

## Directed Reading Chapter 4 Section 4

### Section: Metamorphic Rock

- \_\_\_\_\_ 1. Which rock's name comes from the Greek words for "changed" and "shape"?
- metamorphic
  - sedimentary
  - fossiliferous limestone
  - igneous
- \_\_\_\_\_ 2. What kind of rocks are rocks in which the structure, texture, or composition have been changed?
- fossiliferous limestone
  - igneous
  - metamorphic
  - sedimentary
- \_\_\_\_\_ 3. What force or forces can create metamorphic rocks?
- cooling
  - heat and pressure
  - melting
  - erosion

### ORIGINS OF METAMORPHIC ROCK

4. The heat and pressure at which some metamorphic rocks originally form allow them to sometimes remain \_\_\_\_\_ at pressures and temperatures that would melt other rock.
5. Pressure caused by large movements within the crust sometimes cause the \_\_\_\_\_ in metamorphic rocks to align themselves in parallel bands.
6. During \_\_\_\_\_, rock is heated by nearby magma.
7. The effect of heat on rock decreases as the rock's \_\_\_\_\_ from the magma increases and its \_\_\_\_\_ decreases.
8. When pressure builds up in rock which is located under other rock formations, \_\_\_\_\_ occurs.
9. Regional metamorphism occurs deep in the Earth's \_\_\_\_\_

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**COMPOSITION OF METAMORPHIC ROCK**

- \_\_\_\_\_ 10. Which of the following is NOT a property of an index mineral?
- a. forms only at a certain temperature
  - b. forms only in sedimentary rock
  - c. forms only at certain temperatures
  - d. forms only in metamorphic rocks
- \_\_\_\_\_ 11. Which of the following minerals is an example of an index mineral?
- a. calcite
  - b. quartz
  - c. staurolite
  - d. hematite
- \_\_\_\_\_ 12. Which of the following is an example of a mineral that indicates that a metamorphic rock was formed at a great depth and under extreme heat and pressure?
- a. chlorite
  - b. mica
  - c. magma
  - d. garnet

**TEXTURES OF METAMORPHIC ROCK**

- \_\_\_\_\_ 13. What do we call metamorphic rocks in which mineral grains are NOT aligned?
- a. foliated
  - b. intrusive
  - c. nonfoliated
  - d. extrusive
- \_\_\_\_\_ 14. What is the process in which a mineral changes composition during metamorphism called?
- a. recrystallization
  - b. nonfoliation
  - c. foliation
  - d. deformation
- \_\_\_\_\_ 15. After quartz limestone has recrystallized, the new rock is called
- a. schist.
  - b. gneiss.
  - c. slate.
  - d. quartzite.

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

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|---|-------------|
| _____ 16. a rock in which coarse-grained minerals separate into distinct bands                          | a. foliated |
| _____ 17. a foliated metamorphic rock made from shale   | b. shale    |
| _____ 18. the texture of a metamorphic rock in which the mineral grains are arranged in planes or bands | c. slate    |
| _____ 19. a metamorphic rock made from phyllite that has been exposed to heat and pressure              | d. phyllite |
| _____ 20. a sedimentary rock made of layers of clay   | e. schist   |
| _____ 21. a metamorphic rock made from slate that has been subjected to heat and pressure               | f. gneiss   |

**METAMORPHIC ROCK STRUCTURES**

- \_\_\_\_\_ 22. What is a change in the shape of a rock caused by a force placed on it called?
- a. deformation
  - b. recrystallization
  - c. foliation
  - d. nonfoliation