Name: _____

SAY WHAT?

In "Tunnel Vision" (p. 20), you read about how scientists are trying to address the challenges of dropping water levels in Lake Mead. As in most informational texts, the author of the story included direct quotations from different sources. Writers use quotes to help explain or highlight a fact from the article or to express different opinions or points of view about the topic. Use this work sheet to analyze some of the quotes from the article on Lake Mead.

QUOTE	Who said it?	What qualifications does the speaker have to address the topic?	Use your own words to explain what the speaker meant.	Why do you think the author included this quote?
"We can't afford to play those kind of odds." (First paragraph of "Big Dig")				
"It turns out that we gave away more water than we actually have." (third paragraph of "Water Woes")				
"I think of this drought as a window into what the future might look like." (fifth paragraph of "Heating Up")				
"I am sincerely optimistic in our ability to cope with the risks of prolonged drought." (last paragraph)				

Name: _____

PARCHED PLANTS

In "Tunnel Vision" (p. 20), you read that one way scientists are trying to deal with water shortages is to find ways to grow crops with less water. Read the following passage to learn about plants that can survive in drier conditions. Then answer the questions that follow.

PLANTING FOR DROUGHTS

With severe drought affecting many parts of the United States in recent years, many farmers are looking for ways to coax crops from dry soil.

One step is to choose the crops carefully. The *traits* of a plant help determine whether it can survive in dry conditions. For example, plants with large leaves tend to need more water because of increased *transpiration*. The large surface area of the leaves allows more water to *evaporate*, or turn from liquid to gas, and escape into the air. Plants with smaller or waxy leaves transpire less and can grow with less water.

A plant's roots also help determine its tolerance to drought. Wheat grows a deep root system that allows the plants to draw water from deeper in the soil. Moisture often remains buried deep in soil even when the top layer is dry.

To create crops that are even more drought-resistant, some scientists use *artificial selection*. They allow only individual plants that have the desired traits to reproduce, causing more of those characteristics to be passed onto the next generation.

QUESTIONS

1. Which of the following BEST represents the central idea of the passage?

Ⓐ Drought-resistant plants are easy to grow.
Ⓑ Plants need water to grow.
Ⓒ Different plants have different water needs.
Ⓓ Plants have different characteristics.

2. Which of the following is a synonym for *trait*?

Ⓐ requirement
Ⓑ characteristic
Ⓒ leaf
Ⓓ ability

3. What is true about plants with large leaves?

Ⓐ They are not very resistant to droughts.
Ⓑ They transpire less.
Ⓒ They are ideal plants to plant in dry areas.
Ⓓ Less water evaporates from their leaves.

4. Why do plants with deep roots have an advantage during a drought?

Ⓐ They stay standing when the soil dries out.
Ⓑ They can reach water that is deeper in the soil.
Ⓒ They don't need any water.
Ⓓ They draw in water faster than surrounding plants.

5. Use your own words to describe how a farmer could use artificial selection to improve the survival of crops during future droughts. Include two traits he or she might select.

Name: _____

SAFE SOURCE?

In "Tunnel Vision" (p. 20), you learned that Lake Mead delivers much of the water supply to the southwestern United States. Read the following passage to learn about how scientists ensure that the water doesn't contain dangerous chemicals. Then use complete sentences to answer the questions that follow.

WATER CHECK

Lake Mead provides drinking water to more than 25 million people. That's one reason why scientists keep a close eye on the lake's water quality.

One of the biggest sources of pollution comes from rainwater that delivers chemicals from streets, lawns, and parking lots in the surrounding area. Contaminated rainwater washes into storm drains, which eventually lead to Lake Mead. The water can carry trash, as well as gas and oil residue from cars, insect-killing *pesticides*, and *fertilizers* used to keep lawns green.

Scientists regularly examine the lake's water at more than 50 monitoring stations. They measure the concentrations of chemicals such as the nitrates and phosphates found in fertilizer. They also measure the water's acidity, or *pH level*. Certain pollutants can cause the pH level to drop, making the water more acidic. Potentially harmful metals dissolve more easily in acidic water.

