write S, B, or P beside it to show whether it is structural, behavioral, or physiological, then number the sentences that explain how a trait could become more common. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How could brown pattern color increase a lizard's likelihood of survival and reproductive success on dark lava?	**Brown patterns blend with dark lava, so hawks may be less likely to spot those lizards. More survivors can find mates and produce offspring that may inherit the color trait.**
2	What behavior varies among the lizards, and how could that behavior help a lizard reproduce?	**Some lizards stay under rock ledges longer at midday. This can reduce exposure to heat and hawks, helping them survive long enough to breed.**
3	How does the passage distinguish a structural trait from a physiological trait? Give one lizard example of each.	**A structural trait is a body feature, such as pattern color. A physiological trait involves internal body processes, such as losing water more slowly.**
4	Why can the lizard population change over generations even though an individual lizard does not change its inherited traits when conditions change?	**Lizards with traits that improve survival and mating can produce more offspring. Their traits may be inherited by more young, so those traits become more common in later generations.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

TRAIT TYPE	TRAIT VARIATION	BENEFIT DURING DROUGHT	CHANGE OVER GENERATIONS
Structural	Longer eyelashes	More sand stays out of the eyes, helping gerbils find food and mates.	Gerbils with longer eyelashes may leave more offspring, so the trait can become more common.
Behavioral	Forages mainly at dusk	Cooler temperatures reduce water loss while searching for food.	Gerbils with this tendency may survive and reproduce more, so the tendency can become more common.
Physiological	Produces very concentrated urine	Less water is lost in waste, helping the gerbil stay alive during drought.	Gerbils with this inherited trait may produce more offspring, increasing its frequency.

Accept equivalent explanations that connect an inherited variation to a survival advantage, mating or offspring production, and increased frequency over generations. For the open task, each row should correctly match the stated trait type and describe a plausible drought-related advantage.