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You Be the Hydrologist

Directions: Choose one of the Questions for Investigation below. Use the question you chose to formulate a hypothesis. Then design an experiment to test your hypothesis. Make observations and draw a conclusion. Create a record of your experiment on a separate sheet of paper.

Questions for Investigation

- Will water infiltrate sand or silt faster?
  Hint: As you test soil samples, be sure to measure the exact same amount of soil into the funnel and pour in the exact same amount of water.
- Will water infiltrate saturated or dry soil faster?
  Hint: Test a moist sample of soil (sand or silt). Then, test a dry sample of the exact same amount of soil.

Question

Select one of the Questions for Investigation. Write the question you chose.

Hypothesis

Formulate your hypothesis. (What is the answer to your question?) Write your hypothesis.

Experimental Design

Design and conduct your experiment. Write down the steps to your experiment.

Observation

What happened during your experiment? Record your observations.

Conclusion

What is the answer to your question? Write your conclusion. Do your findings support your hypothesis? What did you learn from this experiment?

Floods

A Terrible Flood

At about 3:00 P.M. on May 31, 1889, the South Fork Dam suddenly gave way. More than 18 billion kilograms (20 million tons) of water rushed down the narrow valley to the town of Johnstown, 22 kilometers (14 miles) below.

The massive wall of water was like a huge tidal wave. It reached speeds of 64 kilometers (40 miles) per hour. It picked up houses. It also picked up trees and trains. It tossed them aside. It had the force of Niagara Falls.

By the time it reached the town, the flood did not even look like water anymore. People who saw it coming said it looked like a black mountain of junk.

In minutes, most of the town was destroyed. That included about 1,600 homes. More than 2,200 people had also been killed.

What caused this natural disaster? As with most floods, there are many answers.

First, it had been raining heavily for two days. Two rivers in the area had already overflowed their banks. Much of the town was already under half to two meters (two to seven feet) of water. In addition, much of the ground above the town had become heavily soaked. It could not absorb any more water. That created a dangerous runoff.

Secondly, Johnstown had been built on a floodplain. The floodplain was at the bottom of a long narrow valley. Narrow, deep valleys do not allow water to spread out.

A third reason for the terrible disaster was that there was very little warning. People did not have time to escape. No one knew what to do.

Fourth, over the years, there had been a lot of new development above the town. Trees and other plants had been removed from the hillside. Trees soak up a lot of rain. Their roots help keep the soil from eroding.

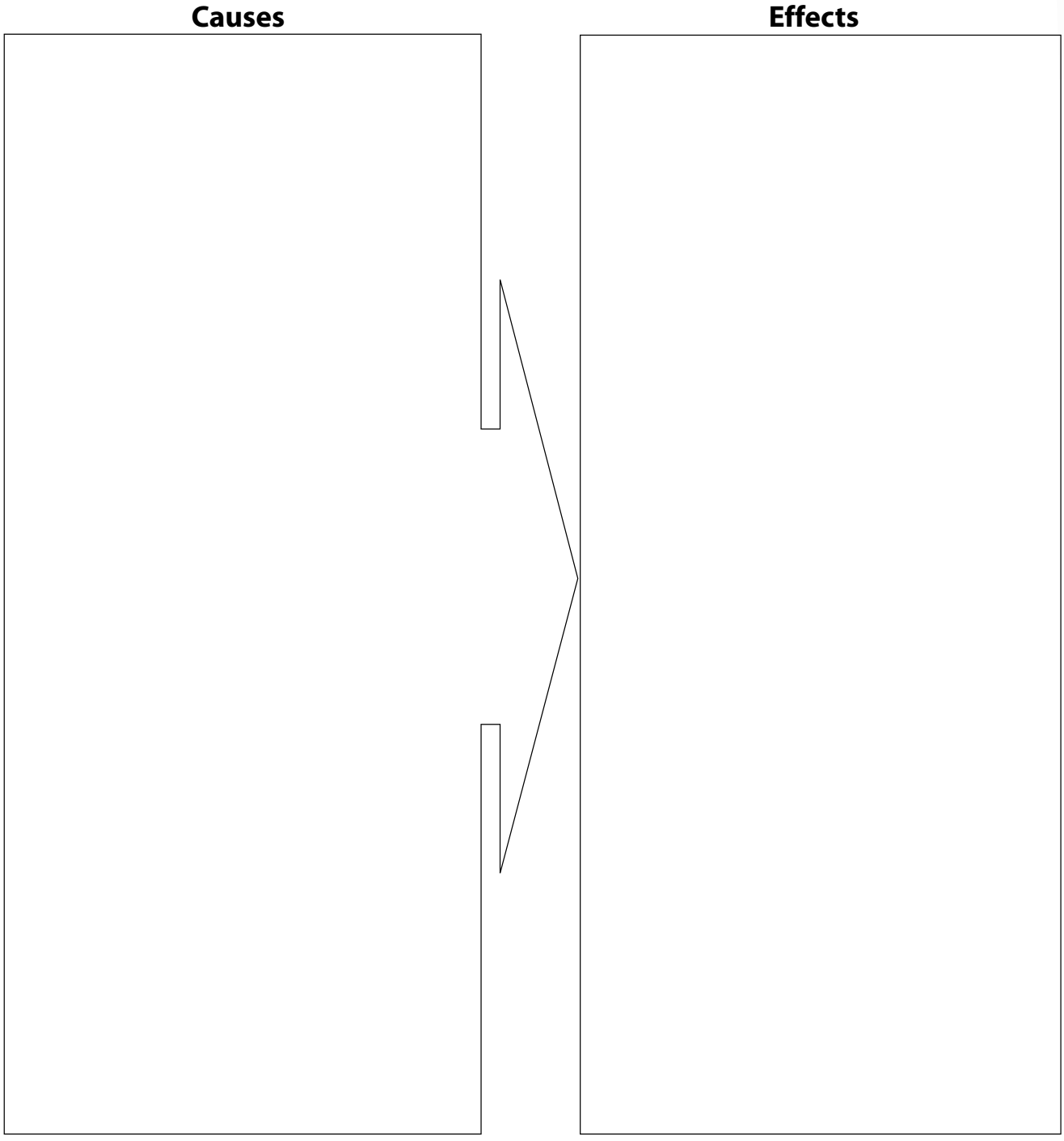
Finally, the dam failed. It had first been built over 30 years earlier. But there had been problems with the dam before. It had not been properly taken care of and repaired. All those facts combined into one terrible flood. It was one of the worst floods the world had ever known.

Name_____

Floods

The Causes and Effects of Floods

Directions: Think about the information you read on the previous page. The causes and effects of the Johnstown flood can be similar to other floods. Write the causes and effects of the Johnstown flood in the graphic organizer below.



Name _____

Floods

Floods Vocabulary

Word Box

levee watershed floodplain flood level

Directions: Write the vocabulary word or phrase next to its definition. Choose words from the word box above.

Definition	Vocabulary Word
1. The amount of water a river can hold before flooding.	
2. An area of land that water flows across as it moves towards a stream, river, or lake.	
3. A natural or artificial embankment or slope designed to prevent the flooding of the land behind it.	
4. Flat area, usually on either side of a river, which has the potential to easily flood.	

Directions: Illustrate each vocabulary word in the space provided below.

flood level	floodplain	levee	watershed

