

**Overview:**

Rocks contain different materials.

**Objectives:**

The student will:

- describe rocks as made of many different materials;
- classify a collection of rocks; and
- write 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**

[1] W1.1.2 The student writes about a topic by writing about a single topic using drawings and a minimum of three complete sentences.

**Vocabulary:**

**attribute** – to consider as a quality or characteristic of the person, thing, group, etc.

**classify** – to arrange or organize by classes; order according to class

**collection** – a group of objects or an amount of material accumulated in one location, especially for some purpose or as a result of some process

**material** – any substance that is used to make something is a material

**rare** – unusual or uncommon

**sediment** – the matter that settles to the bottom of a liquid

**valuable** – having considerable monetary worth; costing or bringing a high price

**Materials:**

- Let's Go Rock collecting by Roma Gans
- One-page collection of stickers
- Chart paper (two pieces)
- Safety goggles (one per student)
- Small gumdrops in assorted colors (three per student)
- Scissors (one pair per student)
- Waxed paper, 4 inch by 4 inch squares (two squares per student)
- White paper, cut to 5 ½ inches by 9 inches (one piece per student)
- Crayons, similar colors as gumdrops, available to each student
- Glue stick (one per student)
- One large sedimentary or metamorphic rock that clearly shows it was made from other rocks
- Marker
- Gans, R., and Keller, H. (1997). Let's go rock collecting. New York: Harper Collins.
- Metamorphic Gumdrops. (2000). In Brennan, J., Crump, I. P., McLaurin, T. H., Sanford, M., Daoust, C. K., et al., Rocks and minerals: Grades 1-3. Greensboro, NC: Education Center.
- STUDENT INFORMATION SHEET: "Rock Pictures"
- STUDENT WORKSHEET: "What I Know About Rocks"

**Activity Procedure:****Gear Up**

*Process Skills: communicating and observing*

1. Introduce topic by asking students to think like scientists. Ask students to consider what they already know about rocks and write students' response on the white board accompanied by the initials of the responder.
2. Ask students to think about the word "collection." Allow students to ponder the question for a minute, and then have them turn to a partner and share what they think a collection is. Ask students to share their ideas with the whole group. Record students' ideas on a piece of chart paper.
3. Show the page of stickers to the class and explain that it is a collection of stickers. Point out one or two very special stickers and explain why the stickers are included in the collection.
4. Gather students in a circle for a read aloud story and explain they are going to hear more about collection. Read *Lets Go Rock Collecting* by Roma Gans. After reading the story, ask students to think about and share any new ideas they have about collections. Guide students to a definition of collection. Ask students what the children in the story collected. Ask what students noticed about the rocks, and how they think the rocks got stripes and dots.

**Explore**

*Process Skills: developing models, communicating, and observing*

5. Divide students into groups of four and distribute safety goggles to each student. Explain students will make their own rock. Ask one student from each group to gather a pair of scissors for each person in their group. A second student should pick up eight pieces of waxed paper for their group (two per student). A third student should gather four pre-cut pieces of paper (one per student). The fourth student should gather a bundle of crayons for their group. Pass out three gumdrops of various colors to each student and then guide groups through the following steps:
  - a. Place one piece of waxed paper on the table, shiny side up.
  - b. Use the scissors to cut each gumdrop into three pieces.
  - c. Place the gumdrop pieces on the waxed paper making sure they are varied in color and all touching.
  - d. Put the second piece of waxed paper on top of the gumdrop pile, shiny side down.
  - e. Firmly push down on the pile, hold for a few seconds, then release.
  - f. Take the waxed paper off and examine the "new" gumdrop.
  - g. Draw the new gumdrop on the sheet of paper.

**Generalize**

*Process skills: Predicting, communicating, and observing*

6. Have students walk around the room to view the new gumdrops displayed at each workstation. Remind student not to touch. Once students are done viewing, discuss the following questions as a class:
  - a. What happened to the gumdrop pieces?
  - b. What would happen if we used all the same color?
  - c. What would have happened if you used more or different colors?
  - d. What would happen if you lined the colors up before you pushed down on them?
  - e. What would have happened if we used smaller or bigger pieces?
7. Under a document camera, or with the children gathered around, form new gumdrop rocks using the ideas gathered from the above questions. Ask the following questions:
  - a. How are the gumdrops like rocks?
  - b. What materials make rocks?

## Apply

*Process Skill: observing*

8. Display a large rock, such as sedimentary or metamorphic, that clearly shows it was formed from other rocks. Ask students to take turns describing what they observe about the materials that make up the rock. Record observations on a piece of chart paper, and then compare to the responses given during the Gear Up on the board. If students decide the original idea was incorrect, cross it off. Add new ideas as they are expressed.

## Answers:

### STUDENT WORKSHEET: "What I Know About Rocks"

Answers will vary but should complete the sentence "Rocks are made from" and include at least two sentences that describe that rocks are made of at least two materials.

## Sources:

Fact Monster. (2009). Retrieved June 25, 2009, from <http://dictionary.factmonster.com>.

## Assessment Task:

Ask students to brainstorm different materials that rocks are made of on the board. Hand out STUDENT WORKSHEET: "What I Know About Rocks." Ask students to complete the cloze journal prompt, "Rocks are made from \_\_\_\_." Ask students to write at least two more sentences that describe that rocks are made of at least two materials. Ask students to cut out pictures of rocks from the STUDENT INFORMATION SHEET: "Rock Pictures." Students should classify the rock pictures by at least one attribute and paste the pictures on the backside of the worksheet. Student should write what attribute they used to classify.

## Rubric:

Objective	GLE	Below Proficient	Proficient	Above Proficient
The student describes that rocks are made of many different materials.	[3] SD1.1	The student does not attempt to describe that rocks can be made of two or more materials, or describes that rocks can be made of more than one material.	The student describes that rocks can be made of two or more materials.	The student describes that rocks can be made of three or more materials.
The student classifies a collection of rocks.	[3] SA1.1	The student does not classify rocks by one attribute.	The student classifies rocks by one attribute.	The student classifies rocks by two or more attributes.
The student writes sentences about rocks.	[1] W1.1.2	The student writes less than three sentences about rocks.	The student writes three sentences about rocks.	The student writes more than three sentences about rocks.

# ROCK PICTURES

# STUDENT INFORMATION SHEET



NAME: \_\_\_\_\_

WHAT I KNOW ABOUT ROCKS



Handwriting practice lines consisting of multiple sets of three horizontal lines: a solid top line, a dashed middle line, and a solid bottom line.