

Skills Worksheet

# Directed Reading A

## Section: Causes of Volcanic Eruptions

1. What are two factors scientists monitor that could indicate a volcano might erupt?

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### THE FORMATION OF MAGMA

- \_\_\_\_ 2. The rock of Earth's mantle
- a. flows very quickly.
  - b. has a puttylike consistency.
  - c. is cooler than Earth's crust.
  - d. is solid and rock-hard.
- \_\_\_\_ 3. Rock usually melts to form magma when
- a. temperature decreases or pressure on the rock increases.
  - b. temperature increases or pressure on the rock decreases.
  - c. temperature and pressure on the rock both decrease.
  - d. temperature and pressure on the rock both increase.
4. Why is a decrease in pressure the most common cause of magma formation?

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5. Why does magma often form at the boundary between separating tectonic plates?

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6. How does magma behave like air bubbles in a jar of honey?

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7. Where do a large number of the world's active volcanoes lie?

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8. What is a tectonic plate boundary?

9. How is magma formation and movement affected at tectonic plate boundaries?

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**WHEN TECTONIC PLATES SEPARATE**

\_\_\_ 10. Tectonic plates move away from each other at a  
a. rift zone.  
b. divergent boundary.  
c. convergent boundary.  
d. magma chamber.

\_\_\_ 11. An area of deep cracks that forms between two tectonic plates that are pulling away from each other is a  
a. divergent boundary.  
b. mantle rock.  
c. crater column.  
d. rift zone.

\_\_\_ 12. Lava from undersea rift zones produces volcanoes and mountain chains called  
a. the Ring of Fire.  
b. subduction zones.  
c. hot spots.  
d. mid-ocean ridges.

13. How does magma form at a divergent boundary?

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14. How does new oceanic crust form at a divergent boundary?

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**WHEN TECTONIC PLATES COLLIDE**

\_\_\_ 15. A convergent boundary is a place where  
a. tectonic plates move side by side.  
b. oceanic crust moves away from continental crust.  
c. continental crust is subducted under oceanic crust.  
d. tectonic plates collide with each other.

**Directed Reading A** *continued*

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- \_\_\_\_ 16. Subduction is the movement of one tectonic plate
- a. against another.
  - b. over another.
  - c. under another.
  - d. away from another.
- \_\_\_\_ 17. As descending oceanic crust scrapes past the continental crust
- a. its temperature and pressure increase.
  - b. it forms a lava fountain.
  - c. it forms a volcano.
  - d. its temperature and pressure decrease.

18. What happens to mantle rock when descending oceanic crust scrapes past continental crust, causing the temperature and pressure to increase?

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**HOT SPOTS**

- \_\_\_\_ 19. The Hawaiian Islands are located
- a. along a tectonic plate boundary.
  - b. far from any plate boundary.
  - c. over a lava fountain.
  - d. on lava plateaus.

20. What are hot spots?

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21. What is a mantle plume?

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**PREDICTING VOLCANIC ERUPTIONS**

Match the correct description with the correct term. Write the letter in the space provided.

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|--|--------------------|
| ____ 22. has not erupted in recorded history                   | a. active volcano  |
| ____ 23. has not erupted recently, but may erupt in the future | b. dormant volcano |
| ____ 24. is erupting now                                       | c. extinct volcano |

25. What happens to the number and intensity of small earthquakes just before an eruption?

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26. What may be indicated by changes in the ratio of sulfur dioxide to carbon dioxide in volcanic gases?

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27. What may be indicated by a bulge in the side of a volcano?

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28. What are two methods scientists use to detect changes in a volcano's slope that may signal an eruption?

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29. How are satellite images used to predict volcanic eruptions?

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