

### Understanding Main Ideas (Part A)

Write the term that best completes the statement.

abyssal plains

barrier islands

beach erosion

hydrothermal vent

ooze

turbidity currents

- \_\_\_\_\_ are long ridges separated from the mainland and are made of sediment deposited by longshore currents.
- Seawalls, groins, jetties, and breakwaters are built to prevent \_\_\_\_\_.
- \_\_\_\_\_ are perhaps the flattest places on Earth and are covered with hundreds of meters of fine-grained sediments and sedimentary rocks.
- Deep-sea sediments formed by shells and hard parts of marine organisms are called \_\_\_\_\_.
- Submarine canyons are formed by \_\_\_\_\_.
- A hole in the seafloor through which fluid heated by magma erupts is a(n) \_\_\_\_\_.

In the space at the left, write *true* if the statement is true; if the statement is false, change the italicized word or phrase to make it true.

- \_\_\_\_\_ 7. Once a seafloor structure, such as a seamount, is formed, the only process that modifies it is *erosion*.
- \_\_\_\_\_ 8. Black and white smokers are submerged *basalt volcanoes*.
- \_\_\_\_\_ 9. The area where a freshwater river or stream enters the ocean is an *estuary*.
- \_\_\_\_\_ 10. A ridge of sand called a *tombolo* connects an island to the mainland to form the tip of a peninsula.

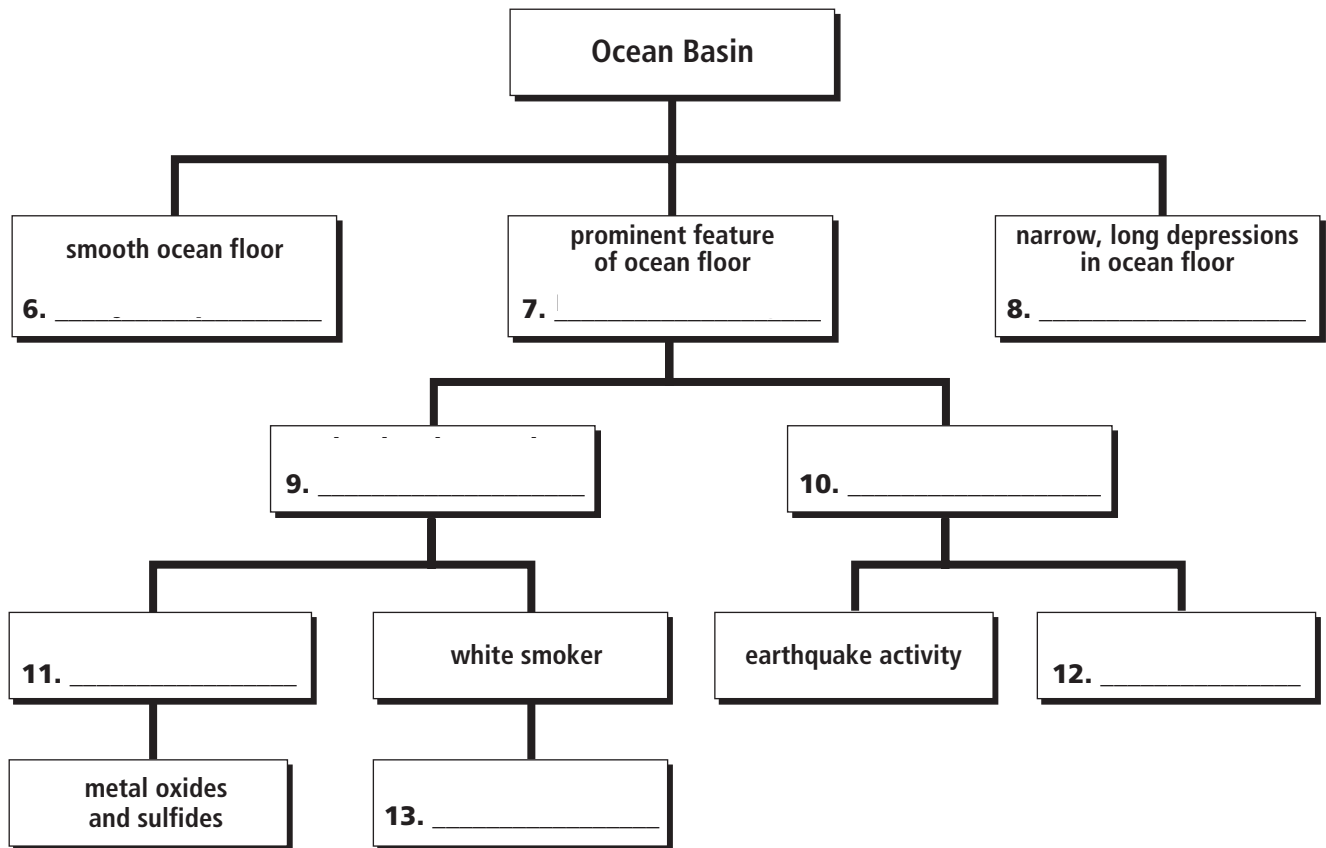
**Understanding Main Ideas (Part B)**

Write the letter of the effect in the second column next to the action that causes it in the first column.

