



# Inquiring Minds Want to Know

## Science Activities for Young Minds

## Oobleck

### WHAT YOU'LL NEED

- Cornstarch
- Water
- 2 big bowls or containers
- A place you can get messy
- Food coloring (optional)
- Rimmed baking sheet (optional)
- Sound system with a subwoofer speaker (optional)
- "Bartholomew and the Oobleck" by Dr. Seuss (optional)

### WHAT TO DO

**Remember:** The purpose is NOT to teach a specific topic but to help children experience the excitement of **science exploration!**

### GETTING READY

(Optional) Oobleck gets its name from the Dr. Seuss book, "Bartholomew and the Oobleck." You could read the book to introduce the name of the substance you will be working with.

Add food coloring to the water to make colored oobleck (optional).

**WARNING!** This is messy! Washing oobleck down the drain might clog your pipes. This is safe to do outside on a nice day and then hose off afterward. Corn starch is biodegradable and can be left on the ground. Food coloring has the potential to stain clothes.

### LET'S GO

1. Have the children **observe** the texture of the cornstarch before you add the water. Have the children measure and mix about 3 cups cornstarch with 1 1/2 cups water. The amount of water may vary. (You may try mixing with a spoon, but hands work best.) The recipe can easily be doubled or tripled. More oobleck allows for more experimentation.
2. Children will naturally experiment with the oobleck without any prompting. Let the children play! Here are some things to try with the oobleck:
  - ▶ *What do you **predict** will happen if you punch the oobleck? Punch it! What do you **observe**? Does your fist go in? Why or why not? Make sure you have a thick bowl of oobleck, so they don't accidentally punch through to the bowl.*
  - ▶ *What do you **predict** will happen if you pour it slowly from one bowl to another? Pour it slowly from one bowl to another. How can it pour when it seems solid? Does the speed at which you pour make a difference?*
  - ▶ *What do you **predict** will happen if you poke it with your finger fast? Slow? Try poking it with your finger. Try pushing your finger in quickly or slowly slicing it. Does it make a difference?*
  - ▶ *What do you **predict** will happen if you squeeze a fistful of oobleck? Take a fistful of the oobleck and hold it as tight as you*



can in your hand. *What do you **observe** when you are squeezing it tightly? What do you **observe** when you aren't squeezing it tightly?*

- ▶ *What do you **predict** will happen if you place the oobleck above a speaker? Put some in a rimmed cookie sheet on a subwoofer speaker on its side. Turn on the speaker and watch the oobleck “dance”. You can add food coloring while doing this for an artistic effect. **What makes the oobleck dance?***
- ▶ *Take action figures or dolls with hard feet and have the kids “jump” the figures across the bowl quickly and forcefully. Then set the action figures on top. This can be fun to act out. “Oh no! I am sinking in quicksand!”*

## TALK IT OVER

*Is oobleck a solid or a liquid? Why do you think that?*

*If you change the amounts of cornstarch and water, what might happen?*

*Are there any examples of this happening in nature?*

*What do you think would happen if you tried to freeze it? Or boil it?*

*Do you think you could swim in it?*

*What would happen if you just let it sit out in the air*

*Are there other experiments that you could conduct?*

## THE SCIENCE BEHIND IT

One of the earliest science principles that young children learn is the states of matter. Learning to identify something as a solid, a liquid or a gas can start children on the process of observing physical properties. You can start this exercise by asking the students about the differences between a solid, a liquid and a gas.

Oobleck is a mixture of a solid (corn starch) suspended in a liquid (water). Oobleck behaves like a solid when force is acted on it quickly. This is because the pressure forces all the particles of corn starch together and they behave like a solid. When you move through it slowly, the particles of corn starch have time to move away and slip around the object. It can be helpful to explain it to children like sand at the beach. If you punch the sand, it doesn't move, but you can wiggle a finger into the sand fairly easily.

If you are really ambitious and have a lot of cornstarch, you can mix the material in a kiddie pool and try “walking on water”. (A video of this experiment being done at Michigan Technological University is at [http://www.youtube.com/watch?v=j\\_ECCLQ7BPo](http://www.youtube.com/watch?v=j_ECCLQ7BPo).)

## RESOURCES

If you are interested in other resources or ideas, contact your local university Extension office – <http://msue.anr.msu.edu/county>.

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