

Section 12.2

Features of Plate Tectonics

Check Your Understanding



Checking Concepts

1. List three kinds of plate boundaries.
2. What is ridge push?
3. How is the worldwide pattern of earthquakes and volcanoes related to tectonic plates?
4. (a) What are convection currents?

(b) Name the region of Earth's interior where convection currents occur.

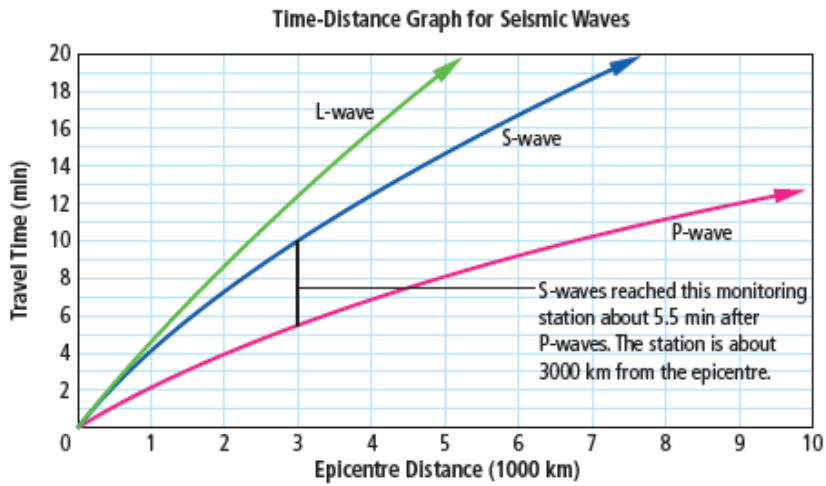
(c) How do convection currents affect tectonic plates?
5. (a) Name the type of island chain that forms over geologic hot spots.

(b) How does an island chain form over a geologic hot spot?
6. What geologic feature is associated with rift eruptions?
7. Which type of seismic waves can travel through Earth's outer core?

8. What do seismometers detect and record?
9. What does a time-distance graph of seismic waves show?
10. After an earthquake, what type of seismic wave is the first to reach earthquake monitoring stations?

Understanding Key Ideas

11. Describe the movement of tectonic plates in the following locations.
 - (a) a mid-ocean ridge
 - (b) a convergent boundary
 - (c) a transform boundary
12. Why do volcanoes usually form at subduction zones but not at transform boundaries?
13. How does the ground motion produced by a P-wave compare to the ground motion produced by a surface-wave?
14. Refer to the time-distance graph (Figure 12.25) shown on the next page (and on text page 531). How far does each seismic wave (P, S, and L) travel in 8 min?



15. What are the correct names for the types of volcanoes shown below (and on text page 537)?

(a)



(b)



(c)



Pause and Reflect

The rock that continents are made of can be as old as 4 billion (4 000 000 000) years. The oldest rock on the ocean floor is less than 200 million (200 000 000) years. Use the plate tectonic theory to explain this observation.