

Name \_\_\_\_\_ Date \_\_\_\_\_ Class \_\_\_\_\_

**Volcanoes** ▪ *Guided Reading and Study*

## Volcanoes and Plate Tectonics

*This section explains what volcanoes are and identifies where most volcanoes occur.*

### Introduction

1. What is a volcano? a weak spot in the crust where molten material or magma comes to the surface  
\_\_\_\_\_
2. A molten mixture of rock-forming substances, gases, and water from the mantle is referred to as Magma.
3. When magma reaches the surface, it is called lava.
4. What is the Ring of Fire? a major volcanic belt formed by the many volcanoes that rim the Pacific Ocean  
\_\_\_\_\_
5. Where do most volcanoes form? \_\_\_\_\_  
Divergent boundaries near the mid ocean ridge  
Convergent boundaries where subduction takes place  
\_\_\_\_\_
6. Describe how volcanoes form along the mid-ocean ridges. \_\_\_\_\_  
along a rift valley lava pours out of cracks in the ocean floor, building new mountains  
\_\_\_\_\_
7. Is the following sentence true or false? Volcanoes can form along diverging plate boundaries on land. True  
\_\_\_\_\_
8. Is the following sentence true or false? Many volcanoes form near converging plate boundaries where oceanic crust returns to the mantle.  
True  
\_\_\_\_\_

## Volcano Guided Reading with answers

9. How does subduction at converging plate boundaries lead to the formation of volcanoes? \_\_\_\_\_

When the older denser plate sinks beneath a deep ocean trench into the mantle, some of the rock above the plate melts and forms magma. The magma is less dense and rises toward the surface, eventually breaking through to the surface.

10. Volcanoes at boundaries where two oceanic plates collide create a string of islands called a(n) Island arc.

11. What are three major island arcs? \_\_\_\_\_

Any three: Japan, New Zealand, Indonesia, the Philippines, the Aleutians, The Caribbean islands.

12. Circle the letter of the types of plates that collided to form the Andes Mountains on the west coast of South America.

- a. two oceanic plates
- b. a continental plate and an oceanic plate**
- c. a continental plate and an island plate
- d. two continental plates

### Hot Spot Volcanoes

13. What is a hot spot? \_\_\_\_\_

an area where material from within the mantle rises and then melts through the crust above it.

14. How did the Hawaiian Islands form? They formed over millions of years as the Pacific plate drifted over hot spots.

15. Is the following sentence true or false? Hot spots form only under oceanic crust. False