

# Directed Reading

## Section: Mineral Resources

1. How much time is usually required for useful mineral resources to form in Earth's crust?

2. List three examples of metals.

3. List two examples of nonmetals.

### ORES

4. List three examples of minerals that can be native elements.

5. How many elements do most minerals in Earth's crust contain?

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

\_\_\_\_\_ 6. cinnabar

\_\_\_\_\_ 7. native element

\_\_\_\_\_ 8. bauxite

\_\_\_\_\_ 9. ore

\_\_\_\_\_ 10. magnetite

\_\_\_\_\_ 11. compound

a. metallic mineral that can exist in Earth's crust as a nugget of pure metal

b. substance consisting of two or more elements

c. mineral deposit from which mineral resources can be removed profitably

d. ore from which mercury can be removed

e. ore from which aluminum can be removed

f. ore from which iron can be removed

Directed Reading *continued*

12. List three ores that form within cooling magma.

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13. What happens to dense metallic minerals as magma cools?

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14. The process that occurs when magma comes into contact with existing rock is \_\_\_\_\_.

15. Heat and chemical reactions with hot fluids from magma sometimes change the surrounding rock and form \_\_\_\_\_.

16. Hot fluids that can move through small cracks in rock are \_\_\_\_\_.

17. Narrow zones of rock formed when minerals precipitate from a hydrothermal solution are called \_\_\_\_\_.

18. An ore deposit that forms from many thick mineral veins in a small region is called a(n) \_\_\_\_\_.

19. List four valuable heavy minerals that are commonly found in veins.

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20. What happens first when movement of water helps form ore deposits?

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21. What causes streams to stop carrying dense metals?

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Directed Reading *continued*

22. Because of the mechanical action of the stream, fragments become concentrated at the bottom of stream beds in \_\_\_\_\_.

**USES OF MINERAL RESOURCES**

- \_\_\_\_\_ 23. An example of a metal valued for its beauty is
- a. gypsum.
  - b. calcite.
  - c. platinum.
  - d. sulfur.
- \_\_\_\_\_ 24. Sources of valuable minerals and elements such as gold are
- a. nonmetallic minerals.
  - b. gemstones.
  - c. metallic ores.
  - d. calcite and gypsum.
- \_\_\_\_\_ 25. Gemstones are
- a. valuable metallic ores.
  - b. rare nonmetallic minerals.
  - c. metals such as gold and platinum.
  - d. common nonmetallic ores.
- \_\_\_\_\_ 26. A mineral often used as a building material is
- a. quartz.
  - b. graphite.
  - c. platinum.
  - d. calcite.

**MINERAL EXPLORATION AND MINING**

- \_\_\_\_\_ 27. In order to be considered for mining, an area must have
- a. much higher concentration of minerals than is found elsewhere.
  - b. large gold and silver deposits.
  - c. gemstones.
  - d. radioactivity.
- \_\_\_\_\_ 28. During mineral exploration, people search for mineral deposits by
- a. tracking weather patterns.
  - b. studying local geology.
  - c. avoiding earthquake zones.
  - d. searching only for metallic ores.

**Directed Reading *continued***

- \_\_\_\_\_ 29. Special equipment is used to measure and identify patterns in
- organic materials, rock samples, and economic recovery.
  - placer deposits, streambeds, and veins.
  - native elements, compounds, and ore deposits.
  - magnetism, gravity, radioactivity, and rock color.
- \_\_\_\_\_ 30. Subsurface mining techniques are used for mineral deposits
- close to Earth's surface.
  - in the oceans.
  - in stream beds.
  - below Earth's surface.
- \_\_\_\_\_ 31. When overlying rock material is stripped away to reveal mineral deposits, the deposits may be mined using
- subsurface mining methods.
  - nodule mining methods.
  - surface mining methods.
  - placer mining methods.
- \_\_\_\_\_ 32. Minerals in placer deposits are mined
- in open pits.
  - by dredging.
  - on the deep-ocean floor.
  - deep underground.
- \_\_\_\_\_ 33. A nodule would be found
- in a subsurface mine.
  - on the deep-ocean floor.
  - in a river or stream.
  - in an open-pit mine.
- \_\_\_\_\_ 34. Undersea mining is not practical because
- there are no valuable minerals in the ocean.
  - nodules cannot be recovered.
  - minerals cannot be removed from nodules.
  - it is difficult and expensive.