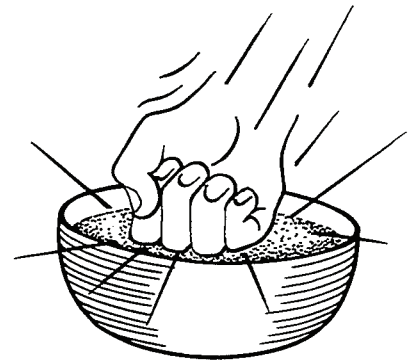


# OOEY GOOEY CHEMISTRY

CREATE A SUSPENSION AND TEST IT TO SEE IF IT IS A SOLID, LIQUID OR BOTH!

## You'll Need:

- ★ cornstarch
- ★ water
- ★ bowl
- ★ paper and pencil
- ★ Popsicle sticks
- ★ measuring cups
- ★ optional: newspaper, food coloring, testing items (penny, paper clip)



## Duration:

30 minutes

## Good to Know:

There are four states of matter: solid, liquid, gas and plasma. In this experiment, we focus on solids and liquids. Some properties of solids are that they maintain their shape, do not compress, and break instead of flow. Liquids take the shape of their container, do not compress, and flow instead of break. But sometimes in nature things are not so easily defined.

A suspension occurs when two substances are mixed together and the molecules of one are suspended in the other (such as fog or smoke). The recipe here (sometimes called "oobleck") is a suspension of a solid (cornstarch) in a liquid (water). Oobleck flows like a liquid when moved slowly, but feels like a solid when pressed hard because the water molecules are driven out of the way as the cornstarch particles get squished together.

## Here's How:

1. Have your girls brainstorm a list of solids from your kitchen and then do the same for liquids. What makes something a solid? A liquid? Can you think of anything that is a little bit of both (e.g., gelatin, whipped cream, yogurt, etc.)?
2. Explain that you are going to make an example of one of these "weird" types of matter, called a suspension. Challenge your girls to figure out if it is a solid, liquid or both!
3. Cover a table with newspaper (recommended). In a bowl add:  $\frac{1}{2}$  cup of cornstarch,  $\frac{1}{4}$  cup warm tap water, and a few drops of food coloring (optional). Mix until smooth with a Popsicle stick. (It should feel like a solid when you tap it, but ooze out of your fingers when lifted out of the container. Experiment with more water or cornstarch to reach the desired consistency.)



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4. Have your girls conduct several tests. Record your observations about the properties exhibited by the oobleck along with whether you think it is behaving as a solid or a liquid. Some suggestions:
  - ☉ Pour some oobleck in your hand. What happens?
  - ⊗ Can you pick a piece up? Can you break it in two? Try pulling it apart quickly and slowly and compare.
  - ⊗ Can you roll it into a ball? What happens when you stop moving the ball?
  - ⊗ What happens when you poke it? Does your finger go in easier when you poke it soft or hard?
  - ⊗ Conduct a "sink or swim" test on the oobleck. Observe what happens when different objects are placed on it, such as a paper clip or a penny.
5. What if a planet were discovered whose oceans were made of oobleck instead of water? Encourage your girls to write a story based on who they think might inhabit such a planet and what mode of transportation they would use to move through an ocean of oobleck.

