Mass Conservation

Experiment Question:

- *How does the mass of the substances before an experiment compare to the mass of the substances after the experiment has taken place? Why?*

Materials:

- 250 ml glass beaker
- 2 Film Canisters
- Sugar Cube
- Stir Sticks
- Water from sink
- 2 - Paper Cups
- Plastic Baggie
- Glow stick
- Vinegar
- Baking Soda
- Weight Scale
- Wooden stir stick

Procedure:

Experiment A: Sugar + Water

1. Find the Mass or the sugar and water cups and wooden stirring cube.
2. Record the mass of the sugar and water prior to mixing in the data table
3. Put the sugar in the water and stir with the wooden stick. After stirring the water, keep the stick inside the cup so that none of the water is allowed to drip. **Be careful so that no water or sugar spills. This is very important.**
4. Now take the empty container that the sugar used to be in, the sugar water, and the plastic stirring rod, and place them on the weight scale again. **It is very important that you weigh everything that you placed on the scale in step 2. Don't forget anything even if it is empty.**
5. Record the weight of the products in the data table.
6. Clean and rinse all the labware.

Experiment B: Glow Stick

1. Find the mass or the glow stick before you crack to glow
2. Record the weight in the data table.
3. Crack/Shake the glow stick
4. Find the mass of the Glowstick after its glowing

Experiment C: Vinegar and Baking Soda

1. Record the mass of the 2 film canisters and plastic baggie
2. Pour baking soda and vinegar into the baggie and SEAL THE BAG QUICKLY!!!
3. Weigh the 2 film canisters and baggie after the chemical reaction has occurred.
4. Record the weight in the data table.
5. Pour the liquid down the sink

Data Tables/Results:

	Experiment A	**Experiment B**	**Experiment C**
Start Mass (grams) (Before mixing)			
End Mass (grams) (After mixing)			
Change in mass =End mass-start mass			

***if there is less than 0.7 grams difference, then you should state that there was no change in mass.**

Data Analysis:

1. What did you notice about the difference between the starting mass and the ending mass of each experiment?

2. All chemical reactions follow what is called the law of conservation of mass. What does it mean?

3. How does this law apply to the 3 Experiments you just did?

4. Which experiments were physical and which were chemical?

4. Identify the Reactants and Products- Exit Ticket

Chemical Equation for Each Experiment	**Identify the Reactants**	**Identify the Products**
Experiment 1: $C_{12}H_{22}O_{11} + H_2O \dashrightarrow C_{12}H_{22}O_{11} + H_2O$		
Experiment 2: Glow Stick ---> Glowing Glow Stick		
Experiment 3: $NaHCO_3 + CH_3COOH$ ----> $NaCH_3COO + CO_2 + H_2O$		