Activity #6

Mineral Munch

Standard II
Students will gain an understanding of Earth and Space Science through the study of earth materials, celestial movement, and weather.

Objective 1
Describe the characteristics of different rocks.

Intended Learning Outcomes
Communicating Science: Communicating effectively using science language and reasoning.
Knowing in Science: Understanding the nature of science.

Content Connections: Language Arts

Connections

Background Information

Halite, which is also called sodium chloride or salt, is a common mineral found in many products, including food. Salt can be used as a food seasoning and is valuable for preserving meats, especially in hot climates. In the U.S. only about 1% of processed salt is used in food, the rest is used as a deicer for the roads or in the chemical industry. In Roman times salt was used as currency and the English word *salary* actually comes from the Latin word *Sal.* You may have heard that a person is "worth their salt" or the "salt of the earth" meaning they are very valuable and highly praised. The recommended daily allowance of sodium is 2,400 mg.

Invitation to Learn

Explain to students that you would like to invite two students to come to a "mineral munch." The two students who can name the most items in the place setting that are made from rock materials (e.g., plates, silverware, vase, salt and pepper shakers, etc.) will be invited to dinner. Unveil the table for 5 seconds. Then give the class a minute to write down as many items as they can remember. Determine which two students had the most items made from rock material. Invite these students to come to the front of the class and become diners.

Instructional Procedures

1. Serve each of the "diners" a low sodium cracker. Don't tell them it's low sodium. Ask them to describe the taste. Then serve them the regular cracker. Ask them if they noticed any difference. Compare the two crackers. Did they like one more than the other? (Students may not be able to tell the difference—even low sodium crackers still have some added salt.) It is okay if the students like

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the lower sodium cracker better. There is no right answer, just a comparison of taste.

2. Allow all of the students in the class to taste the low sodium cracker and then the regular cracker. Can they tell a difference?
3. Discuss some of the benefits and uses of salt. Also discuss some of the problems that can occur if there is too much salt in your diet.
4. Show an overhead of a cereal nutrition label. Point out the sodium content.
5. Explain that when the sodium content is lower, the nutritional value is generally higher.
6. Break into table groups and fill out the *Sodium Content* handouts (p. 7-23) for various cereal nutrition labels. When students are finished, compare results.

Materials

- ❑ Table setting
- ❑ Low sodium crackers
- ❑ Regular crackers
- ❑ Overhead of a cereal nutrition label
- ❑ Cereal nutrition label for each student
- ❑ *Sodium Content* handout

Possible Extensions/Adaptations/Integration

- Compare rocks to a cookie with several ingredients (e.g., chocolate chips, nuts, raisins, M&Ms, etc.). Students can dissect the cookie and divide them into parts. The comparison can be made that chunks of ingredients are the minerals and the remaining cookie parts hold them together—just like real rocks and minerals.
- Using cream, you can make two sets of homemade butter. Salt one set and leave the other plain. Ask the class to see if they can taste the difference.
- Using a cereal with a high iron content like Total, crush the cereal. Add warm water to make a watery mush. Using a powerful magnet pull the iron particles from the cereal by stirring it with the magnet. This is a very visual example of how minerals are found in what we eat.
- For learners with special needs you may want to highlight the sodium line on their nutritional label. Labels can be hard to read and this will help them find the information quickly.

Assessment Suggestions

- Ask students to complete the same activity, but this time look at the calorie count or iron content.

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Additional Resources

http://www.mii.org (Mineral Information Institute)

Family Connections

- Go shopping with a family member and help determine a low sodium purchase.
- Look at all the cereal in your cupboard. Which cereal has the best nutritional value when you compare the sodium, iron, and calories?
- Try to go a day without adding any extra salt to your meals. How did the food taste? Report back to the class.

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Sodium Content

Fill in the table with your group. Using information from the table, answer the questions.

Name	Cereal Name	Sodium Content
		

The cereal with the least amount of sodium is

_____.

The cereal with the greatest amount of sodium is

_____.

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