

Grade: 3-5 | Time: 45 minutes

ROCK GAME

Essential Question:

What are properties of rocks and minerals?



Overview

Students describe rocks in detail using new and common terminology, in a game where teams try to identify the rock being described.

Vocabulary

- Luster
- Stratification
- Composition
- Texture

Assessment

Can students

- Give an accurate and detailed description of the composition of a rock?
- Explain how and why scientists describe things?

Teacher Information and Procedure

Prior knowledge for students: None

Source: Adapted from previous AMEREF Curriculum (Graphics from Depositphotos.com)

Materials needed

- Alaska Rock and Mineral Collection (40 specimen)
- Handout provided in this lesson
- Pencil

What to do in advance

- Set up enough stations to allow 2-4 students per station.
- Place 4-6 rocks, at each station.(the more similar the rocks are the more difficult the activity will be)
- Copy the handout provided 1 for each group.
- Cut the Handout in half along the dotted line.

Teaching the Lesson

Gear-up

Show samples from the rock and mineral set to demonstrate vocabulary for describing rock properties:

- **Luster:** The way in which the surface of a mineral reflects light. Show samples of obsidian (glassy), talc (dull), pyrite or galena (metallic), graphite (waxy). Students may also use words such as “shiny” or “sparkly” to describe luster
- **Texture:** General appearance of the rock surface in terms of its minerals or crystals. Show samples of gabbro, granite (coarse) halite, shale (fine), obsidian (smooth) Pyrolusite might show “fibrous”



Alaska Standards Addressed

Science GLEs:

The student demonstrates an understanding of
-the processes of science by: [3] [4]
[5] SA1.1 asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring and communicating.

Alaska English/Language Arts and Mathematics Standards (2012)

- RI.K-5.4
- SL.K-5.1
- WS.K-5.2

texture.

- **Stratification:** The accumulation of material as layers in rocks. “Stratified” is another term for “layered”. Samples of sandstone or shale in your mineral set may or may not show stratification. If not, try to find a layered rock elsewhere as an example.
- **Composition:** Describes “ingredients” of the rock. Students will describe this in terms of what they see in the rock: Big white grains, small black shiny grains, little holes, white “veins” or lines, etc. Use conglomerate, granite, and other rocks that you find to practice describing composition.

Encourage students to use other, more familiar terms for describing the rock samples as well. They can describe the color, the way it feels (soapy, rough), whether it is heavy or light for its size.

In terms of preparing for future identification and classification of rocks and minerals, it’s helpful if students don’t use “size” as a descriptor. Discuss the idea that smaller rocks come from the breaking and weathering of larger rocks as part of the rock cycle.

Explore

This exploration may be done one to three times. Arrange the students in groups of 2-4 and place each group at a different station with 4-6 rocks. Give them the top half of the handout and assign a group number to each group.

Have each group secretly select one rock from a group of many. They should not pick it up or indicate their selection in any way. Give students 5-10 minutes to write adjectives describing their rock on the top half of the handout.

Give them the bottom half of the handout. Switch stations (leaving the top half with the rocks, bringing the bottom half with them) and have each group read the previous group’s description and try to guess the original group’s rock. Give the reading group 1-3 minutes to come to a consensus and record on the bottom half of the handout.

Have each group present which rock they think was

described by the previous group and what clues helped them the most. Why?

Generalize

What did all of the rocks have in common? What were some of the observable characteristics that helped you to identify one rock out of many?

Why might it be important for scientists to observe and describe things carefully? Why do rocks sometimes have the same characteristics, even though their sizes and shapes are different?

Assess

Students describe a rock in detail, orally or in writing. If this is a written assessment, students could make a brochure to sell their rock or write a poem about their rock.

Assessment criteria include:

- Describe at least five observable properties of the rock (not including size).
- Use vocabulary accurately

Extensions, adaptations and more resources:

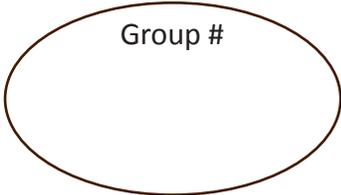
- Classify all of the rocks made by the whole class into different groups.
- Go on a “rock hunt” to find rocks that have particular properties: coarse-grained, fine-grained, white veins, pink color, black speckles, stripes, etc.



Choose **ONE** rock out of the group to describe how it LOOKS and how it FEELS.

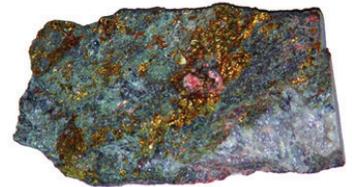
Try to come up with good describing words that won't give your rock away!

Look at similar characteristics that all of your rocks have in common...



- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____
- 6. _____
- 7. _____
- 8. _____
- 9. _____
- 10. _____

Everyone pick up a rock.
One member of your group will read the clues.
If the clue does not match your rock, put it down.
Continue until you have all agreed upon which rock the group chose.
Write the number of the rock next to THEIR group number



Group 1- _____

Group 2- _____

Group 3- _____

Group 4- _____

Group 5- _____

Group 6- _____

How many did your team get correct? _____