February Science

Exploding Hearts

Age Range: All Ages

Supplies: Toilet paper rolls, baking soda, food coloring, vinegar, scissors, tray, or paper plates.

Set Up: Cut hearts in the center of the toilet paper rolls.

Instructions: Stand the toilet paper rolls upright on a tray. Pour 1-2 tablespoons of baking soda in each toilet paper roll. Squeeze several drops of food coloring on top of the baking soda. Slowly pour the vinegar on top of the baking soda, watch it explode out of the heart!

Why does this happen?

The chemical reaction happens when vinegar's acetic acid reacts with the baking soda's sodium bicarbonate to form carbonic acid. Carbonic acid falls apart into carbon dioxide and water. The bubbles come from the escaping carbon dioxide. The CO2 has no where to go except up and out of the paper tube.

February Science

Egg in a Bottle

Age Range: All Ages

Supplies: Peeled hard boiled eggs, glass jar with narrow opening (similar to old fashioned milk bottle), matches, vinegar (optional).

***MATCH ALERT: This experiment involves the use of matches and should be conducted by a responsible staff member, and with director approval. ***

Set Up: Hard boil 1-2 eggs before the experiment, peel the eggs. If you do not want to hard boil the eggs, soak the eggs overnight in vinegar until the shell of the egg softens.

Instructions: Light a match and drop it into the bottle. When the match has almost burned out, place the egg on top of the bottle, narrow side down. Watch as the egg seems to be sucked into the bottle!

Why does this happen?

The match warms the air, which then expands (some of it escapes) and becomes less dense. Putting the egg on the bottle snuffs out the fire because there is no oxygen supply left. The egg rests between normal air pressure (pushing it down) and weaker air pressure from inside (pushing up against it). Not contest- the downward pressure wins the day!

SUNSHINE DAY CAMP

Science Curriculum

Child's Name: _____

Science Experiment:	
My Hypothesis (What I think will happen.)	What happened?
Why do I think it happened?	

February Science

Glitter Static Electricity Activity

Age Range: All Ages

Supplies: Pink Glitter, Paper Plate, Cloth, Balloon

Set Up: Blow up the balloon and tie it securely and rub the inflated balloon against a wool cloth or your hair. This action creates static electricity on the surface of the balloon

Instructions: As you hold the ballon over the glitter, you'll notice the glitter jumps towards the balloon, sticking to it. This is due to the attractive force between opposite charges. The static electricity on the balloon attracts the positively charged glitter. Try using different materials to see if they generate static electricity differently.

February Science

Valentine Lava Lamp

Age Range: All Ages

Supplies: Glass jar, water, oil, alka seltzer tablets, food coloring

Set Up:

Instructions: Fill the glass jar about three-quarters full with water. Pour oil into the jar, leaving some space at the top. The oil will float on top of the water due to their immiscibility. If desired, add a few drops of food coloring to the water. This will create a more vibrant and visually appealing lava lamp effect. Allow the jar to sit for a moment, and you'll notice the oil and water forming distinct layers. The oil will stay on top because it is less dense than water. Break an Alka-Seltzer tablet into a few small pieces. You don't need the whole tablet at once. Drop a small piece of the Alka-Seltzer tablet into the jar. Observe what happens. As the Alka-Seltzer reacts with the water, it produces carbon dioxide gas. This gas forms bubbles that rise through the oil, carrying droplets of colored water with them. When the bubbles reach the top, the gas is released, and the colored water droplets fall back down to the bottom, creating a mesmerizing lava lamp effect.

SUNSHINE DAY CAMP

February Science

Dry Erase Hearts

Age Range: All Ages

Supplies: Shallow container or tray, water, dry erase markers, spoon

Set Up: Begin by filling the shallow container or tray with water. Ensure that the water level is not too high to prevent spills.

Instructions: Use the dry erase markers to draw hearts directly onto the surface of the spoon. Make sure the hearts are drawn completely on the spoon's surface, covering a significant area to ensure buoyancy. Hold the spoon upright, with the hearts facing downward. Ensure that the drawn hearts are on the side facing the water. Carefully lower the spoon with the drawn hearts into the water, ensuring that the hearts are fully submerged. Hold the handle of the spoon to keep it steady. As you lower the spoon into the water, the drawn hearts will separate from the spoon and float on the water's surface. The hydrophobic nature of the dry erase marker ink repels water, allowing the hearts to float. Lift the spoon out of the water and see if the hearts adhere to the spoon again. You can redraw on the spoon and repeat the process to create more floating hearts.