

## The Global Ocean Realm

### Interactivity Worksheet

**Directions:** While viewing the program THE GLOBAL OCEAN REALM, record the answer given after each question. Use the pictures below to help you explain the information given. Include text, arrows, or other symbols to help explain the dynamics of our global ocean realm.

1. How many oceans are there?



2. Why is the ocean a valuable resource?

3. How were the oceans formed?

NAME \_\_\_\_\_

## The Global Ocean Realm

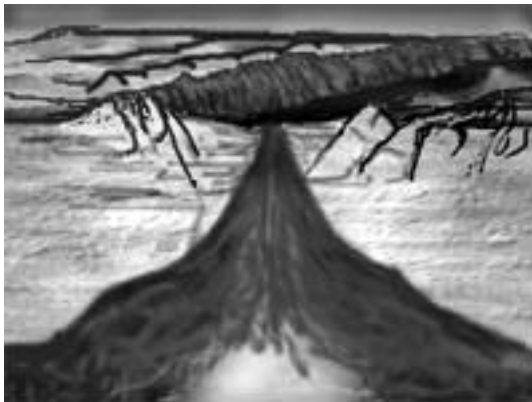
### Interactivity Worksheet

4. How have the oceans changed through geological history?



5. What is plate tectonics?

6. What is the mid-ocean ridge?



## The Global Ocean Realm

### Interactivity Worksheet

7. What is convergence?



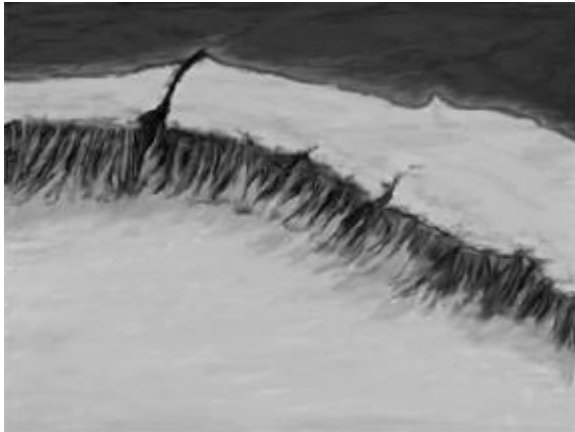
8. What are deep-sea trenches?

