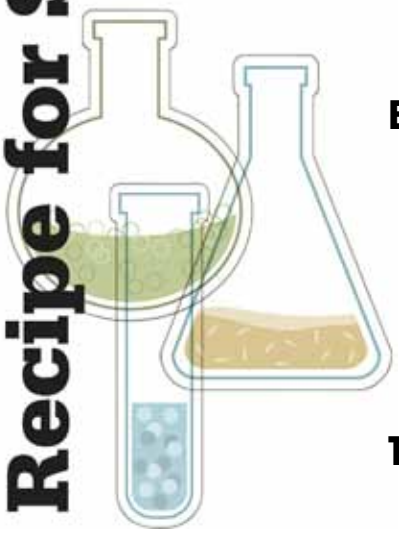
Recipe for Science



Oobleck

Ingredients:

1 cup of cornstarch
about 1 cup of water
2 drops of food coloring (optional)

Procedure:

Put the cornstarch in a bowl and add the water a little bit at a time, until it is about the consistency of cake batter. Add food coloring if you wish.

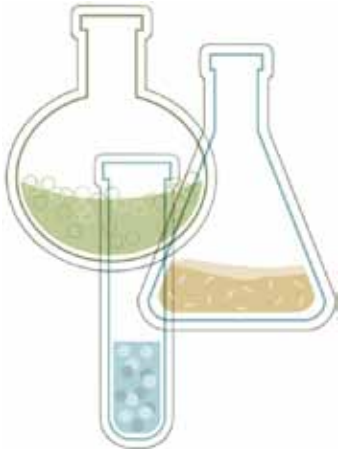
Experiment:

What happens if you . . .

1. roll it into a ball?
2. bounce it?
3. slowly poke it with your finger?
4. quickly poke it with your finger?
5. put it into a cup?
6. pour it out of the cup?

Try some experiments of your own!

What do you think? Is it a solid or a liquid?



What is it?

This stuff is what scientists call a non-Newtonian fluid. Starch particles are very small. In cold water, they organize themselves with water molecules into a structure that is quite firm when it is under sudden pressure, but flows as a liquid when it is relaxed. This is a suspension, the particles are too small to settle or float out, and too big to go into solution. Many suspensions, like smoke, ketchup, or milk, are identified by their opacity, light doesn't travel well through the material.

A person familiar with corn starch knows that if we put it in hot water, something else happens altogether. Heat breaks down the large starch molecule and it goes into solution, so the mixture becomes clear.

Another non-Newtonian fluid but with the opposite characteristics is house paint. We want it to load a brush and go onto the wall like a liquid, but once it is on the wall we would like it to stay there like a solid until it dries.

BRADBURY SCIENCE museum
LOS ALAMOS NATIONAL LABORATORY