

# Liquids – 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.

## What you'll need

- 3 clear plastic cups
- Masking tape
- Pen
- Water
- Mineral oil
- Corn syrup
- Straws or droppers
- Zip-closing plastic bag
- Stiff paper (Cardboard or other stiff paper)



## Be safe

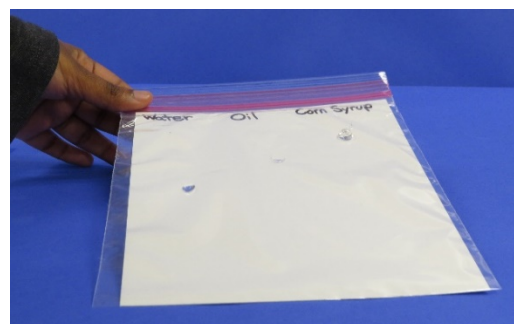
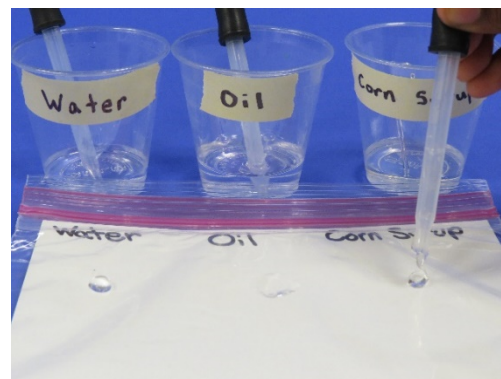
Food coloring will stain skin and clothes. Always work with an adult to supervise and guide you. You and your adult partner should both wear properly fitting safety goggles. Do not taste or eat any food items you are testing.

## Here's what to do

1. Use masking tape and pen to label three cups Water, Oil, and Corn syrup.
2. Place about  $\frac{1}{2}$  teaspoon of each liquid in its labeled cup.
3. On a stiff piece of paper, label three areas Water, Oil, and Corn syrup. Place the card in a zip-closing plastic bag and seal the bag.
4. Using separate straws or droppers, place a drop of each liquid on the plastic in its labeled area.

Do all the liquids look the same on the plastic?

5. Tilt the plastic bag to let the drops move down the plastic. What do you notice?



## **What to expect**

When the liquids are first put on the plastic, the water is most like a ball. The oil is much flatter. The syrup is similar to the water but a bit flatter.

When the plastic is tilted, the water runs down very quickly and leaves no trace. The oil runs down slowly but leaves a long streak. The corn syrup barely moves at all.

## **What's happening in there?**

Each liquid has certain characteristics based on the molecules it is made of. The plastic also has certain characteristics based on the molecules it is made of. The way the liquids act when placed on the plastic depends on how the molecules of the liquid and the surface interact.

## What else could you try?

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Here's another quick test to see any differences between the liquids.

### What you'll need

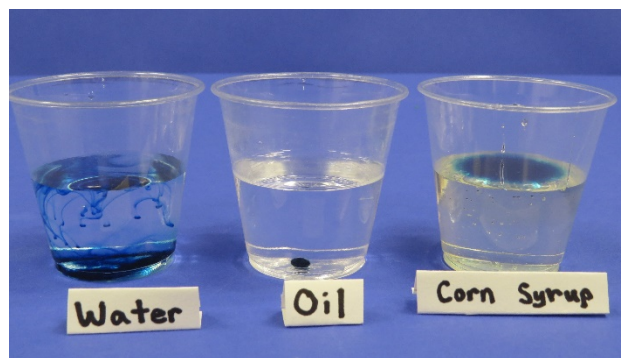
- Cups labeled Water, Oil, and Corn syrup
- Water
- Oil
- Corn syrup
- Food coloring (one color)

### Be Safe

Be sure to review the safety instructions on page 1 before proceeding.

### Here's what to do

1. Add more water, oil, and corn syrup to their labeled cups until they are about 1/2-full.
2. Hold the food coloring container close to the surface of the water and carefully add one drop of food coloring to the water.
3. Repeat step 2 to add one drop of food coloring to the oil and the corn syrup.



What did you notice about the way the food coloring acted in each liquid?

### What to expect

In the water, the food coloring sinks and spreads out.

In the oil, the food coloring sinks to the bottom but stays together.

In the corn syrup, the food coloring stays on top and spreads out.

### What's happening in there?

Just as in the plastic bag activity, each liquid has certain characteristics based on the molecules it is made of. The food coloring also has certain characteristics based on the molecules it is made of. The way the food coloring acts when placed in the different liquids depends on how the molecules of the food coloring and the molecules of each liquid interact.