

**Rocks** ▪ *Guided Reading and Study*

# Sedimentary Rocks

*This section describes how sedimentary rocks form and how they are classified and used.*

## Use Target Reading Skills

*As you read about sedimentary rocks, use the headings to complete the outline below.*

Sedimentary Rocks
I. From Sediment to Rocks
A. Erosion
B. _____
C. _____
D. Cementation
II. Types of Sedimentary Rock
A. _____
B. Organic Rocks
C. _____
D. _____
III. _____

## From Sediment to Rock

1. What remains of living things may sediment include? \_\_\_\_\_  
\_\_\_\_\_
2. Small, solid pieces of material that come from rocks or living things are called \_\_\_\_\_.
3. Is the following sentence true or false? Sedimentary rocks form from particles deposited by water and wind. \_\_\_\_\_



**Rocks** ▪ *Guided Reading and Study*

**Sedimentary Rocks** *(continued)*

4. List three forces that can carry sediment.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

Match the process with its description.

**Process**

**Description**

- \_\_\_\_\_ 5. erosion
- \_\_\_\_\_ 6. deposition
- \_\_\_\_\_ 7. compaction
- \_\_\_\_\_ 8. cementation

- a. Dissolved minerals glue sediments together.
- b. Sediments are pressed together in layers.
- c. Water or wind loosen and carry away fragments of rock.
- d. Sediments settle out of water or wind.

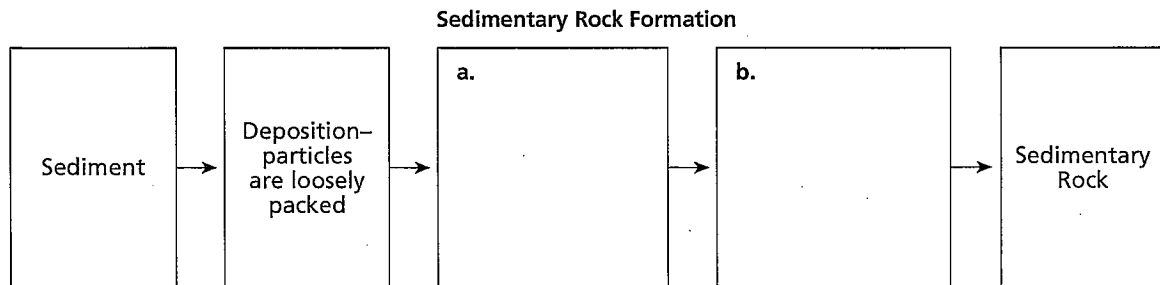
9. What happens to rock fragments and other materials carried by water?

\_\_\_\_\_

\_\_\_\_\_

10. The process in which thick layers of sediment press down on the layers beneath them is called \_\_\_\_\_.

11. Complete the flowchart to show how sediment is turned into sedimentary rock and what happens to it at each step.



c. Describe what happens to sediment as it is changed to sedimentary rock. \_\_\_\_\_

\_\_\_\_\_

12. Is the following sentence true or false? It takes millions of years for sedimentary rock to form. \_\_\_\_\_

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**Types of Sedimentary Rock**

13. How do geologists classify sedimentary rock? \_\_\_\_\_  
 \_\_\_\_\_
14. List the three major groups of sedimentary rock.
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
15. Is the following sentence true or false? The same process forms all types of sedimentary rock. \_\_\_\_\_
16. Is the following sentence true or false? Clastic rocks form when rock fragments are squeezed together. \_\_\_\_\_
17. How are clastic rocks classified? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
18. Complete the table to show the different materials from which clastic rock forms.

How Clastic Rock Forms	
Type of Clastic Rock	Material From Which It Forms
a.	Tiny particles of clay
b.	Small particles of sand
c.	Different-sized rock fragments

- d. How are the types of clastic rocks shown in the table similar and different? \_\_\_\_\_  
 \_\_\_\_\_
19. The type of rocks that form where the remains of plants and animals are deposited in thick layers is called \_\_\_\_\_ rock.



**Rocks** ▪ *Guided Reading and Study*

**Sedimentary Rocks** *(continued)*

20. List two important organic rocks.

a. \_\_\_\_\_

b. \_\_\_\_\_

21. Organic rock that forms from the remains of swamp plants buried in water is \_\_\_\_\_.

22. How does organic limestone form? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

23. Circle the letter of each sentence that describes a way that chemical rocks can form.

a. Minerals that are dissolved in a solution crystallize.

b. Sediments of plants and animals form oil and other chemicals in rock.

c. Mineral deposits form when seas or lakes evaporate.

d. Tiny particles of clay are cemented together with chemicals.

