Color Splash

What You Need

- 3 clear plastic cups
- water
- cooking oil
- liquid food coloring
- pencil

Science Scoop

When you add food coloring to **water**, it **mixes** in. When you add food coloring to **oil**, it stays in a little ball and **does not mix** in. Why? Food coloring is mostly made of water, and **water and oil don't mix**. Even after you **stir** them, the oil separates and forms a layer on **top** of the water. So when you add food coloring to the cup that has water and oil, each drop is **coated** with oil. That is why the drops **sit in the oil layer**. The oil is like a raft that helps the food coloring float. If you **poke** a drop with a pencil, the oil layer is **broken**. Then the food coloring **mixes** with the water and makes a cool design.

1 **Fill** one cup about $\frac{2}{3}$ full of **water** and another cup about $\frac{2}{3}$ full of **oil**.

2 **Add** a few drops of food coloring to each cup. **Leave space** between the drops so they don't touch. **What happens?**

3 Now **fill** the third cup about $\frac{2}{3}$ full of **water**. **Pour** in enough cooking oil so it forms a **thin layer** on top of the water.

4 What do **you think** will happen if you add **food coloring** to this last cup? Make a **prediction** and then **test it**.

5 **Touch** one of the drops of food coloring in the last cup with the tip of a pencil. **What happens?**

ZOOMon

Now it's time for you to experiment. What happens if you use **vinegar** instead of food coloring? What happens if you use a **different kind of cooking oil**? Choose **one thing** to change (that's the variable), and **predict** what you think will happen. Then **test it** and **send** your results to ZOOM at **pbskids.org/zoom/sci**

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