

Glue-Ball Laboratory: Felix Muhiga

Teacher's Guide

Goals

- To introduce chemical change and the reactivity of matter
- To practice observation skills in the laboratory

The Activity

In this activity, students use white glue and soap to create a new substance—a glue-ball. They experience chemical reactivity and investigate the properties of the new material formed, by observation. Thus they are introduced to basic laboratory skills.

Materials for Each Group

- Safety goggles
- 4% borax solution (sodium borate)
- 55% Elmer's glue solution in water
- Ziplock sandwich bags

SAFETY

Make sure that both you and your students wear safety goggles at all times during the laboratory.

Make sure that the students zip the bags to prevent spills.

This activity requires no other special safety precautions. It can be done on the bench, with no additional ventilation.

Teaching Tips From Mr. Pratuch

Here at Annandale, one of the things we've set out to do in the last couple of years is to try to integrate all of the teachers and get more of a team approach. Felix Muhiga was one of the team members in setting up what we do.

So for the very first lab, what we did was the glue-ball lab. The students don't expect to come in and see glue and soap become something that you can play with for 10-14 days. They expect glue to dry after a couple of hours, they expect soap to be wet and liquidy, and dry off of their hands and that's it.

They don't know what the outcome is going to be. That shows that you don't know where things are going unless you see it.

The students are not very good at observing. They look, they see, but they don't really observe.

There's actually an advanced concept that students don't even come near to understanding on the first day of chemistry: polymerization and cross-linking issues. But on the basic level, that is exactly what the first day is like.

If you ask the guys what they want to see they go "poof"—and if you ask the gals, they want to see something become something so they get the feeling of it. Starting out with this the first day, they get the feeling that they were in chemistry class; they did something chemically.

References: Links

http://www.uh.edu/curriculum_units/chemistry/Essien_Unit.htm

A complete unit of study on phase change, thermochemistry, and the gas laws, with activities. The unit was designed for the college level, but can be done easily in a high school class. The unit relates observations to the Kinetic Theory of Matter.