

# Shapeshifting Slimes

We often think of the states of matter as solid, liquid and gas. But there are many exotic states of matter studied at the National MagLab, like quantum spin liquids and Bose-Einstein condensates. Scientists are even using high magnetic fields at the MagLab to discover new states!

But you can explore a material that behave strangely without even leaving your kitchen, SLIME. Is it a liquid? Or a solid? It's both! Use the recipes below to make your own oobleck or butter slime using ingredients you probably have at home. It's fun to play with, and you can get messy while learning all about strange states of matter.

## Oobleck

### Materials

- 2 plastic bowls
- 1 cup cornstarch (2:1 ratio - double the amount of cornstarch to the water)
- 1/2 cup water
- 1-3 drops of either gel or liquid food coloring (optional - playing with colored Oobleck can temporarily stain your hands and permanently stain fabric!)
- Plastic bag or container that is sealable for storage (optional)

### Instructions

- Put the water and food coloring in a bowl. Mix water and food coloring until it is completely tinted.
- Pour the cornstarch into a bowl.
- Slowly adding the water with the cornstarch while you stir or knead. You may feel the mixture "pull" as you stir, but this is normal. Keep on mixing until everything is well-combined.
- The result should have the consistency of honey.



# Butter Slime

## Materials

- 1/2 cup of cornstarch
- 1/3 cup of clear dish soap
- 1-3 drops of either gel or liquid food coloring (optional - Food coloring can temporarily stain hands and permanently stain fabric.)

## Instructions

- Mix cornstarch and dish soap. Use a spoon to mix things at the beginning, but once the cornstarch has mostly been incorporated into the dish soap, feel free to use your hands!
- Squeeze a few drops of food coloring into the mixture and continue kneading/mixing.
- After about five minutes of mixing, the slime should be ready. It'll have a consistency that's between playdough and slime made with glue (if it's too sticky, sprinkle in a little more cornstarch. If it's crumbly, add 2-3 more drops of dish soap).
- When you're done playing with your slime, put it into a plastic container that has a lid. When you want to use it again, just massage it with your hands a few times to work out any stiffness, and enjoy!
- If kept in an airtight container, the slime should last 2-3 weeks. Once it has dried out, it's time to throw it away and make a new batch.

