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Activity 1

Investigation

Collecting rocks.

Rockhounds

Skills

Matching size and shape ✧ Comparing dimensions
✧ Thinking creatively

Materials

Bags; boxes of various sizes.

Setting Up

Provide a large paper bag for each child with their name on it.



Starting Out

Take the children on a rock-collecting excursion. Pick a location where the children can find lots of different kinds of rocks (and one where there are no restrictions on rock collecting). Have each child take along a large paper bag and take some boxes to be used later.

Before you start directing the children's explorations, let the children search for any kinds of rocks they find interesting or beautiful. Any they wish to keep can be placed in their bags.

Guiding Children's Actions

1. After the children have had an opportunity to freely explore the rocks in the area, have them search for rocks that are a particular size and shape. Give each of the children a box and challenge them to look for the largest rock they can find that will fit inside the box.
2. As they search, have them compare the best rock they have found so far with the ideal rock, the biggest one that will fit inside the box. They might say, for example, *This rock fits in the box, but it could be wider.* Or, *I'm looking for a rock that is a little bit smaller than this one.* You might ask questions like these:
 - Why doesn't that rock fit in the box?
 - Will it fit in the box if you turn it a different way?
 - Do you think you can find a better rock? How will it be different from the best rock you have found so far?
3. Bring all the rocks collected on the excursion back to the class for further examination. On the way back from the rock collection site, have the children look for ways rocks are used – in buildings, bridges, fireplaces, walls, statues, jewellery and so on. Record the ways as the children find them.

Stretching their Thinking

Show the children a rock and ask them to name all the different ways they can think of to use the rock. Help make this a creative brainstorming session by encouraging the children to suggest even the wildest ideas. Keep a list of the ideas as the children name them.

Activity 2

Pet Rocks

Investigation

Classifying rocks.

Skills

Classifying ✧ Describing categories ✧ Comparing shape, size, texture

Materials

Rock collection; aluminium pie plates; sorting mat and sorting mat labels, *Rough, Smooth, Rough and Smooth* (see page 78 for labels).

Setting Up

At a science centre, set out several pie plates, the sorting mat and labels, and the rocks the children collected in Activity 1. It is best to use ordinary rocks for this activity, not a collection of special rocks and minerals, and not polished rocks or gemstones.



Starting Out

Have the children come to the centre alone or in pairs and sort the rocks onto the plates. Tell them to put together the ones that are alike in some way. They can use any number of plates. The rocks can be sorted in various ways: by colour, size, shape, texture. They can be sorted into those that are hard and those that are soft, those that are shiny and those that are dull, those that have holes in them and those that do not, those that are transparent and those that are opaque. The possibilities are limitless.

When the children have sorted the rocks, ask them to explain how all the rocks in each pie plate are alike.

Guiding Children's Actions

1. When the children have had a chance to explore the rocks on their own for a while, begin to guide their actions. Present the sorting mat with the labels *Rough and Smooth*. Work with the children to sort the rocks in the collection. (If any of the rocks are both rough and smooth, you might add a third column labelled *Rough and Smooth*.)
2. When all the rocks have been sorted on the basis of texture, talk about the rocks on each side of the sorting mat. Ask questions like these:
 - What shapes are most of the smooth rocks?
 - How many are round?
 - How many of the smooth rocks are thin and flat?
 - Are any of the rough rocks round?
 - Are any of the rough rocks thin and flat?
3. Work with the children to sort the rocks according to other criteria such as those that sparkle and those that do not, or those that are shiny and those that are dull.
4. Have each of the children choose a smooth rock to use for creating a pet rock. The children can draw on the rocks with felt-tip pens to make them look like animals.

Stretching their Thinking

Place a smooth round rock in a pillowcase and hit it with a hammer. Show the children the broken parts and ask them how the inside differs from the outside. Round rocks that have been worn down by the eroding effects of wind or water are often rough inside.