

## SCIENCE FESTIVAL FAMILY EXPERIMENT GUIDE: IT'S CHEMICAL



### Instructions:

**Adult:** Pour vinegar into the bottle until it is ½ inch deep.

**Adult:** Place the narrow end of the funnel into the neck of the balloon and hold it for your student.

**Student:** Pour two spoonful's of baking soda into the neck of your balloon using the funnel. teaspoon of baking soda.

**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 the balloon so that the baking soda runs into the vinegar. (Shake the bottle carefully if needed)

**Together:** Watch what happens!

**Optional:** Once the balloon is filled up take it off the bottle, tie it and see if it drops or floats.

### Questions for after:

#### K-2<sup>nd</sup> Grade:

- What happened to make the raisins dance?
- Why do you think that happened?
- Do you think they will stop dancing?

#### 3<sup>rd</sup>-5<sup>th</sup> Grade:

- What happened when you combined the baking soda and vinegar?
- Why did bubbles start appearing?
- Can you explain what was happening to the raisins?

### How It Works:

In the plastic bottle, the baking soda (solid) and vinegar (liquid) react to make a gas (carbon dioxide). As the gas forms, its bubbles rise and inflate the balloon. These two substances combine to make a new substance this is called a chemical reaction. If you tried to get your balloon to float you will see that it falls to the ground, that is because carbon dioxide, is heavier than the air and so the balloon wont float.

### Vocabulary:

**Chemical reaction:** A change that happens when two substances combine to make something new.

### Real-World Application:

Chemical reactions happen all around us! When plants use light to make food and oxygen, your parents light a match, or you use soap to clean the dirt from your hands ... you're seeing chemistry in action. Understanding chemical reactions is important in many careers like chefs, doctors, and chemical engineers.

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