RUBBER VS. GLASS

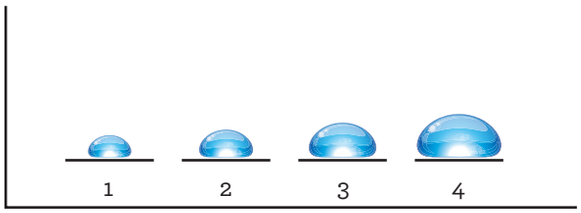
Observing the Property of Shape for Different Liquids

Do this activity with various liquids such as water, honey, cooking oil, and alcohol. Have a youngster compare the appearances of single drops of each on waxed paper. (From the side, drops approximate a hemisphere.) He or she can make profile charts of what is seen. Two drops of the same liquid can be pushed together with a pin or toothpick. It will be observed that each liquid tends to pull in its open surface so that the surface is as small as possible. Explain that this property of liquids is called surface tension.

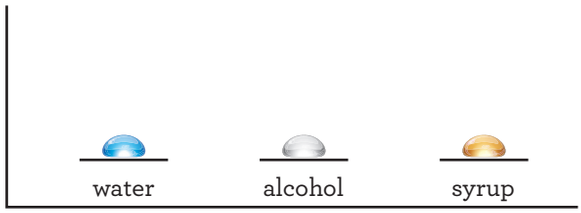
Now put water in a wide-mouth glass or similar container. Using a steady hand from a very low height, drop a paper clip or sewing needle onto the surface of the water. The object will seem to float on the surface (supported by the surface tension). If difficulty is encountered in floating the object, try placing a small piece of tissue paper on the surface of the water, then set the object on the paper. When the paper absorbs the water, it will sink, leaving the object "floating" on the surface tension.

Next, continue to fill a container to its brim with water. Use an eyedropper to add drops of water to the container. The youngster will find that the water can rise, drop by drop, until it is considerably higher than the rim of the cup. A sheet of dark paper behind the container will improve the observations. Discuss how the property of surface tension allows this to happen.

Profile Charts



Number of water drops



Kinds of liquid drops

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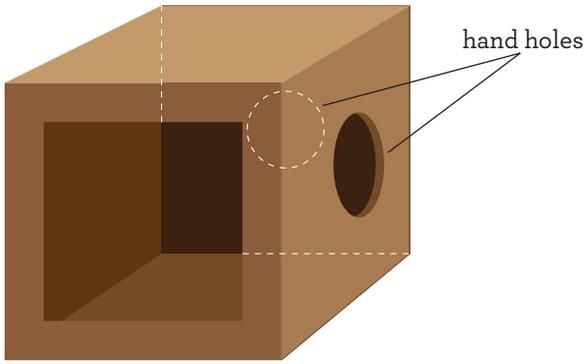

Feeling and Describing Some Properties of Some Objects

Tactile properties have a great range of learning possibilities. Items can be selected to emphasize such touch aspects as size, shape, or texture (e.g., roughness, stickiness, elasticity, softness, hardness, etc.).

For example, prepare six to eight identical-size squares of sandpaper, each of a different grade (e.g., roughness). Place the squares in a "Touch Box" like the one shown. The youngster can feel objects in the box with both hands, but cannot see them. Challenge the child to arrange the squares from roughest to smoothest or have two identical sets and have them put together in matching pairs. Ask the youngster how he or she carried out the task.

NOTE: All our senses can be used to identify properties of objects (use caution to test the sense of taste).

Identifying Solid Materials That Dissolve in Liquids

Some liquids have the ability to dissolve other materials; some materials dissolve in liquids and some do not.

Fill four identical containers with a half cup (100 ml) of water. Have a youngster put one level teaspoonful (one 5 ml spoonful) of different materials (e.g., sugar, salt, iron filings, dirt) into each container. NOTE: A level spoonful can be obtained by scraping off any excess with the edge of a ruler. Separate spoons should be used to stir each container. Stir thoroughly and observe the contents. (Some materials will "disappear" or dissolve, and some will remain visible.) Test other materials to see which dissolve and which do not. Compile a listing under such headings as the following:

Dissolves	Partially dissolves	Does not dissolve

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