Lemon Suds

Here’s a twist on a classic chemical reaction made for young children. Just squeeze a little lemon juice into the container and stir the concoction… lemon suds appear like magic! It’s so simple to do and kids scream, “Do it again!” When you’re finished making a mountain of bubbles, use the lemon-scented suds as a great cleaner.

Materials

• Lemon (cut into quarters)
• Plastic cup (8 oz.)
• Liquid soap (Ivory or Dawn)
• Baking soda
• Measuring spoon
• Straw
• Paper towel (you can't be a messy scientist)
Experiment
1. Measure 1 teaspoon of baking soda into the empty cup.
2. Add a squirt (okay, about a teaspoon) of liquid soap to the cup. Use the straw to stir the mixture. Your set-up is complete!
3. It’s show time! Hold the cup in your left hand – being careful to conceal the secret mixture in the bottom of the cup with your hand – and pick up the piece of lemon with your right hand. “Some people use lemon to flavor their iced tea… I use lemon to make soap. Watch this…”
4. Put on your safety glasses (this only adds to the suspense!). Squeeze the lemon into the cup (squeeze hard to get as much lemon juice as possible) and stir the mixture with your straw. In just a few seconds, a chemical reaction occurs and the cup fills with lemon suds! “Can you guess what I made? No, not a drink… it’s lemon suds soap!”
5. Scoop out some of the suds with your hands to show the incredible cleaning power of your new concoction. “So, what do you think I used to make the lemon suds?” After your audience has exhausted all of their guesses, pull out a new cup and show them your secret recipe.
6. When you’re finished, this mixture can be poured down the drain.

How Does It Work?
This is a simple but elegant example of a classic chemical reaction between baking soda and citric acid (lemon juice). When the citric acid combines with the baking soda, a chemical reaction takes place producing carbon dioxide gas (those are the bubbles) and water. You also produce a small amount of sodium citrate (just in case you were wondering).