

CONGLOMERATES: MORE THAN JUST A PRETTY ROCK

(MODIFIED FOR ADEED)

INSTRUCTIONS

Overview:

Rocks can be made of several parts that are stuck together.

Objectives:

The student will:

- draw and label parts of a rock;
- make observations about parts of a rock; and
- write complete sentences about rocks.

Targeted Alaska Grade Level Expectations:

Science

- [3] SD1.1 The student demonstrates an understanding of geochemical cycles by recognizing that most rocks are composed of combinations of different substances.
- [3] SA1.1 The student demonstrates an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring and communicating.

Writing

- [2] W1.1.1 The student writes about a topic using complete sentences with a subject and predicate.

Vocabulary:

conglomerate – sedimentary rock containing fragments of other rock

gravel – a mixture of small stones, pebbles and sand

pebble – a small, rounded stone

sand – fine debris from rocks, consisting of small, loose grains, often of quartz

sedimentary – rocks deposited as sediment by water, wind or ice, and consolidated by pressure

shells – a hard outer covering of an animal

silt – earthy matter, fine sand, or the like carried by moving or running water and deposited as sediment

NOTE: Do not hold students responsible for knowing conglomerate or sedimentary at this grade level, but introduce the words.

Materials:

- Plaster of Paris
- Small rocks, sand, shells, fossils, pebbles, etc.
- Small containers, such as pint sized milk containers (one per student)
- Water
- Sandwich bags
- 15-20 rocks that are made up of at least three parts (shells, fossils, pebbles, sand, leaves, twigs, etc.)
- Science journal (one per student)
- Stick for stirring
- Magnifiers (one per student)
- Nails
- Hiscock, B. (1968). *The Big Rock*. New York, NY: Antheneum
- OVERHEAD: "Conglomerate Rock"

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Activity Preparation:

1. Line the small containers with sandwich bags.
2. Prepare a KWL chart.

NOTE: A KWL chart is a three-column chart to be filled in during student discussion. The first column should be labeled "K (What I KNOW)," the second column "W (What I WANT to know)," and the third column "L (What I LEARNED)."

Activity Procedure:

Explore

Process Skills: observing and communicating

1. Take the class outside. Ask students to gather five to ten rocks each.
2. Return to the classroom and divide students into small groups. Distribute magnifiers and nails. Ask students to observe their rocks and compare them. Students may scratch their rocks with nails and examine them closer under the magnifier.
3. Ask students to draw and label the parts of at least five of the collected rocks in their science journal. Be sure to have them write down all observations and any questions.
4. Show OVERHEAD: "Conglomerate Rock" and discuss. Ask students what it is made of. Tell students they will make a conglomerate rock. Guide students, one at a time, to mix Plaster of Paris, sand, water, and their small rocks, shells, fossils, pebbles, etc. together in their lined milk carton. Place milk cartons in a spot where they can dry.
5. When the contents of the cartons are dry, have students observe the conglomerate rocks they have created. Share it with a partner.

Generalize

Process Skills: inferring, making generalizations, and describing

6. Finish the "What did you LEARN?" part of the KWL chart by asking students the following questions and filling in the last column of the chart:
 - a. What did you observe when you explored your rocks?
 - b. What happened to the Plaster of Paris when we added water?
 - c. Why do you suppose this happened?
 - d. How did the small rocks, shells, pebbles, fossils, etc. mix with the Plaster of Paris?
 - e. How would the conglomerate rock have been different if we used less/more water?
 - f. How are conglomerate rocks used in our world?

Apply

Process Skills: communicating

7. The next day, invite students to share their conglomerate rock with another class. Students should explain its parts and how it was created.

Assessment Task:

Choose a rock from the ones provided by the teacher. In your journal, draw and label at least three parts of your rock. Write at least three observations about your rock. Your observations should be written in complete sentences. Make sure to include a subject and predicate in each sentence.

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Rubric:

Objective	GLE	Below Proficient	Proficient	Above Proficient
The students draw and label parts of a rock.	[3] SD1.1	In his or her journal, the student draws and labels less than three parts of a rock (silt, sand, gravel, pebble, shells, etc.).	In his or her journal, the student draws and labels three parts of a rock (silt, sand, gravel, pebble, shells, etc.).	In his or her journal, the student draws and labels more than three parts of a rock (silt, sand, gravel, pebble, shells, etc.).
The student observes parts of a rock.	[3] SA2.1	The student makes less than three observations about parts of a rock.	The student makes three observations about parts of a rock.	The student makes more than three observations about parts of a rock.
The student writes complete sentences about rocks.	[2] W1.1.1	The student writes less than three complete sentences (with a subject and predicate) about rocks.	The student writes three complete sentences (with a subject and predicate) about rocks.	The student writes more than three complete sentences (with a subject and predicate) about rocks.

