

Pond Connections

Model how parts work together in a pond system.

6.5.D "examine and model the parts of a system and their interdependence in the function of the system;"

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each pond part. Circle phrases that tell how one part affects another, then use your marks to trace the pond's connections.

A Pond Works Together

- ① At the edge of the school courtyard, a small pond works as a system. Its parts include water, rocks, pond plants, algae, insects, tadpoles, fish, and bacteria. Water holds dissolved oxygen, which fish and tadpoles need. Rocks give insects and tadpoles places to hide. Pond plants use sunlight to grow and add oxygen to the water. The plants also provide shelter. Each living and nonliving part has a job, but no part keeps the pond healthy alone.
- ② Food and waste connect the parts even more closely. Algae and pond plants are food for some tadpoles and insects. Small fish may eat insects. Fish, tadpoles, and insects release waste into the water. Bacteria break down much of this waste. In that process, bacteria use oxygen, so the amount of oxygen can drop when there is a lot of waste. If oxygen becomes too low, fish and tadpoles may struggle to survive. This change can affect animals that eat them.
- ③ Suppose fallen leaves wash into the pond after a storm. The extra leaves become food for bacteria as they decay. More bacteria then break down more material and use more oxygen. Lower oxygen can harm fish and tadpoles. With fewer tadpoles, there may be less food for animals that visit the pond. Removing some fallen leaves can reduce this problem, but plants, bacteria, and animals must still remain in balance. A pond model can show these connections with labeled parts and arrows that explain what moves or changes.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 How do pond plants and water work together to support fish and tadpoles?

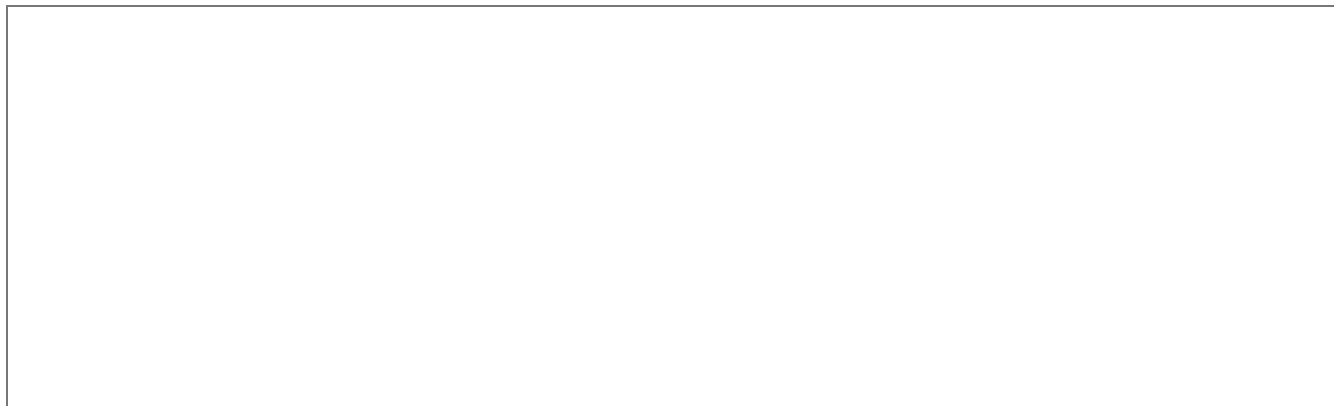
2 Trace the change from fallen leaves to fish being harmed. Include at least three linked steps.

3 How can bacteria help the pond and also create a problem when there is a lot of waste?

4 Why would removing every pond plant not be a good solution to low oxygen caused by decaying leaves? Use two jobs of pond plants from the passage.

3 YOUR TURN _____ Your own words

In the box, draw a model of a school garden system using these four labeled parts: rain barrel, soil, bean plant, and bee. Draw labeled arrows to show how the parts depend on one another, then write two sentences that explain what could happen if the rain barrel becomes empty.



PART 1 • READ AND MARK

Underline each pond part. Circle phrases that tell how one part affects another, then use your marks to trace the pond's connections. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	How do pond plants and water work together to support fish and tadpoles?	Pond plants add oxygen to the water. The water holds the dissolved oxygen that fish and tadpoles need.
2	Trace the change from fallen leaves to fish being harmed. Include at least three linked steps.	Fallen leaves decay and provide more food for bacteria. More bacteria use more oxygen, lowering the oxygen in the water. Low oxygen can harm fish.
3	How can bacteria help the pond and also create a problem when there is a lot of waste?	Bacteria help by breaking down waste. When there is much waste, more bacteria use more oxygen, so oxygen levels can drop.
4	Why would removing every pond plant not be a good solution to low oxygen caused by decaying leaves? Use two jobs of pond plants from the passage.	Pond plants add oxygen to the water and provide shelter. Removing them would take away oxygen and shelter needed by other pond parts.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Model labels and arrows: rain barrel → water → soil → water and minerals → bean plant → nectar → bee; bee → pollination → bean plant. The rain barrel gives water to the soil, and the soil supplies water and minerals to bean plants. If the rain barrel becomes empty, the plants may make fewer flowers, so bees have less nectar and fewer beans may grow.

Accept equivalent explanations that accurately identify parts, their jobs, and linked effects. For the open task, look for all four garden parts, meaningful labeled arrows, and a logical chain showing how an empty rain barrel affects more than one part.