Activity #5

Rock Star Centers

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
Generating evidence: Using the processes of scientific investigation (i.e. framing questions, designing investigations, conducting investigations, collecting data, drawing conclusions)
Communicating Science: Communicating effectively using science language and reasoning.
Knowing in Science: Understanding the nature of science.

Content Connections: Language Arts

Background Information

All rocks are made of minerals or a combination of minerals. They are used to make many products. Common minerals, such as graphite, are used to make the lead in pencils, while other minerals are more rare, such as gold and silver. These minerals are often used to make jewelery or money. Common minerals can be identified by looking at some of their properties or attributes, such as color, texture, hardness, and luster.

Invitation to Learn

Tell the students they are going to study a rock star. They each get to choose their own rock rock star,and then they are going to learn everything they can about their "rock" star..

Instructional Procedures

1. Have each student select on rock from his/her rock collection. Give each student a *Rock Star Journal* (p. 7-16). Put the rock in a bag that is stapled to the front of his/her journal. It is important that they keep it safe and don't loose it. When they are finished you will want to discuss the results and try to determine a good use for their rock.
2. Students will rotate through the different centers and complete tasks to help determine the differnt properties of their rock.

   These are the centers:

Materials

- ☐ *Rock Star Jouranl*
- ☐ Ziploc bags
- ☐ Rock for each student
- ☐ Pencil
- ☐ Center materials
- ☐ Crayons

Center 1—Weight

Students will use a balance scale to determine how heavy their rock is. They may add teddy bear counters, marbles, or some other nonstandard unit of measure to determine the weight of their rock.

Materials

- ❑ Balance scale
- ❑ Nonstandard weights (e.g., teddy bear counters, marbles, etc.)

Center 2—Size and Shape

Students will trace their rock onto their paper. They will also use string to determine the circumference of their rock.

Materials

- ❑ Scissors
- ❑ Ball of sturdy string

Center 3—Hardness

Students will determine how hard their rock is by scratching it with several objects (e.g., fingernail, penny, nail, etc.). If the object does not make a mark, then the rock is harder then the object.

Materials

- ❑ Penny
- ❑ Nail

Center 4—Texture

Students will compare the texture of their rock to varying grits of sandpaper. They will take a small square of the sandpaper that matches their rock's texture and glue it into their journal.

Materials

- ❑ Several pieces of sandpaper with different grits

Center 5—Sink or Float (density)

Students will predict whether or not their rock will sink or float. Have a sample of pumice so students can compare it to their rocks before they test for density.

Materials

- ❑ Container of water
- ❑ Paper towels
- ❑ Sample of pumice

2nd 2-1 5.2

Materials

- ❑ Aluminum foil
- ❑ Glitter or sequins
- ❑ Brown paper sack
- ❑ Wax paper

Center 6—Shiny or Dull (luster)

Students will compare their rocks to pieces of aluminum foil, sparkly sequins or glitter, wax paper, or a brown paper sack. They will take a sample of the one that is most like their rock and glue it in their journal.

Center 7—Color

Students will draw their rock and how it looks on the outside. They should pay close attention to whether or not the rock has layers or multiple colors.

Materials

- ❑ Crayons

3. When each child has had a chance to complete each center, have a short discussion about the findings. Based on these findings, see if they can come up with some ideas for uses of the rock.

Possible Extensions/Adaptations/Integration

- Using the word MINERALS, conduct a "making words" activity. Some possible words and chunks that can be created are: a, an, in, me, ran, man, nail, sail, rail, mine, line, miner, Reams, linear etc.
- Make an interactive writing book about the properties of rocks and their uses. For example, a page may read, "Some rocks are hard. Hard rocks can be used to make tools like hammers and jewelry like diamond rings. Some rocks are soft. Soft rocks can be used to make things to write with like chalk and pencil lead."
- Be sure to include pictures alongside difficult vocabulary words for learners with special needs. You may also want to have students work with partners as they move through the centers.

2nd 2-1 5.3

Assessment Suggestions

- The *Rock Star Journal* is a good indicator as to whether or not the student understood the centers. When the centers are complete, students could also be asked to write a short descriptive paragraph about their rock using information they discovered at the centers.

