



ROCKS, EROSION AND WEATHERING

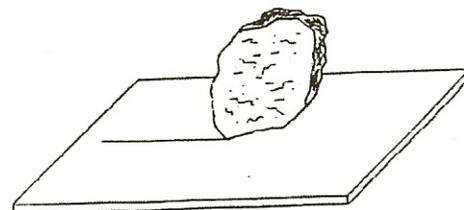
SECTION 3-USING THE STREAK TEST TO IDENTIFY ROCKS

From *Hands on Elementary School Science* by Linda Poore, 2003

STANDARDS:

Students will conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.

Students know how to identify common rock-forming minerals (including quartz, calcite, feldspar, mica, and hornblende) and ore minerals by using a table of diagnostic properties.



MATERIALS:

For Each Pair:

tray
1 glazed tile
magnifier
chalk
pencil(graphite)
student work sheet

Rocks:
galena
hematite
pyrite
sulfur
shale
feldspar

EXPLORE:

ROCKS CAN BE IDENTIFIED BY THEIR STREAK!

1. Have students rub their pencil and the chalk across the tile. Why do they leave a mark? (They are soft rocks. A pencil is usually graphite, a form of carbon.)

SORTING ROCKS: LUSTER AND CLEAVAGE

2. Pass out trays with materials.
Sort rocks into 2 groups by one property using a Venn diagram. → → → →

Ask students what property they sorted by.
(Example: shiny/not shiny)

Introduce the words luster (Shiny) and cleavage (layered, flat planes with smooth surfaces). Ask all students to sort rocks into shiny and not shiny and then sort each group (shiny/not shiny) again into 2 sets: cleavage/no cleavage. Discuss and compare groups.



MAKING PREDICTIONS

3. *Have students:* Predict what color streak each rock will make. Write down their predictions on a piece of paper.

TESTING FOR STREAKS

4. Have the students rub each rock across the tile to make a streak.

Compare the color of the streak to the color of the rock.

Make several different streaks next to each other to compare the colors. Make a streak with your pencil (graphite).

Compare its color to other streaks.

Decide on a name for each color. Which streak is *greener? redder? brownish? grayish?*

Identifying Rocks by the Streak they Make worksheet.

5. Pass out the student worksheet (at the end of section) *Have students:*

Match rock streaks to streak colors on the work sheet.

Complete the work sheet except for the rock name.

Place the rock on the name square.

There is no space of the work sheet for feldspar.

(*Work Sheet answers:* Streak colors for rocks: Galena: lead/gray, Sulfur, yellow, Pyrite: greenish/black, Hematite: reddish, Shale: gray/brown, Feldspar: pink/white streak)

NAMING THE ROCKS:

6. Tell the name of each rock by saying, "Hold up the rock that makes the _____streak." (e.g., yellow)

Is it shiny or dull?

Name another property of this rock. (rough)

Its name is _____. (e.g., sulfur)

Which rock was the softest? (streak made with little effort.)

Which rock was the hardest? (Force used to make a streak or does not make a streak.)

7. Allow students to test for streak color with other minerals in the kit or rocks they bring from home.

Hard rocks will not leave a streak.

Students can rub the tile with a finger to erase all the streaks after the lesson.

IDENTIFYING ROCKS BY THE STREAK THEY MAKE

ROCK	SHINY OR DULL	DESCRIPTION	STREAK COLOR
Name _____			Lead/gray
Name _____			Yellow
Name _____			Greenish/black
Name _____			Reddish
Name _____			Gray/Brown

What type of rocks make a streak? _____

Which rocks are too hard to leave a streak? _____

Why do scientists use the streak test? _____

PROPERTIES OF MINERALS

MINERAL	COLOR	LUSTER	STREAK	HARDNESS	PROPERTIES
Calcite	White/clear	Glassy	White	3	Fizzes with acid
Feldspar	White/pink	Glassy	White/pink	6	Cleavage
Galena	Lead gray	Metallic	Lead gray	2.5	Cleavage, an ore
Gold	Bright Yellow	Metallic	Yellow	2.5-3	Conducts electricity, an ore
Graphite	Black	Shiny	Gray black	1-2	In pencils, an ore
Halite (rock salt)	Colorless	Glassy	White	2.5	Salty taste
Hematite	Gray/red	Dull	Dark red	6	Found in lava
Hornblende	Green/black	Glassy	Pale gray	5.5	Cleavage
Magnetite	Iron black	Metallic	Black	6	Magnetic, an ore
Malachite	Bright Green	Dull	Pale green	3.5	Cleavage
Mica	Silvery black	Glassy	White	2.5	Flaky
Olivine	Olive green	Glassy	White gray	6.5	Stubby crystals
Pyrite	Gold	Metallic	Green black	6.5	Looks like gold, an ore
Quartz	Milky White	Glassy	White	7	Looks like glass
Sulfur	Yellow	Shiny	Yellow	2	Deposits in hot springs

1. You have a mineral with no luster. Using the chart, list the minerals it could be.

2. Name two minerals on the chart that look glassy and have a hardness of 2.5. ___

3. Name the 3 green rocks on the chart: _____

Describe 2 things you would do to find out the name of a green rock you found.

1. _____

2. _____

4. You are given a chunk of 'gold'. How will you tell that it is not pyrite?

5. Which rock on the chart is the hardest? _____

6. Which rock on the chart is the softest? _____