

Oobleck... ooooo what??

Solid or Liquid is normally the question, but why can't there be both? Well, sometimes there is both. This is considered a **Non-Newtonian fluid**. Sir Isaac Newton is known for developing many scientific theories in math and physics and describes how normal fluids are meant to behave. He observed that they have a constant **viscosity** or flow, meaning that their flow behavior (viscosity) only changes with changes in temperature or pressure. This is why water is a solid when it freezes into ice at 32F but changes into a gas when it heats up to 212F. If the water stays at a certain temperature then it behaves as a normal liquid with constant viscosity. However, non-newtonian fluids will change this viscosity behavior under stress rather than with temperature or pressure. If it is still it will express one state vs when it is shaken or hit, under stress it will be another state. That is what oobleck is, a non-newtonian fluid where the viscosity increases with increased stress. It will be runny until stress is applied and suddenly it is a solid again. You can poke it or make it into a ball and if you have enough, can even walk on it but it is a liquid if it's left alone.

Ingredients

- 1.5-2 cups Cornstarch
- 1 cup Water
- Mixing bowl and spoon
- Food coloring (optional)

Instructions

1. Start with the cornstarch in a bowl and slowly start adding the water to it.
2. As you are adding the water, (if you are using food coloring, add it to the water first) stir the mixture slowly until all the water and cornstarch are combined. The goal is to get a consistency where the Oobleck reaches a state that is the liquid and yet solid.
3. You may want to add more cornstarch if it is too runny and doesn't seem to be forming the solid portion. If you add too much you can add more water until you find a better consistency.
4. Now play around with your Oobleck! Figure out how it moves. Grab and hadful and then watch it go back through your fingers, poke it quick then slowly.
5. For clean up, throw the mixture in the garbage as the liquid will clog the sink. You can also save your Oobleck in a plastic bag to play with later.

[Let's make oobleck- SciShow Kids Youtube](#)

Once you have completed this activity. Let us know what you think in the [Post Activity Evaluation form](#).

Sources: <https://www.instructables.com/id/Oobleck/>
<https://www.sciencelearn.org.nz/resources/1502-non-newtonian-fluids>