

Home Scientist

Complete the five steps to earn your Home Scientist Badge.

- 1. Be a kitchen chemist:** Make your own ice cream! Fill a pint-sized zip lock bag with 1 tablespoon of sugar, $\frac{1}{2}$ cup whipping cream or half and half, and $\frac{1}{4}$ teaspoon of vanilla. Seal up the bag. Then, fill a gallon size zip lock bag half way with ice, then add 6 tablespoons of rock salt or kosher salt, you may even find some ice cream salt in the store. Place the pint bag inside the gallon bag and seal it. Shake the bag for about 10 minutes, until you see ice cream forming in the small bag. You may want to wear gloves, your hands will get cold.
Notice how the salt keeps the temperature low enough to freeze the liquid.
- 2. Create static electricity:** See how static electricity causes salt and pepper to dance. You will need a piece of paper, salt, pepper, and a balloon. Pour some salt and pepper on the piece of paper. Then blow up and tie the balloon. Then take the balloon and rub it on your hair. Then hold the balloon about 3 inches over the salt and pepper and watch how it moves.
Notice how the pepper is attracted to the balloon. Pepper is lighter than salt it is attracted to the balloon and goes to the balloon faster than the salt.
Please use caution when performing this experiment, wear glasses or be sure not to touch your eyes. Pepper and salt to eye can hurt.
- 3. Dive into density:** Watch the attached video to learn a little bit about density with raisins and soda!
- 4. Make something bubble up:** Blow up a balloon without using your breath! Grab an empty bottle and a balloon. The bottle should be about the size of a 16 ounce water bottle. Add 2 tablespoons of vinegar to the

bottle. With the help of someone pour 1 teaspoon of baking soda into the bottle and immediately put the balloon on the opening of the bottle. Watch the balloon inflate.

Notice how the combination of these two ingredients create more carbon dioxide than can fit in the bottle causing the excess to blow up the balloon.

5. **Play with science:** Make some giant bubbles. You will need some cotton string or cotton yarn, a large plastic tub, 2 plastic straws, 1 cup of dishwashing soap, 4 cups of water, and $\frac{1}{2}$ cup of light colored corn syrup or glycerin. Make your bubble wand by cutting a long piece of string and thread it through the two straws. Tie the ends of the string together, and then slide the knot into the middle of one of the straws. Pour the soap, water, and corn syrup (or glycerin) into the tub and mix it up. Then dip your bubble wand into the tub. Hold onto the straws and slowly spin around to create bubbles.