HALLOWEEN OOBLECK

1. Add some cornstarch to a bowl
2. Add a little bit of water – only a tablespoon or two at a time
3. Stir with a spoon (or use your hands). Experience how the mixture behaves with just a little bit of water.
4. Slowly add more water until you get a nice goopy texture. When you move through the mixture slowly, it will feel like slimy liquid. If you just tap hard on the mixture, it will act like a solid.
5. Add food coloring when ever you want. You'll probably have dyed hands, but it will eventually wear off!

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The Science Behind It

Oobleck is a non-Newtonian fluid. It doesn't behave like a "normal" liquid. It has properties of both a solid and a liquid depending on the amount of stress applied. When stress is applied, the cornstarch and water mixture acts like a solid. When constant stress is not applied, the mixture acts like a liquid.

Other examples of non-Newtonian fluids like the cornstarch and water mixture are mud and wet sand. It is easier to travel across mud or wet sand when you run. You will stay on top. If you walk slowly, you will sink!

Ketchup and toothpaste are also non-Newtonian fluids except they behave in the exact opposite way of oobleck. When stress is applied they are thinner (rather than thicker like oobleck).

Questions for Learning

- What happens when you add water to the cornstarch?
- What happens if you add too much water?
- Describe the texture of the mixture.
- What makes the oobleck act like a solid?
- When does it act like a liquid?
- What do you think would happen if we let the oobleck sit for a while? {It will eventually dry out and turn back into powdery – all be it colored – cornstarch. Try it!}