



WHAT YOU WILL NEED:

- 1/2 teaspoon of Borax
- 2 ounces of Elmer's Glue
- Food coloring
- 1/2 cup of water (for first mixture)
- 1/4 cup of water (for second mixture)
- Small mixing bowl
- Cup
- Storage container



HOW TO MAKE SLIME

Overview and objective:

Students will use basic chemical techniques to make slime. The mixture of Elmer's Glue with Borax and water produces a putty-like material called a polymer.

Major concepts:

In simplest terms, a polymer is a long chain of molecules. If the long molecules slide past each other easily, then the substance acts like a liquid because the molecules flow. If the molecules stick together at a few places along the strand, then the substance behaves like a rubbery solid called an elastomer. Borax is the compound that is responsible for hooking the glue's molecules together to form the putty-like material. When making homemade slime, you learn about some of the properties of polymers.

Slime is a non-Newtonian fluid that is dilatant, which means when under stress, the material dilates or expands. Other wellknown stress-thickening materials are quicksand, wet sand on the beach, some printer's inks, starch solutions and 'Silly Putty'. Dilatant materials tend to have some unusual properties:

- Procedure:
- 1. Mix a 1/2 cup of water and 1/2 teaspoon of Borax in a cup and set aside.
- 2. In a bowl, add 2 ounces of glue and 1/4 cup of water.
- Add four drops of food coloring to the bowl and mix thoroughly. Additional drops of food coloring can be added to deepen the color.
- 4. Add the mixture from the cup into the bowl and stir.

Continued.....











Procedure Continued:

- 5. Drain the remaining water in the bowl into the cup.
- Knead the slime until it is no longer wet and gooey (may take a minute).
- 7. Store the slime in a storage container for later use.

Exercises:

- Pull slowly (low stress) on the material and it will flow and stretch. If careful, you can form a thin film.
- Pull sharply (high stress) and the material breaks.
- Pour the material from its container then tip the container upwards slightly and the gel self siphons.
- Put a small amount of the material on a table top and hit it with your hand. There is no splashing or splattering.
- Throw a small piece onto a hard surface and it will bounce slightly.



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