Water – Clearly Unique!

Water is clear and colorless and has many interesting and useful characteristics. There are other liquids that are also clear and colorless but have properties very different from water. In this activity, you can use some quick and easy tests to see the difference between water and some other liquids that look very similar.

Materials:

- 3 clear plastic cups
- Masking tape
- Pen
- Water
- Isopropyl alcohol
- Mineral oil
- Straws or droppers
- Wax paper
- Brown coffee filter

NOTE: When using isopropyl alcohol, be sure to read and follow all safety warnings on the label. Be sure all participants are wearing properly fitting goggles.

Procedures:

1. Use the masking tape and pen to label your three cups water, alcohol, and oil.
2. Place about ½ teaspoon of each liquid in its labeled cup.

3. Using separate straws or droppers, place a drop of each liquid on a piece of wax paper. Do all the liquids look the same on the wax paper? Tilt the paper to let the drops move a little. What do you notice?
4. Tear open a brown coffee filter and lay it out flat. Again using separate straws or droppers, place a drop of each liquid on the coffee filter paper. Is there anything similar or different about how the liquids absorb into the paper?
5. Gently wave the coffee filter back and forth to try to make the liquids evaporate. Check to see if there are any differences in how fast the different liquids evaporate.

Think about this …

Here's another quick test to see any differences between the liquids. Gently and carefully place one drop of food coloring onto the surface of each liquid. Describe your observations for each cup and how they are similar or different from each other.

Where's the Chemistry?

Each liquid has certain characteristics based on the molecules it is made of. The wax paper and the coffee filter also have certain characteristics based on the molecules they are made of. The way the liquids act when placed on the wax paper and the coffee filter depends on how the molecules of the liquid and the surface interact.

The American Chemical Society develops materials for elementary school age children to spark their interest in science and teach developmentally appropriate chemistry concepts. The *Activities for Children* collection includes hands-on activities, articles, puzzles, and games on topics related to children's everyday experiences.

The collection can be used to supplement the science curriculum, celebrate National Chemistry Week, develop Chemists Celebrate Earth Day events, invite children to give science a try at a large event, or to explore just for fun at home.

Find more activities, articles, puzzles and games at www.acs.org/kids.

Safety Tips

This activity is intended for elementary school children under the direct supervision of an adult. The American Chemical Society cannot be responsible for any accidents or injuries that may result from conducting the activities without proper supervision, from not specifically following directions, or from ignoring the cautions contained in the text.

Always:

- Work with an adult.
- Read and follow all directions for the activity.
- Read all warning labels on all materials being used.
- Wear eye protection.
- Follow safety warnings or precautions, such as wearing gloves or tying back long hair.
- Use all materials carefully, following the directions given.
- Be sure to clean up and dispose of materials properly when you are finished with an activity.
- Wash your hands well after every activity.

Never eat or drink while conducting an experiment, and be careful to keep all of the materials used away from your mouth, nose, and eyes!

Never experiment on your own!

For more detailed information on safety go to www.acs.org/education and click on "Safety Guidelines".