

## ROCK COOKIE (MODIFIED FOR ADEED)

## INSTRUCTIONS



### Science Concept:

Rocks are made up of more than one material.

### Objectives:

The student will:

- describe how a rock is made up of more than one material;
- classify materials in a rock; and
- illustrate and label a rock in a science journal.

### GLEs Addressed:

#### 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 process of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.

#### Writing

- [1] W1.2.2 The student writes for a variety of purposes and audiences by writing a variety of responses to text (e.g., response logs, journals).

### Vocabulary:

*pebbles* - small rounded stones

*dirt* - earth or soil

*sand* - gritty particles of disintegrated rock with grains smaller than pebbles and larger than dust

*particle* - a tiny or very small bit

*pressure* - force applied over a surface

*sedimentary rocks* - rocks formed from sediment or from transported minerals deposited in layers by water

### Materials:

- Chart paper (1 piece)
- Crisped rice cereal (10-12 cups)
- Hand lenses (one per group)
- Large bowl
- Mini-marshmallows (8 cups)
- Paper bowls (one per student)
- Peanut butter\* (6-8 tablespoons)
- Peanuts\* (1 pound)
- Raisins (1 pound)
- Small assorted candies (1 pound)
- Small collection of sedimentary rocks (one collection per group)
- Small paper cups (three per group)
- Stirring spoon
- STUDENT WORKSHEET: "Classifying Materials"
- STUDENT WORKSHEET: "Rock Cookie Goodie Count"

\*Caution: Substitute ingredient for peanut allergies.

### Activity Preparation:

1. Set out small collections of sedimentary rocks for each group of students.
2. Create 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]”).
3. Make the rubric visible to all students by putting on a poster or displaying on an overhead.
4. Prepare “rock cookies” by mixing peanut butter, crisped rice, and mini-marshmallows in a large bowl until well coated. (NOTE: Cookie ingredients should be mixed right before the activity to remain pliable.)
5. Place raisins, candy, and peanuts in small cups. Prepare one cup of each item for each small group.

### Activity Procedure:

Please refer to the assessment task and scoring rubric located at the end of these instructions. Discuss the assessment descriptors with the class before teaching this lesson.

#### Gear up

##### *Process Skills: observing and communicating*

1. Ask students what they already *know* about rocks. List responses on the KWL chart.
2. Ask students what they *want* to know about rocks. List responses on the KWL chart.
3. Distribute a rock collection to each small group of students.
4. Remind students hand lenses are available to help them observe more closely.
5. Ask students to look at the rocks very closely using all of their senses (touch, sight, hearing, smell), except taste.
6. Ask students to discuss with their group what they observe about the rocks.
7. Ask students to share what they observed about the rocks.
8. List responses on the board. Tell students scientists also look closely at rocks using their senses.

#### Explore

##### *Process Skills: communicating and observing*

9. Tell students they will be making rock cookies. Give each student a scoop of cookie mixture (See Activity Preparation #4) in a small bowl. Give each group a set of small cups filled with other ingredients.
10. Hand out the STUDENT WORKSHEET: “Rock Cookie Goodie Count.” Ask students to add ingredients to the mixture to form a rock cookie, and record the amounts and types of candies, nuts, and raisins added to the cookie mixture.

#### Generalize

##### *Process Skills: inferring, describing, generalizing, and communicating*

11. Ask students the following questions. Discuss as a class.
  - a. What happened to the mixture when you added candies, nuts, raisins, etc.?
  - b. Which of your five senses did you use when observing your rocks?
  - c. Which of the five senses did you use the most when observing your rocks?
  - d. Think about the rocks we observed with our hand lenses. What do you think the rock is made of?
  - e. How were those rocks similar to the rock cookies we made?
  - f. What have you *learned* about rocks today? List responses on the KWL chart.

#### Apply

##### *Process Skills: observing, communicating, and describing*

12. Ask students to find two rocks and draw a picture of the rocks and compare and contrast them by writing how they look the same or different.

# ROCK COOKIE

# RUBRIC

## Assessment Task:

Show students an assortment of rocks. Ask each student to choose one rock to observe. In a science journal, the student will describe how the rock is made up of more than one material. Examples of rock materials such as sand, pebbles, etc. may be mentioned. Have the student closely observe their rock and classify the materials seen in at least two categories (big, small, rough, smooth, hard, soft). Complete STUDENT WORKSHEET: "Classifying Materials." Each student will illustrate and label their rock. They must label at least three materials.

## Rubric

Objective	GLE	Below Proficient	Proficient	Above Proficient
The student will describe how a rock is made up of more than one material.	[3] SD1.1	The student does not attempt to describe how a rock is made up of material.	The student describes how a rock is made up of more than one material.	The student describes how a rock is made up of more than one material with details that may include examples of rock materials, such as sand, pebbles, etc.
The student will classify materials in a rock.	[3] SA1.1	The student classifies rock materials in only one category (big, small, hard, soft, rough, smooth, etc.) or not at all.	The student classifies rock materials in two categories (big, small, hard, soft, rough, smooth, etc.)	The student classifies rock materials in three or more categories (big, small, hard, soft, rough, smooth, etc.)
The student will illustrate and label three parts of a rock cookie in a science journal.	[1] W1.2.2	The student does not illustrate and/or labels only 0-2 parts of a rock cookie in his or her science journal.	The student illustrates and labels three parts of a rock cookie in his or her science journal.	The student illustrates and labels more than three parts of a rock cookie in his or her science journal.

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

**ROCK COOKIE GOODIE COUNT**

**Directions:** List the materials added to your rock cookie. Record the amount of each material added.

Rock Material	Amount

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

**CLASSIFYING MATERIALS**

**Directions:** Classify the materials in your rock in at least two ways. Put a tally mark for each material you observe that fits in the correct category.

Category _____	Category _____
Category _____	Category _____
Category _____	Category _____