



Mystery Rock

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Target Grade: 3rd grade

Time Required: 65 minutes

Standards:

- S3CS5. Students will communicate scientific ideas and activities clearly.
- S3CS7. Students will be familiar with the character of scientific knowledge and how it is achieved.
Students will recognize that:
 - a. Similar scientific investigations seldom produce exactly the same results, which may differ due to unexpected differences in whatever is being investigated, or observational uncertainties.

Lesson Objectives:

Students will:

- Observe, measure, and describe the physical attributes of rocks and soils
- Classify rocks and soils based on student observations

Central Focus:

In this lesson, students will be given samples of sedimentary, igneous, and metamorphic rocks in a container. They will investigate each rock through touch, smell, color, and durability to categorize and find the name of each mystery rock.

Background Information:

The teacher should have already read the story, *Let's Go Rock Collecting* by Roma Gans (Houghton Mifflin, 1999). The teacher should be sure the students understand the 3 categories of rocks and characteristics that differentiate them.



Materials

- Rock samples
 - [Rock resources](#)
 - [Rock resource](#)
 - [Rock resource](#)
- Handout
- Pencils
- Colored pencils
- Smart board
- Chromebook



Instruction

Introduction (15 minutes):

Step 1: The teacher will review the characteristics that differentiate the characteristics of the 3 types of rocks (sedimentary, igneous, metamorphic). The class can review the story read for background knowledge.

Step 2: Display the handout on the smartboard and model how to investigate a rock sample: The teacher will model how to look over and predict what type of rock sample they pull from their container. As the teacher examines a rock sample, she will make notes on a section of the handout displayed on the smartboard and predict if the rock is igneous, metamorphic, or sedimentary. The teacher will then pull up the website <https://geology.com/rocks/> and demonstrate how to investigate and find the true name of the rock. The website has pictures of every rock sample, if the sample looks familiar to the one in the subjects hand then they click on it. They then have to read the description about the rock they clicked on and see if it matches everything they observed and wrote down. If it does, then they solved the mystery name for that rock.

Step 3: Separate students into groups of 3 or 4 so they can share the rock collections. Have students take out their chrome books and navigate to this website <https://geology.com/rocks/> . Pass out the handouts to each student. They will use this handout and the rock samples to investigate and figure out the rock names based on the characteristics.

Activity (30 to 45 minutes):

Step 4: Students will repeat the steps that the teacher modeled with their group. Being sure to record everything in their handout.



Step 5: Closure: Ticket out the door: When they find all of the mystery names, they will write on the ticket out the door explaining the characteristic differences between sedimentary, igneous, and metamorphic rocks.

Differentiation

Students will be split into groups, so they can support each other throughout the lesson. The teacher will model how to investigate with visuals on the smartboard, so students have a clear understanding of what to do.

Assessment

Formative:

The handout can be used as in class grade to assess whether or not the students were able to investigate and determine based on observations.

Ticket out the door: Students will write on the ticket out the door explaining the characteristic differences between sedimentary, igneous, and metamorphic rocks. This will show if students understand the overall differences between rocks.

Mystery Rock Samples

**Draw
a
picture
of
your
sample**

Description:
(glassy,
color,
crystal size,
holes, smell,
scratch
glass,
banding)

Guess
(Metamorphic,
igneous,
sedimentary)

**Actual
rock
name:**

**Was it a
metamorphic,
igneous, or
sedimentary?**



Sample number	Sample Name (metamorphic, igneous, sedimentary)
1	Obsidian (Igneous)
2	Granite (Igneous)
3	Basalt (Igneous)
4	Pumice (Igneous)
5	Rhyolite (Igneous)
6	Shale (Sedimentary)
7	Tufa (Igneous)
8	Sandstone (Sedimentary)
9	Limestone (Sedimentary)
10	Conglomerate (Sedimentary)
11	Slate (Metamorphic)
12	Marble (Metamorphic)
13	Quartzite (Metamorphic)
14	Gneiss (Metamorphic)
15	Schist (Metamorphic)

