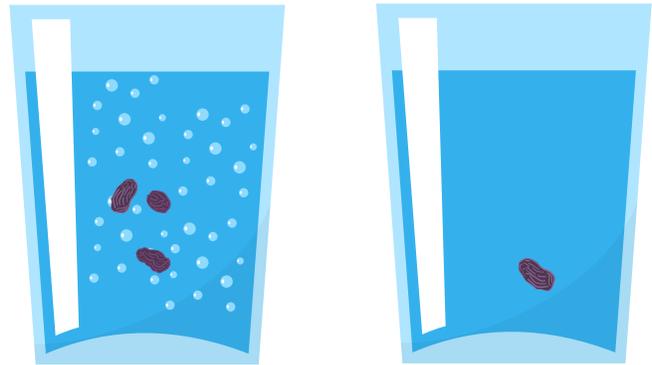


DANCING RAISINS

MATERIALS:

2 Clear glass or cup
Any clear carbonated beverage
Water
Raisins
Paper & Pencil



Experiment:

1. (instructions). Pour the water into one cup and pour the clear carbonated liquid into the other cup. Pour the same amount in each cup.
2. Observe what is happening in each cup.
3. Draw a line down the middle of your paper. Label one column "water" and the other "carbonated liquid." Write or draw your observations of the 2 liquids on the paper. How are they alike? How are they different?
4. Write down what you predict will happen when you drop 4 raisins into each cup.
5. Now, drop 4 raisins in each cup. Observe and record your observations on your paper. Did the raisins sink or float? What else do you notice?
6. In a minute or so, the raisins in one of the cups should start to pop up and fall down. Which cup do you think will have the dancing raisins?

How does this work?

Here's an explanation from Steve Spangler Science:

The raisins will bob up and down for several minutes. This “raisin dance” is captivating to watch. Since the surface of the raisins is rough, tiny bubbles of carbon dioxide gas are attracted to it. These bubbles increase the volume of the raisin substantially, but contribute very little to its mass. As a result, the overall density of the raisin is lowered, causing it to be carried upward by the more dense fluid surrounding it.

Archimedes' Principle states that the buoyant force exerted on a fluid is equal to the weight of fluid displaced. Since the raisins now have a greater volume, they displace more water, causing the fluid to exert a greater buoyant force. The buoyant force of the surrounding fluid is what pushes the raisins to the top.

Once the raisins reach the top, the bubbles pop upon exposure to the air. This makes the raisins more dense, causing them to sink. As more bubbles adhere to the raisins, the density of the raisins decreases and they rise to the surface again. This experiment very clearly shows that an increase in volume (as long as the mass increase is negligible) will lead to a decrease in density. The bubbles that attach themselves to the raisins are like little life jackets that make the raisins more buoyant by increasing their volume.

Learn even more at:

stevespanglerscience.com/lab/experiments/dancing-raisins-the-bubble-lifter/