

# A STEM in the Park

## Take Home Activity

# STEM

in the **PARK**™

Science, Technology, Engineering, and Mathematics

## DINO GOO (GAK)



1. Squirt about 1 tablespoon of Elmer's glue into a sandwich size ziploc bag.
2. Dilute with 1 tablespoon of water.
3. Make a strong Borax solution (20 mule team from grocery store)
  - 1 teaspoon Borax in 1 tablespoon of water or
  - 1 part Borax, 1 part water in a pitcher (use for more than one person)
4. Add to the diluted glue.
5. Close the bag and have students work with their fingers until well mixed.
6. Add a drop of food coloring to the bag and continue to mix
7. The glue will transform into a glob of slimy, gelatinous mass. Pour off excess liquid into a container for disposal later (never a sink, because there may still be cross linking\* (*see back for explanation*) which can clog up the drain).
8. PLAY with your Dino Goo!

*Continued on back*

## **WHY DOES IT WORK?**

Elmer's glue is an adhesive polymer made of polyvinyl acetate, which can be modified by a chemical process called cross linking. The 20 mule team Borax (sodium tetraborate decahydrate) can be used as the cross linking agent. Properties of long chain molecules change when they are cross-linked. Elmer's glue changed into slimy glob.

\*A natural polymer, rubber latex, is cross-linked with sulfur in a process discovered and patented by Charles Goodyear in 1844. (Yes...Goodyear Tires!) That process is known as vulcanization.

*This activity is brought to you by the Ohio Virtual Academy*

