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Activity 1

Water is Different

Investigation

Comparing water to sand and rice.

Skills

Describing likenesses and differences ◊ Using the sense of touch
◊ Creating experience charts ◊ Comparing weight

Materials

Plastic tubs; sand; water; rice; plastic funnels; measuring cups; measuring spoons; plastic bottles; paper towels; butcher's paper for experience chart.

Setting Up

Set up a pouring centre. The centre should have three tubs, one containing water, one containing rice and one containing sand. Separate the tubs so the children will not inadvertently combine the materials. Provide plastic funnels, measuring cups, measuring spoons, bottles, sieves and so on. Prepare an experience chart with the headings *Rice, Sand* and *Water*, as shown, and set aside.



Starting Out

Let the children freely explore the properties of the materials before you begin to guide their discoveries.

Guiding Children's Actions

1. Work with a small group of children and the three tubs of water, rice and sand. Have one child close their eyes while the others choose a tub for the child to touch. After the child puts a finger in the tub, ask them to identify the contents. Ask how they knew it was water, rice or sand.
2. After everyone has had a turn identifying the contents of a tub by touch, talk about how the three materials are alike and different.
3. Introduce the experience chart. Work together to fill in the chart with descriptive words about the three materials. Write the words children use to describe the materials beneath the labels. You can focus their observations using questions such as these:
 - How do water, rice and sand feel different?
 - What happens when you blow on water, rice and sand? Do they move differently?
 - What happens when you drop something into each of the tubs?
 - What happens when you stick a dry finger into rice, sand and water? Does water, rice or sand stick to your finger? (Provide paper towels so that the children can stick a dry finger into each tub.)
 - In which tubs can you see the bottom? Can you see through water, sand or rice?
 - How is the colour of water, sand and rice different?

Stretching their Thinking

Ask the children if they think a cup of water weighs more or less than a cup of sand. Use scales to find out.

Let the children explore on their own how the weight of water compares to other materials of their choosing. Can they find something that weighs as much as the water?

Activity 2

Waterflow

Investigation

Observing how water flows.

Skills

Predicting ◊ Observing reactions ◊ Drawing conclusions
◊ Testing hypotheses

Materials

Plastic tubs; water play equipment: plastic funnels, clear plastic tubing, bottles, margarine tubs, containers of various sizes and shapes; corks; watering can; sponges; food colouring.

Setting Up

Set up a science centre for water play. Set out the plastic tubs, the watering can filled with water coloured with food colouring and the water play equipment. Cover the table with a plastic cloth and provide sponges for clean up, as the children will undoubtedly experience spills during this activity.



Starting Out

Let the children explore the materials on their own for a while before you begin directing their discoveries.

Guiding Children's Actions

1. Give each child a piece of tubing stopped with a cork in one end. Pour a little coloured water through a funnel into the other end of the tubing, then put a cork on that end. Ask the children where the water will go.
2. Let the children explore the water flow while holding both ends of the tubing. Tell them to raise or lower one or the other end of the tubing and then see where the water goes. They should notice that the water always goes to the lowest part of the tubing.
3. Next, connect a piece of plastic tubing to a funnel on one end and to a large empty drink bottle on the other end. The top of the bottle should be above the funnel; the tubing should curve up and into the bottle.
4. Tell the children that you are going to pour a cupful of water into the funnel. Ask them where they think the water will go. Will it go into the bottle?
5. When everyone has had a chance to predict the results, pour a cupful of water into the funnel and observe with the children that the water does not reach the bottle. Ask them if there is anything they can do to get the water to go up into the bottle.
6. Have the children make a similar structure and experiment to find out. Some children may try to blow the water into the bottle. Others may try to pour more and more water into the funnel. A few may siphon the water into the bottle by sucking on the bottle end of the tubing and then putting the tube back into the bottle. Still others may discover that they can lift the funnel and the water will go into the bottle.
7. As the children make their discoveries, have them share their findings with the others in the group.

Stretching their Thinking

Make other kinds of constructions with the water play equipment and see if the children can predict where the water will go. One possibility is to build a tower with containers, some with holes poked in them and others without holes. See if the children can predict where the water will go if it is poured into the top container.