Before it flows into people's homes, water from Lake Mead also undergoes an intensive cleaning process at a treatment facility. That ensures that it meets the safety guidelines for drinking water.

QUESTIONS

1. How many people rely on Lake Mead for drinking water?

2. Use your own words to describe how a toxic chemical spilled on the road could make it into Lake Mead.

3. What are two types of chemicals found in fertilizer?

4. What is one reason acidic water is potentially dangerous to drink?

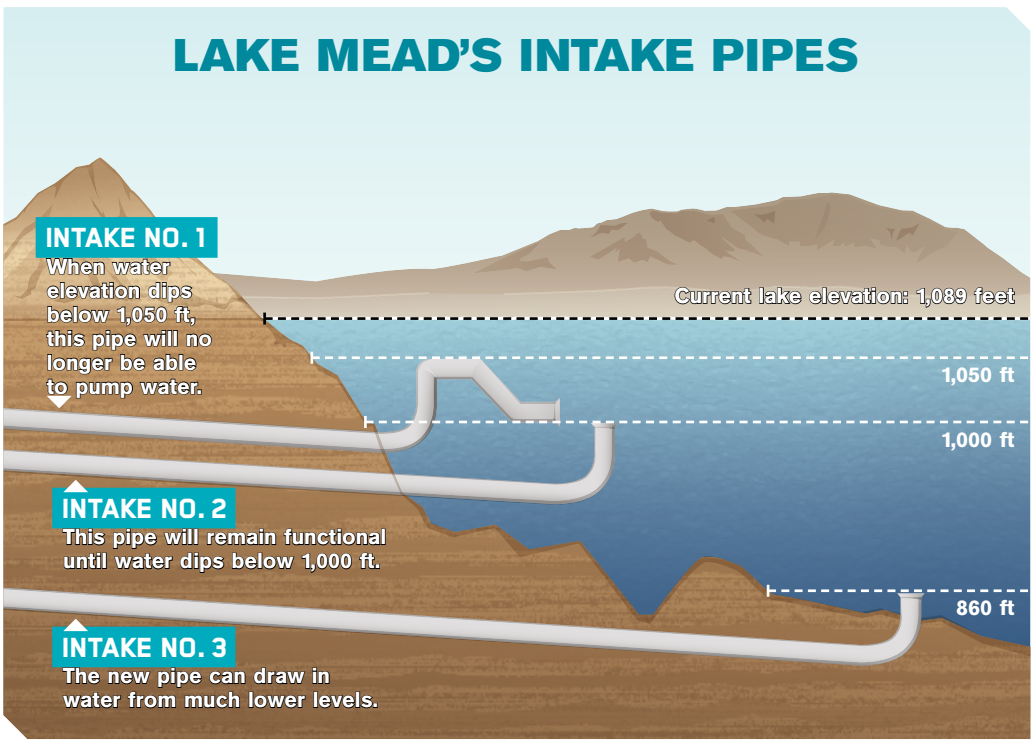
5. Why do you think scientists measure Lake Mead's water quality if the water is cleaned before being delivered to homes?

Name: _____

PUMPING WATER

In "Tunnel Vision" (p. 20), you learned about intake pipes that draw water from Lake Mead and route it to Las Vegas, which depends on the lake for 90 percent of its water. But a severe drought in the Southwest is threatening to cause water levels to dip lower than existing intake pipes (Intake No. 1 and Intake No. 2). A new intake pipe, Intake No. 3, was recently installed closer to the lake bottom so it can draw water even if levels continue to fall.

The diagram below (also on p. 21 of your magazine) shows the intake pipes in Lake Mead. Study the diagram and then answer the questions that follow. Use complete sentences.



QUESTIONS

1. What is the elevation of the newest intake pipe?

2. How much lower is the elevation of Intake No. 3 than the current lake level?

3. How much more would the lake level need to drop for Intake No. 1 to no longer be able to pump water?

4. What do you think will happen to Intake No. 1 if the drought in the Southwest continues?

5. In your own words, explain why engineers decided to build Intake No. 3.