# MELTING ICE EXPERIMENT


**MATERIALS**

- Cake pan
- Liquid Watercolor Paint
- salt (table salt)
- paint brushes, small spoons
- ice cube tray
- bowl of warm water
- shallow baking dish
- plastic tablecloth or towels (to protect work area)

**MAKE YOUR ICE AHEAD OF TIME AND PUT THEM IN ANY CONTAINER.**

*If you're using your freezer, I would suggest setting your cake pan(s) on a baking sheet to prevent any spills as you set them into your freezer.*

**NOW THE FUN BEGINS!**

A vinyl tablecloth protected the coffee-table from any drips or spills. Each child had their own tray of water colours, some paintbrushes, a small spoon and a bowl of very warm water for science discoveries.

**SPRINKLE THE SALT ON YOUR ICE**

Pour some salt into directly into the trays of watercolours and sprinkle a generous amount of salt over each container.

**WHAT'S HAPPENING?**

The ice made lots of loud popping and cracking noises.
This was the perfect opportunity to talk about the chemical reaction that was occurring, and how salt affects the melting point of ice. Simply talking about science is a wonderful experience for preschoolers.

**Source:** https://happyhooligans.ca/melting-ice-with-salt-and-watercolours/

# Exploring Colors with Baking Soda and Vinegar

In this science activity, not only will children get to create a chemical reaction, but they'll also be able to explore color mixing and create some colorful "artwork"!

**MATERIALS:**

- Tray
- Baking soda
- White vinegar
- Containers to hold the colored vinegar i.e ice cube trays.
- Pipettes
- Liquid watercolors or food coloring

**INSTRUCTIONS:**

1. Give a tray to your child
2. Fill the tray with baking soda.


3. Fill each ice cube tray (or other container) with vinegar. Add liquid watercolors to the vinegar so each child or group has a variety of colors to use.
4. Use a pipette or dropper to place a few drops of the colored vinegar.
5. Continue exploring with other colors.



**Source:**
https://buggyandbuddy.com/exploring-colors-with-baking-soda-and-vinegar/

# How to make a Volcano

Materials:

- 10 ml of dish soap
- 100 ml of cold water
- 400 ml of white vinegar
- Food coloring
- Baking soda slurry (fill a cup about ½ with baking soda, then fill the rest of the way with water)
- Empty 2liter soda bottle

**Instructions:**
NOTE: This should be done outside or in the bathtub due to the mess.

1. Combine the vinegar, water, dish soap and 2 drops of food coloring into the empty soda bottle.
2. Use a spoon to mix the baking soda slurry until it is all a liquid.
3. Eruption time! … Pour the baking soda slurry into the soda bottle quickly and step back!

**How it Works:**
A chemical reaction between vinegar and baking soda creates a gas called carbon dioxide. Carbon dioxide is the same type of gas used to make the carbonation in sodas. What happens if you shake up a soda? The gas gets very excited and tries to spread out. There is not enough room in the bottle for the gas to spread out, so it leaves through the opening very quickly, causing an eruption!

**Source:** http://www.sciencefun.org/kidszone/experiments/how-to-make-a-volcano/

# Rain Cloud in a Jar

It's Springtime! It might be raining outside, but you too can make your very own rainstorm in your home. This activity is an engaging one for our little scientists! Explore and see how rain is formed with your very own rain cloud in a jar!

**Materials:**

- Clear Wide Jar
- Little plastic containers/cup
- Tap Water
- Shaving Foam (Please be aware that some children might be sensitive to the smell)
- Blue Food Colouring
- Eye dropper (if your food colouring doesn't have a built-in one)

**Instructions:**

- Fill your clear jar with three quarters full of tap water
- Drop the blue food colouring into a little plastic container/cup and dilute it with water
- Use the shaving foam to squeeze "clouds" on top of the water
- Let the shaving foam settle a little bit
- Drop the colours into the "clouds" with the dropper.
- As the food colouring fills the clouds, the colour will start falling down into the water, creating an effect that looks like rain is falling down!


**Source:** https://funlearningforkids.com/rain-cloud-jar-science-experiment/


# Fireworks In A Jar

**Materials:**

- An empty jar
- 4 tablespoon of cooking oil
- Food colouring
- Water
- A bowl
- Paper towels
- A spoon

**Instructions:**

1. Begin by filling an empty jar ¾ of the way with water. Set this to the side.
2. In a bowl, combine 4 tablespoons of cooking oil along with several drops of food colouring.
    - You will want to add 3 to 5 drops of food colouring for each colour that you are using.

