Name: _____

GATHER SUPPORT

In "Stormy Debate" (p. 20), you read about the discussion of whether or not people should rebuild in hurricane-prone areas. Reread the article carefully. Then use this skills sheet to gather the facts supporting both sides of the debate.

1. Use your own words to describe the issue that is being debated.

_____

_____

_____

2. Use the space below to describe the opinions of people on each side of the debate. Gather at least three pieces of evidence from the article to support each point of view.

Opinion 1 _____

_____

Supporting Evidence

a. _____

b. _____

c. _____

Opinion 2 _____

_____

Supporting Evidence

a. _____

b. _____

c. _____

3. Which side of the debate do you support? Explain why.

_____

_____

_____

_____

Name: _____

CAUGHT IN THE STORM

In "Stormy Debate" (p. 20), you read about how people were affected by Hurricane Sandy. Do wild animals fare any better during hurricanes? Read the following passage to learn how the large storms affect wildlife. Then use complete sentences to answer the questions that follow.

SURVIVING THE STORM

People can often evacuate coastal areas before a hurricane strikes. But what happens to the wild animals that have to ride out a storm?

Scientists believe that wildlife can sense an approaching storm. Dolphins may swim to deeper water, where they won't be tossed by crashing waves. Forest-dwelling birds find shelter under bushes or in sturdy trees. A bird's feet have special muscles that automatically tighten on a perch to hold the animal in place in high winds.

But a hurricane's powerful forces kill or harm many animals. Seabirds can be blown far from their homes. A sick and injured pelican native to the Southern U.S. was found hundreds of miles away in Nova Scotia, Canada, after Hurricane Earl in 2010. The nests of animals like sea turtles can be washed away. Powerful waves and sediment churned up from the seafloor can kill saltwater fish. Large sea animals can be washed ashore.

Animals that do survive can face challenges after a storm. Winds destroy forest habitat. Saltwater flooding can disrupt freshwater environments where plants and animals live.

Still, scientists believe that most animals are able to survive storms, and healthy populations can recover when the winds die down.

QUESTIONS

1. What do you think is most likely the author's purpose in writing this passage?

2. What characteristic do birds have that helps them during a hurricane?

3. What are three ways animals can be harmed during a hurricane?

4. In general, how do scientists believe a healthy wild animal population will fare after a hurricane?

5. Some coastal areas are home to small populations of animals that are endangered. How might a hurricane affect their chances of survival compared with other animal populations?

Name: _____

TESTING THE WATERS

In "Stormy Debate" (p. 20), you read about the devastation caused by last year's Hurricane Sandy. One of the less obvious effects of a hurricane is pollution. Read the following passage to learn how scientists track water pollution after a hurricane. Then answer the questions that follow.

TOXIC WATER

Hurricane Sandy flattened thousands of buildings in the Northeast. But the storm also left behind damage that's harder to see: pollution.

When the hurricane struck, it flooded the coastline with water carrying sediment churned up by the waves. As the water washed through towns, it picked up dangerous pollutants such as chemicals on the ground or in industrial buildings, and oil and gasoline from flooded cars. Flooding and power outages caused several water-treatment plants to fail, allowing raw sewage filled with disease-causing bacteria and viruses to escape. Health officials worried that all of these types of contaminants might seep into the water supply.

Immediately after the storm, people were advised to boil drinking water to kill any dangerous microorganisms. Then, over the following days and weeks, scientists set up stations around the area to test water quality. Satellites were used to search for plumes of visibly dirty water flowing through waterways. The murky color of polluted water can be seen in images taken from space. As the pollution washed away and testing revealed a safe water supply, restrictions on water use were removed.

QUESTIONS

1. Which of the following best describes the purpose of the passage?

(A) to explain why hurricanes are dangerous
(B) to describe a little-known impact of hurricanes
(C) to advise readers about how to treat drinking water
(D) to explain why satellites are important

2. The structure of the second paragraph is best described as:

(A) problem and solution
(B) order of importance
(C) compare and contrast
(D) cause and effect

3. Use context clues to choose the BEST definition for *contaminants*.

(A) microorganisms
(B) sediment particles
(C) pollutants
(D) water sources

4. Why were people advised to boil drinking water after Hurricane Sandy?

(A) to kill any disease-causing bacteria and viruses in the water
(B) to remove chemicals like gasoline from the water
(C) to conserve water
(D) to separate sediment from the water

5. According to the passage, what type of data do scientists study in satellite images to determine whether water is polluted?

(A) water color
(B) the area of flooded lands
(C) water temperature
(D) the distance of flooded areas from the ocean

Name: _____

BEACH ENGINEERING

In "Stormy Debate" (p. 20), you learned that some towns hit by Hurricane Sandy are building dunes to try to protect the land from future storms. Try this hands-on activity to see how dunes can help hold sand in place during a storm.

PREDICT

Will crashing waves wash farther over a beach with dunes or one without them? Which beach will experience more erosion?

MATERIALS

Masking tape • Rectangular baking pan, 33 by 23 cm (13 by 9 in.) • Book (or stack of books) approximately 4 cm (1.5 in.) thick • Large bowl • Roughly 4 cups of sand • Water • Marker • Sponge • Ruler • Toothpicks

PROCEDURE

1. Place a piece of masking tape along the top edge of the long sides of the baking pan.
2. Place the book beneath one end of the pan so that the pan is slanted on a table.
3. Pour the sand into the bowl. Slowly mix small amounts of water into the sand until the sand is slightly damp and sticks together easily.
4. Use the sand to build a "beach" in the raised end of the baking pan. Form a slope that is roughly 4 cm (1.5 in.) thick at the top and ends halfway down the pan.
5. Mark the end of your beach on the masking tape on the pan's sides.
6. Slowly pour water into the lower end of the pan until it just touches your beach.
7. Gently swish the sponge through the water to make a wave that washes up onto the beach. Observe how far the water travels. Repeat two more times.
8. Use a ruler to measure the farthest point the water reached on the beach. If the shoreline changed, measure how far it has moved from its original position.
9. Carefully pour the water from the pan. Make sure to keep the sand inside.
10. Rebuild your beach. Make sure the shoreline starts at the same place as before. This time, create dunes on the beach by molding two ridges of sand across the width of the pan. Space the dunes about 5 cm (2 in.) apart.
11. Stick roughly 20 toothpicks into each dune. The toothpicks represent the roots of plants that grow on sand dunes.
12. Repeat steps 6 to 8, being sure to keep your waves the same strength as before.

ANALYZE IT

1. On which beach did the waves travel farthest onshore? How far did the water reach?

2. Did the dunes affect the amount of erosion on the beach? Explain your answer.

3. Suppose there were houses built along each of your beaches. On which beach do you think the houses would be most likely to survive a hurricane? Explain your answer.