

Grade: 3-5 | Time: 1-2 hours

JELLY BELLY GEOLOGY & ROCK IDENTIFICATION

Essential Question:

How do you identify rocks and minerals?



Overview

Students will learn about the makeup of rocks and minerals and how to identify and classify them by their properties. They will learn about the uses of rocks and minerals in everyday life.

Assessment

Can students

- Identify and classify rocks and minerals?
- Describe rocks and minerals based on scientific characteristics?

Vocabulary

- Geologist
- Classification
- Characteristics
- Opaque
- Translucent
- Texture
- Stratification

Teacher Information and Procedure

Prior knowledge for students: None.

Source: Adapted from Previous AMEREF Curriculum (Graphics from DepositPhotos.com)

Materials needed

Small cups/bags to hold Jelly Belly's

- Jelly Belly's (see the attached Jelly Belly Key for flavors)
- Jelly Belly key
- Rock Key
- Alaska Rock and Mineral Collection (40 specimen set)

What to do in advance

Copy the attached handouts for the students.

In each small cup, put 1 of each flavor of Jelly Belly

Teaching the Lesson

1. Gear-up

Discuss prior knowledge of rocks and minerals to gauge how much introduction or review to include in the lesson. Let them describe a favorite rock they have by using one or two descriptive words.

2. Explain the term geologist. A geologist is a scientist who studies the solid and liquid matter that constitutes the Earth and terrestrial planets. Tell them that with this lesson, they will be geologists (rock detectives).

Alaska Standards Addressed

Science GLEs

The student demonstrates an understanding of
SA students develop an understanding of the processes and applications of scientific inquiry

SA1 students develop an understanding of the processes of science used to investigate problems, design and conduct repeatable scientific investigations, and defend scientific arguments

SA2 students develop an understanding that processes of science require integrity, logical reasoning, skepticism, openness, communication, and peer review

-the structure and properties of matter by:
SB1 students develop an understanding of characteristic properties of matter and then relationship of these properties to their structure and behavior

SD1 students develop an understanding of Earth's geochemical cycles

Alaska English/Language Arts and Mathematics Standards (2012)

- RI.K-5.4, RI.K-5.9, RI.K-5.1
- SL.K-5.1,
- WS.K-5.2

Explore

1. Hand out the Jelly Belly's and Keys for the students. Instruct students to NOT EAT the Jelly Belly's because they are the rocks that they are going to classify and identify.
2. Have the students start with the color of the Jelly Bean and follow the lines that most appropriately describe their Jelly Belly until they reach the flavor. Have them set the bean on the flavor they think it is and continue until all their Jelly Belly's have been classified.
3. When finished, have the students taste test their Jelly Belly's to see if they matched it with the correct flavor. Have them tally their answers as correct or incorrect and log it in the box on the Jelly Belly Key.
4. Discuss that geologists are not always accurate in their assessments. Rocks can have many similar characteristics but still be different. It is important for geologists to conduct several types of tests and to repeat their work to make sure they are accurate. A mistake in real life could cost millions of dollars to the company.
5. Have students partner up. Show them the Alaska Rock and Mineral Kit and explain that these are materials that are mined currently or historically in Alaska. Pull out the rocks listed on the Rock Key and hand one or two out (depending on class size) to each pair. Be sure to keep the lid of the Rock Key with you as they contain the answers.
6. Instruct the students to classify their rock samples from the rock kit using the Rock Key. have the students write the number on the rock or mineral next to the name of the rock/mineral they think it is. Pass the specimens around until everyone has had a chance to identify each one. Confirm with them if they matched the correct rock with the name.

Generalize

Ask the following questions:

- What were some of the observable characteristics that helped you to identify one rock/mineral out of many?
- Why might it be important for scientists and geologists to observe and describe things carefully?
- What makes it difficult to identify one rock from another?

Assess

- Have Students list different characteristics of rocks and minerals used to identify and classify them.

