

Study Guide  
Chapter 11 – The Oceans

**GPS: S6E3. Students will recognize the significant role of water in Earth's processes.**

- c. Describe the composition, location, and subsurface topography of the world's oceans.
- d. Explain the causes of waves, currents, and tides.

**SE5. Students will investigate the scientific view of how the earth's surface is formed.**

Explain the effects of physical processes on geological features including oceans.

**S6E6. Students will describe various sources of energy and with their uses and conservation.**

- a. Explain the role of the Sun as the major source of energy and the Sun's relationship to wind and water energy.

1. Three things that make studying the ocean floor so difficult are extreme pressure, cold temperature and darkness.
2. Sonar is a technological system that uses sound waves to calculate the distance to an object on the deep ocean floor.
3. The smooth, nearly flat region of the ocean floor that is covered with thick layers of sediment is called an abyssal plain.
4. The mid-ocean ridge is made up of a range of mountains that winds through the oceans.
5. Most waves form when wind blowing across the water's surface transmit their energy to the water.
6. The horizontal distance between crests of a wave is the wavelength.
7. The vertical distance from the crest to the trough is the wave height which can be very destructive in a tsunami.
8. A tsunami is caused by an earthquake beneath the ocean floor.
9. The strong roots of dune plants, such as beach grass, hold the sand in place and reduce beach erosion.
10. The daily rise and fall of Earth's water on its coastlines are called tides.
11. Tides are caused by the interaction of the sun, moon, and the earth.
12. The greatest difference between the heights of high and low tide are called a spring tide.
13. The least difference between the heights of the high and low tide are called a neap tide.
14. Tidal power can be a useful part of an overall plan to generate electricity.
15. The total amount of dissolved salts in a sample of water is the salinity of that sample of water.
16. Sodium chloride (table salt) is the salt present in the greatest amount in ocean water.
17. Algae need carbon dioxide and sunlight for photosynthesis so their growth in the ocean is limited.
18. As you descend through the ocean, the water temperature decreases.
19. A current is a large stream of moving water that flows through the oceans.
20. In the Northern Hemisphere, the Coriolis Effect causes the currents to curve to the right.
21. The largest and most powerful surface current in the North Atlantic is called the Gulf Stream.
22. El Nino is the abnormal climate event that occurs every two to seven years in the Pacific Ocean.
23. The currents that cause chilly waters to creep slowly across the ocean floor are caused by differences in the density of the ocean water.