

**Chapter 16 The Dynamic Ocean**

**Section 16.1 Ocean Circulation**


*This section discusses how movements of surface and deep-ocean waters occur.*

**Reading Strategy**

**Identifying Main Ideas** As you read, write the main idea of each topic in the table. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.

Topic	Main Idea
Surface currents	a.
Gyres	b.
Ocean currents and climate	c.
Upwelling	d.

**Surface Circulation**

1.  Is the following sentence true or false? Friction between the ocean and the wind blowing across its surface cause ocean surface currents. \_\_\_\_\_

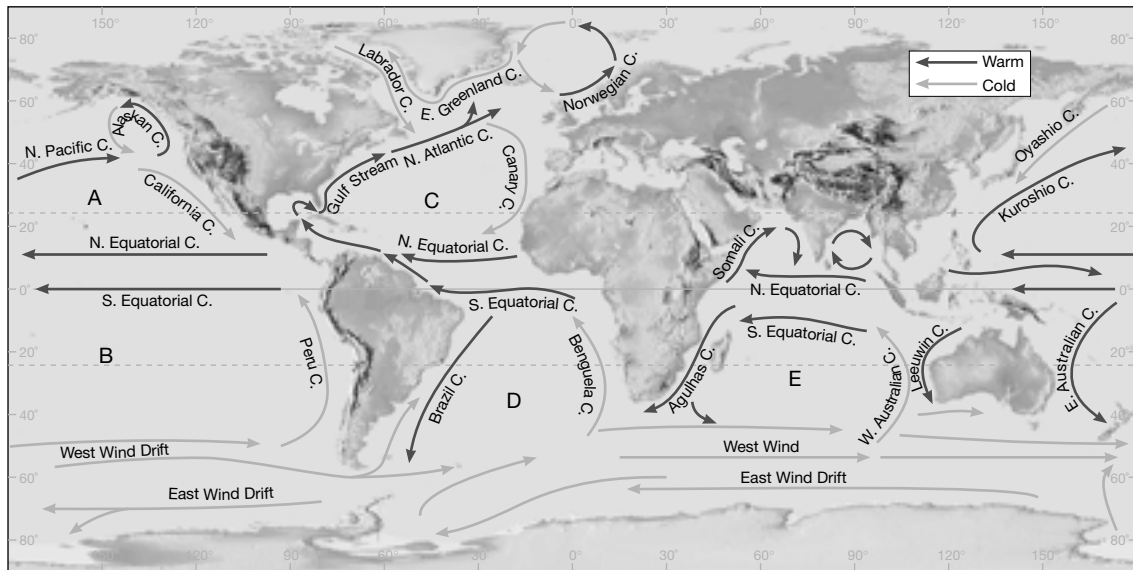
*Match each definition with its term.*

Definition	Term
_____ 2. large whirl of water within an ocean basin	a. gyre
_____ 3. mass of ocean water that flows from place to place	b. upwelling
_____ 4. rising of cold, deep ocean water to replace warmer surface water	c. surface current
_____ 5. horizontal water movement in the upper part of the ocean's surface	d. ocean current

### Chapter 16 The Dynamic Ocean

6. Select the appropriate letter on the map that identifies each of the following ocean currents.

- \_\_\_\_\_ North Atlantic Gyre
- \_\_\_\_\_ North Pacific Gyre
- \_\_\_\_\_ South Atlantic Gyre
- \_\_\_\_\_ South Pacific Gyre
- \_\_\_\_\_ Indian Ocean Gyre



7. 🗺️ How does the Coriolis effect impact ocean currents in the Northern and Southern Hemispheres? \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
8. 🗺️ Ocean currents moving from low-latitude to higher latitude regions transfer \_\_\_\_\_ from warmer to cooler areas.
9. 🗺️ Is the following sentence true or false? Winds cause upwelling, which in turn causes an increase in dissolved nutrients at the ocean surface. \_\_\_\_\_

### Deep-Ocean Circulation

10. What are density currents? \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
11. 🗺️ Ocean water can increase in density as a result of a decrease in temperature or a(n) \_\_\_\_\_ in salinity.
12. Circle the letter of the area where the ocean water with the highest density occurs.
- a. at the equator
  - b. near Antarctica
  - c. in the Mediterranean Sea
  - d. near Australia