9. What are the abyssal plains?

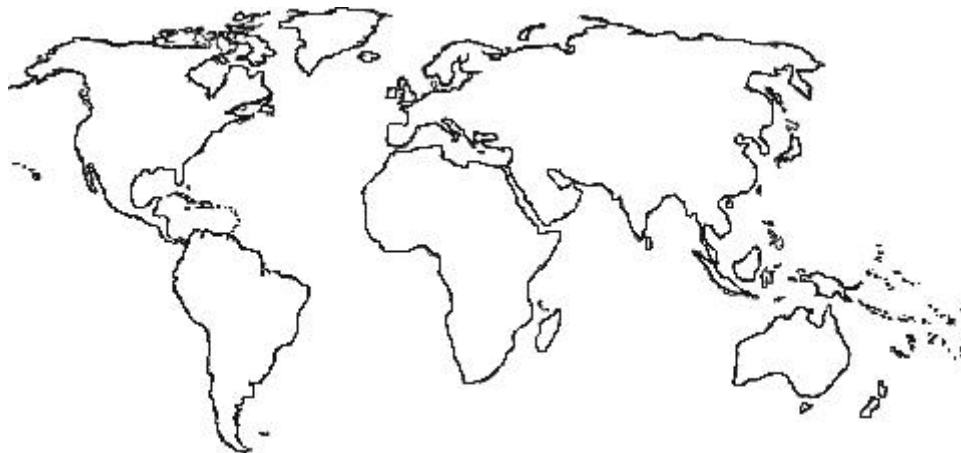
## The Global Ocean Realm

### Interactivity Worksheet

10. What are the continental shelf, continental slope, and the continental rise?



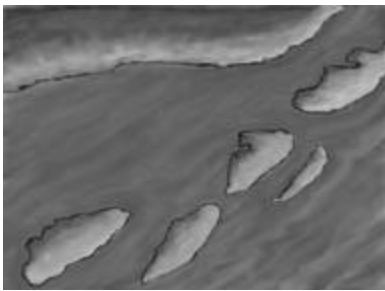
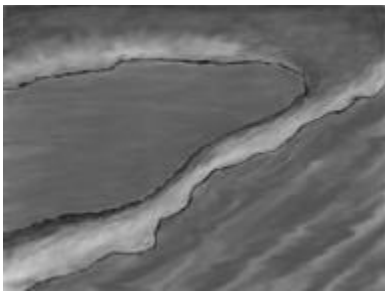
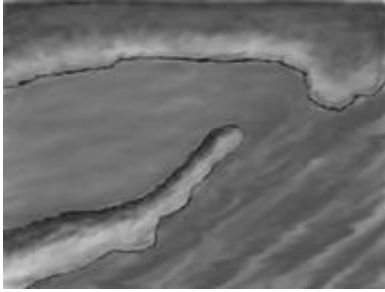
11. What creates ocean currents?



## The Global Ocean Realm

### Interactivity Worksheet

12. How are waves formed and how do they shape coastal areas?



NAME \_\_\_\_\_

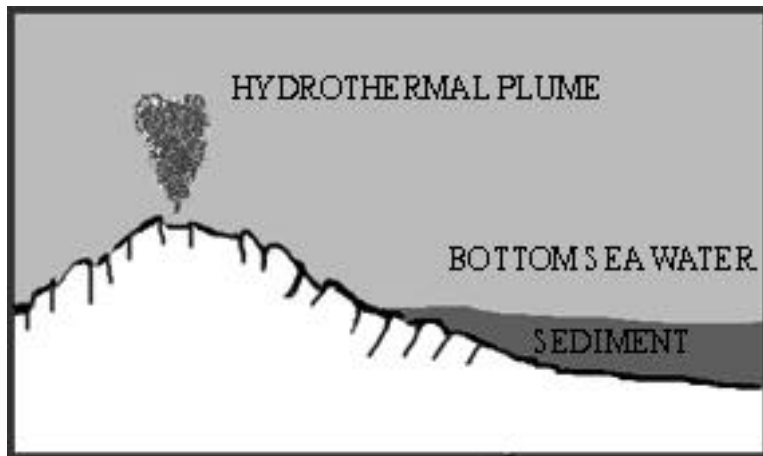
## The Global Ocean Realm

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13. What are the coral reefs?

14. How do temperature, light, oxygen, pressure, and nutrients vary with depth?

15. What are hydrothermal vents?



16. What can the scientific community offer us?

# The Global Ocean Realm

## Vocabulary List

**Abyssal plain:** a very level area of the deep ocean floor, usually lying at the foot of the continental rise.

**Atmosphere:** the gaseous portion of a planet.

**Barrier island:** a low, elongated ridge of sand that parallels the coast.

**Baymouth bar:** a sandbar that completely crosses a bay, sealing it off from the open ocean.

**Continental rise:** the gently sloping surface at the base of the continental slope.

**Continental shelf:** the gently sloping submerged portion of the continental margin extending from the shoreline to the continental slope.

**Continental slope:** the steep gradient that leads to the deep-ocean floor and marks the seaward edge of the continental shelf.

**Convergence:** the event when one tectonic plate has a slow "collision" with another plate, causing the plate to be consumed into the mantle as it descends beneath an overriding plate.

**Coral reefs:** wave-resistant ecological units composed predominantly of calcite-rich remains of corals and limy secretions of algae.

**Coriolis effect:** the deflective force of Earth's rotation on all free-moving objects, including the atmosphere and oceans. Deflection is to the right in the Northern Hemisphere and to the left in the Southern Hemisphere.

**Deep-ocean trench:** a narrow, elongated depression on the floor of the ocean.

**Deep sea hydrothermal vent:** a geyser on the ocean floor.

**Glaciation:** covered with or affected by a glacier.

**Mid-ocean ridge:** a continuous mountainous ridge on the floor of all the major ocean basins and varying in width from 300 to 3,000 miles, or 500 to 5,000 kilometers. The rifts at the crests of these ridges represent divergent plate boundaries.

**Plate tectonics:** the theory which proposes that Earth's outer shell consists of individual plates, which interact in various ways.

**Sea arch:** an arch formed by wave erosion when caves on opposite sides of a headland unite.

**Ocean basin:** the part of the Earth's crust that lies beyond the continental margin, including abyssal plains, oceanic ridges, volcanic islands, and trenches.

