

# Ocean Basins

Textbook pages 402–413

## Before You Read

If you could take all the water out of the ocean, what would you see? Write your thoughts on the lines below or make a sketch.

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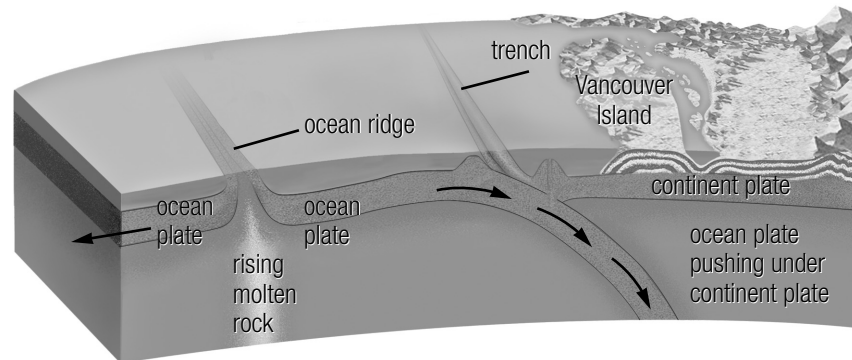


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### Mark the Text

#### Identify Definitions

Highlight the definition of each word that appears in bold type. Make a chart or sketch to help you understand what each word means.



### What is the bottom of the ocean like?

The bottom of the ocean has features like those you would see on land. There are ranges of mountains. There are steep, deep valleys. There are vast, flat plains.

These features are different from those on land in two main ways. First, the features are much larger. Second, the forces that shape these features are different from the forces that shape landforms. There are no winds, rivers, rain, or ice at the bottom of the ocean to erode rock. Instead, the main force that shapes the ocean basins is the movement of Earth's crust.

### How does the movement of Earth's crust shape the ocean basins?

Earth's crust is made up of huge sections of rock called tectonic plates. These plates float on a layer of molten (melted) rock. Some plates lie under the bottom of the ocean. Others lie under the continents. The movement of the plates and the way they interact are called **tectonic processes**. ✓

### Reading Check

1. What are tectonic processes?

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In the middle of the ocean, the ocean plates move apart as molten rock pushes up from underneath them. As the molten rock pushes up into the ocean water, the rock cools and becomes solid. This process creates huge mountain systems called mid-ocean ridges.

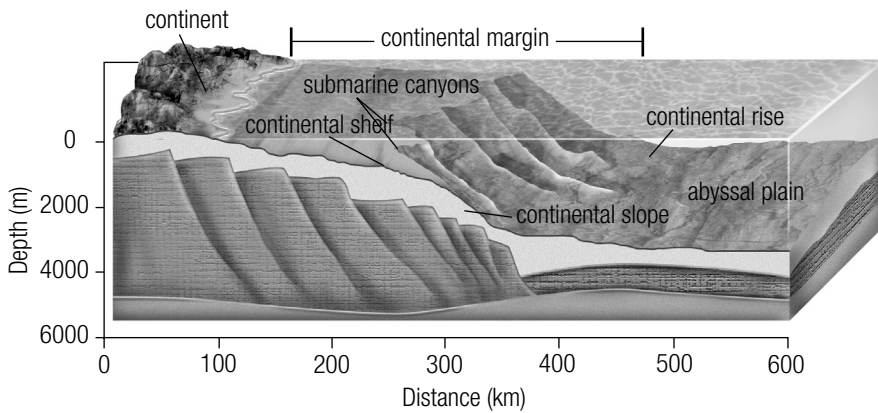
Closer to land, ocean plates move under continent plates. This process creates deep ocean valleys, called trenches, at the base of some continents. ✓

**What are the features of an ocean basin?**

The shallowest part of the continental margin that runs out into the ocean from the shoreline is called the **continental shelf**. The shelf slopes gradually away from the shore for tens or hundreds of kilometres. Then it drops steeply downward. From the point at which this steep drop occurs to the ocean basin is the **continental slope**.

At the base of the slope is a more gentle slope called the **continental rise**. It is made of sediments carried by **turbidity currents**, which are underwater landslides from the continental slope. Some powerful turbidity currents scrape out large parts of the continental shelf and slope to form deep gullies called **submarine canyons**. ✓

The broad, flat region in the middle of the ocean basin is called the **abyssal plain**. The abyssal plain is surrounded by the rising outer edges of the **continental margin**.



✓ **Reading Check**

2. What features are part of the continental margin?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Name \_\_\_\_\_

Date \_\_\_\_\_

Use with textbook pages 404–409.

## The ocean floor

### Vocabulary

abyssal plain	molten rock
continental margin	submarine canyons
continental shelf	tectonic plates
continental slope	tectonic processes
continental rise	trenches
landforms	turbidity currents
mid-ocean ridges	

