

## Skills Worksheet

**Directed Reading****Section: Weathering Processes**

- \_\_\_\_\_ 1. Most rocks deep within Earth's crust formed under extreme conditions of
- gas and water.
  - change and uplift.
  - temperature and pressure.
  - weathering and erosion.
- \_\_\_\_\_ 2. Rocks that are uplifted to the surface are exposed to what in Earth's atmosphere?
- gases and water
  - radiation and pressure
  - temperature and pressure
  - weathering and erosion
- \_\_\_\_\_ 3. What is the change in the appearance and composition of rock called?
- radiation
  - erosion
  - uplift
  - weathering

**MECHANICAL WEATHERING**

- \_\_\_\_\_ 4. In addition to ice and running water, common agents of mechanical weathering are
- radioactivity, animals, and humans.
  - plants and animals, gravity, and wind.
  - sunlight, gravity, and wind.
  - erosion, gravity, and farming.
- \_\_\_\_\_ 5. What can happen to rocks as plants grow?
- They attract animals that crack the rock.
  - Their roots grow and expand, creating pressure that wedges rocks apart.
  - They pull weaker rock up to the surface.
  - They attract water that freezes in cracks.
- \_\_\_\_\_ 6. Over time, the digging activities of what kinds of animals can affect the rate of weathering?
- birds and fish
  - climbing animals
  - burrowing animals
  - domesticated animals

**Directed Reading *continued***

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

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| <p>_____ 7. mechanical weathering</p> <p>_____ 8. joints</p> <p>_____ 9. exfoliation</p> <p>_____ 10. ice wedging</p> <p>_____ 11. abrasion</p> | <p>a. a process in which rock breaks into curved sheets and then peels away from the underlying rock</p> <p>b. the grinding and wearing away of rock surfaces through the mechanical action of other rock or sand particles</p> <p>c. long, curved cracks in rocks, resulting from decreasing pressure when rock is uplifted</p> <p>d. the process by which rocks break down into smaller pieces by physical means</p> <p>e. weathering in which water seeps into rocks, freezes, expands, and widens existing cracks, eventually splitting rocks apart</p> |
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**CHEMICAL WEATHERING**

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

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| <p>_____ 12. chemical weathering</p> <p>_____ 13. acids</p> <p>_____ 14. bases</p> <p>_____ 15. oxidation</p> <p>_____ 16. hydrolysis</p> <p>_____ 17. leaching</p> <p>_____ 18. carbonation</p> <p>_____ 19. organic acids</p> <p>_____ 20. acid precipitation</p> | <p>a. rain, sleet, or snow that contains a high concentration of acids, often due to air pollution</p> <p>b. a process in which water carries dissolved minerals to lower rock layers</p> <p>c. the conversion of a compound into a carbonate</p> <p>d. the process by which rock breaks down as a result of chemical reactions</p> <p>e. the process by which a metallic element combines with oxygen</p> <p>f. a chemical reaction between water and another substance to form two or more new substances</p> <p>g. acids produced by lichens and mosses</p> <p>h. substances that form hydroxide ions in water</p> <p>i. substances that form hydronium ions in water</p> |
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Directed Reading *continued*

21. When chemical reactions act on the mineral in rock, what substances besides water and rock are commonly involved?

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22. What are hydronium ions, and how do they affect minerals?

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23. What are hydroxide ions, and how do they affect minerals?

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24. What are two things that chemical weathering changes in rock?

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25. What causes the red color of much of the soil in the southeastern United States and the red color of many rocks?

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26. Describe the process by which the common clay called *kaolin* is produced.

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27. When is carbonic acid formed?

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28. What happens when carbonic acid reacts with the calcite in limestone?

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29. What substances do fossil fuels produce when they are burned?

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Directed Reading *continued*

30. How does acid precipitation form?

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31. What kind of damage does acid precipitation do and why?

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32. What has the U.S. government done to regulate power plant emissions?

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33. How have power plants reduced the occurrence of acid precipitation?

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