

Blobber

Summary

Students will mix ingredients to create a chemical change and "Blobber" - a substance similar to silly putty.

Materials

- One tablespoon white glue
- ½ teaspoon borax
- ½ cup water
- Food coloring (Optional)
- Two paper cups
- Tablespoons, teaspoons, and stirring sticks
- Scales to measure weight

Additional Resources

Books

- *Super Science Concoctions*
, by Jill Frankel Hauser; ISBN 1-885593-02-3
- *Aims Chemistry Matters*
, ISBN 1-932093-03-6

Background for Teachers

White glue is made up of millions of polymers. When polymers are dissolved like they are in glue they slide around each other letting the glue flow. However, they are so long, that when they flow they get in each others way making the glue more viscous. Viscous means that glue flows more slowly than water. When you add a borax solution to the glue the polymers change. The borax makes them cross link or connect to each other like a net. The more tangled the polymers get the more water they trap creating a jelly like feel. Tangled molecules change and are even more difficult to pour. This makes the solution even more viscous than glue. The change that takes place to the polymers by adding the borax solution is a chemical change.

Indicators of a chemical change can be color, a new odor, light or change in heat is given off. When making Blobber two liquids are mixed together forming a precipitate. A precipitate is also an indication that a chemical change has taken place.

Super Science Concoctions, by Jill Frankel Hauser talks about a mistake that paid off, "Try as he might, the chemist James Wright was never able to create rubber in the laboratory. But one of the mistakes did become a very popular toy. When he added boric acid to silicone oil he created a bouncing solid that oozed like a liquid. You probably know it as Silly Putty!" (pg. 152).

Intended Learning Outcomes

2. Manifest Scientific Attitudes and Interests.

Instructional Procedures

Invitation to Learn

What happens when you mix glue, and a mixture of borax and water together? Can you bend it, bounce it, even blow it up like a balloon. Why is it so moldable and flexible?

Instructional Procedures

- Weigh all ingredients before mixing together.
- Dissolve the borax in water.

Pour the white glue into another cup (optional: food coloring).

Add one tablespoon of the borax solution to the glue and stir with a stick or spoon

Take the mixture out of the cup and knead it with your hands for several minutes. You've got Blobber.

Prepare worksheet and worksheet cards for different recipes. See worksheets provided.

On the worksheet, predict, gather data about the Blobber, and draw conclusions as to what happened when the ingredients were combined.

Extensions

Curriculum Extensions/Adaptations/Integration

Have students conduct three different Blobber tests using different [recipes](#) varying the amount of borax.

Have students complete worksheet [Comparing Different Recipes](#) . Predict, gather data about the Blobber, and draw conclusions as to what happened when the borax amount is changed in each recipe and which recipe is the best..

Red Blobber. Use same recipe however change the amount of borax added to the water. This time add one teaspoon of borax to the one-half cup of water.

Yellow Blobber. Use same recipe as above.

Blue Blobber. Use the same recipe, however, change the amount of borax added to the water to one-fourth teaspoon borax.

Family Connections

This is a fun activity for families to do at home. Ingredients are available in most homes and if not the school can provide borax and glue.

Warning: Small children should be supervised when using this product. If swallowed, a child could choke on the Blobber.

Assessment Plan

Were students able to mix the solution together properly and make Blobber? Were students able to follow worksheet and complete answers drawing the correct conclusions? Look for evidence that the students understand what glue, water, and borax are and what they become when mixed together.

Were students able to mix different solution of Blobber together, make predictions, gather data, and draw conclusions using their first mixture of Blobber?

Bibliography

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Hands-on learning is critical to students' understanding of science concepts. Research shows that hands-on projects actually help children learn better. Hands-on learning helps students more readily understand concepts and boosts their self-confidence.

Performance Assessment is the collection and evaluation of evidence of student learning, focusing on indicators of meaningful and valuable student progress. This type of assessment asks students to

perform, create, produce or do something. It taps into higher-level thinking and problem-solving skills. It uses tasks that represent meaningful instructional activities involving real world applications and using human judgment to do the scoring.

Authors

[Utah LessonPlans](#)