# Pond Ripple Effects

Trace how one change can spread through a food chain.

**5.LS2.2** "Use models to explain or predict factors that upset the stability of local ecosystems."

NAME _____ DATE _____

## 1 READ AND MARK

Read it twice

**YOUR JOB** Underline two changes that could upset the pond. Then number three effects of one change in the order they happen.

### Changes at the Neighborhood Pond

1. At a neighborhood pond, a food chain links plants, snails, sunfish, and herons. Pond plants make their own food using sunlight. Snails eat the plants, sunfish eat the snails, and herons catch the fish. In a food chain model, an arrow can point from food to the animal that eats it. When the pond has enough water and food, these populations can stay fairly steady, even though their numbers change a little.

2. One summer, a long dry spell lowers the pond's water level. Some pond plants dry out near the shore, so snails have less to eat. If snails become fewer, sunfish may find less food, and herons may catch fewer fish. A model with arrows from food to eater helps show how one change can affect several living things. If rain refills the pond, shore plants may grow again.

3. Another year, heavy rain washes lawn fertilizer into the pond. Fertilizer adds nutrients, and algae grow fast. When much of the algae dies, tiny decomposers break it down and use oxygen in the water. With less oxygen, sunfish may struggle to survive. Herons may then find fewer fish to catch. Even though rain adds water, this kind of runoff can still upset the pond's balance.

## 2 ANSWER WITH EVIDENCE

Use the passage

1. Use the pond food chain to predict what may happen to sunfish after a long dry spell. Explain the steps between the dry spell and the fish.

2. If rain refills the pond after the dry spell, how might the number of snails change? Use the food chain to explain your prediction.

3. Use a chain of causes and effects to explain why fertilizer runoff may make it harder for sunfish to survive.

4. Predict how fertilizer runoff could affect herons, even though herons do not eat algae. Explain the link.

## 3 YOUR TURN

Your own words

Choose a local place other than a pond. In the box, draw a model linking one nonliving condition and at least three living things; label what each arrow means. Show a change in the condition, then write two sentences predicting how that change could affect the living things.

ANSWER KEY

# Pond Ripple Effects

GRADE 5 · 5.LS2.2

## PART 1 · READ AND MARK

Underline two changes that could upset the pond. Then number three effects of one change in the order they happen. Accept any marking that follows this job and points at the right text.

## PART 2 · ANSWERS

| # | QUESTION | ANSWER |
|---|---|---|
| 1 | Use the pond food chain to predict what may happen to sunfish after a long dry spell. Explain the steps between the dry spell and the fish. | **The dry spell lowers the water level. Shore plants dry out, leaving snails with less food. If snails become fewer, sunfish may have less to eat.** |
| 2 | If rain refills the pond after the dry spell, how might the number of snails change? Use the food chain to explain your prediction. | **Snails may become more numerous because shore plants may grow again, giving snails more food.** |
| 3 | Use a chain of causes and effects to explain why fertilizer runoff may make it harder for sunfish to survive. | **Fertilizer helps algae grow fast. When the algae dies, decomposers use oxygen as they break it down. Less oxygen makes survival harder for sunfish.** |
| 4 | Predict how fertilizer runoff could affect herons, even though herons do not eat algae. Explain the link. | **Herons may find fewer fish to catch because low oxygen may make it harder for sunfish to survive.** |

## PART 3 · YOUR TURN (SAMPLE ANSWER)

Schoolyard model: Rainfall → grass (supports growth) → grasshoppers (food for) → robins (food for). If rainfall drops, less grass may grow, leaving grasshoppers with less food. With fewer grasshoppers, robins may have less prey and move to another area.

Accept predictions that follow the passage's cause-and-effect links, including answers that say populations may change rather than definitely will. For Part 3, accept a plausible local ecosystem model with labeled arrows, a changed nonliving condition, and two sentences that trace its effects.