

Slime

Summary

In this activity, we will continue to review chemical changes and physical properties as we make and compare three different types of slime. How will you compare these three slimy polymers? (A polymer is a chemical compound consisting essentially of repeating structural units.)

Materials

We recommend paper towels and plates to help contain any messes caused by the slime mixtures. For more fun, you may also add drops of food coloring into the liquid ingredients for each type of slime..

Borax Slime

- 1 Tablespoon of borax per $\frac{1}{2}$ cup warm water
- $\frac{1}{2}$ cup glue (*Elmer's Glue works best in our experience*)
- Disposable cups or bowl
- 1 disposable fork, spoon, craft stick, or other disposable utensil.
- 1 Resealable bag or container to store the slime in.

Sta-flo Slime

- $\frac{1}{2}$ Cup Glue (*Elmer's Glue works best in our experience*)
- $\frac{1}{2}$ Cup Sta-flo (liquid starch)
- Disposable cups or bowl
- Disposable fork, spoon, craft stick, or other disposable utensil
- 1 Resealable bag or container to store the slime in.

Saline Solution and Baking Soda Slime

- $\frac{1}{2}$ Cup of water
- $\frac{1}{2}$ -1 Teaspoons baking soda
- 1 Tablespoon saline solution
- $\frac{1}{2}$ cup Glue (*Elmer's Glue works best in our experience*)
- Disposable cups or bowl
- 1 Disposable fork, spoon, craft stick, or something disposable utensil
- 1 Resealable bag or container to store the slime in.

Steps to Follow (*All activities must be done with adult supervision*)

We recommend making all three different types of slime so you can compare the polymers together at the end. We separate materials into disposable cups to observe each ingredient, but you may combine them in a single bowl or large cup to reduce the amount of materials being used.

Borax Slime

1. Create a solution by mixing 1 tablespoon of borax and a ½ cup of water.
2. Add in ½ cup of glue.
3. Using a craft stick or disposable utensil, mix all ingredients together.
4. Time to get messy! Use your hands scoop up as much slime as you can to continue incorporating all the materials.
 - a. *It's okay if there is some water and glue that do not mix.*
 - b. *We recommend doing this over a plate or tray of some kind to contain the mess.*
5. Place slime in a plastic baggie or container for storage.

Sta-flo Slime

1. Mix ½ a cup of glue with ½ a cup of Sta-flo (liquid starch).
2. Using a craft stick or disposable utensil, mix all ingredients together.
3. Time to get messy! Use your hands try to scoop up as much slime as you can to continue incorporating all the materials.
 - a. *We recommend doing this over a plate or tray of some kind to contain the mess.*
4. Place as much as you can into a plastic baggie or container for storage.

Saline and Baking Soda Slime

1. Mix ½ cup of water and ½-1 teaspoons of baking soda.
 - a. *Less baking soda results in slime that is runnier, while more make it denser.*
2. Add 1 tablespoon of saline solution and ½ cup of glue to the mix.
3. Using a craft stick or disposable utensil, mix all ingredients together.
4. Time to get messy! Use your hands try to scoop up as much slime as you can to continue incorporating all the materials.
 - a. *Adding saline solution to your hands makes it easier to grab and move the slime.*
 - b. *We recommend doing this over a plate or tray of some kind to contain the mess.*
5. *Place as much as you can into a plastic baggie or container for storage.*

It's time to make some observations about each of the slimes that we made:

- *Which was the thickest?*
- *Which was the runniest/goopiest/slimiest?*
- *How does each slime flow?*
- *Which is the stickiest?*

Slime fits into a state just between solids and liquids called a non-Newtonian fluid, this means it is a bit of both depending on the amount of pressure applied to it. *Try squeezing it in your hands versus letting it "relax" and slide out of your hands.* The molecules from the glue are attaching the molecules of the other ingredients we mixed it with. *Imagine a beaded necklace or bracelet where all the beads are the glue molecules.* They are all attached now and hold together as we squeeze, push, or pull them apart. The borax slime made very rigid chains

that seem to snap apart, while the other two manage to hold no matter how you stretch or pull them.

- *Have you made other kinds of slime? How do those polymers compare?*

Ohio Learning Standards

C.IM.1

Next Generation Standards

5-PS1-4, MS-PS1-2