SCIENCE FESTIVAL FACILITATOR'S GUIDE

It's Chemical

1. Make sure you have the materials you need.

- Plastic table cover and paper towels to wipe up spills
- Small, strong plastic bottles (for example, 20-oz. soda bottles, one for each adult-student pair)
- Medium-sized round balloons (one for each adult-student pair)
- Vinegar (several bottles)
- Baking soda (several boxes)
- Plastic Teaspoons (several to share)
- Funnels (several to share)

2. Watch this video on your smartphone:

https://www.youtube.com/watch?v=JmzBf3XGsOE

3. Prepare your station.

- Cover your table with plastic to protect it from spills.
- Distribute plastic bottles, balloons, baking soda, vinegar, teaspoons and funnels around the table for everyone to use.

Questions to ask participants before they start:

- Who thinks they could inflate this balloon without blowing into it?
- What could we try?
- Let the students make some guesses or even silly tries—remember, there are no wrong hypotheses!
- Good ideas! We're going to try another way.

Instructions:

Please read each set of instructions out loud. Make sure that you direct the correct person to complete each assigned task.

- **Adult:** Pour vinegar into the bottle until it is about 1/2 inch deep. Place the narrow end of the funnel into the neck of the balloon, and hold them for your student.
- **Student:** Pour two teaspoons of baking soda into the neck of your balloon, using the funnel.
- **Adult:** Stretch the neck of the balloon over the neck of the bottle, being careful not to let the baking soda out of the balloon.
- **Student:** Lift up the balloon so that the baking soda runs into the vinegar. Shake the bottle carefully.
- **Together:** Watch what happens!

How It Works:

In the plastic bottle, the baking soda and vinegar react to make a gas (carbon dioxide). As the gas forms, its bubbles rise and inflate the balloon.

Vocabulary:

Chemical reaction: What happens when two substances combine to make something new.

Real-World Application:

Chemical reactions happen all around us, all the time! When plants use light to make food and oxygen, or your parents light a match, or you use soap to clean the dirt from your hands … you're seeing chemistry in action.