24. Is the following sentence true or false? Some limestone is considered to be a chemical rock. \_\_\_\_\_

25. Rock salt crystallizes from the mineral \_\_\_\_\_.

**Rocks** ▪ *Guided Reading and Study*

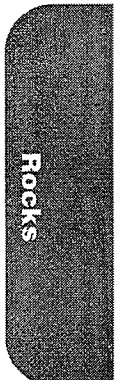
**Uses of Sedimentary Rocks**

26. Why have sandstone and limestone been used as building materials for thousands of years? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

27. Is the following sentence true or false? The White House in Washington, D.C., is built of limestone. \_\_\_\_\_

28. What are some ways that builders today use sandstone and limestone?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

29. Is the following sentence true or false? Limestone is used for making cement. \_\_\_\_\_



**Rocks** ▪ *Review and Reinforce*

# Sedimentary Rocks

## Understanding Main Ideas

The flowchart below shows a sequence of processes that form sedimentary rock. Put the processes into the correct sequence by writing their letters in the correct order in the blank.

- a. Compaction ⇒ b. Erosion ⇒ c. Cementation ⇒ d. Deposition

1. \_\_\_\_\_

Classify each of the following sedimentary rocks by writing *Clastic, Organic, or Chemical* in the blank beside it.

- |       |   |       |              |
|-------|---|-------|--------------|
| _____ | 2. Sandstone                                | _____ | 6. Coal      |
| _____ | 3. Limestone made from shells               | _____ | 7. Breccia   |
| _____ | 4. Conglomerate                             | _____ | 8. Rock salt |
| _____ | 5. Limestone made from precipitated calcite | _____ | 9. Shale     |

## Building Vocabulary

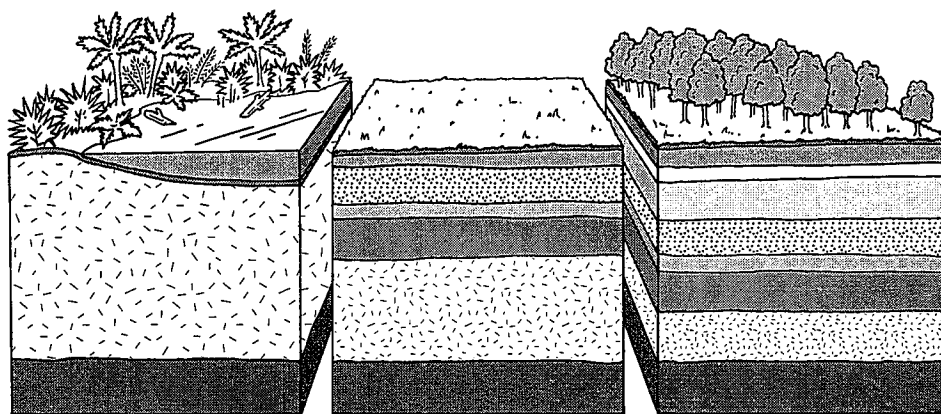
Match each term with its definition by writing the letter of the correct definition on the line beside the term.

- |                       |  |
|-----------------------|--|
| ___ 10. erosion       | a. small, solid pieces of material from rocks or living things                           |
| ___ 11. clastic rock  | b. the process that presses sediments together   |
| ___ 12. sediment      | c. sedimentary rock that forms from remains of plants and animals                        |
| ___ 13. cementation   | d. the process in which running water, wind, or ice loosen and carry away rock fragments |
| ___ 14. organic rock  | e. the process in which dissolved minerals crystallize and glue sediments together       |
| ___ 15. compaction    | f. sedimentary rock that forms when rock fragments are squeezed together                 |
| ___ 16. chemical rock | g. the process by which sediment settles out of wind or water                            |
| ___ 17. deposition    | h. sedimentary rock that forms when minerals dissolved in a solution crystallize         |

**Rocks** ▪ *Enrich***The Formation of Coal**

Coal is an organic sedimentary rock. One of its properties is that it burns. Coal provides energy for industries and for the production of electricity.

Much of the country's best coal is found in Pennsylvania, Ohio, West Virginia, Kentucky, Tennessee, and Alabama. The formation of this large coalfield began about 300 million years ago during a time geologists call the Carboniferous Period. During that period, vast tropical swamp forests covered much of North America. When these ancient trees died, they fell into the swamp water, which was low in oxygen. Instead of rotting—as they would in an oxygen-rich environment—the dead vegetation piled up. The sequence of pictures below tells the rest of the story of how this plant matter became coal.



Dead plant matter built up on the bottom of a vast swamp during the Carboniferous Period.

Layers of sediment were deposited. The weight of the sediment compacted the plant matter into a substance called peat.

More and more sediment was deposited on top of the peat. Over millions of years, the weight of overlying sediment compressed the peat into coal.

*Answer the following questions on a separate sheet of paper.*

1. What is coal?
2. When did the coal deposits of the eastern United States begin to form? What were environmental conditions like at that time?
3. What is peat?
4. What process caused the peat to become coal?
5. A type of coal called anthracite is classified by geologists as a metamorphic rock. It is much harder than sedimentary coal. Describe how you think anthracite forms.