

# It's Sedimentary, My Dear!

## Purpose

Students will describe how sediments of sand and smaller particles, sometimes containing the remains of organisms, are gradually buried and are cemented together by dissolved materials to form solid rock again.

## Materials

*For the teacher:* chalk, chalkboard

*For each group of students:* paper, pencils, plastic containers, salt, water, sand, plaster of paris, small seashells, pebbles, small rocks, copy of Black Line Master (BLM) *It's Sedimentary, My Dear!*

*For the class:* samples or pictures of sandstone, halite, limestone, chalk, breccia, chert, and conglomerate

## Activity

### A. Pre-Activity Discussion

1. Show students the collection of sedimentary rocks, and ask: "Where do rocks come from?"
2. Discuss students' answers, and tell them that petrologists (scientists who study the origin, composition, and structure of rocks) have classified rocks into three general groups based on how they were formed: sedimentary, metamorphic, and igneous. Write these terms on the chalkboard.
3. Divide students into seven groups and tell them that they will focus on how sedimentary rocks are formed.

### B. Looking for Clues

1. Distribute a rock to each group, and ask questions, such as:
  - Have you seen rocks like this before? Where?
  - How would you describe the rock?
  - What is the rock made of?
  - How do you think this rock was formed? What are some clues?
2. Instruct students to record their observations. Redistribute the rocks so that each group has a chance to study each rock.
3. Tell the students that their observations will be discussed at the end of the activity.

(continued)

connecting  
across the  
curriculum



### Social Studies

Direct students to research and identify which Indiana cities and counties are named after rocks or geologic processes. Have students find out why they have these names (e.g., Oolitic, Bedford, Clay City, etc.).

EXTENDING  
THE  
ACTIVITY



Have students investigate why sedimentary rock can tell us so much about Earth's history. Have them make posters or reports about specific pre-historic phenomenon that are identified by studying sedimentary rock (e.g., the presence of limestone in Indiana tells us that this area used to be covered by an ocean!).

**Standards Links**  
**7.3.9, 7.3.10, 7.7.2**

**Activity (continued)**

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**C. Making Rocks**

1. Distribute plastic containers, salt, water, sand, plaster of paris, small seashells, pebbles, small rocks, and any other materials to make rocks to each group of students.
2. Instruct each group of students to use the materials to make a rock. Allow students to experiment with the materials.
3. Direct students to use materials such as plaster of paris to cement the rock together. Monitor students as they work.
4. Allow time for the rocks to dry.
5. Explain that sedimentary rocks form when sediments of sand and smaller particles, sometimes containing the remains of organisms, are gradually buried and are cemented together by dissolved materials to form solid rock again.
6. Ask students to compare this process to how they made their rocks.

**D. Wrapping It Up**


1. Redistribute the sedimentary rocks and give a copy of the BLM *It's Sedimentary, My Dear!* to each group.
2. Discuss the origins and characteristics of each rock and have students compare the sedimentary rocks with the rocks they made.
3. Ask students to discuss any similarities or differences between the rocks.
4. Have students compare their original observations of each rock to what they learned from the BLM; discuss their responses.


**Classroom Assessment**


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**Basic Concepts and Processes**

At the conclusion of the activity, ask questions, such as the following:

 How do sedimentary rocks form?

 How did you make your rock?

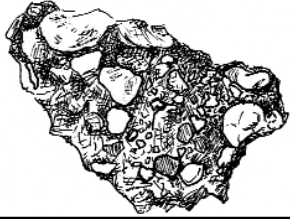
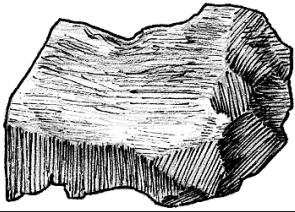
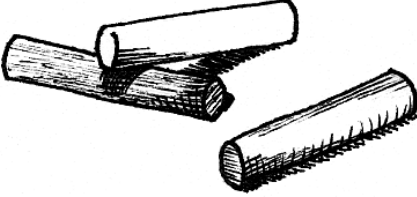


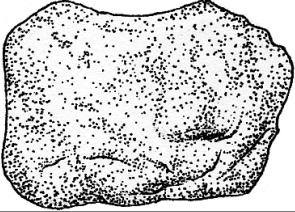
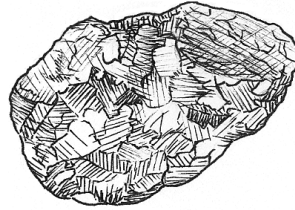
 Which of the sedimentary rocks is your rock most like?

 How did you make your decision?

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Name: \_\_\_\_\_

## *It's Sedimentary, My Dear!*

Name and Pictures	Description and Make-Up	How Rock Was Formed
Conglomerate 	Cemented, rounded cobble and pebbles	Formed by river movement or wave action, giving a rounded shape
Limestone 	Gray-white, soft; calcium carbonate; dissolves in acids	Formed by calcium carbonate secretions from algae and coral
Chalk 	White, soft; easily breaks apart; calcium carbonate	Formed from fossilized, single-celled organisms
Chert 	Found in limestone; silica-based	Formed from ancient sea sponges and other fossilized ocean animals
Breccia 	Cemented, sharp and angular pieces of rocks	Formed like conglomerate, but small rocks have not yet been weathered
Sandstone 	Cemented, sand-sized grains; calcium carbonate, and silica	Formed by cementing of sand with crystallization of silica, iron, and water
Halite 	Also known as rock salt and table salt	Formed when brackish sea beds dry up and leave behind a salt precipitate

# *It's Sedimentary, My Dear!*

## **Teacher Directions**

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Distribute copies of the BLM *It's Sedimentary, My Dear!* and sedimentary rocks to each group of students. Direct them to use the BLM to learn more about the sedimentary rocks. Have students make comparisons between their model rocks and the sedimentary rocks. Have students make comparisons between their original observations of the sedimentary rocks and the information on the BLM.

## **Answer Key**

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Not applicable.