

Slime & Polymers

WHAT YOU NEED

- Elmer's glue (not the washable kind)
- Borax
- Water
- Sealable plastic bags
- Spoon
- Large cup
- Bowl

PROCEDURE

- Mix an equal amount of glue and water in the bowl. Mix well.
- In the cup, combine a tablespoon of borax with a cup of water. Stir.
- Continue adding borax to the water, little by little, until no more will dissolve.
- Add two tablespoons of this borax solution to the glue/water mixture. Stir quickly.
- Now you have slime! Put it into the sealable plastic bags to save it. Add water if it gets too dry.

WHY THIS HAPPENS

The glue and water form a substance made of polymers. The borax solution binds the polymers together, making them harder to move around. Your slime's thickness will depend on how much borax you add.

by Christina Quick

Let's Hear It for the

GOO!

Did You Know?

As you will read in the next story, it took a long time for people to learn how to keep rubber from getting gooey in the heat. According to the Rubber Manufacturers Association, about 237 million tires will be made in the United States in 2009. Believe it or not, that's a smaller number than usual. In 2000, 321 million tires were made. If the economy improves, about 260 million tires could be made in 2010. Wow!

That's a lot of rubber!

Gloopy, gloopy, gooey stuff can be a lot of fun. Just think of play slime, chewing gum and Silly Putty. But for Charles Goodyear, sloppy goo was a big problem.

In the 1800s, Goodyear experimented with bits of natural rubber from plants. He hoped to find a way to turn it into a substance that would hold its shape. He used rubber to create everything from mailbags to shoes. At first, people were excited about his inventions. Then summer came, and the rubber items turned into a yucky, stinky mess. The mailbags melted into a pile of black goop. The shoes stuck to people's feet.

But Goodyear didn't give up. One day he added something called sulfur to the rubber. While he was working, he accidentally dropped some of the mixture on a hot stove. To his surprise, it turned into a hard, leathery material that didn't melt in the sun.

Today, we use this kind of rubber for tires and many other products. Maybe you've heard of Goodyear tires, named after the rubber man himself.

The Bible tells about a time when a gloppy mess helped God's people. For many years, an army commander named Sisera was cruel to the Israelites. The Israelites prayed and asked God to help. God chose two leaders named Deborah and Barak. They led the Israelites in a fight against Sisera's army. (See Judges 4.)

Sisera came with many chariots. During the battle, while the chariots were near a river, it started to rain. Soon it was very muddy. The chariot wheels would not roll in the gooey mud. Sisera left his chariot and ran

away. The Israelites won the battle. God answered their prayers and saved them from their enemies.

Like the Israelites, you may face problems that are too sticky for you to handle on your own. It's good to know you can pray and ask God for help. Nothing is too hard for Him. He loves you and wants to meet your needs.

"I waited patiently for the Lord; he turned to me and heard my cry. He lifted me out of the slimy pit, out of the mud and mire; he set my feet on a rock and gave me a firm place to stand" (Psalm 40:1,2, NIV). **e**

E-mail your comments to pe@ag.org.

