Procedure:

1. Observe the cans of coke and diet coke on your table. Take a good look at each can and make careful observations about you what you see. Don't take even the simplest observations for granted. Anything is fair game- shape size, color…..
2. Make a list of as many similarities as they can about the 2 cans of coke.
3. Make a list of as many differences as you can about the 2 cans. Add to list.

4. Place the coke can in the tub. What happens?

5. Place the diet coke can in the tub. What happens?

6. Weigh the Coke and Diet Coke to determine mass of each can.

7. Using water displacement and our established volume formulas, find the volume of each can. How do they compare?

8. Use the formula for Density to determine the densities of Coke and Diet Coke. Be careful with units!

9. Based on your answers to 8, can you predict what the density of water is? What range of values must water's density be between? Make sure to express your answer in the appropriate units.

10. What about trying this experiment with other sodas? Look up the relevant information (easily found on-line) for Pepsi and Diet Pepsi and another soda/diet soda (same brand- say Dr. Pepper or Mountain Dew). Calculate their densities. What do you predict would happen if these sodas were submerged in water?

11. The density of Gasoline is 680 g/cm^3. What would happen to the regular coke can if we submerged it in gasoline? Support your answer with calculations.

12. Instead of diet sodas, what might a more scientifically accurate name for these types of sodas be?

13. When water freezes, it expands. What does this imply about the density of ice compared to the density of water?

14. What weighs more, a liter of ice or a liter of water?

15. Which has the greater density-100 kg of lead (density-11,340 g/cm^3) or 1000 kg of aluminum (density = 2, 700 g/cm^3)?