

Chapter 10: Section 2: Directed Reading Pages 247-254**Section: The Theory of Plate Tectonics (page 247)**

1. The theory that explains why and how continents move is called _____.

HOW CONTINENTS MOVE (page 247)

In the space provided, write the letter of the definition that best matches the term or phrase.

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|----------------------------|--|
| _____ 2. oceanic crust | a. the solid outer layer of Earth, that consists of the crust and the rigid upper part of the mantle |
| _____ 3. continental crust | b. dense crust made of rock that is rich in iron and magnesium |
| _____ 4. tectonic plates | c. blocks of Earth's shell that ride on a deformable layer of the mantle |
| _____ 5. lithosphere | d. solid, plastic layer of the mantle beneath the lithosphere |
| _____ 6. asthenosphere | e. low-density crust made of rock that is rich in silica |

7. Tectonic plates can include _____ crust, _____ crust or _____.

TECTONIC PLATES (page 248)

8. How do scientists identify plate boundaries?

9. A sudden movement along the boundary of a tectonic plate is a(n) _____.

10. Frequent earthquakes in a given zone are evidence that

TYPES OF PLATE BOUNDARIES (page 249)

In the space provided, write the letter of the definition that best matches the term or phrase.

- | | |
|---------------------------|---|
| _____ 11. divergent | a. boundary between tectonic plates that are sliding past each other horizontally |
| _____ 12. convergent | b. region where one plate moves under another |
| _____ 13. transform | c. boundary between tectonic plates that are moving away from each other |
| _____ 14. mid-ocean ridge | d. undersea mountain range |
| _____ 15. subduction zone | e. the boundary between tectonic plates that are colliding |

16. When oceanic lithosphere collides with continental lithosphere, the oceanic lithosphere is denser than the continental lithosphere, so it sinks, or _____.

17. What deep-ocean feature forms at subduction zones?

18. As the oceanic plate subducts, it releases fluids into the mantle, causing magma to form and rise to the surface, forming _____.

Chapter 13: Section 1: Directed Reading Pages 319-324

- _____ 19. The cause of many volcanic eruptions is the movement of
a. Earth's mesosphere. b. Earth's inner core. c. Earth's tectonic plates. d. Earth's oceans.

FORMATION OF MAGMA (Page 319)

- _____ 20. Sometimes Earth's solid mantle and crust melt to form
a. magma. b. mesosphere. c. petroleum. d. mineral elements.
- _____ 21. Which of the following is NOT a way magma can form?
a. The temperature of rock rises above the melting point of the minerals the rock is composed of.
b. Excess pressure is removed from rock that is above its melting point.
c. Addition of fluids, such as water, increase the melting point of some minerals in the rock.
d. Addition of fluids, such as water, may decrease the melting point of some minerals in the rock.

VOLCANISM (Page 320)

- _____ 22. Magma rises upward through the crust because
a. the magma is less dense than surrounding rock.
b. magma is more dense than surrounding rock.
c. magma is the same density as the surrounding rock.
d. the surrounding rock is porous.

In the space provided, write the letter of the description that best matches the term or phrase.

- | | |
|------------------------|--|
| _____ 23. volcanism | a. a vent or fissure in Earth's surface through which magma and gases are expelled |
| _____ 24. lava | b. any activity that includes the movement of magma toward or onto Earth's surface |
| _____ 25. mantle plume | c. magma that flows onto Earth's surface; the rock that forms when lava cools and solidifies |
| _____ 26. volcano | d. a column of solid, hot material from the deep mantle that rises and reaches the lithosphere |

MAJOR VOLCANIC ZONES (page 320)

- _____ 27. Volcanoes erupt on Earth's surface
a. mostly in random locations. b. in all mountainous areas.
c. only along the Pacific coast. d. mostly near tectonic plate boundaries.
- _____ 28. A major zone of active volcanoes encircling the Pacific Ocean is called
a. the Major Pacific Earthquake Zone. b. the Pacific Ring of Volcanoes.
c. the Pacific Ring of Fire. d. the Pacific tectonic plate.
- _____ 29. The Pacific Ring of Fire is also one of Earth's major
a. flood zones. b. hurricane zones. c. drought zones. d. earthquake zones.
- _____ 30. One tectonic plate moves under another along a(n)
a. reduction zone. b. subduction zone. c. earthquake zone. d. continental zone.
- _____ 31. On the ocean floor, along the edge of the continent where the plate is subducted,
a. a deep trench forms. b. a shallow trench forms.
c. a narrow trench forms. d. a wide trench forms.

32. Explain what happens as magma comes to the surface where plates move apart at mid-ocean ridges.

33. What is happening in Iceland, where volcanic eruptions happen along mid-ocean ridges?

Use the numbers 1 through 4 to show the sequence of volcano development in a hot spot.

- _____ 34. Volcanoes form in the interior of a tectonic plate.
- _____ 35. Columns of solid, hot material called mantle plumes rise and reach the lithosphere.
- _____ 36. Magma rises to the surface and breaks through the overlying crust.
- _____ 37. A mantle plume reaches the lithosphere, and spreads out.

38. Describe what happens to volcanic activity when the lithospheric plate above a mantle plume continues to drift.