Fluffy Fall Slime

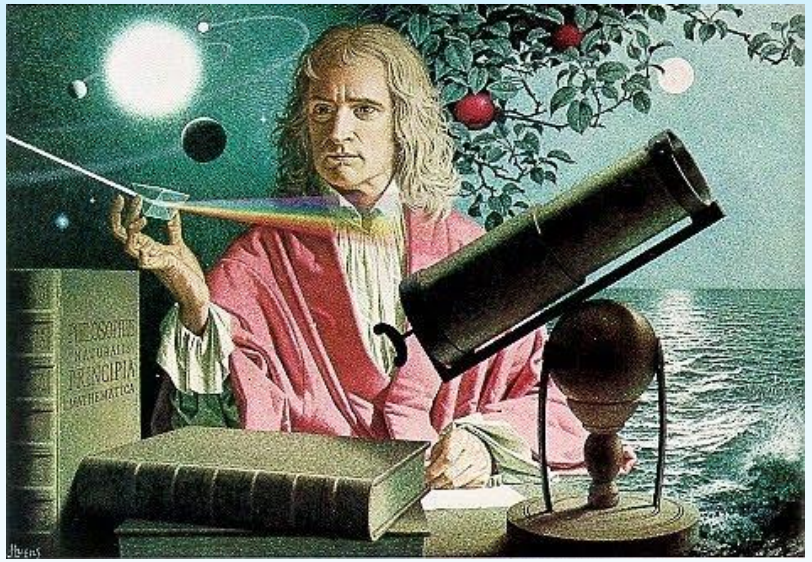
Science Saturday

The Science Behind Slime

- **Slime as a Non-Newtonian Fluid**
- **Slime as a Polymer**
- **The Slime Formation**

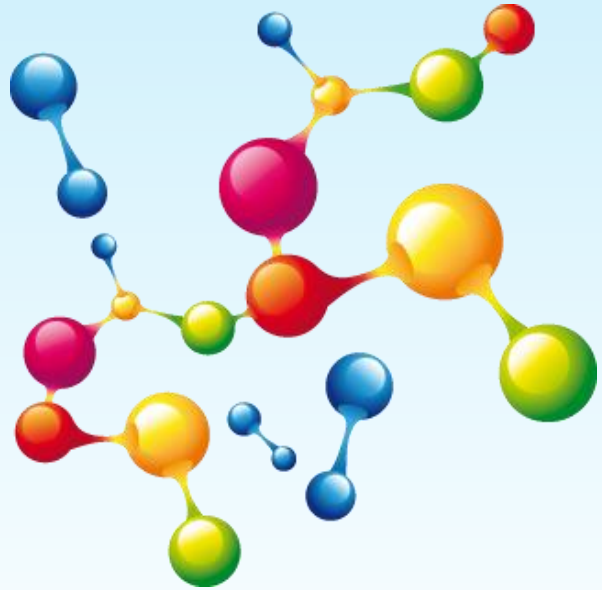
Slime as a Non-Newtonian Fluid

- Newtonian fluids are liquids that pour and behave like oil, water, and alcohol. This is based on the observation of Isaac Newton, a great scientist who studied fluids and other discoveries in Mathematics.