**Ocean current:** a portion of the ocean moving in a certain direction.

**Seamounts:** an isolated volcanic peak that rises at least 3,000 feet, or 1,000 meters, above the ocean floor.

**Sea stack:** an isolated mass of rock standing just offshore, produced by wave erosion of a headland.

**Spit:** an elongated ridge of sand that projects from the land into the mouth of an adjacent bay.

**Subduction zone:** a long narrow zone where one tectonic plate descends beneath another.

**Swells:** waves out in the open ocean.

# The Global Ocean Realm

## Vocabulary Worksheet

Directions: Match the letter of the definition with the correct definition by putting the letter in the blank.

- |                            |   |
|----------------------------|---|
| 1. ____ swells             | A. a rise in waves out in the open ocean  |
| 2. ____ mid-oceanic ridge  | B. the gently sloping surface at the base of the continental slope  |
| 3. ____ convergence        | C. an isolated volcanic peak that rises at least 3,000 feet, or 1,000 meters, above the ocean floor                       |
| 4. ____ subduction zone    | D. a portion of the ocean moving in a certain direction   |
| 5. ____ deep-sea trenches  | E. a long, narrow zone where one tectonic plate descends beneath another  |
| 6. ____ abyssal plains     | F. the steep gradient that leads to the deep-ocean floor and marks the edge of the continental shelf                      |
| 7. ____ seamounts          | G. a geyser on the ocean floor  |
| 8. ____ continental shelf  | H. the gaseous portion of a planet  |
| 9. ____ continental slope  | I. wave-resistant ecological units composed predominately of calcite-rich remains of corals and slimy secretions of algae |
| 10. ____ continental rise  | J. a continuous mountainous ridge on the floor of all the major ocean basins  |
| 11. ____ ocean currents    | K. a very level area of the deep-ocean floor, usually lying at the foot of the continental rise                           |
| 12. ____ Coriolis effect   | L. the horizontal distance separating successive crests or troughs  |
| 13. ____ wavelength        | M. a low elongated ridge of sand that parallels the coast   |
| 14. ____ barrier island    | N. the gently sloping submerged portion of the continental margin extending from the shoreline to the continental slope   |
| 15. ____ coral reefs       | O. the deflective force of Earth's rotation on all free-moving objects, including the atmosphere and oceans               |
| 16. ____ hydrothermal vent | P. a narrow, elongated depression on the floor of the ocean   |
| 17. ____ atmosphere        | Q. the event when two tectonic plates converge  |
| 18. ____ baymouth bar      | R. a sandbar that completely crosses a bay, sealing it off from the open ocean  |



# The Global Ocean Realm

## Post-Test

### True or False

Directions: Label each statement with a "T" if it is true or "F" if it is false.

- \_\_\_ 1. Throughout the Earth's history, the ocean has transformed in size and depth.
- \_\_\_ 2. Most upwelling of material from the mantle along separating plate boundaries is mostly found underneath the Earth's oceans.
- \_\_\_ 3. Ocean-floor plates never collide with or slide under continental plates.
- \_\_\_ 4. Earthquakes often occur along plate boundaries.
- \_\_\_ 5. The force of gravity enables the planet to retain an atmosphere.

### Multiple-Choice

Directions: Circle the word that best completes the sentence.

6. At the lower and mid latitudes where the ocean surface receives much solar energy, it is here that water temperatures are \_\_\_\_\_.
- a. constantly changing      b. warmest      c. very cool      d. coldest
7. Coral reefs are found in \_\_\_\_\_ climates.
- a. arctic      b. cooler      c. warmer      d. all
8. Oxygen becomes more abundant along coastal waters due to \_\_\_\_\_.
- a. waves      b. sediment      c. rivers      d. coastal features
9. Ocean currents are affected by all of the following except \_\_\_\_\_.
- a. winds      b. the shape of the continents      c. the Coriolis effect      d. seamounts
10. Presently, the global ocean and marginal seas cover \_\_\_\_\_ of the Earth.
- a. 71%      b. 25 %      c. 88%      d. 42 %
11. Much of the sediment making up beaches comes from \_\_\_\_\_.
- a. wave-eroded rock      b. continental slopes      c. sediment-laden rivers      d. sea stacks
12. Hydrothermal vents are created and sustained by the heat of \_\_\_\_\_.
- a. volcanic processes      b. deep sea trenches      c. ocean currents      d. water pressure

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### Post-Test (cont.)

#### Short Essay

Directions: Answer the following questions in the spaces provided. Use the back of the sheet if necessary.

13. Why is the ocean a valuable resource?

14. What are deep trenches? Do earthquakes occur here? What is the level of heat flow here?

15. What are seamounts? What have scientists observed at the Loihi seamount?

16. In what ways can people benefit by studying the oceans?