**Background:**

Today we will talk about the conservation of mass in any ecosystem. In every ecosystem there is movement of mass, however there is not a loss of mass. The matter that moves around changes forms and still has the same mass. Today we will test that experiment.

**Materials:**

|  |  |  |
| --- | --- | --- |
| 1 Balloon | One Flask | One scoop of baking soda |
| 30 mL of vinegar | Triple Beam Balance |  |

**Methods:**

1. Take the vinegar and measure of 30 mL of vinegar. Take the 30 mL of vinegar and put it in your flask
2. Take your balloon. Carefully stretch the mouth of the balloon and add one scoop of baking soda to the balloon.
3. Take the flask and the balloon and measure them on the triple beam balance. **Make sure to keep them separate.** Record your observations on the data table.
4. Very carefully stretch the mouth of the balloon over the lip of the flask. **While doing this, be sure to not get any baking soda into the vinegar.**
5. When the whole system is attached, measure the mass. Record it in your data table
6. Take the balloon and stretch it straight up. This should help drop the baking soda into the flask. If not all of the baking soda has dropped, move the balloon around to drop all of the baking soda.
7. Watch the chemical reaction that happens. Make sure that no solids, liquids or gas escape the system.
8. After approximately thirty seconds, measure the mass of the entire system. Record that mass in your data table

**Data**

Table 1

|  |  |
| --- | --- |
| **Item Measured** | **Combined Mass** |
| Flask and balloon separate |  |
| Flask and balloon before reaction |  |
| Flask and balloon after reaction |  |

**Results:**

Use the space below to summarize what happened in this experiment. Use complete sentences to describe how this showed conservation of mass.

**Questions:**

1. In an ecosystem is matter gained, lost or conserved?
2. Between different trophic levels there is a 90% loss in mass. Where might this mass go?