Slime as a Polymer

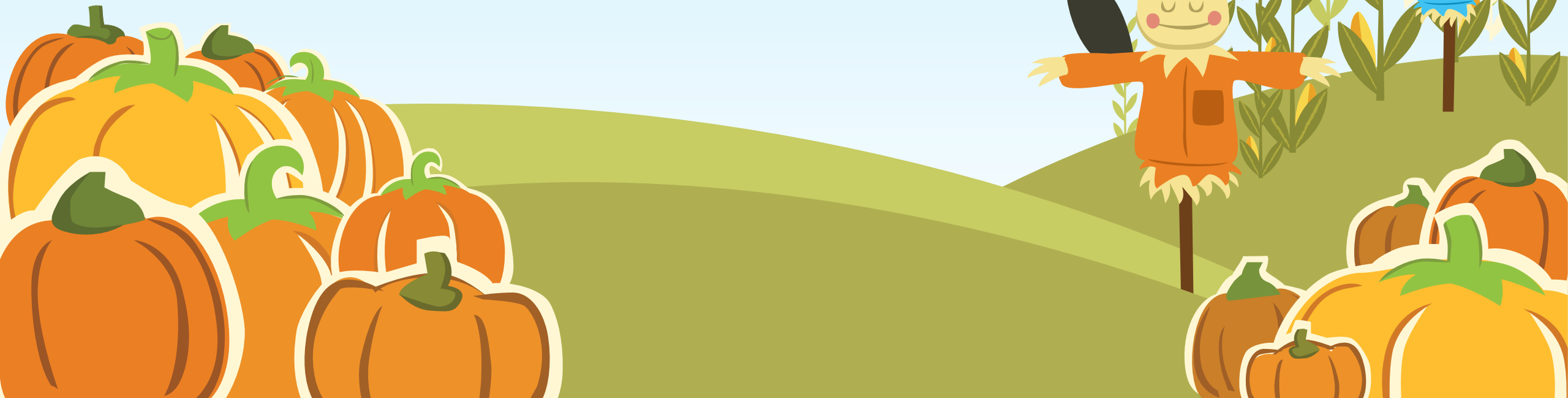
- Slime is also a polymer or also known as a macromolecule or big molecule. It is made from large chains of molecules known as monomers, which could either be plastic or natural.



The Slime Formation

- Did you know that all standard slimes are made the same way? It's true. Slimes from stores, borax slime, liquid starch slimes, and even laundry detergent slimes are all created from the same reaction.
- We're going to make BORAX SLIME!
- Cross-linking is a process needed for the slime formation. This process includes the shaping of bonds linking big molecules together making the fluid no longer slide past one another.
- The slime is formed because of the cross-linking between another material known as borax, which is a natural mineral and the protein molecules of white glue.
- Once the cross-linking occurred, the big molecules in the white glue will then have difficulty moving past each other making it hard to flow. Meanwhile, the borate ions in the borax solutions make the big molecules link with one another making them even bigger. With this, the molecules have difficulty moving and sliding past one another. They become tangled mass resulting in a slimy solution called "slime."

Let’s Make Our Fluffy Fall Slime!



MATERIALS

1. White School Glue
2. Baking Soda
3. Saline Solution
4. Shaving Cream
5. Food Coloring
6. Glitter (Optional)

STEP 1

- ***Pour ⅔ cup (158 ml; 5.4 fl oz) of school glue into a bowl.***
  Start making your fluffy slime by adding glue into the bowl. This serves as the base of the fluffy slime, and helps to make the finished product stretchy and fun to play with!

STEP 2

- ***Stir ½ tsp (5 g; 0.18 oz) of baking soda and ¼ cup (60 ml; 2 fl oz) of water with the glue.*** Begin creating the actual slime by adding in small amounts of baking soda and water. Use your fingers to knead the ingredients together. As you continue creating the slime, your fingers will be your most useful stirring tool.

STEP 3

- ***Mix 2 to 3 cups (470 to 710 mL) of shaving cream into the bowl.*** Make the slime fluffy by spraying some shaving cream into the mixture. Continue using your fingers to mix all of the ingredients together until it begins congealing into a slimier form!

STEP 4

- ***Squeeze in a few drops of food coloring until you achieve your desired color.*** Add a splash of color to your fluffy slime by squirting around 3 drops of coloring into your mixture. Pour an additional drop or 2 into the slime if you want the color to be more vibrant. If you want to make the slime's color less bold, consider adding fewer drops into the mixture.

STEP 5

- ***Start by gradually adding 1 tablespoon (15 mL) of contact solution into the mixture.*** Activate the slime by pouring a little saline solution into the mixture. Keep kneading the mixture with your fingers until your slime becomes a fluffy texture! Make sure that your saline solution contains sodium borate or boric acid, or else the slime won't set. Pour in another 0.5 tablespoons (7.4 mL) of saline solution if you don't want the slime to be as sticky.
- Put the fluffy slime in an airtight plastic bag!