Density And Mass Of Sodas.

M7-14 PHYSICS
Question: Can the mass of a beverage, make you conclude if it can sink or float in density?

Purpose: My purpose of the project is to see if other sodas sink or float in water as well as see if mass of a drink, can help you conclude if it sinks or floats.
Abstract

The idea is to see which soda can float or sink and if we can get to that conclusion by testing 2 fluid ounces of a drink and then weighing it but subtracting the weight of the cup to be left with only the sodas weight in ounces converted to mass.
Hypothesis

The diet sodas mass should be less compared to both water and other soda substances as well as the regular sodas masses being more than water and sinking.
Materials

1. A measuring cup.
2. Scale.
3. Sodas, mine being mountain dew, Mountain dew with real sugar, Chek Kountry Mist, Pepsi, Pepsi with Real sugar, diet Pepsi, coca cola, diet coca cola, and tonic water.
4. Napkins, for cleaning up.
5. Paper and pencil, to write results.
Procedures

1. Pull out all of the materials.
2. Find the mass of the cup.
3. Find the mass of an empty measuring cup, mine was 4.5 ounces, converted to 127.573 grams.
4. Find the mass up with water to a certain point (I was at 2 fluid ounces, and converted to 59.147 milliliters.)
5. Test each soda in a measuring cup up to 2 fluid ounces.
Variables:

Independent Variable: The soda type.

Dependent Variable: The mass and found density and if we conclude if it will float or sink.

Control: Water is used as a base. We always subtract by 4.5 ounces (127.573 grams) from each value. Always use the density formula being, Density = Mass/Volume measured. Use the same cup. Always measure up to the 2 OZ mark.
The two scales I used to get exact measures.

The materials
<table>
<thead>
<tr>
<th>Sodas</th>
<th>Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mountain Dew</td>
<td>Mass of 62.369 grams with a density of 1.05 g/ml so it sinks.</td>
</tr>
<tr>
<td>Mountain dew with real sugar</td>
<td>Mass of 65.204 grams with a density of 1.1 g/ml, so it sinks.</td>
</tr>
<tr>
<td>Chek kountry Mist</td>
<td>Mass of 62.369 grams with a density of 1.05 g/ml so it sinks.</td>
</tr>
<tr>
<td>Pepsi</td>
<td>Mass of 59.534 grams with a density of 1.01 g/ml, so it sinks.</td>
</tr>
<tr>
<td>Pepsi with real sugar</td>
<td>Mass of 65.204 grams with a density of 1.01 g/ml so it sinks.</td>
</tr>
<tr>
<td>Diet Pepsi</td>
<td>Has a mass of 53.8641 grams and a density of 0.91 g/ml so it floats.</td>
</tr>
<tr>
<td>Coca Cola</td>
<td>Mass of 62.369 grams so its density is 1.05 g/ml so it sinks.</td>
</tr>
<tr>
<td>Diet Coca Cola</td>
<td>Mass of 51 grams with a density of 0.86 g/ml so it floats.</td>
</tr>
<tr>
<td>Tonic Water</td>
<td>Mass of 62.369 grams and has a density of 1.05 g/ml so it sinks.</td>
</tr>
</tbody>
</table>

Formula to find this is Density = mass / volume of measure.

Water is 1 g/ml.
Conclusion

I can now conclude that mass does effect the density of a soda and you can conclude if it sinks or floats from its mass and its volume. You can do this by the formula Density = mass / volume. I also now know that if it is over 1g/ml then it is more dense than water and will sink and if it is under it will float being less dense.