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Name: _____

Oobleck at Home! - An Introduction

This activity was created by Alora.

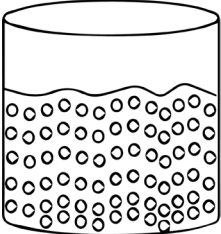
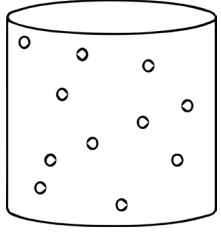
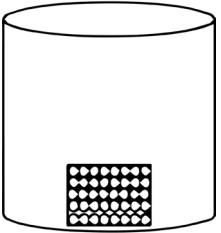
Oobleck is a fun (and messy) activity you can do at home with just two ingredients and a bowl! It is also a very special substance because of the way it behaves when you interact with it. Oobleck is something called a **non-Newtonian fluid**. This means that it doesn't follow typical properties of everyday solid, liquid, and gas.

For example, we can compare it to water: when we pour water, it is a very easy and smooth task to do, as well as running our hand through a bucket of water. No matter how fast or slow we move our hands through water, it behaves the same way, like any other typical liquid. We can also compare it to a solid: we can't pour a solid because it keeps its shape. A solid does not take the shape of the container it's poured into unless it's something granular like sugar or salt. A solid also has a definite size and shape. Oobleck is an interesting substance because it can act as both a solid or a liquid depending on how you handle it and this is because of its unique viscosity.

Viscosity is a word used to describe the rate at which a substance flows. A low rate of viscosity means that a fluid will flow very quickly, which can include things like water. A high rate of viscosity means that a fluid will flow slowly, or is super difficult to pass through, which would be something like honey. Either way, a fluid should flow at a consistent rate unless it is a non-Newtonian substance.

Once you create your own oobleck at home, you will see that it flows at a different rate depending on the pressure applied to it.

In the image below, match the state of matter in the middle with its molecular representation on the left and its properties on the right by drawing lines.

	Gas	Has a definite volume, takes the shape of its container.
	Solid	Has a definite volume and maintains its shape.
	Liquid	Has no definite shape or volume on its own, takes shape and volume of container.

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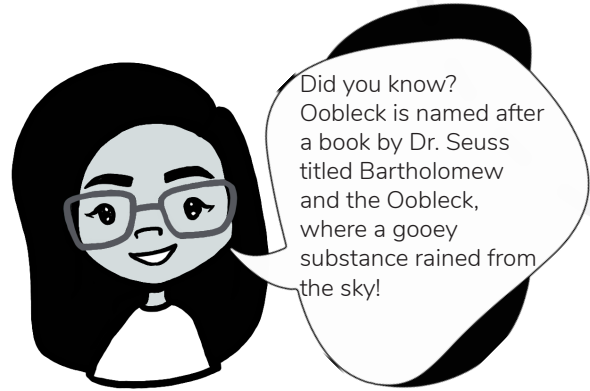
Oobleck at Home! - Let's Make It!

Ingredients

- 1 1/2 - 2 cups cornstarch
- 1 cup water
- Optional: Food colouring

Materials

- Large bowl
- Spoon



Did you know? Oobleck is named after a book by Dr. Seuss titled *Bartholomew and the Oobleck*, where a gooey substance rained from the sky!

What happens when you run your fingers slowly through the oobleck? Is it more similar to a liquid or a solid?

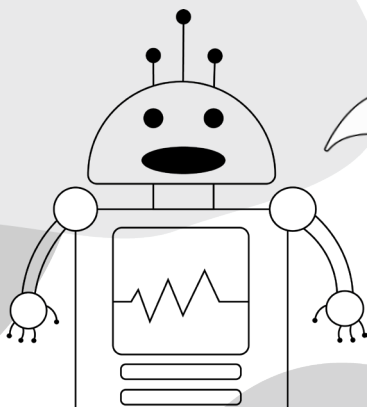
Instructions

1. Find a space where you can get a little messy!
2. Take your cornstarch and water to combine in the large bowl, mix with the spoon.
3. Add food colouring if desired.
4. You should be done mixing once it becomes quite difficult to mix, similar to mixing honey.
5. Once the consistency feels right, jump in with your hands! Play around with the oobleck and answer the questions listed to the right when you're all cleaned up.

What happens when you take some oobleck in your hand and squeeze it? What about when you let go? When does it feel more liquid? When does it feel more solid?

Be sure someone is holding the bowl for this next question! Try punching the oobleck! Does it feel like punching a liquid or like punching a solid?

Anything else super cool you noticed?



Coding challenge: Follow the instructions again, but pretend you're a robot following an **algorithm!** Are the instructions clear enough that you know exactly what to do? Machines need instructions to be super detailed to know exactly what humans want them to do! How would you rewrite the instructions to make it clearer?