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Oobleck

Ooey-gooey and so much fun to play with, oobleck is a favorite of every kid. Read on to understand the science behind oobleck, as well as how to make it!

The science behind oobleck:

- A Newtonian fluid has a constant viscosity, no matter the force – called “shear stress” – applied to it. Common examples of Newtonian fluids include water, alcohol, and gasoline. So, you can shake a jar of water vigorously and it will not become thicker or thinner.
- Oobleck is what’s called a non-Newtonian fluid. Non-Newtonian fluids change their viscosity – or their ability to flow – when an external force is applied to them. Quicksand is another familiar non-Newtonian fluid.
- Oobleck works because the grains of cornstarch (or sand, in the case of quicksand) don’t dissolve in water. When a strong force is applied, the grains start rubbing against each other and get locked in place. When there’s no force, or weak forces, however, the water surrounding the grains acts like a lubricant, allowing the fluid to flow.

How to make oobleck:

- Combine one part water with one to two parts cornstarch. The easiest way to mix it is with your hands, but a spoon works too. If it doesn’t flow when left alone, it’s too dry: add more water. If it doesn’t seize up when punched or flicked, it’s too wet: add more cornstarch. The reason the recipe can fluctuate is due to differences in humidity, food coloring amount, or water temperature that can all affect the mixture.
- Try adding food coloring or natural dyes (like from berries) if desired.

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Clean up:

- Oobleck should come off most clothes with water, but it's difficult to get out of some surfaces like decking or sidewalks, so it's best to put some newspaper down before diving in.
- The best way to dispose of oobleck is to throw it in the trash. Putting it down the sink can cause a blockage.