Additional Resources

Books

Rocks and Minerals, by Dr. R. F. Symes (Eyewitness Books); ISBN 0-394-89621-1

Rocks and Minerals, by Ann O. Squire; ISBN 0-516-22505-9

Gemstones, by Ann O. Squire; ISBN 0-516-22505-7

Investigating Rocks, by Natalie Lunis and Nancy White (Big Book); ISBN 1582730814

Remarkable Rocks, by Ron Cole (Big Book); ISBN 1-56784-221-6

Rocks, Minerals, and Fossils, by Rebecca Hunter; ISBN 0-7398-3250-6

Video

Uses of Rocks and Minerals; ISBN 1-58541-088-8

Web site

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

Family Connections

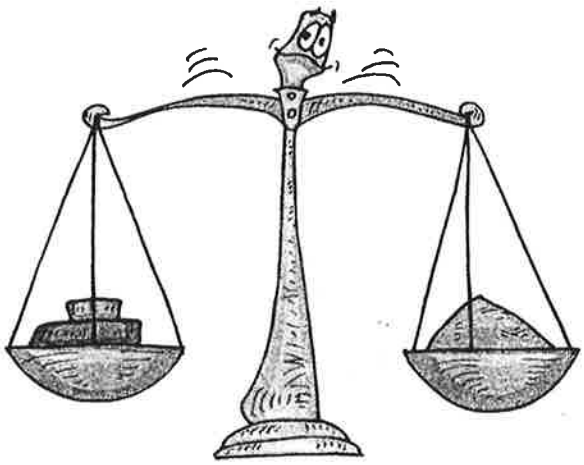
- Teachers could send a short summary of each of the centers home and ask families to test more rocks for hardness, texture, etc.
- Give families the Web site to the Mineral Information Institute. Ask students to look up one of their favorite minerals. Bring in a sample or printed picture.
- Issue a challenge for families to find three kid-friendly Web sites about rocks and minerals.

2nd 2-1 5.4

Rock Star Journal

Name_____ **Date**_____

Center 1—Weight



My rock is as heavy as _____ **teddy bears.**

2nd 2-1 5.5

Center 2—Size and Shapes

This string will fit around the widest part of my rock.
(Tape string here.)

This is what my rock looks like when I trace it.

Center 3—Hardness

Check each item that scratches your rock.




Fingernail____ Penny____ Nail____ Nothing____

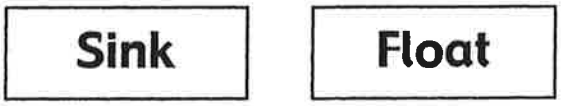
2nd 2-1 5.6

Center 4—Texture

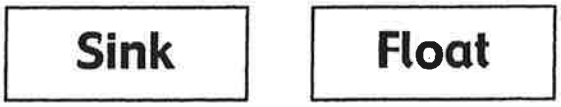
The surface of my rock feels like this.

Center 5—Sink or Float

Predict what will happen to your rock when you place it in water.
(Color in the box.)



What happened to your rock when you placed it in water?
(Color in the box.)



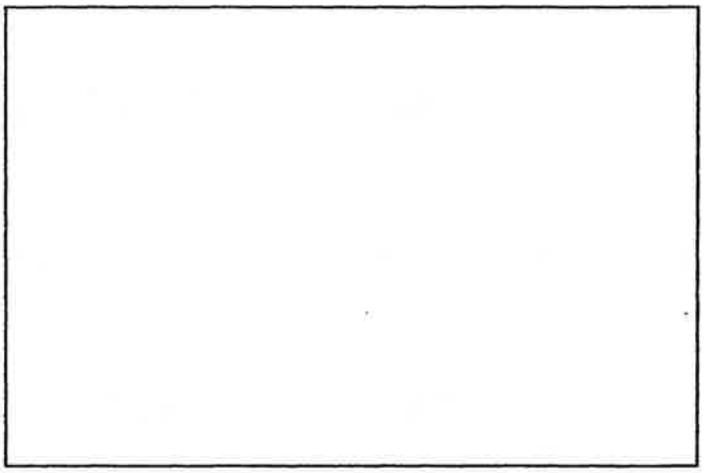
2nd 2-1 5.7

Center 6—Shiny or Dull

The surface of my rock looks like this.

Center 7—Color

The color of my rock looks like this:



Be sure to draw any layers or multi-colored areas.

2nd 2-1 5.8