

Ocean Systems Below

Trace how the ocean floor, water, and living things work together.

4.7 "The student will investigate and understand that the ocean environment has characteristics. Key characteristics include geology of the ocean floor; physical properties and movement of ocean water; and interaction of organisms in the ocean."

NAME _____ DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline details about the ocean floor, circle details about water properties or movement, and write a 3 beside details about organism interactions. These marks help you track three connected parts of an ocean environment.

A Busy Ocean Environment

- ① Far below a research boat, the ocean floor is not flat. A wide continental shelf slopes away from land. Farther out, steep continental slopes lead to deep, broad plains. Long mountain chains called mid-ocean ridges rise from the floor. At some ridges, melted rock from inside Earth cools and makes new ocean crust. Deep trenches form where one moving plate sinks beneath another.
- ② Ocean water has properties that affect life. Salt dissolved in seawater makes it denser than fresh water. Sunlight warms the surface most, while deeper water is colder and darker. Wind pushes surface water into waves and currents. Differences in water temperature and saltiness also help move water. Tides raise and lower water levels as the Moon's gravity pulls on Earth's oceans.
- ③ Ocean organisms depend on one another and on their surroundings. Tiny plants called phytoplankton use sunlight near the surface to make food. Small animals eat phytoplankton, and fish may eat the small animals. A shark can eat fish. When organisms die, bacteria break down their remains, returning materials to the water. Ocean-floor features, moving water, and light all help decide where organisms can live.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What happens at a mid-ocean ridge, and what does it make?

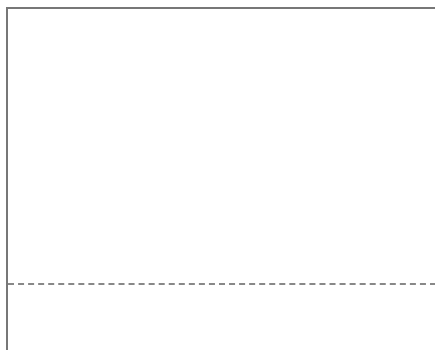
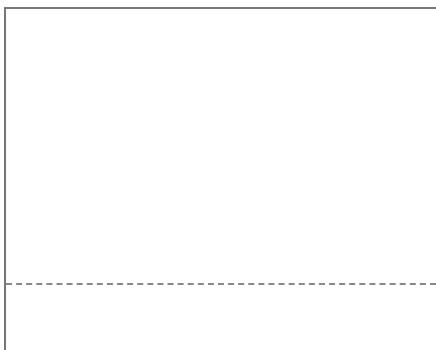
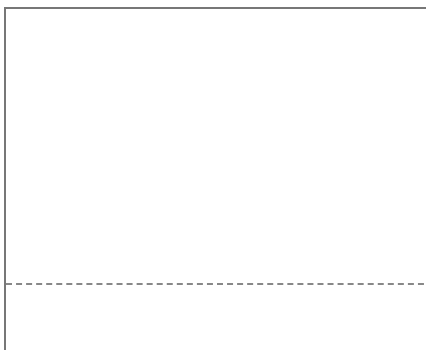
2 Give two ways deep ocean water differs from surface water.

3 What causes waves and currents at the surface, and what causes tides?

4 How do phytoplankton, small animals, fish, and sharks show a food relationship? What do bacteria do after organisms die?

3 YOUR TURN _____ Your own words

Create a three-panel sketch of an ocean place. Show one ocean-floor feature, one water property or movement, and one organism interaction. Label each panel and write one sentence for each panel.

		
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PART 1 • READ AND MARK

Underline details about the ocean floor, circle details about water properties or movement, and write a 3 beside details about organism interactions. These marks help you track three connected parts of an ocean environment. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What happens at a mid-ocean ridge, and what does it make?	Melted rock from inside Earth cools at some ridges and makes new ocean crust.
2	Give two ways deep ocean water differs from surface water.	Deep water is colder and darker than surface water.
3	What causes waves and currents at the surface, and what causes tides?	Wind pushes surface water into waves and currents. The Moon's gravity causes tides.
4	How do phytoplankton, small animals, fish, and sharks show a food relationship? What do bacteria do after organisms die?	Small animals eat phytoplankton, fish may eat the small animals, and sharks can eat fish. Bacteria break down remains and return materials to the water.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Panel 1, Ocean floor: A mid-ocean ridge rises from the ocean floor. Panel 2, Water movement: Cold, salty water moves below warmer surface water. Panel 3, Organisms: Fish eat small animals that ate phytoplankton.

Accept accurate labels and sentences that show one geology feature, one water property or movement, and one interaction among organisms. Students may choose examples other than the sample if each example is scientifically accurate.