FOSS EARTH MATERIALS MODULE

PROJECT IDEAS

- Make a batch of cookie rocks to share with the class. Be sure to list the "minerals" you used to make the cookie rocks.
- Bring in your own rock and mineral collection. In your presentation be ready to tell the class about each sample.
- Write a letter to the U.S. Geological Survey. See the teacher for the address and what to order.
- Interview a geologist. Write a list of questions, then interview a geologist in person or over the phone. Tell what you learn to the class.
- Seriate a set of rocks or minerals by a property such as weight, diameter, circumference, or other property. Explain your methods to the class.
- Research the Mohs' scale. Make a poster to show a mineral for each hardness, 1 through 10.
- Find some other rocks that you can test for calcite. Show what rocks you used, how you tested them, and what your results were.
- Use warm vinegar to see if you get different results in the fizz test.
- Check with the U.S. Department of Agriculture or a garden supply company to find out how limestone and its products are used in farming.
- Research the uses of Portland cement. What is it and how is it used?
- What is your state rock or mineral? Why was that one selected?
- Each county has a Natural Resources Conservation Service unit, part of the U.S. Department of Agriculture. Find out what information on local rocks and minerals is available from the NRCS.
- Take a survey around the neighborhood about how different earth materials are used for construction of buildings, sidewalks, roads, decoration, and so forth.
- Library Research. Find the answer to one of the questions below and present information to the class.
    - How do caves form?
    - How many forms of calcite are there?
    - How do rocks such as limestone and marble form?
    - What is a sinkhole? How does one form?
    - Where do geologists look for petroleum?
    - How are some of the rocks and minerals we studied used?
    - What is spelunking? Would you like to try doing it?
    - What is a fossil? What kinds of rocks are fossils found in?
    - Where is most of the basalt or granite on Earth?
- Look in the *Science Stories* or books in the library for ideas about projects you might like to present to the class.
- What kind of rocks and minerals were found on the moon?

Name _____

Date _____

MATH EXTENSION—PROBLEM OF THE WEEK

INVESTIGATION 1: MOCK ROCKS

On his vacation Jay hunted for special rocks for his collection. On the first day he found two rocks. The next day he found four rocks. On each day of his vacation Jay found two more rocks than he had found the day before. On what day did Jay have 42 rocks in his collection?

Name _____

Date _____

MATH EXTENSION—PROBLEM OF THE WEEK

INVESTIGATION 2: SCRATCH TEST

Cheryl and Vincent were testing minerals for their hardness. After working all day they had tested 57 minerals. Cheryl tested nine more minerals than Vincent. How many minerals did each student test?

Name _____

Date _____

MATH EXTENSION—PROBLEM OF THE WEEK

INVESTIGATION 3: CALCITE QUEST

Josiah and Parisa were playing a game. They had agreed that, at the end of each round, the loser would give the winner a rock from his or her collection. After playing the game for a while, Josiah had won three games. Parisa had three more rocks than she did when they began. What is the fewest number of rounds they could have played?

Name _____

Date _____

MATH EXTENSION—PROBLEM OF THE WEEK

INVESTIGATION 4 TAKE IT FOR GRANITE

Anders, Catherine, Dustin, Yelda, Rocky, and Maren are rock collectors. Each collector has chosen some rocks from his or her collection to trade. Each collector is going to trade with every other collector. How many different pairs of collectors will trade with each other?

Name _____

Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 1: MOCK ROCKS

BRING A ROCK TO CLASS

Plan to bring one or two rocks to school to share with the class. Choose samples from rocks you have at home, or go outside and find some interesting rocks in your neighborhood.

Put three or four rocks on a table and give each person in your family a piece of paper and a pencil. Have everyone choose one of the rocks to write about, but don't let anyone say which rock they have chosen. Have everyone write a riddle that describes one of the rocks on the table. Take turns reading the riddles out loud. Can everyone else determine which rock the riddle was about? If they guess wrong, ask them what would have helped them to guess correctly.

Write your favorite riddle below. Bring the rock and the riddle to school to share with the class. (Don't show any of your classmates, though, until your teacher tells you to!)

