

# EXPERIMENT 1 - SUPER SOAP BUBBLES

This experiment is all about physics. Participants will learn about how different surfaces cause different soap bubbles to form. Plan on seeing bubbles. Lots and LOTS of BUBBLES! Older boys (ages 11-13) will have fun building a variety of wireframes while younger boys (ages 7-11) will enjoy seeing all the different bubbles being formed.

## What You Need:

- Glycerin
- Water
- Liquid Dishwashing Detergent
- Wire

## What You Do:

- Put on your protective eyewear
- Make a 50-50 mixture of glycerin and water
- Add 5% detergent (this could range from a couple of tablespoons to a cup of mixture).  
The exact proportions are not crucial.
- Make wireframes of different shapes and dip into solution. If the frames are twisted the bubbles will form minimum surface area configuration.

# EXPERIMENT 2 - ELEPHANT TOOTHPASTE

In this experiment, participants will learn about the role of chemistry. By combining a few simple home ingredients, scouts will watch as a major foam reaction occurs, perhaps reminding them of a giant tube of toothpaste. The experiment is quick, easy and great for all ages.

## What You Need:

- A clean 16oz plastic soda bottle
- ½ cup 20-volume hydrogen peroxide liquid (20-volume is a 6% solution, you can get this from a beauty supply store or hair salon)
- 1 tablespoon of dry yeast
- 3 tablespoons of warm water
- Liquid dish washing soap
- Food coloring
- Small cup
- Pan / tray to catch overflow
- Protective eyewear

## What You Do:

- Put on your protective eyewear.
- Set the soda bottle in the middle of a pan to catch the toothpaste.
- Add 8 drops of your favorite food coloring into the bottle.
- Add 1 tablespoon of liquid dish soap into the bottle and swish the bottle around a bit to mix it.
- In a separate small cup, combine the warm water and the yeast together and mix for about 30 seconds.
- Now the adventure starts! Pour the yeast water mixture into the bottle and watch the foaminess begin! (a funnel can help during this step)

# EXPERIMENT 3 - SLIME TIME

The purpose of this experiment is to show that chemistry isn't just important, it's fun! Each lab will go through a series of measured steps in the process of creating homemade SLIME! Participants will be left with a better understanding of the role chemistry plays in their lives while also leaving them with a fun take home gift. This event is for all ages and will be fun for anyone participating.

## What You Need:

- Protective eyewear
- Borax (purchased at local grocery store in the laundry detergent aisle)
- Elmer's white glue
- Ziploc Bags
- Water
- Food Coloring (optional - purchased at local grocery store in the baking aisle)

## What You Do:

- Put on your protective eyewear.
- Take a cup of water add add to it 1 Tbs. of borax (approx. 4% solution). Stir until completely dissolved.
- Make a 50% water 50% white glue solution. Take 1/4 cup of each and mix thoroughly.
- In a Ziploc bag, add equal parts of the borax solution to equal parts of the glue solution. 1/2 cup of each will make a cup of slime.
- Add a couple drops of food coloring.
- Seal bag and knead the mixture.
- Dig in and have fun! Remember to wash your hands after playing.
- Keep your slime in the sealed bag in the refrigerator when not playing with it to keep it longer. Unfortunately it may eventually dry out or grow mold. Just throw it out and start again!

# EXPERIMENT 4 - COBRA STICKS

Demonstrating a steady hand will be key when performing this fun activity. Everyone in the lab will take turns weaving together popsicle sticks into a long chain that takes the shape of a snake. After the puzzle has been completed, it's time to watch your creation come to life!

## What You Need:

- Popsicle Sticks (jumbo craft sticks)
- String (optional)

## What You Do:

- Click [here](#) for detailed instructions on how to assemble.
- You can also watch a video on how it's done by clicking [here](#).

# EXPERIMENT 5 - CATAPULTS

Scouts will get an opportunity for a hands-on engineering lesson with this experiment. Each participant will get their own wood kit to construct a working catapult that they will put to use. Put Newton's first law to work and watch it throw!

## What You Need:

- Catapult Wood Kits can be purchased directly from [ScoutStuff.org](http://ScoutStuff.org) in order to be used for the Science of Scouting Playbook program. The information below, including the model number, description, price, and order details, is noted for ordering purposes.

- **Item: Kit Wood Catapult (Bulk Order: Quantity 50)**

Model Number: 612100

Wholesale Cost to Councils: \$84.65 (8+ packs)

\$89.10 (4+ packs)

\$99.00 1 pack

Retail Cost: \$199.99 1 pack

- To order, please call [ScoutStuff.org](http://ScoutStuff.org) at 1-800-323-0736. Specify model number, name of item, and number of units needed. For example, if 1,000 catapults are need, you will be ordering 20 units (50 catapults per unit) x \$84.65.
- You can also visit [distributor.scoutstuff.org](http://distributor.scoutstuff.org) directly and order online. Please allow up to two weeks for delivery.