

# Directed Reading A

## Section: The Theory of Plate Tectonics

1. The theory that Earth is divided into plates that move around is

\_\_\_\_\_.

### TECTONIC PLATE BOUNDARIES

\_\_\_\_\_ 2. The place where tectonic plates touch is known as the

- a. continental plate.
- b. tectonic boundary.
- c. magma zone.
- d. tectonic ridge.

\_\_\_\_\_ 3. Which of the following is NOT a type of tectonic plate boundary?

- a. convergent boundary
- b. fault-block boundary
- c. divergent boundary
- d. transform boundary

\_\_\_\_\_ 4. The three ways that tectonic plates can move relative to each other are

- a. collide, separate, and slide.
- b. collide, fuse, and slide.
- c. drift, separate, and slide.
- d. collide, fuse, and drift.

5. When two plates with continental crust collide, what happens to the continental crust?

\_\_\_\_\_  
\_\_\_\_\_

**Match the correct definition with the correct term. Write the letter in the space provided.**

\_\_\_\_\_ 6. boundary formed when tectonic plates collide

- a. transform boundary
- b. convergent boundary

\_\_\_\_\_ 7. boundary formed when tectonic plates separate

- c. divergent boundary

\_\_\_\_\_ 8. boundary formed when tectonic plates slide past horizontally

9. Which type of boundary produces strike-slip faults?

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10. Which type of boundary produces earthquakes?

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**Directed Reading A *continued***

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**POSSIBLE CAUSES OF TECTONIC PLATE MOTION**

- \_\_\_\_\_ 11. When rock is heated, it becomes less dense and tends to
- a. rise.
  - b. sink.
  - c. move sideways.
  - d. erupt.
- \_\_\_\_\_ 12. When rock cools, it becomes more dense and tends to
- a. rise to the surface.
  - b. sink below the surface.
  - c. move sideways.
  - d. push against the surface.
13. Density changes in the asthenosphere are caused by the flow of \_\_\_\_\_ energy from deep within the Earth.

**Match the correct definition with the correct term. Write the letter in the space provided.**

- |                                                                |               |
|----------------------------------------------------------------|---------------|
| _____ 14. plate motion due to higher densities                 | a. ridge push |
| _____ 15. plate motion due to gravity                          | b. convection |
| _____ 16. plate motion due to the heating and cooling of rocks | c. slab pull  |

**TRACKING TECTONIC PLATE MOTION**

- \_\_\_\_\_ 17. How fast do tectonic plates move?
- a. kilometers per year
  - b. meters per year
  - c. meters per month
  - d. centimeters per year
- \_\_\_\_\_ 18. What do scientists use to measure the rate of tectonic plate movement?
- a. clinometers
  - b. the global positioning system
  - c. densitometers
  - d. seismographs

Skills Worksheet

## Section Review

### The Theory of Plate Tectonics

#### USING KEY TERMS

1. In your own words, write a definition for the term *plate tectonics*.

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#### UNDERSTANDING KEY IDEAS

- \_\_\_\_\_ 2. The speed a tectonic plate moves per year is best measured in
- a. kilometers per year.
  - b. centimeters per year.
  - c. meters per year.
  - d. millimeters per year.

3. Briefly describe three possible driving forces of tectonic plate movement.

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4. Explain how scientists use GPS to measure the rate of tectonic plate movement.

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#### MATH SKILLS

5. If an orbiting satellite has a diameter of 60 cm, what is the total surface area of the satellite? (Hint:  $surface\ area = 4\pi r^2$ ) Show your work below.

**Section Review** *continued*

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**CRITICAL THINKING**

**6. Identifying Relationships** When convection takes place in the mantle, why does cool rock material sink and warm rock material rise?

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**7. Analyzing Processes** Why does oceanic crust sink beneath continental crust at convergent boundaries?

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