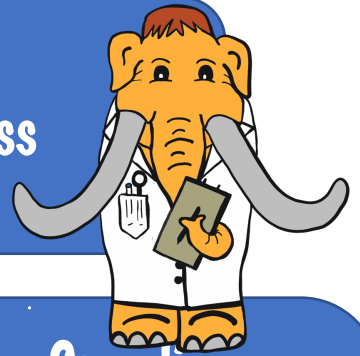


# Science Saturday @ Home

## *Bartholomew and the Oobleck* by Dr. Seuss

### Non-Newtonian Fluid - Oobleck



## Gathering Supplies:

Corn Starch  
Water  
Green Food Coloring  
Measuring Cups  
Spoon  
Shallow Bowl or Cake Pan

In Dr. Seuss' book *Bartholomew and the Oobleck*, Bartholomew makes a new substance for a bored king, but the new Oobleck isn't what people expect. Make some of your own Oobleck and explore a non-Newtonian fluid that doesn't always act like a fluid.



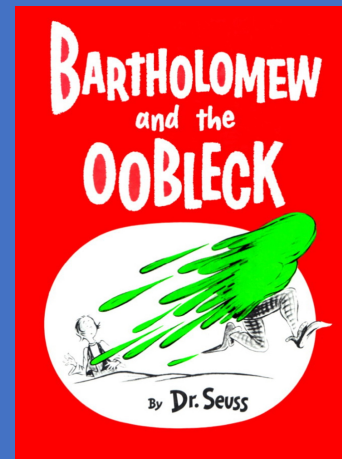
## How To Steps:

1. Measure and pour 1 cup of corn starch into a shallow bowl.
2. Take 1/2 cup water and mix in a few drops of green food coloring.
3. Pour in about 1/2 of the water into the corn starch and stir with a spoon.
4. Not afraid to get messy? Just start using your hands as you add more water until you have a good consistence. Too wet? Add more corn starch. Too stiff? Add more water. The Oobleck will thicken as is sits too.
5. Trying taking a small amount and roll it into a ball in your hands. What happens to the Oobleck when you stop rolling? How does the Oobleck feel when you rest your hand in the bowl? What happens if you slap your hand down?
6. This does get messy! Also remember that when you are done you should throw your Oobleck away in the trash and NOT down your sink. It is bad for the pipes!

# Max and the Oobleck



Bartholomew and the Oobleck  
Written and Illustrated by Dr. Seuss  
Originally published by Random House Books in 1949.



## Did You Know?

What can act like a liquid and a solid, but not be a solid or a liquid? A non-Newtonian fluid! A mix of cornstarch and water combine to make a non-Newtonian fluid, meaning the fluid acts differently depending on how much energy is applied to it. If you press gently, the molecules of water and cornstarch can flow around each other, and the mix acts like a liquid. However, if you press harder (like rolling it between your palms), the molecules can't flow fast enough, and they lock up, making the mix act like a solid. As soon as you stop pressing, though, the molecules unlock and flow like a liquid again. Non-Newtonian fluids do not act the way other fluids act. What other type of non-Newtonian fluids can you think of? How about ketchup?

Fluids that get thicker when you press on them are called isotropic fluids. Another example of an isotropic fluid is quicksand – which is why you get stuck if you struggle, but can escape if you move calmly. Scientists call the thickness of a fluid its viscosity.