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LESSON PLAN

CLASSIFICATION OF MATERIALS GRADES K-2

SUMMARY

Students will sort and classify rocks using different properties. Duration: 45 minutes.



2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

| Science & Engineering Practices | Connections to Classroom Activity |
|---|---|
| <p>Analyzing and Interpreting Data</p> <p>Analyzing data in K-2 builds on prior experiences and progresses to collecting, recording and sharing observations.</p> | <ul style="list-style-type: none"> Students will make observations of rocks to classify them by specific properties. |
| Disciplinary Core Ideas | Connections to Classroom Activity |
| <p>PS1.A: Structure and Properties of Matter</p> <p>Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties. (2-PS1-1)</p> | <ul style="list-style-type: none"> Students will think of different observable properties that they can sort their rocks by. |
| Crosscutting Concepts | Connections to Classroom Activity |
| <p>Patterns</p> <p>Patterns in the natural and human designed world can be observed. (2-PS1-1)</p> | <ul style="list-style-type: none"> Properties of some rocks follow patterns. |



ENGAGE

Show students a rock and tell them it's part of your rock collection. Ask if any of them have ever collected rocks. Ask, "Where might you find rocks for a rock collection?" "What kinds of qualities make you want to pick up a rock?" They most likely will say things like, "It was shiny, the color, it sparkled" etc. Tell students that today they will be observing a variety of rocks and classifying them in different ways. (Please note, if you do not have access to rocks, you could use other items such as Lego pieces in a variety of shapes, colors, and sizes, or beads of different sizes, colors and shapes. The idea is to give them items that have multiple ways to sort.)

MATERIALS

Per Group of 4:

- Bag of assorted rocks
- 2 Hand lenses
- Science notebooks

DIY Activity

- A variety of random objects from the classroom or home.



EXPLORE

Give each group of 4 a bag of rocks. Instruct them to take a few minutes to observe the rocks carefully using a magnifying glass. Next, have students discuss with each other different ways that they could group or classify their pile of rocks. Once they have decided, have the students sort their rocks based on their chosen classification. They can record their classifications in their science notebooks or on a piece of paper. Next, they will put all the rocks back into one pile and figure out a different way to classify their rocks. Give student groups 10 minutes to work on this and record their classifications.



EXPLAIN

Have student groups share the different ways they chose to classify their rocks. Prompt with questions such as, "Which classifications were the most difficult?" "Did you all agree on where to place the rocks?"

Share that scientists often test rocks for specific properties such as hardness, shininess (luster), and smoothness. To test for hardness, scientists use a scratch test. Softer rocks are easier to scratch, while really hard rocks are difficult to scratch. To test for luster, a small flashlight can be used to see if there are reflective pieces in the rock.



ELABORATE



WATCH THE GENERATION GENIUS CLASSIFICATION OF MATERIALS VIDEO AS A GROUP

Facilitate a conversation using the Discussion Questions. You could also take your students on a "Property Walk" around the school. Focus on one property at a time and have students identify different things they see with different aspects of that property. For example, students could focus on texture and look for different types of texture.



EVALUATE

Students can play the online Kahoot! quiz game located below the video which provides downloadable scores at the end of the quiz game. Alternatively, you can use the paper quiz or the exit ticket questions. All these resources are located below the video in the Assessment section.



EXTENSION

For more advanced students, the discussion of properties can include properties such as boiling point and melting point. Different materials will melt at different temperatures such as an ice cube or a piece of butter. Likewise, different liquids will begin to boil at different temperatures such as water or when making candy from melted sugars.

