**Dancing Raisins**

**Scientific Concepts:** Acetic acid (HC2H3O2) in vinegar reacts with baking soda (NaHCO3) to produce carbon dioxide, CO2 gas which makes the raisins dance.

**Introduction:**

Why don't we all take a huge breath in and exhale. Did you know that when you exhale, you release gas into the air? This gas is called carbon dioxide. Let's see what would happen if we created carbon dioxide, like you just breathed out, but in the water. The bubbles that are being created are the carbon dioxide. Now let's see what will happen to these raisins when I put them in.

**Explanation:**

The raisins in this experiment sink quickly when the density is greater than the density of the water. The acetic acid in the vinegar mixing with baking soda creates carbon dioxide bubbles of gas. The CO2 gas bubbles attach themselves to the raisins, which help make them less dense than water. The raisins are able to float at the surface carried by the carbon dioxide bubbles. After a few seconds, the bubbles break, and the raisins fall back to the bottom. The process repeats itself over and over. These carbon dioxide bubbles are like the water wings you or your little brother or sister wears when you need help swimming. They help you float, just like the carbon dioxide bubbles help the raisins to float. When the bubbles burst at the top, it's like the raisins took off their wings and sunk back down to the bottom.

**Chemical Reaction:**Vinegar + baking soda

Acetic Acid + sodium bicarbonate --> carbon dioxide gas + water + sodium acetate

HC2H3O3 +NaHCO3 --- > CO2 gas + H2O +NaC2H3O2

**Safety and Disposal:** No particular safety precautions are needed. The solution can be poured down the drain. Be careful to collect the raisins for solid waste as they will clog the drain.