Conservation of Matter Lab
“You can't get something from nothing”

Introduction

The conservation of mass tells us that you cannot destroy or create matter. In this lab I want you to prove it!

Reactants:

Products:

Materials:

<table>
<thead>
<tr>
<th>Vinegar</th>
<th>Small cup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baking soda</td>
<td>Balance</td>
</tr>
<tr>
<td>Plastic zip lock bag</td>
<td></td>
</tr>
</tbody>
</table>

Procedure:

1. Place one scoop of baking soda in a plastic bag.
2. Fill the cup with 3 squirts of vinegar from a pipette.
3. Place the cup of vinegar in the plastic bag being careful NOT to spill the vinegar.
4. Seal the plastic bag.
5. Determine the mass of the cups and the mass of the bag, baking soda, vinegar and cup.
6. Without opening the bag, pour the vinegar into the baking soda.
7. Observe.
8. Without opening the bag, record the mass of the bag and contents.
Conservation of Matter

Data Table:

<table>
<thead>
<tr>
<th>Initial Mass (g)</th>
<th>Final Mass (g)</th>
<th>Change in mass (g) [Final mass – Initial mass]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Questions:

1. What is a chemical reaction?
2. Describe what happens when the vinegar is poured into the baking soda.
3. Is this a chemical reaction? What evidence do you have to support your answer?
4. The gas in this reaction can put **out** fires. It is also a gas used by plants. Make a guess as to what gas is produced.
5. What is the conservation of mass and how does it relate to this lab? Why did we do this experiment in a plastic bag?
6. This lab showed one example of showing conservation of mass. Design an experiment with a **different procedure** to show the law of conservation of mass using an Alka-seltzer tablet and water (write this out on a separate sheet of paper). Your team must bring required materials. (You will be provided Alka-seltzer and water.) BE SPECIFIC in your procedure. You will be conducting this lab tomorrow.