Assessment criteria include:

- Describe at least five observable properties of the rock (not including size)
- Use science vocabulary accurately

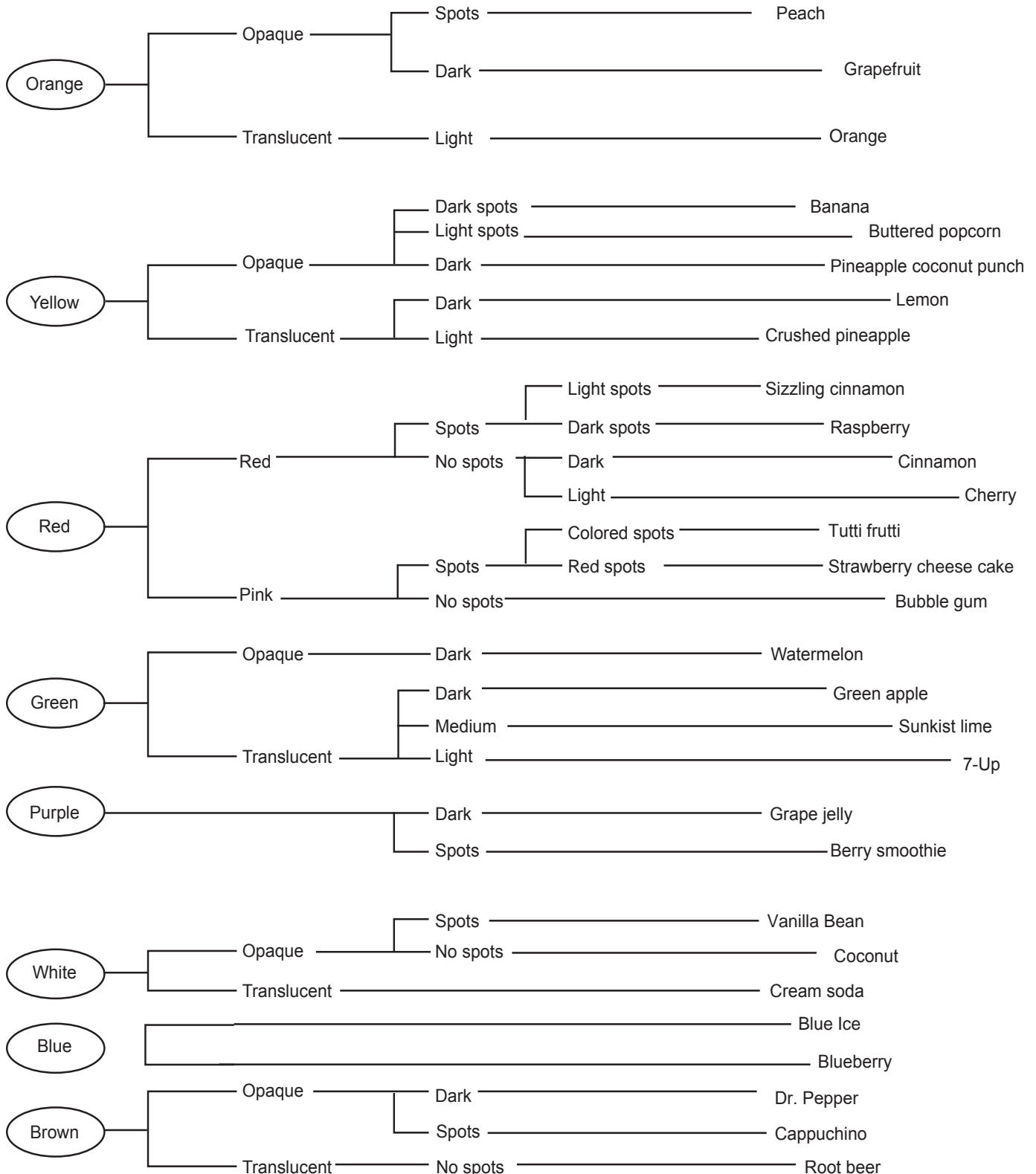
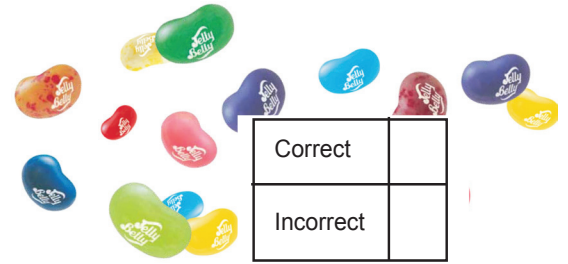
Extensions, adaptations and more resources:

Have the students:

- Develop a way to depict luster, color, texture, opacity, porosity, stratification and composition. Then draw a picture of a specific rock.
- Estimate the weight of several different rocks and check the answer with a balance or scale.
- Estimate the volume of a rock and have students explain their answer to the teacher.
- Organize 3 rocks into a still life and draw them with specific attention to at least 3 of their properties.
- Classify rocks into piles using properties such as luster, texture and composition.



Jelly Belly Geology Key



ROCK KEY

Name _____

