Dancing Raisins

Leading questions:

- Can you give an example of something sinking? Something floating?
- Why do you think some things float and other things sink?

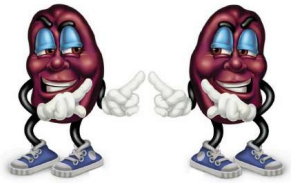
What to do:

1. Predict what you think will happen if you drop a few raisins into a glass of water.
   - Try it and explain what you think is happening.
   - What do you think causes what you see?
2. Now try dropping some raisins into the glass of bubbly soda.
   - Watch for a minute and describe what you see. What forces are acting on the raisin?
   - What do you think causes the raisins to rise?
   - Why do you think the raisins fall after they reach the surface?

Summary:

Buoyancy is the upward force a liquid exerts on an objects. It works against gravity, which is the force that causes everything to fall. The water does not have enough buoyancy to lift the raisins. In the soda, the bubbles attach to the raisins to increase the buoyancy and overcome the force of gravity. At the surface, some of the bubbles pop and gravity becomes the stronger force.

Other things you can try; Check out the lava lamp and the buoyancy tube.



Dancing Raisins
(Guide)

Leading questions:

- Can you give examples of something sinking? And something floating?
  Talk: to students about their answers (why, how, give more examples…).
- Why do you think some things float and other things sink?
  Explain: Something will float (for example in water) when the space it takes up (its volume) has less mass (weighs less) than the water it displaces; it is more buoyant. The buoyant force ↑ is greater than the force of gravity ↓.
  Show examples: a cork in water, plastic in water

What to do:

1. Predict what you think will happen if you drop a few raisins into a glass of water.
   - Try it and explain what you think is happening.
   - What do you think causes what you see?
     Explain: the raisin will sink in water because the force of gravity ↓ is greater than the ↑ buoyant force of the water.
2. Now try dropping some raisins into the glass of bubbly soda.
   - Watch for a minute and describe what you see.
   - What do you think causes the raisins to rise?
     Explain: the raisins rise because they are covered in bubbles from the soda them more buoyant. The buoyant force ↑ (from the bubbles) is greater the force of gravity ↓ .
   - Why do you think the raisins fall after they reach the surface?
     Explain: the bubbles pop at the surface; then, the force of gravity ↓ is greater than the ↑ buoyant force of the soda.

Summary:

The lava lamp and the density tube work the same way as the raisins; the more buoyant (less dense) object or material will rise in a less buoyant (more dense) material.

WATER

SODA

Set-up Guide and Suggestions

Glass with water, glass with soda
PREDICT, Add raisins to a glass of water; to a glass of soda
Observe action, surface of raisins
Compare coming up, going down
What force causes them to rise; causes them to sink?

Note to us:
Cups, raisins, waste jar, spoon, wider base glasses, ginger ale, 10 min time limit activity
Sodas: What works: Ginger Ale, …What doesn't work, diet tonic water, club soda.