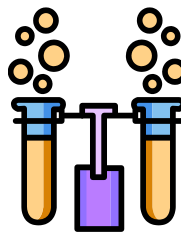


## Cool Chemistry

Summer is here and it is time to have fun! What better way to stay cool this summer, than with some amazing science fun! Remember to practice safe science and have the help of an adult.

### POP ROCKETS

Materials:



1. Alka-Seltzer tablets (A lot)
2. One empty 35 mm film canister (preferably the white ones). You can ask your local photo shops to save them for you (CVS, Walgreens, etc)
3. Water. We use plastic ketchup bottles and used those to put water in. It gives a nice easy squeeze right into the film canister. Another alternative is to reuse the dish soap bottles.

What to do:

1. Make sure the activity is done outside in a wide open space.
2. Put the Alka-Seltzer in the film canister.
3. Put 2 squirts of water in the film canister.
4. Very quickly put the top back on the canister and make sure it snaps in place.
5. Put the film canister (cap side down) on the ground.
6. Step back and watch it POP!
7. If it does not pop, the lid was not snapped on tight enough.

What is happening?

Alka-Seltzer and water form a gas when mixed. This is why you see bubbles. When the film canister is closed, the gas begins to build up pressure. When the pressure gets to be too much...POP!!

### SOAP EXPLOSION

Materials:

1. 1 bar of Ivory Soap
2. Other brands of soap to compare
3. Microwave safe dish or paper towel
4. Microwave



What to do:

1. Place Ivory Soap in the microwave on dish or paper towel.

2. Microwave soap anywhere from 90 seconds to 2 minutes. Times vary depending on power of microwave.
3. Let soap cool 2-3 minutes before touching.

Notes:

Soap will begin to foam and get flaky. Not to worry, it can still be used.

What is happening?

The microwave is heating up the soap and also heating up the air and water that is inside the soap. As the air and water get warmer, they begin to expand. The heated gas pushes on the soap (which is now soft because it is warm) creating a foam.

Extension:

Try other brands of soap and compare to the Ivory. Which soap has the most air bubbles? Why do you think Ivory is 99.9% pure?

### **Bubble Solution**



What fun is summer without bubbles? Make your own bubble solution and wands and have a blast.

Materials:

1. Clean 1 gallon container (milk jugs work best)
2. 11 cups of water
3. 4 cups Dawn original formula
4. 1 cup glycerin (found in pharmacy near first aid kits) or 1 cup clear corn syrup.

What to do:

Put all of the ingredients in the gallon container. Put cap on container and shake. Let solution sit for at least 24 hours. The longer the solution sits, the longer the bubbles will last in the air. Pour into a tray or container to use with string and straw bubble wands.

Notes:

Bubbles work best right after or before rain. There is more moisture in the air to keep the bubbles in tact longer. Direct sun pops bubbles quicker because the sun evaporates the bubble. If it is a sunny day, try to blow bubbles in the shade.

## **Bubble Wands**

Materials:

1. Cotton String
2. Straws (not the flexible kind)

What to do:

1. Make string desired length. The longer the string the bigger the bubbles will be.
2. Put the string through both straws.
3. Cut string and tie a knot, with the straws still on the string. The straws will act as your "handles".
4. Hold one straw in each hand, you should have a square/rectangle shape.
5. Dip completely in bubble solution, make sure the cotton gets soaked, and make sure hands are soaked as well.
6. You can either blow or move the bubble wand through the air.