

Deep-Sea Detectives

A couple of years ago, a volcano erupted more than 8,000 feet underwater. Today, researchers 500 miles off the coast of Mexico are getting a close look at the aftermath. The eruption covered 9 square miles of the ocean floor with hot liquid rock called **lava**. Scientists are studying how quickly deep-sea creatures come to live on the lava flow.

The Crew: Two scientists and a pilot took a dive in *Alvin*, a submarine. They used cameras to take pictures and robotic arms to take samples.

The Clues: The lava cooled within seconds of the eruption into **bulbous**, or rounded, shapes. The lava is broken by deep-sea vents that spew **toxic**, or poisonous, chemicals.

The Scene: The eruption took place along the mid-ocean ridge, the most active volcanic region on Earth.

The Deep-Sea Creatures

Bacteria: The crew made an amazing discovery! Chemicals from the vents attracted tiny organisms called bacteria.

Tube Worms: Over time, scientists think that the bacteria will help tube worms grow in the area.

Crabs: Later, crabs will come to feed on organisms, such as the tube worms, near the vents.

Starting Over

The dark zone of the ocean floor has no sunlight. The temperature there is almost freezing. Yet even after the eruption, living creatures are moving to this place to form a **food web**. (A food web links plants and animals that depend on each other for food.) Life is starting over.

Name: _____ Date: _____

1. According to the article, what did scientists find on the lava?
 - A tube worms
 - B crabs
 - C snails
 - D bacteria

2. Hot liquid rock called lava covered nine square miles of ocean floor. According to the passage, what *caused* the lava?
 - A deep-sea creatures
 - B the mid-ocean ridge
 - C a volcano
 - D deep-sea vents

3. After reading this passage, what can you conclude about the underground lava site?
 - A More lava will soon cover the site.
 - B *Alvin* will return for more samples.
 - C Tube worms will eventually feed on crabs.
 - D The bacteria may begin a new food web.

4. Read the following sentence from the passage: "The lava is broken by deep-sea vents that spew toxic, or poisonous, chemicals."

In this sentence, the word **spew** means

 - A visit
 - B force out
 - C talk to
 - D twist

5. Which statement best describes the central idea of this passage?
 - A Many volcanoes are located along the mid-ocean ridge.
 - B Scientists discovered new deep-sea creatures.
 - C Scientists are learning how deep-sea creatures came to live on lava.
 - D An underwater volcano erupted off the coast of Mexico.

6. According to the passage, why did scientists think finding bacteria was important?

7. Why might the passage describe the ocean floor as dark and almost freezing? Cite evidence from the text to support your answer.

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

_____ the lava erupted, it cooled.

- A Instead
- B After
- C Before
- D Next

9. Answer the following questions based on the sentence below.

Thousands of feet below the ocean’s surface, scientists traveled in a submarine to take pictures and get samples from the lava site.

Who? _____

(did) What? _____

Where? _____

(traveled there) Why? to take pictures and get samples from the lava site

10. **Vocabulary Word:** vents: openings that allow fumes, gases, liquids, or steam to escape.

Use the vocabulary word in a sentence: _____

Teacher Guide and Answers

Passage Reading Level: Lexile 810

Featured Text Structure: Enumerative – the writer includes a list, giving examples of something. This text structure is often combined with cause/effect or problem/solution.

Passage Summary: “Deep-Sea Detectives” looks at the how scientists are studying deep-sea creatures that came to live on lava after a volcano erupted 500 miles off the coast of Mexico a couple of years ago. The passage lists some details of the search and ways that new life may be forming a food web.

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- D **bacteria**

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6. According to the passage, why did scientists think finding bacteria was important?

Suggested answer: Finding bacteria seemed important because scientists think the bacteria could help tube worms grow in the area. If tube worms start to grow, they could attract other creatures and eventually bring more life to the area. [paragraphs 5, 6, and 7]

7. Why might the passage describe the ocean floor as dark and almost freezing? Cite evidence from the text to support your answer.

Suggested answer: The ocean floor is dark and almost freezing because no sunlight reaches that deep into the ocean. [paragraph 8]

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

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9. Answer the following questions based on the sentence below.

Thousands of feet below the ocean's surface, scientists traveled in a submarine to take pictures and get samples from the lava site.

Who? **scientists**

(did) What? **traveled in a submarine**

Where? **thousands of feet below the ocean's surface**

(traveled there) Why? to take pictures and get samples from the lava site

10. **Vocabulary Word:** vents: openings that allow fumes, gases, liquids, or steam to escape.

Use the vocabulary word in a sentence: answers may vary.