

Objective

By the end of this lesson, Ted will have conducted several fun and safe chemistry experiments using common household items. He will learn about chemical reactions, observe changes, and understand the science behind them in a hands-on way.

Materials and Prep

- Baking soda
- Vinegar
- Food coloring
- Plastic cups or containers
- Water
- Salt
- Sugar
- Oil (vegetable or olive)
- Dish soap
- Paper towels

Before starting the experiments, make sure to have all materials ready and set up a safe workspace. It's a good idea to wear an apron or old clothes, just in case things get messy!

Activities

- **Volcano Eruption**

Combine baking soda and vinegar in a plastic cup. Add a few drops of food coloring to make it colorful! Watch as it erupts like a volcano. This experiment demonstrates an acid-base reaction.

- **Magic Milk**

Pour some milk into a shallow dish and add drops of food coloring. Then, dip a cotton swab in dish soap and touch it to the milk's surface. Watch the colors swirl and mix! This shows how soap interacts with fat in the milk.

- **Homemade Lava Lamp**

Fill a clear container with water, then add oil on top. Drop in food coloring and watch it sink through the oil. This experiment shows how different liquids can separate based on density.

- **Salt and Sugar Solubility Test**

Take two cups of water and add salt to one and sugar to the other. Stir and observe how each dissolves. This will help Ted learn about solubility and the differences between substances.

Talking Points

- "Did you know that when baking soda and vinegar mix, they create carbon dioxide gas? That's what makes the bubbles!"
- "The colors in the magic milk swirl because the soap breaks down the fat in the milk. Isn't that

cool?"

- "In our lava lamp, oil and water don't mix because they have different densities. That's why the oil floats on top!"
- "When we mix salt and sugar in water, we can see how some things dissolve better than others. Why do you think that is?"