

Cool Collectibles and Super Sorts

Standard IV

Students will gain an understanding of Life Science through the study of changes in organisms over time and the nature of living things.

Objective 1

Tell how external features affect an animal's ability to survive in its environment.

Intended Learning Outcomes

Knowing in Science: Understanding the nature of science.

Content Connections: Math

Background Information

Rocks have many different properties. The properties of rocks will determine how rocks are used. Rocks can be sorted and classified according to their properties. Rock collecting is a popular hobby. Many people enjoy collecting rocks. People who collect rocks for fun are called "rock hounds."

Invitation to Learn

Ask students, "Does anyone have a collection?" "Why do you like to collect _____?" Read *Everybody Needs a Rock* by Byrd Baylor.

Instructional Procedures

1. Explain to students that they will start a classroom rock collection. Explain the general rules:
 - a. Rocks should not be purchased at a store.
 - b. Rocks should fit in one of the egg carton compartments.
 - c. Ask permission before taking a rock from private property.
 - d. Try to get rocks from different locations.
2. At this point you may want to decorate your "rock" cartons and put them in an area where they will be safe. When students bring in rocks, allow them to clean them, label them, and put them in their cartons.
3. When everyone has several rocks, it is time to play the super sort. Get in a giant circle. (You may want to do this in the gym.) Ask each student to take off one shoe and place it in the center of the circle. How many ways can the shoes be sorted? Sort them by color, by size, by design, by material, by how they

Connections

Materials

- Everybody Needs A Rock*
- Egg carton for each student (Ask students in advance to bring these in. Cardboard egg cartons work best if you want to paint them. Otherwise it doesn't matter.)
- Rock cleaning station with water, an old toothbrush, and a permanent marker to label rocks with student initials
- A space to keep the egg cartons
- Sorting cards
- Venn Diagram sheets (two circles)

are fastened, etc. Have the students move into groups depending on the shoe that they are wearing. (If you are doing this for a physical education activity, have them use different locomotor skills as they move from group to group, such as skipping, jumping, galloping, etc.) Next, ask what would happen if you decided to sort using two attributes? Hopefully the students will decide to use two intersecting circles—a Venn Diagram. Try a few of those examples such as, black shoes and Velcro®, or white laces and zigzag soles.

4. When the shoe sort is complete, go back to class and try the sort with rocks. Ask the students to brainstorm some attributes of the rocks. Write the attributes on the board or overhead (e.g., speckled, smooth, brown, rough, shiny, striped, black, white, etc.). Have some attribute sorting cards already prepared. Pass them out to the students by table. As a group, ask the students to sort their rocks into the Venn Diagrams. When the groups are finished, have students walk around the room and observe the different sorts. They may repeat this activity several times.

Possible Extensions/Adaptations/Integration

- Once students have completed the activity using a Venn Diagram have them sort their rocks using a bull's eye graph, where the rocks in the center of the bull's eye have all of the attributes of the outlying rings.
- Some students may be ready to try a three circle Venn Diagram. Ask them what happens if they choose attributes that are completely opposite of each other like smooth and rough. Would they be able to put any rocks in the intersecting area?
- For students with special needs you may want to include a picture on each of the attribute sorting cards. For example, if it says speckled, draw an illustration of a speckled rock. You may also want to create a word list to hang in the classroom, which would include the same pictures.
- Using the attribute sorting cards, sort the cards according to hardness, color, texture, layering, and particle size.

Assessment Suggestion

- Students could draw a Venn Diagram in their *Rock Journals*. Have them choose two attributes and draw what a sample rock sort might look like. Be sure to have them label the attributes of each of the circles.

Additional Resources

Everybody Needs a Rock, by Byrd Baylor; ISBN 0-689-71051-8

Grandmas's Button Box, by Linda Williams Aber;

ISBN 1-57565-110-6

If You Find a Rock, by Peggy Christian; ISBN 0-15-239339-0

Let's Go Rock Collecting, by Roma Gans; ISBN 0-06-445170-4

Rocks and Minerals Sticker Book, by Alan Woolley (E D C

Publications, Spotter's Guide Sticker Books Series);

ISBN 0-7460-2999-3

Family Connections

- If you don't have space to clean or store egg cartons, you may want to have the students collect, clean, and label their rocks at home with their family and then bring the completed collection to school in the egg carton.
- Students could bring in rock collections from home for show and tell. If they have a large rock or a precious rock they could display it in the classroom.
- When someone goes on vacation or on a business trip, ask families to bring rock samples to add to the class collection. Be sure to have them label where the rock was located and remind families not to collect rocks in national parks or protected places.

