

Gak- Elmer's Glue Borax Recipe



Objective: the participant will identify and comprehend the concept of a polymer, and the state of matter between a solid and a liquid

Materials

- Elmer's Glue® (8 oz bottle of Elmer's Glue-All)
- Borax (a powdered soap found in the grocery store)
- Large mixing bowl
- Plastic cup (8 oz size works well)
- Spoon
- Measuring cup
- Food coloring (the spice of life)
- Water
- Paper towel (hey, you've got to clean up!)
- Zipper-lock bag (don't you want to keep it when you're done?)
- Empty plastic soda bottle with cap
- Water

Method:

- Empty the entire Elmer's Glue bottle into a mixing bowl
- Fill the empty bottle with warm, place the lid on, and shake
- Add the warm water into the mixing bowl with the glue
- Add a drop or two of food coloring into the mixture

- In the 8 oz plastic cup, dissolve 1 teaspoon of Borax powder into ½ cup of water. **TIP:** do not worry if the powder does not completely dissolve.
- While stirring the glue in the mixing bowl, slowly add a the Borax solution.
- Mix the solution with both of your hands until you get a perfect batch of Elmer's slime.
- For safe keeping seal it up in a zipper-lock bag.

Explanation

The mixture of Elmer's Glue with Borax and water produces a putty-like material called a polymer. In simplest terms, a polymer is a long chain of molecules, ex: We also found this in spaghetti. If the long molecules slide past each other easily, then the substance acts like a liquid because the molecules flow. If the molecules stick together at a few places along the strand, then the substance behaves like a rubbery solid called an elastomer. Borax is the compound that is responsible for hooking the glue's molecules together to form the putty-like material

Reference:

Sprangler, Steve. (2011). *Making science fun* . Retrieved from <http://www.stevespanglerscience.com/>

Picture: <http://www.stevespanglerscience.com/experiment/00000039>

Sign

Elastomer

Polymer

Solid

Liquid

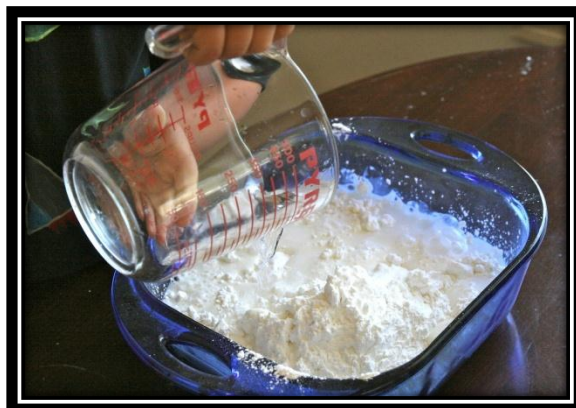
Language

The mixture of glue, Borax, and water will transform into a substance that is not liquid or solid.

Making this an experiment:

- 1.
- 2.
- 3.

Cornstarch Suspension



Objective: the participant will identify and comprehend the concept of a polymer, and the state of matter between a solid and a liquid

Materials

- 1 cup of cornstarch
- Bowl
- About ½ cups water
- Spoon
- Pie plate
- Food coloring
- Optional: Cornstarch Suspension Printable Activity Sheet

Methods:

- Empty 1 cup of cornstarch into a large bowl
- Stir while you add water slowly --- **CAUTION: DO NOT ADD WATER IF THE MIXTURE DOES NOT NEED IT.**
- The mixture needs the consistency of thick pancake batter **(LESS IS MORE!! And take your time)**
- Record the consistency of the mixture
- In the pie plate, pour some water and lightly patted it with your hand (Record the event)
- Empty the pie plate, and put the cornstarch mixture into the pie plate.
- Smack it with your hand, and record the event.

Explanation:

There are three states of matter: solid, liquid, and gas. The cornstarch mixture is known as suspension. If you squeeze a cornstarch suspension it really feels like a solid because the molecules line up. However, It looks like a liquid and acts like a liquid when no one is pressing on it because the molecules relax. This is another state of matter, called a suspension (it can act as a liquid and a solid).

Reference:

Pringle, Laurence. (1998-2011). *Kidzone fun facts for kids*. Retrieved from <http://www.kidzone.ws/>

Vocabulary

Sign

- Elastomer
- Polymer
- Solid
- Liquid

Language

The mixture of cornstarch and water will create a substance that is not solid or liquid.

Making this an experiment:

- 4.
- 5.
- 6.