

# Buoyancy DENISTY

## Will it... FLOAT?



water

Guess if objects will sink or float in water. Ask a parent where is the best place to do some messy experiments.

Select a variety of small objects (like a rock, piece of styrofoam, a plastic bottle cap, a coin, a grape, a rubber eraser, a leaf).

Don't use anything valuable that could be damaged.

One at a time, place the items into a small glass of water. If you want to make it a game, guess, "Will it float?" before you test.

If it floats then it is buoyant. This is because it is lighter (less dense) than the liquid so it will sit on the top.

If it sinks then it is heavier (more dense) than the liquid.

Get 2 more glasses and try the same experiment in syrup and then in vegetable oil. Don't forget to get permission to use the groceries.



syrup



oil

Next, test relative density of the liquids. Use a tall glass.

Pour water into the glass. Then add syrup and vegetable oil. You can use what is left over from the previous experiments.

Watch what happens. The three liquids will float on top of one another in separate layers because they have different densities (weights).

The heaviest will sink to the bottom. The lightest will float on the top. The medium weight liquid will be in between the other two.



relative density

**DON'T FORGET TO CLEAN UP!**

**DANCING RAISINS:** Fill a clear glass with colorless soda. It must be fizzy, not flat. Drop a few raisins into the glass. The raisin will "dance" to the surface.

When the bubbles stick to the rough surface of a raisin, it will be lifted. The bubbles of carbon dioxide (the fizz of the soda) are less dense than a raisin and increases its buoyancy.

When the raisin reaches the surface, the bubbles pop. The gas inside the bubble escapes into the air. The raisin loses buoyancy and sinks.

This continues until most of the bubbles have escaped and the soda goes flat.



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