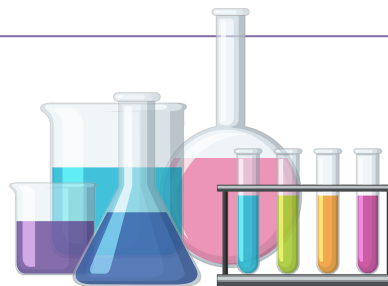


# DRY ICE INVESTIGATION



## 01 MAD SCIENTIST'S POTION



**Supplies needed: 1 cup, water, food coloring, dry ice**

**Step 1:** Fill your cup with water.

**Step 2:** Add a few drops of food coloring.

**Step 3:** Make a prediction: What will happen when you add the dry ice?

**Step 4:** Add a chunk of dry ice and see what happens!

## WHAT'S HAPPENING?

Dry ice is frozen carbon dioxide. It's called dry ice because it never melts.

Melting is when something turns from a solid into a liquid. Dry ice turns directly from a solid to a gas. That's called sublimation. The water in your cup speeds up this process, so you see lots of "smoking." That "smoke" is the solid carbon dioxide turning into carbon dioxide gas.

## 02 BUBBLY BUBBLES



**Supplies needed: 1 cup, water, food coloring, dish soap, dry ice**

**Step 1:** Wait until the dry ice in your cup is completely gone.

**Step 2:** Add a few drops of dish soap to your colored water.

**Step 3:** Make a prediction: What will happen when you add the dry ice?

**Step 4:** Add a chunk of dry ice and observe what happens. Were you right?

Note: These bubbles are safe to play with! Feel free to pop them, hold them in your hands, play with them, etc.

## WHAT'S HAPPENING?

Those bubbles are each filled with carbon dioxide gas from the dry ice. The gas is white, because the carbon dioxide goes right from a solid to a gas. It's never a liquid, so it never gets the chance to mix with the colored water in your cup. It stays colorless.

## 03 JUICY BALLOONS



**Supplies needed: 1 bottle of juice or water, 1 balloon, dry ice**

**Step 1:** Open your bottle of juice and take a few sips. (You'll need a little space in the bottle for your dry ice.)

**Step 2:** Make a prediction: What will happen when you add dry ice to the bottle, then stretch a balloon over the mouth of the bottle?

**Step 3:** Add some dry ice to your bottle.

**Step 4:** Stretch a balloon over the mouth of the bottle. What happens?

**Step 5:** Now take the balloon off the bottle and tie it- balloons filled with carbon dioxide are fun to play with because they're heavier than normal.

**Step 6:** When the dry ice is completely gone from your bottle, take a taste! What's different?

## WHAT'S HAPPENING?

**Why did the balloon fill up?** Gas takes up more space than a solid. (The molecules are more spread out.) So when the solid dry ice turns into carbon dioxide gas, it fills up the balloon. **How did my juice turn into soda?** The fizziness of soda is caused by carbonation, or carbon dioxide bubbles. When your dry ice sublimated, it left carbon dioxide bubbles in your juice, causing it to become fizzy!