



Bouncy Balls

Supplies:

1. 1 tbsp. White Elmer's School Glue
2. ½ tsp. Borax Powder
3. 3 tbsp. Corn Starch
4. 4 tbsp. Warm Water
5. Food Coloring (optional)
6. 2 Cups or Bowl for mixing
7. Popsicle Sticks to stir
8. Paper Towels

Directions:

1. In one cup, combine the warm water, cornstarch and borax. In another cup or bowl, pour in the glue.
2. Next, add several drops of food coloring to the white glue and stir well.
3. Give your water/borax/cornstarch mixture one last good stir to combine all the ingredients (the cornstarch has a tendency to settle on the bottom). Then pour the water mixture into the colored glue.
4. Stir and you'll see it immediately start to clump together. Stir a bit more until you have one big, slimy glob.
5. Take the glob out of the liquid and begin rolling it between the palms of your hands to form a ball. It'll be sticky at first, so keep a paper towel handy to wipe off your hands occasionally. Soon a rubbery ball will form. (Using your palms seems to work better than using your whole hand and fingers.)
6. Once the stickiness is gone and you have a nice smooth ball, that's it! You can bounce away!

If the bouncy ball is left lying alone for a while, it may begin to flatten out. You can always roll back into shape.

Why does it work?

This activity demonstrates a chemical reaction, primarily between the borax and the glue. The borax acts as a “cross-linker” to the polymer molecules in the glue – basically it creates chains of molecules that stay together when you pick them up. The cornstarch helps to bind the molecules together so that they hold their shape better. When you mixed the borax and the glue, the chemical reaction formed long chain molecules called polymers. Store-bought bouncy balls are made of rubber, another material that is made up of polymers. When the bouncy ball is stretched, these polymer chains uncoil and straighten.