



NEWTON'S corner

A+ The Arts & Science Center
A Plus for Southeast Arkansas

Presented by Arkansas Discovery Network

Sink or Swim

Science and Math Concept

Density
Bouancy



Special instructions

Imagine a hot summer day. You're at a picnic and go to the ice chest where the sodas are staying nice and cool. Which cans are floating in the ice water, and which have sunk to the bottom?

Materials

- several unopened cans of regular soda of different varieties
- several unopened cans of diet soda of different varieties
- a large plastic tub or sink

What to Do

1. Fill the tub or sink almost to the top with water.
2. Place a can of regular soda into the water. Make sure that no air bubbles are trapped under the can when you place it in the water.
3. Observe whether the can sinks or floats?
4. Repeat the experiment with a can of diet soda. Does it sink or float?

What's happening?

Soda cans have exactly the same volume or size. But their density differs due to what is dissolved in the soda. Regular soda contains sugar as a sweetener. The nutrition facts on a can of regular soda show it contains A LOT of sugar. In some cases a 12-oz. can of regular soda will contain over 40 grams of sugar. Diet sodas use artificial sweeteners such as aspartame. These artificial sweeteners may be hundreds of times sweeter than sugar which means only a few grams of artificial sweetener are used in diet soda. The difference in the amount of dissolved sweeteners leads to a difference in density. Regular soda cans tend to be more dense than water so they sink. Diet soda cans are usually less dense than water, so they float.

Questions

1. Why does one can sink, and the other can float?
2. Are there any varieties of regular soda that will float?
3. Are there any varieties of diet soda that sink?
4. Can you think other factors that might influence which sodas float or sink?