Cause	Effect
_____ 1. Melting ice-age glaciers	<b>a.</b> submarine canyons
_____ 2. Rising coastline	<b>b.</b> rise in sea level
_____ 3. Rapidly flowing turbidity currents	<b>c.</b> turbidity currents
_____ 4. Underwater landslides, earthquakes, or large storm waves	<b>d.</b> harbor entrance closes
_____ 5. Sand drifting around jetties	<b>e.</b> drop in sea level

Write the terms to complete the network tree concept map.

- abyssal plain      warm water      volcanic activity      fractures  
 mid-ocean ridges      deep-sea trench      black smoker      hydrothermal vent



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## Thinking Critically

Answer the following questions.

1. Researchers find that sediments along the ocean bottom seem to be sorted by size. Coarse gravel and sand are found close to shore. Fine particles are deposited at a greater distance from shore. What can you infer about the movement of sediments from these observations?

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2. What observations support the fact that turbidity currents help form the topography of the seafloor?

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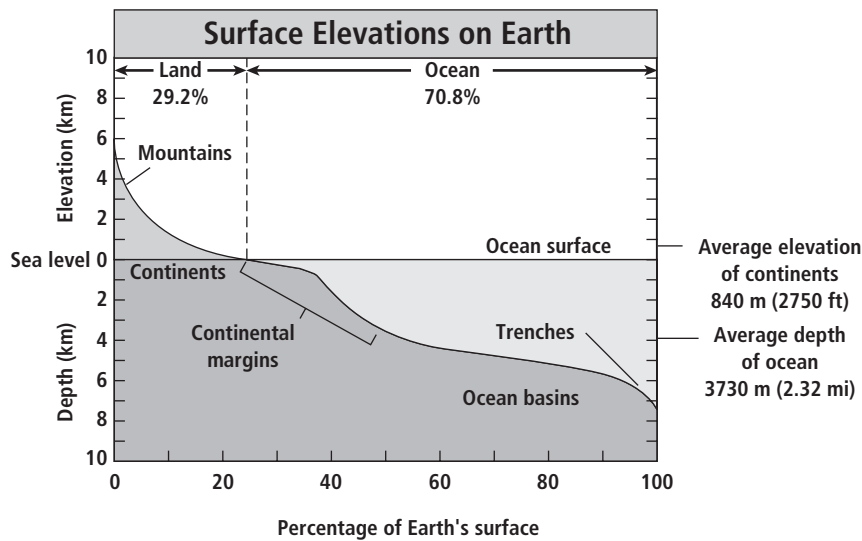


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3. How would the data in this graph change if the polar ice sheets melted?




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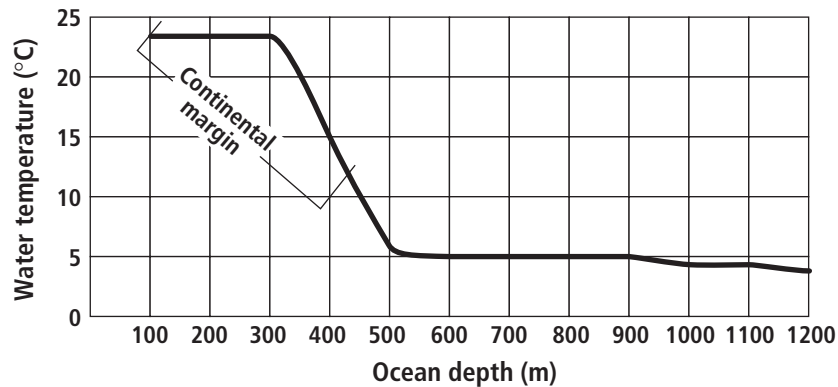


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## Applying Scientific Methods

Research has shown that the temperature of the ocean varies with ocean depth. Use data from the table and graph to help you with the activities that follow.

Ocean depth (m)	100	200	300	400	500	600	700	800	900	1000	1100	1200
Water temperature (°C)	23	23	23	15	5.5	5	5	5	5	4.5	4.5	4



1. Describe the relationship between water temperature and ocean depth.

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2. Formulate a hypothesis to explain why water temperature decreases as water depth increases.

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***Applying Scientific Methods, continued***

3. Plan an experiment to prove your hypothesis. Your plan should include variables, controls, and expected results.

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4. Once the cause of the temperature difference has been identified, researchers may want to determine what effect, if any, the temperature difference has on ocean organisms. Suggest questions or phenomena that might be investigated.

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5. Which question or phenomenon that you wrote for question 3 would you like to investigate? Why?

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