

Quick and Easy Slime Experiments You Can Share With Your Kids

by Aurora Lipper, Supercharged Science

When you think of slime, do you imagine slugs, snails, and puppy kisses? Or does the science fiction film "The Blob" come to mind? Any way you picture it, slime is definitely slippery, slithery, and just plain icky. Which is a perfect forum for learning real science. But which ingredients work in making a truly slimy concoction, and *why* do they work? Here's a closer look at the real thing.

Imagine a plate of spaghetti pasta. The noodles slide around and don't clump together, just like the long chains of molecules (called polymers) that make up slime. They slide around without getting tangled up. The pasta by itself, fresh from the boiling water, doesn't really hold together until you put the sauce on, right? Slime works the same way.

Long, spaghetti-like chains of molecules don't clump together until you add the sauce – something to cross-link the molecules strands together. In the case of the first slime (Bouncy Putty), the borax-water mixture is the "spaghetti" (long chain of molecules), and the "sauce" (cross-linking agent) is the glue-water mixture. You need both in order to create a slime worthy of Hollywood filmmakers. Let's give it a try.

Bouncy Putty Slime Combine $\frac{1}{2}$ cup water with one teaspoon of Borax in a cup and stir with a popsicle stick. In another cup, mix equal parts white glue and water. Add in a glob of glue mixture to the borax. Stir for one second with a popsicle stick, then quickly pull the putty out of cup and play with it until it dries enough to bounce on table (3-5 minutes). Pick up an imprint from a textured surface or print from a newspaper, bounce and watch it stick, snap it apart quickly and ooze apart slowly...

Mucus Slime Pour 1 tablespoon polyvinyl alcohol (PVA) into a cup. In a fresh cup, mix 1 tablespoon of water with 1 teaspoon of borax. Measure $\frac{1}{4}$ to $\frac{1}{2}$ teaspoon of borax solution into the PVA cup and stir.

Starch Slime Measure 1 tablespoon of liquid starch into paper cup. Stir in glob of glue mixture (equal parts of white glue and water), stir for a second. Pull it all out and play with it until it dries in hands. How is this different from Bouncy Putty?

Sewer Sneeze Slime Fill a cup with 7 tablespoons of cold water. Stir in 1/4 teaspoon of guar gum, stir with a popsicle stick 10 times and stop, leaving the stick in. Cautiously dip a pinky into the cup, then rub it in their fingers. Does it smell? Leave it for 2 minutes to thicken before adding this final ingredient: ½ teaspoon of the Borax Solution (Borax Solution: 1 teaspoon borax in one tablespoon water). Stir and it will form a gel that looks like real boogers!

Corny Slime Fill a large bowl with two cups of cold water. Mix in one cup of cornstarch. The faster you stir, the harder it is to stir. Go slow. Grab it with your hand – it should form a hard ball that you can't squish. When you relax your grip, the ball should melt and drip between your fingers as if liquid. If this is not what's happening for you, adjust the amounts of cornstarch and water you have in your bowl.

Squishy Slime Mix 1 cup sugar, 12 cups water, and 3 cups cornstarch in a saucepan. Stir constantly until thickened, about 5 minutes. Place a glop in each of several bowls along with drops of food coloring in each. Place a dollop of each color into a plastic sandwich bag and zip it shut. You can squish and squeeze without getting your hands slimy.

Gelatinous Slime Combine two cups cold water with one cup cornstarch or white flour. Cook in a saucepan over medium heat, stirring until boiling. When thickened, remove from heat, let cool, add food coloring, and serve.

Amoeba Slime This is always the biggest hit at the birthday party. After kids are finished making the above slimes, I leave out all the ingredients and ask them to make the best slime ever. Stand back and get ready with a hose. Best done outdoors. Kids always get to take home samples in empty film canisters (photo below).

Kitchen Wizard Chemical Reactions You can produce a number of fun chemical reactions with things you already have: a raw potato slice and hydrogen peroxide; chalk and vinegar; baking soda and vinegar; Alka-Seltzer and water; raisins and 7-Up.

TIP: Never polish your tarnished silver-plated silverware again by safely dipping it in a self-polishing solution in a saucepan lined with aluminum foil heating a solution of water, one teaspoon of baking soda and one teaspoon salt.

Since 1996, Aurora Lipper has been helping families learn science. As a pilot, astronomer, mechanical engineer and university instructor, Aurora can transform toilet paper tubes into real working radios and make laser light shows from Tupperware.

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