

Dancing Raisins: Exploring Carbon Dioxide Bubbles



Grade: 5th Grade | **Topic:** dancing raisins | **Measurement:** US Customary (cups, ounces, inches, etc.)

Purpose

To observe how carbon dioxide gas makes raisins move up and down in a liquid. This experiment helps us understand the behavior of gases in liquids and buoyancy.

Hypothesis

If raisins are placed in carbonated water, then they will move up and down because the bubbles will stick to the raisins and lift them up.

Materials

- 1 clear glass or plastic cup (about 8 ounces)
- 1 cup of clear carbonated water (such as club soda or sparkling water)
- 8-10 raisins
- Paper towel (for clean-up)

Procedure

1. Pour 1 cup of carbonated water into the clear glass.
2. Observe the bubbles in the water before adding anything.
3. Drop 8-10 raisins carefully into the glass of carbonated water.
4. Watch the raisins for 5 minutes and note what they do.
5. Use a paper towel to wipe any spills immediately.

Results

The raisins sink to the bottom at first. Then, bubbles of carbon dioxide gas stick to the wrinkles on the raisins, lifting them to the surface. When the bubbles pop at the surface, the raisins sink again. This cycle can repeat several times, making the raisins appear to 'dance.'

Conclusion

The carbon dioxide gas in the carbonated water attaches to the rough surface of the raisins, causing them to rise. When the bubbles burst, the raisins sink again because they are heavier than the water. This shows how gas bubbles can affect the movement of objects in a liquid.

Learning Objectives

- Understand how gases can create movement in liquids.
- Learn about buoyancy and how objects float or sink.
- Observe physical changes without changing the substance.
- Practice making and testing a hypothesis.

Teacher Notes:

Key Concept: This experiment demonstrates how carbon dioxide gas in carbonated water creates bubbles that can attach to objects and change their buoyancy. It is a simple way to see gas behavior and the concept of sinking and floating.

Answer/Explanation: Raisins have a rough surface that allows bubbles to stick. As bubbles collect, they decrease the raisin's overall density, making it float. When bubbles pop, the raisin becomes heavier and sinks again, creating a dancing effect.

Teaching Tips:

- Encourage students to describe what they see using their own words. 2. Ask them to predict what will happen before dropping raisins. 3. Compare results using different liquids (like plain water) for contrast. 4. Discuss real-life examples of buoyancy such as boats and balloons.

Relevant Standards: NGSS 5-PS1-1, NGSS 5-PS1-3



Name: _____

Date: _____

Experiment Title:

Purpose: *(I wonder...)*

Hypothesis: *(I think...)*

Materials:

Procedure:

Results: *(What happened?)*

Conclusion: *(I learned...)*