Cause and Effect in Texts

Grade 5 Reading Worksheet - Challenge Me

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Name _____ Date _____

Circle the answer.

READ THIS FIRST

How Lake Erie Came Back

In the 1960s, newspapers called Lake Erie a dying lake. Thick green slime covered parts of its surface every summer. Beaches closed, and fish disappeared from large areas of the water. How did one of North America's Great Lakes get so sick, and how did it recover?

Lake Erie is the shallowest and warmest of the five Great Lakes. Those features make it a rich home for wildlife. They also make it easy to harm. By the 1960s, millions of people lived around its shores. Their cities and farms sent huge amounts of waste into the lake.

The biggest trouble came from a nutrient called phosphorus. Phosphorus helps plants grow, so farmers spread it on their fields as fertilizer. In those years, it was also a main ingredient in laundry soap. Every time people washed clothes, phosphorus flowed down the drain, through the sewers and into the lake.

In the water, phosphorus acted like fertilizer for algae, tiny plantlike living things. The algae multiplied wildly and formed huge green blooms. When the algae died, they sank to the bottom and rotted. The bacteria that broke them down used up much of the oxygen in the deep water. Without enough oxygen, fish could not live there. Large areas of the lake became what scientists call dead zones.

Pollution also affected the rivers flowing into the lake. In June 1969, oil and trash floating on the Cuyahoga River in Cleveland caught fire. The river had burned before, but this time a national magazine published the story. People across the country were shocked that a river could catch fire. Their anger helped push leaders to act.

In 1972, the United States passed the Clean Water Act. That same year, the United States and Canada signed the Great Lakes Water Quality Agreement. Cities built better sewage plants, and many states banned phosphorus in laundry soap. Over the next twenty years, the amount of phosphorus entering Lake Erie dropped by more than half. The algae blooms shrank, the water cleared and fish returned. By the 1990s, people were swimming and boating again.

Unfortunately, the story did not end there. Since the early 2000s, large algae blooms have returned. This time, most of the phosphorus comes from farm fields rather than from soap or city sewers. Heavy spring rains, which are becoming more common, wash fertilizer off the fields and into rivers. Some blooms even produce harmful toxins. In August 2014, the city of Toledo, Ohio, told about 400,000 people not to drink their tap water for three days.

Scientists and farmers are now working together on new solutions. Some farmers plant cover crops that hold soil in place. Others test their soil so they use only as much fertilizer as plants need. Lake Erie's history shows that a lake can heal when people remove the cause of the harm. It also shows that new causes can appear, so the work is never really finished.

1. According to the text, why was Lake Erie easier to harm than the other Great Lakes?
   - It is the only Great Lake that borders a city.
   - It is the shallowest and warmest of the five.
   - It gets all of its water from the Cuyahoga River.
   - It has more fish than any of the other lakes.

2. How did laundry soap affect Lake Erie in the 1960s?
   - Soap took the oxygen out of the water as soon as it arrived.
   - Soap in the river is what caught fire in Cleveland.
   - Phosphorus from the soap flowed into the lake and fed algae.
   - Soap bubbles covered the lake and blocked the sunlight.

3. Which chain correctly shows how algae blooms led to dead zones?
   Fish left the lake, algae began to grow, and bacteria added oxygen to the water.
   Algae died and sank, bacteria used up oxygen, and fish could not live there.
   Bacteria used up oxygen, phosphorus entered the lake, and then the algae died.
   Algae made extra oxygen, fish crowded together, and the water turned green.

4. Why did the 1969 Cuyahoga River fire lead to change when earlier fires had not?
   It destroyed all of the sewage plants in the city of Cleveland.
   It was the very first time that the river had ever caught fire.
   A magazine story spread the news and angered people across the country.
   It burned for many weeks and spread out onto Lake Erie.

5. What was the main effect of the actions taken in 1972?
   The Cuyahoga River stopped flowing into the lake.
   Algae blooms grew larger and came more often.
   Less phosphorus entered the lake, so it began to recover.
   Farmers stopped using fertilizer on their fields.

6. How is the cause of today's algae blooms different from the cause in the 1960s?
   Most phosphorus now comes from farm fields, not soap or sewers.
   Today's blooms are caused mostly by oil floating on rivers.
   Today's blooms have no connection to phosphorus at all.
   Today's blooms come from laundry soap, not from farm fields.

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Answer Key - Grade 5 Reading Worksheet - Challenge Me

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