

Silly Putty

What you need:

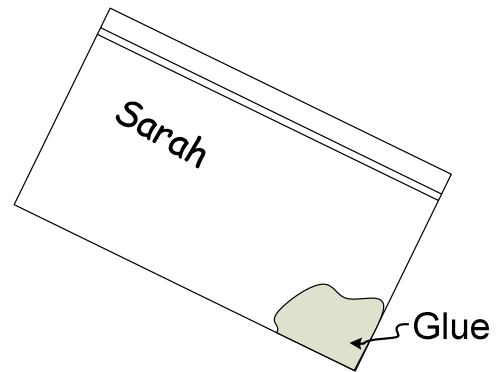
- Small zip-loc baggie
- Wood glue
- Borax laundry powder dissolved in water
- Permanent marker

CAUTION:

- Borax can irritate your eyes and it can be harmful if you swallow it. Be very careful to use it exactly as directed in these instructions.
- Don't eat your silly putty.
- The key to successful silly putty is to use a very small amount of Borax. Start with a very small squirt. If you need more, add only a couple drops at a time.

What to do:

1. Write your name on your baggie with the marker.
2. Pour a dollop of glue about the size of a toonie into a corner of your baggie. Try not to get the glue spread all over the baggie. You might find it helpful to ask a friend to hold the baggie open for you.
3. Add a small squirt of Borax. **Use only a small amount of Borax. Too much will make your silly putty too stiff. Be careful not to get Borax in your eyes or in your mouth.**
4. Seal the baggie tightly. Knead the baggie until the glue and Borax are **completely** mixed together. You should notice that the glue is getting stiffer and is pulling away from the sides of the baggie.
5. If the glue is still a little runny or if it looks stringy, add another drop or two of Borax. **Don't add too much Borax.** Seal the baggie again and completely mix the new Borax into the glue. Your silly putty should be a little bit slippery, but it shouldn't stick to the baggie or to your fingers.
6. Stretch your silly putty out gently. How far can you stretch it before it breaks? What happens if you hold one end of it in each hand and pull on it sharply? Why?



How it works:

When the glue and Borax mix, they form a special type of material called a polymer.

Polymers, like everything else on earth, are made up of molecules, or microscopic particles.

A polymer is special because it has very long chains of molecules. Those long chains get bent and twisted up when you knead the glue and Borax together. When you stretch your silly putty out slowly, the molecule chains gently unbend, so you can stretch your silly putty a long way. But if you pull sharply on your silly putty, the molecules can't stretch out fast enough—they break instead.