ROCK RIDDLE

Name _____

Date _____

HOME/SCHOOL CONNECTION

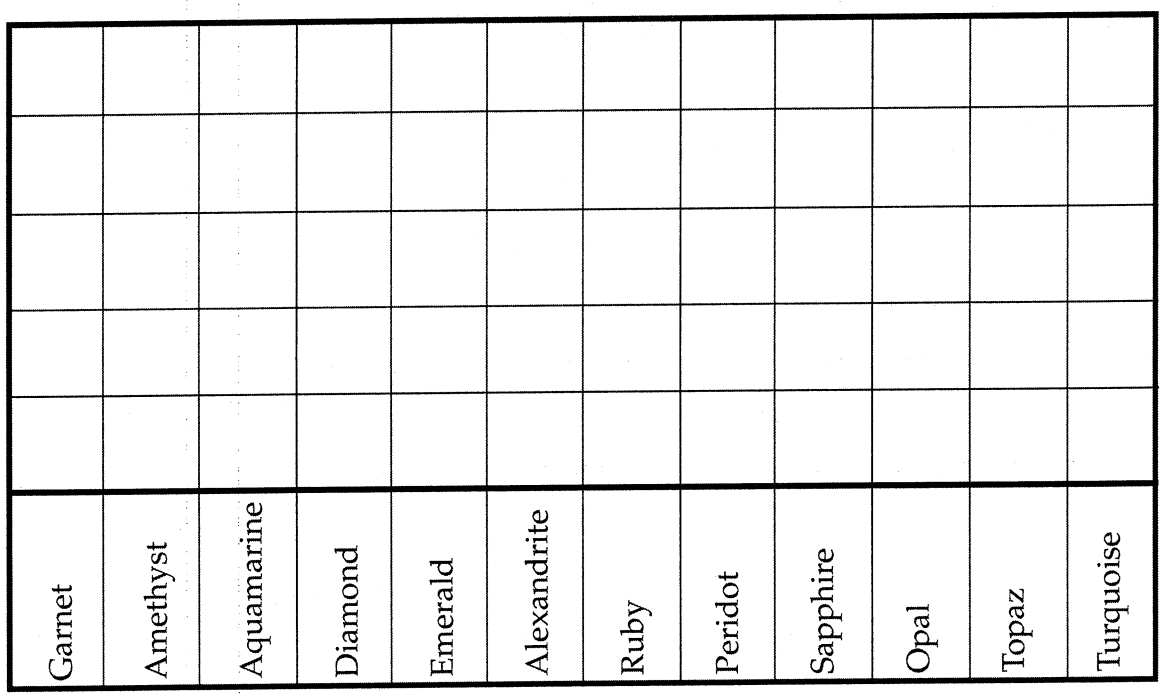
INVESTIGATION 2: SCRATCH TEST

BIRTHSTONES

Tell your family what you learned about birthstones from the FOSS Science Stories book. Tell them about the difference between rocks and minerals.

Ask family and friends when their birthday is and see if they know their birthstone. (If they don't, you can tell them!) Then complete the chart below and make a bar graph to show which month among your family and friends has the most birthdays.

		Name of person	Birthday month
January	Garnet	1. _____	_____
February	Amethyst	2. _____	_____
March	Aquamarine	3. _____	_____
April	Diamond	4. _____	_____
May	Emerald	5. _____	_____
June	Alexandrite	6. _____	_____
July	Ruby	7. _____	_____
August	Peridot	8. _____	_____
September	Sapphire		
October	Opal		
November	Topaz		
December	Turquoise		



Name _____

Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 3: CALCITE QUEST

CALCITE TEST

Explain to members of your family how geologists test rocks to see if they contain the mineral calcite as one of their ingredients.

If you have some vinegar at home, see if you can find five or six rocks to test for calcite. Take a short walk with your family around the neighborhood to find rocks to test.

Keep a record of your findings in the space provided below.

It is advisable not to use special rocks, such as fancy crystals or valuable rocks. The vinegar could change their appearance and lessen their value.

CALCITE TEST

ROCK PROPERTIES	TEST RESULTS

Name _____

Date _____

HOME/SCHOOL CONNECTION

INVESTIGATION 4: TAKE IT FOR GRANITE

EARTH MATERIALS HUNT

Use the clues to find items around your house that are made of earth materials.

1. See if you can find something made from bauxite. Bauxite (aluminum) can be refined into a very thin metal good for packaging liquids. _____

2. See if you can find something beautiful that someone might wear, made from an earth material. _____

3. Sometimes people use earth materials to make lamps and other decorative items for the home. Can you find something? _____

4. Look at the thermometer you use to find out if you have a fever when you're sick. Which part of the thermometer do you think is made from earth materials? _____

5. Look outside. Can you find something that you walk on everyday that is made from earth materials? _____

6. Can you think of a place that you have visited that had some interesting rocks or minerals? What is the name of the place? What was so interesting? _____

7. There is an earth material that most people eat all the time. Imagine that! Its mineral name is halite. It's shaped like little white cubes, and you use it a lot in cooking. _____