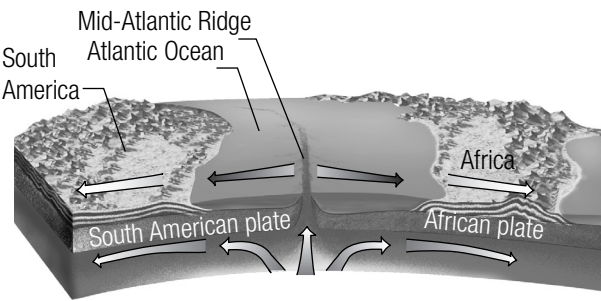
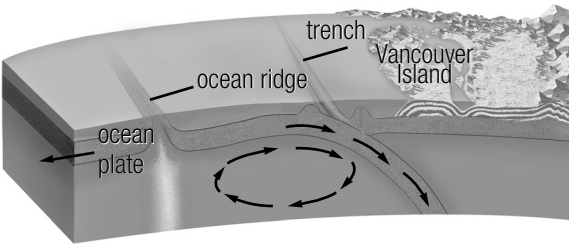
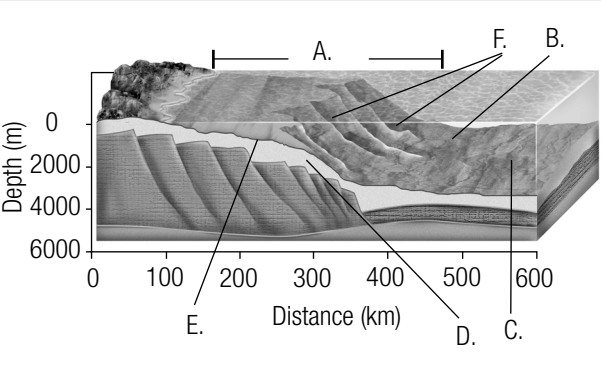
Use the terms in the vocabulary box to fill in the blanks. Each term may be used as often as needed. You will not need to use all the terms.

1. Earth's crust is made up of huge sections of rock called \_\_\_\_\_ that float on a layer of \_\_\_\_\_.
2. The movement of the plates and the way they interact are called \_\_\_\_\_.
3. In the middle of the ocean, the ocean plates move apart as \_\_\_\_\_ pushes up from underneath them. As it pushes up into the ocean water, it cools and becomes solid. This process creates huge mountain systems called \_\_\_\_\_.
4. Closer to land, ocean plates move under continent plates. This process creates deep ocean valleys called \_\_\_\_\_ at the base of some continents.
5. The shallowest part of the continental margin that runs out into the ocean from the shoreline is called the \_\_\_\_\_. It slopes gradually, then it drops steeply downward. From the point at which this steep drop occurs to the ocean basin is the \_\_\_\_\_.
6. At the base of the slope is the \_\_\_\_\_. It is made of sediments carried by \_\_\_\_\_, which are underwater landslides from the continental slope.
7. Some powerful turbidity currents scrape out large parts of the continental shelf and slope to form deep gullies called \_\_\_\_\_.
8. The middle part of the ocean bottom is the ocean basin. This broad, flat region is called the \_\_\_\_\_. It is surrounded by the rising outer edges of the \_\_\_\_\_.

Use with textbook pages 406–409.

## Features of the ocean floor

Examine the pictures below. Answer the questions.

<p>A.</p> 	<p>1. What events cause the formation of mid-ocean ridges?</p>
<p>B.</p> 	<p>2. What events cause the formation of ocean trenches?</p>
<p>C.</p> 	<p>3. Name the features:</p> <p>A.</p> <p>B.</p> <p>C.</p> <p>D.</p> <p>E.</p> <p>F.</p>

Use with textbook pages 400–409.

## On the bottom of the ocean

Imagine that you are the pilot of small undersea exploration vehicle. You are exploring the ocean bottom. You travel from the shore (Box 1) out to the middle of the ocean (Box 4). Use words and pictures to describe your journey. Remember to use the proper terms for all the features that you see.

Box 1

Box 2

Box 3

Box 4

Name \_\_\_\_\_

Date \_\_\_\_\_

Use textbook pages 402–413.

## Ocean basins

**Match the Term on the left with the best Descriptor on the right. Each Descriptor may be used only once.**

Term	Descriptor
1. _____ abyssal plain	<b>A.</b> underwater mountains
2. _____ continental shelf	<b>B.</b> movement of the plates
3. _____ continental slope	<b>C.</b> steep drop in the continental margin
4. _____ continental rise	<b>D.</b> deep gullies
5. _____ submarine canyon	<b>E.</b> shallowest part of the continental margin
6. _____ tectonic processes	<b>F.</b> gentle slope in the continental margin
7. _____ turbidity current	<b>G.</b> broad, flat region in the middle of the ocean
	<b>H.</b> underwater landslide

**Circle the letter of the best answer.**

8. The continental margin
  - A.** is the plate under a continent
  - B.** is part of the continental shelf
  - C.** extends from a continent to the abyssal plain
  - D.** is the shoreline of a continent
9. The main force that shapes the ocean bottom is the movement of
  - A.** Earth's crust
  - B.** the continents
  - C.** turbidity currents
  - D.** underwater landslides

10. Trenches are formed when
  - A.** ocean plates move under continent plates
  - B.** continent plates move under ocean plates
  - C.** continent plates and ocean plates move apart
  - D.** none of the above
11. Ocean plates move apart when
  - A.** turbidity currents push them apart
  - B.** molten rock pushes up
  - C.** trenches are formed
  - D.** all of the above
12. Which features can be found on both the ocean floor and on continents?
  - A.** mid-ocean ridges, mountains, and valleys
  - B.** mountains, valleys, and plains
  - C.** turbidity currents, valleys, and plains
  - D.** none of the above
13. Mid-ocean ridges are formed when
  - A.** ocean plates move apart
  - B.** ocean plates move under continent plates
  - C.** continent plates move under ocean plates
  - D.** turbidity currents happen
14. Which of the following is not a feature of the ocean bottom?
  - A.** continental shelf
  - B.** continental slope
  - C.** continental floor
  - D.** continental rise