

# Stay at Home Science



## Oobleck

### What You Need

Cornstarch  
Water  
Container (Throw away container is easiest for clean-up)  
Paper towels  
Food coloring (optional)  
Spoon (Optional)

### What You Do

1. Create the Oobleck by mixing two cups of cornstarch with one cup of water. Add a bit more of either ingredient to get it to the point that you can pick it up, but it is still runny. Add food coloring, if desired.
2. Play with it! Try to pick it up in your hand, squeeze it, push it, draw in it with your finger, and more. Try hitting it with a spoon to see what happens then.

### Questions to ask

- Does it feel more like a liquid or a solid? Why?
- What observations can you make about Oobleck?
- What actions make it act more like a solid?

### What's The Science?

Oobleck is a Non-Newtonian fluid, which means that it changes its viscosity (or ease of pouring) not based on temperature (like water) but based on shear stress caused by stirring, squeezing, and adding pressure. The most generally accepted explanation for the behavior of Oobleck is offered by Cary Sneider in "Oobleck: What do Scientists Say?". When sitting still, the granules of starch are surrounded by water. The surface tension of the water keeps it from entirely flowing out of the spaces between the granules. This cushion of water provides quite a bit of lubrication and allows the starch to move freely. But, if the movement is abrupt, the water is squeezed out from between the starch particles, and the friction between them increases rather dramatically.

### Try This

**Use science vocabulary:** Use related science words such as texture, fluid, solid, liquid, pressure, and observations. Children learn new vocabulary words when they hear grown-ups use them in context.

**For older children:** Challenge them to find other Non-Newtonian fluids in your home. (Examples include ketchup, jelly, silly putty, mayonnaise, and slime.)

### Keep In Mind

- Do NOT dispose of Oobleck down your sink. Throw it away in a trash can.
- Children are natural scientists; let them lead the way in their experimentation! Encourage them to ask questions and make suggestions only when they are stuck/discouraged.
- The order suggested is not the only right or perfect way. Make adjustments based on the age, ability, and interests of the children.

### Additional Resources

*Bartholomew and the Oobleck* by Dr. Seuss

*Change It!: Solids, Liquids, Gases and You* by Adrienne Mason

