

Pond Population Shifts

Trace how changing conditions affect frog survival and population size.

LS.8.b "changes in the environment may increase or decrease population size; and"

NAME _____

DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline each environmental change. Circle each statement that tells whether the frog population may increase or decrease, and number the details that explain why.

Willow Pond Chorus Frogs

- ① At Willow Pond, chorus frogs lay eggs in shallow water each spring. One dry winter left the pond much lower than usual. By early summer, several puddles had disappeared before tadpoles could finish changing into frogs. Fewer young frogs survived that year, so the breeding population was likely to shrink the following spring. The drought did not harm every frog directly, but it reduced water habitat that eggs and tadpoles needed. For this population, available water became a limiting environmental condition.
- ② The next year brought steady rains, and the pond stayed shallow but wet through summer. More tadpoles completed development than during the drought year. Adult frogs also found more insects near the pond because damp ground supported insects and other small animals. With more water and food available, more frogs survived and some females laid eggs. The population could increase, but only if enough young frogs lived long enough to breed again in a later season.
- ③ Scientists would count egg clusters, tadpoles, and adult frogs over several years. They would also record rainfall, water depth, insect numbers, and nearby land use. These observations help scientists connect population changes to environmental conditions instead of assuming that one count tells the whole story. For example, a new road beside the pond could raise deaths when frogs cross it, while a protected wetland nearby could provide additional breeding water. Population size depends on how such changes affect survival and reproduction.

2 ANSWER WITH EVIDENCE Use the passage

1 Which environmental change caused fewer young frogs to survive, and how did it affect their habitat?

2 Name two environmental conditions that could help the frog population increase after the drought year.

3 Why might the breeding population shrink the following spring instead of at the exact time the pond dries?

4 What information would scientists record to connect frog population changes to environmental conditions?

3 YOUR TURN Your own words

Choose a population not in the passage. In two sentences, describe one environmental change and explain whether it would increase or decrease the population by affecting survival or reproduction.

PART 1 • READ AND MARK

Underline each environmental change. Circle each statement that tells whether the frog population may increase or decrease, and number the details that explain why. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Which environmental change caused fewer young frogs to survive, and how did it affect their habitat?	A dry winter lowered the pond, and puddles disappeared before tadpoles finished developing. This reduced the water habitat needed by eggs and tadpoles.
2	Name two environmental conditions that could help the frog population increase after the drought year.	Steady rain kept the pond wet, and more insects provided more food for adult frogs.
3	Why might the breeding population shrink the following spring instead of at the exact time the pond dries?	The drought reduced the number of young frogs that survived. Population effects on breeding are seen later, when fewer survivors are available to breed.
4	What information would scientists record to connect frog population changes to environmental conditions?	They would record frog counts at different life stages, rainfall, water depth, insect numbers, and nearby land use over several years.

PART 3 • YOUR TURN (SAMPLE ANSWER)

A long heat wave dries the soil where earthworms live. Fewer earthworms survive and reproduce, so the earthworm population decreases.

Accept any scientifically plausible population and environmental change. The response must clearly predict an increase or decrease and connect it to survival or reproduction.