Fun With Elmers

Summary

This is an inquiry lab where students see a suggested combination of Elmers and Borax and then make another substance out of chemicals of their own choice (and their teachers').

Time Frame

1 class periods of 60 minutes each

Group Size

Large Groups

Materials

Elmers glue
borax solution (2tsp borax soap in 100 ml water)
solutions of other water soluble substances-salt, iron, copper, sodium carbonate, baking soda. (Do not use chemicals which have any hazard associated with them. If in doubt, try it yourself first.)
plastic cup
stirring stick
goggles
- student sheet (attached)

Background for Teachers

You might discuss the discovery of the slightly sticky adhesive that helps "Post-its" stick around. It was discovered accidentally in a search for a strong adhesive. Students may know that glue is made from the hooves and bones of cows but they probably do not know that plastics come largely from oil or that these modern substances did not exist 60 years ago.

Student Prior Knowledge

Students should have learned to recognize chemical changes.

Instructional Procedures

Read over student sheet with students and show them where materials are.
Allow time for experimentation and clean-up.
Have students save their substances and show unusual ones to the class

Assessment Plan

Scoring guide
:
1. Students perform experiment, record data and clean up….15 pts
2. Students correctly answer questions and write conclusion….10 pts

Answers to analysis questions:
1. There is not much evidence of change except that the new substance has quite different properties from the glue it started out as.

2. Properties change as chemical reactions occur.
3. Answers will vary.
4. Discovering the right stuff can make lots of money, save lives, or make life better.

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

Utah LessonPlans