

# OOZING OOBLECK AT HOME

**Make a non-Newtonian fluid that can change from a liquid to a solid instantly**

## What you'll need:

- Large bowl
- Mixing spoon
- 2 cup of cornstarch
- 1 to 2 cups of water
- Spooky food colouring: green, orange or red
- Items to play with your Oobleck: plastic spiders, metal cars, little figures, draw eye balls on ping pong balls, or choose kitchen tools you'd like to use to poke, prod, sift or drip your Oobleck

## Activity setup:

1. Make Oobleck that is ghostly green, pumpkin orange or bloody red. Add a few drops of red food colouring and mix it with the water before you begin.
2. Pour cornstarch into an empty bowl.
3. Slowly add 1 cup of water to the cornstarch while stirring constantly. You might not need all the water. Add just enough so that the mixture is thick, and the cornstarch is well mixed.
4. Test out your Oobleck. To make your Oobleck the right consistency, you have to play and experiment with it! Tap on the mixture with your hand. Is it solid when you hit it? If your mixture is too runny, add a little bit more cornstarch. If it is too thick, add a little bit more water.

## How to play:

- Put your fingers in the Oobleck. Move very slowly in a large circle, then quickly in small circles. How does it feel?
- Place plastic spiders or ping pong eyeballs on top of the Oobleck, or lay a spoon on the surface. What happens?
- Moving as quickly as possible, place a big spoonful of Oobleck into your hand, making sure to catch one of the spooky items you put in the Oobleck. Roll the Oobleck into a ball and squeeze it tightly. Now open your hand and watch the Oobleck ooze between your fingers, revealing a spooky surprise.
- If you have a family member or friend nearby, make another ball of Oobleck and transfer it into their hand. Trick them with a spooky surprise inside!



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## Clean-up:

- When you are finished playing with your Oobleck, you can store it for a day or two by covering the bowl. The next time you want to use it, you may need to add a bit more water to reach the correct consistency.
- IMPORTANT: Dispose of your mixture by putting it in the garbage, NEVER down the sink, as it will clog your pipes.

## How does it work?

You've just made Oobleck, a non-Newtonian fluid. Most liquids are Newtonian fluids, staying either runny or thick at all times and changing from runny to thick only if the temperature changes. Non-Newtonian fluids can switch between acting runny and thick depending on how much force you use—just like your Oobleck.

Oobleck is made from cornstarch and water. Cornstarch has long molecules (or chains) of starch. When you add water, the long molecules dissolve in the water next to each other. If you move a spoon very slowly through the mixture, the fluid is runny and allows the long molecules to move aside and flow past each other. If you move a spoon quickly, the long molecules tangle up, the liquid becomes thicker, and movement stops.

## Did you know?

This material gets its funny name from the Dr. Seuss book *Bartholomew and the Oobleck*. In the book, Oobleck is a mystery substance that falls from the sky.

