

Directed Reading

Section: Metamorphic Rock

1. Define *metamorphism*.

2. Where does most metamorphic rock form?

3. Metamorphic rock forms from which three types of rock?

FORMATION OF METAMORPHIC ROCKS

Use the terms from the following list to complete the sentences below. Each term may be used only once.

parallel bands

composition

magma

pressure

tectonic plates

metamorphism

4. Hot fluids, heat, and _____ cause some minerals to change into other minerals.

5. Minerals may change in size or shape, or they may separate into _____ that give rocks a layered appearance.

6. Hot fluids from magma can circulate through the rock and change the mineral _____ by dissolving some minerals and adding others.

7. The type of rock that forms because of _____ can indicate the conditions that were in place when the original rock changed.

8. One type of metamorphism occurs when small volumes of rock come in contact with _____.

Directed Reading *continued*

9. The second type of metamorphism occurs when large areas of Earth's crust are affected by the heat and pressure caused by the movement and collisions of _____
10. Define *contact metamorphism*.

11. Describe the area of rock that is affected by contact metamorphism.

12. In addition to changes caused by heat from magma, what other occurrence can cause changes in the surrounding rock during contact metamorphism?

13. Define *regional metamorphism*.

14. Describe what happens to minerals during tectonic activity.

15. Which type of metamorphism causes most metamorphic rock to form?

16. Why are rocks that are formed as a result of contact metamorphism often found near those formed by regional metamorphism?

Directed Reading *continued*

CLASSIFICATION OF METAMORPHIC ROCKS

17. In what two ways are metamorphic rocks classified?

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

- | | |
|-----------------------|---|
| _____ 18. foliation | a. a coarse-grained rock that forms when large amounts of heat and pressure are exerted on slate |
| _____ 19. slate | b. the metamorphic rock texture in which mineral grains are arranged in planes or bands |
| _____ 20. schist | c. a nonfoliated rock that forms when quartz sandstone is metamorphosed |
| _____ 21. gneiss | d. the metamorphic rock texture in which mineral grains are not arranged in planes or bands |
| _____ 22. nonfoliated | e. a foliated rock that forms when pressure is exerted on the sedimentary rock shale |
| _____ 23. quartzite | f. a metamorphic rock that forms from the compression of limestone |
| _____ 24. marble | g. a metamorphic rock that forms when intense heat and pressure underground cause the minerals in schist to separate into bands as the minerals recrystallize |

25. Describe the two ways in which foliated metamorphic rock might form.

26. Describe two characteristics of nonfoliated metamorphic rock.
