

**Plate Tectonics** ▪ *Guided Reading and Study*

# The Theory of Plate Tectonics

*This section explains how the lithosphere is broken into separate sections that move.*

## Use Target Reading Skills

Before reading the section, write simple definitions for the words *diverge*, *converge*, and *transform*. You may use a dictionary. After reading the passages that contain the key terms *divergent boundary*, *convergent boundary*, and *transform boundary*, explain how your definitions relate to these terms.

Plate Tectonics

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Write a definition of each Key Term in your own words below:

plate: \_\_\_\_\_

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scientific theory: \_\_\_\_\_

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plate tectonics: \_\_\_\_\_

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fault: \_\_\_\_\_

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divergent boundary: \_\_\_\_\_

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rift valley: \_\_\_\_\_

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convergent boundary: \_\_\_\_\_

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transform boundary: \_\_\_\_\_

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**The Theory of Plate Tectonics** *(continued)*

**Introduction**

1. The lithosphere is broken into separate sections called \_\_\_\_\_.
2. Is the following sentence true or false? Plates can carry continents or parts of the ocean floor but not both. \_\_\_\_\_

**How Plates Move**

3. What is a scientific theory? \_\_\_\_\_  
\_\_\_\_\_
4. State the theory of plate tectonics. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. Is the following sentence true or false? The theory of plate tectonics explains the formation, movement, and subduction of Earth's plates.  
\_\_\_\_\_

**Plate Boundaries**

Match the term with its definition.

**Layer**

- \_\_\_ 6. plate boundary
- \_\_\_ 7. fault
- \_\_\_ 8. rift valley

**Description**

- a. Deep valley that forms where two plates pull apart
- b. Line where the edges of Earth's plates meet
- c. Break in Earth's crust where rocks have slipped past each other

9. Complete the compare/contrast table to show how plates move at the different types of plate boundaries.

Plate Movement	
Type of Plate Boundary	How Plates Move
Divergent boundary	a.
Convergent boundary	b.
Transform boundary	c.

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d. How are the movement of plates at divergent boundaries and at transform boundaries similar?

\_\_\_\_\_

10. Is the following sentence true or false? Crust is neither created nor destroyed along a transform boundary. \_\_\_\_\_

11. Most divergent boundaries occur along \_\_\_\_\_.

12. When two plates converge, the result is called a(n) \_\_\_\_\_.

13. When two plates collide, what determines which plate comes out on top? \_\_\_\_\_

\_\_\_\_\_

14. Circle the letter of each sentence that is true about convergent boundaries.

a. Where two plates carrying oceanic crust meet, subduction does not take place.

b. An oceanic plate sinks beneath a continental plate when the two plates collide.

c. Where two plates meet, the one that is more dense sinks under the other.

d. Mountain ranges form where two plates carrying continental crust collide.

15. Was Pangaea the only supercontinent to have existed? Explain your answer.

\_\_\_\_\_

\_\_\_\_\_

16. Is the following sentence true or false? The pieces of the supercontinent Pangaea began to drift apart about 225 million years ago.

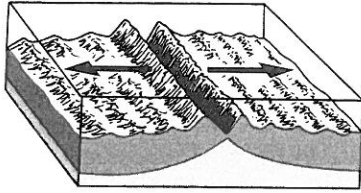
\_\_\_\_\_

**Plate Tectonics** ▪ *Review and Reinforce*

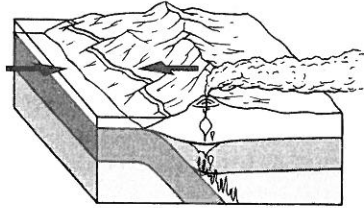
# The Theory of Plate Tectonics

## Understanding Main Ideas

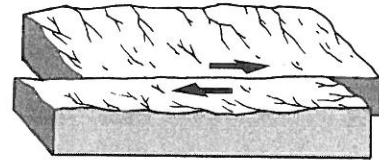
Label each figure by writing the type of plate boundary it shows.



1. \_\_\_\_\_



2. \_\_\_\_\_



3. \_\_\_\_\_

Answer the following questions on a separate sheet of paper.

4. Describe what happens when a. two plates carrying oceanic crust collide, b. two plates carrying continental crust collide, and c. a plate carrying oceanic crust collides with a plate carrying continental crust.
5. Explain what force caused the movement of the continents from one supercontinent to their present positions.

## Building Vocabulary

Fill in the blank to complete each statement.

6. A scientific \_\_\_\_\_ is a well-tested concept that explains a wide range of observations.
7. Breaks in Earth's crust where rocks have slipped past each other are called \_\_\_\_\_.
8. The lithosphere is broken into separate sections called \_\_\_\_\_.
9. A(n) \_\_\_\_\_ is a deep valley on land that forms along a divergent boundary.
10. The geological theory that states that pieces of Earth's crust are in constant, slow motion is called \_\_\_\_\_.



**Plate Tectonics** ▪ *Chapter Test (continued)*

- \_\_\_ 10. What erupts through the valley of the mid-ocean ridge?  
a. molten material      b. the lithosphere  
c. deep-ocean trenches      d. continental drift

**Completion**

*Fill in the line to complete each statement.*

11. Heat transfer by the movement of a heated fluid is called \_\_\_\_\_.
12. A \_\_\_\_\_ boundary is a place where two plates slip past each other.
13. The \_\_\_\_\_ is the part of the mantle that can bend like plastic.
14. The process that continually adds new material to the ocean floor is \_\_\_\_\_.
15. Fossils of tropical plants found on an island in the Arctic Ocean are evidence for the theory of \_\_\_\_\_.

**True or False**

*If the statement is true, write true. If it is false, change the underlined word or words to make the statement true.*

- \_\_\_ 16. A rift valley forms along a convergent boundary on land.
- \_\_\_ 17. The supercontinent that began to break apart about 225 million years ago is called Antarctica.
- \_\_\_ 18. As oceanic crust moves away from the mid-ocean ridge, it cools and becomes more dense.
- \_\_\_ 19. Density is a measure of how much mass there is in a volume of a substance.
- \_\_\_ 20. The lithosphere includes all of the core and part of the mantle.

**Essay**

*Answer each of the following on the lines provided.*

21. Explain what sets convection currents into motion.

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