3. Use a spoon to stir the food colouring into the oil
    - It will not mix, but stirring will help to break the food colouring into smaller droplets
4. Pour the container of oil into the jar of water.
5. After a moment or two, the oil will settle at the top of the jar, but the food colouring will begin to shoot down and mix into the water, creating a “fireworks” effect!

**SOURCE:**
https://www.growingajeweledrose.com/2019/02/fireworks-in-jar.html

# Colourful Sugar Water Density Tower

**Materials:**

- Water
- 5 clear glasses or clear plastic cups
- Tablespoon
- Food colouring
- Sugar

**Instructions:**

1. Fill the cups with 8 oz (237 ml) of hot tap water. Use your method of choice to color the water. You'll want a different color for each cup, for example, blue, green, yellow, and red.
2. Add 2 level tablespoons of granulated sugar to the first cup, 4 to the second cup, 6 to the third cup and 8 tablespoons to the fourth cup.

Be sure to label each color with the amount of added sugar. For example:

- Blue = 2 tablespoons
- Yellow = 4 tablespoons
- Red = 6 tablespoons
- Green = 8 tablespoons

3. Use a separate spoon to stir each cup and stir until the sugar is *completely* dissolved. It's crucial that all of the sugar be dissolved in each cup. Use separate spoons so you don't dilute one density with another.
4. You'll need to move to a supersaturated solution to dissolve all the sugar and this means heating the water. Place a cup in a microwave oven for 20 seconds to warm the water. Stir the warmer water. Continue warming and stirring in stages until all of the sugar is dissolved in all of the cups.
5. Start with the cup containing the most dissolved sugar (green water in the example). Using a pipette, dropper, or a turkey baster, add the bottom layer of colored sugar water to another clear glass or cup. Keep the sides of the test tube dry by placing the baster well down into the center of the tube before gently squeezing it.

**NOTE:** If you have only one pipette or baster, be sure to rinse and dry it between each color change so one solution doesn't mix with another.

6. Add the solution with 6 tablespoons, then 4 tablespoons solution and the 2-tablespoon last. Admire the awesome layers of colour you've created!

**Source:** https://www.stevespanglerscience.com/lab/experiments/colorful-sugar-density-tower/?source=pepperjam&publisherId=21181&clickId=3055867111

# Growing Sugar Crystal

This easy sugar crystals recipe lets kids observe the crystallization process firsthand while making some pretty delicious treats. Sugar, water, and a few more items found at home are all you need to turn your kitchen into a rock candy laboratory!

**Materials:**

- 2 cups of water
- 4 cups of sugar
- A pot
- Wooden sticks
- Clear jar
- Food colouring (optional)
- Flavour enhancements (optional)
    - Vanilla extract
    - Peppermint extract

**Instructions:**

1. Bring two cups of water to a boil in a large pot on the stove.
2. Next, stir in four cups of sugar. Boil and continue stirring until sugar appear dissolved. This creates a supersaturated sugar solution.
3. Add in any flavor enhancements, such as vanilla or peppermint. Allow the solution to cool for 15-20 minutes.
4. While waiting for the solution to cool, prepare your wooden sticks for growing the rock crystals. Wet the wooden sticks and roll them around in granulated sugar. Make sure you allow the sugared sticks to completely dry.

5. Once the sugar solution is cool, add in food coloring to create rock candy of your preferred color.

6. Pour the cooled solution into a glass jar and insert the sugar-covered wooden stick into the center of the glass. Make sure that the stick is not touching any part of the jar. If it does, the candy crystals could get stuck to the bottom or to the sides.

7. Once in place, secure the stick in place using a clothespin. Cover the top of the glass with a paper towel. You may have to poke a hole in the paper towel for the wooden stick to poke through.

8. Place the glass in a cool and quiet place. They will reach their maximum growth potential by two weeks!

**Youtube link**: https://www.youtube.com/watch?v=ZJ448SMHYS8&feature=emb_logo
**Source:** https://mommypoppins.com/kids/how-to-make-rock-candy-with-kids