



SCIENCE FESTIVAL FAMILY EXPERIMENT GUIDE: DANCING RAISINS

**Instructions:**

Student: Pour 1 ½ cups of water into the plastic bottle

Adult: Add one heaping teaspoon of baking soda.

Student: Stir until the baking soda is

dissolves in the water

Student: Add 4-6 raisins into the bottle.

Adult: SLOWLY add one cup of vinegar into the plastic bottle.

Together: Watch what happens!

Questions for after:**K-2nd Grade:**

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

3rd-5th 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 and vinegar react to make a gas (carbon dioxide). As the gas forms, it clings to the raisins in the bottle. Once enough gas sticks to a raisin, it will begin to rise to the surface, the carbon dioxide is increasing the buoyancy of the raisings temporarily. When it reaches the surface, the gas escapes into the air, and the raisin sink back down because it is denser than water. The raisin will repeat this process for several hours or until the raisin gets soggy and too heavy to rise to the surface.

Vocabulary:

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

Buoyancy: The ability for an object to float in water or another fluid.

Density: Describes how much space an object or substance takes up (its volume) in relation to the amount of matter in that object or substance (its mass). If an object is heavy and compact, it has a high density. If an object is light and takes up a lot of space, it has a low density.

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.

The carbon dioxide bubbles are acting just like floaties or an innertube a child would wear in a swimming pool. The air in the floaties is less dense than water and increases the buoyancy of the child and allows them to float

spark. inspire. engage.

