

Description

Oobleck is a unique fluid that is not like normal liquids. It has properties of both liquids and solids. Let's learn how to make this crazy goo at home.

Materials

- Water
- Corn starch
- Large container
- Towels
- Optional materials
 - o Spoon
 - Slotted spoon
 - Colande
 - Food color

Concepts Explored

- States of Matter
- Non-Newtonian Fluid
- Viscosity

What to Do

- 1. Find a container that is large enough to allows for lots of exploration space but any size will work.
- Slowly combine 1 part water with 2 parts cornstarch: this means for every ¹/₂ cup of water add 1 cup of cornstarch. Mix well as you add the ingredients together to prevent clumps.
- 3. The finished consistency should coat your hand but still drip off, similar to honey. If you want, now is a great time to add in a few drops of food or water color.
- 4. After you have made your oobleck, take some time to explore this non-Newtonian fluid! Try holding some in your hand. What happens? Try scooping some up with a regular spoon. What happens? Try putting some in a colander and hold it above the bowl. What do you notice? What other kind of toys and tools can you use to play with this non-Newtonian fluid?









Oobleck

Troubleshooting Tips

- Oobleck can clog pipes so use caution when cleaning up. Rinse your hands in a bucket of water before washing hands in the sink. Do not dispose of oobleck in a sink. Discard in a trash bag. Allow oobleck to dry on surfaces and then sweep up the corn starch powder.
- You can use a plastic tablecloth or trash bag to protect surfaces if you do this activity inside.

What happens to the oobleck if you add ice? What happens if you freeze your oobleck?

What happens if you add more corn starch to the water?



Does the temperature of the water change the oobleck?

What is Happening?

- A **non-Newtonian fluid** does not maintain constant viscosity at any given temperature. **Viscosity** is a measure of how much a fluid resists flowing or moving. Non-Newtonian fluids are fluids that changes how easily it flows when under a force such as squeezing.
- While playing with oobleck the viscosity increases when you agitate the fluid or apply pressure. For example, when you apply sudden force like dropping something on it, the oobleck will react like a **solid** and resist moving. This is because the starch grains are rubbing against each other and are locked into position.
- When you hold the fluid in a relaxed fist the starch grains are able to relax and will flow more like a **liquid**.

Taking it Forward

- Connecting this activity to the real world:
 - Look for other non-Newtonian liquids at your home. Can you find something in your home that either pours fast or really slow? Check out ketchup and shampoo.
- If you like this activity, you'll also like...
 - o <u>Marble Painting</u>
 - <u>Fireworks in a Jar</u>



