

Name _____

Date: _____

Data Table and Explanation

Purpose: Decide whether the amount of matter changes during physical and chemical changes.

Procedure

Check off each step after you complete it.



- 1. Have one member of your group get the materials you'll need from the supply table.

Part 1: Physical Change

- 2. **Predict:** Do you think the weight of the liquid water bottle and the frozen water bottle will be the same or different? Why do you think so?

- 3. Place the liquid water bottle on one side of the balance. Wipe the frozen water bottle with a paper towel to make sure it's dry on the outside. Then place the frozen water bottle on the other side of the balance. Record your results on the data table by writing "Same" if both sides of the balance are equal (even) or "Different" if both sides aren't equal.
- 4. Place one bag of 5 Lego water molecules on one side of the balance. Place the other bag of 5 Lego water molecules (representing ice or solid water) on the other side of the balance. Record your results on the data table by writing "Same" if both sides of the balance are equal or "Different" if both sides aren't equal.

Data Table

Beginning Substance	Final Substance	Same or Different Weight?
Liquid water	Solid water	
Lego water molecules (representing liquid water)	Lego water molecules (representing solid water, or ice)	

5. Use the data from your data table and the Lego models to answer the focus question: *Is matter created or destroyed when it changes? How do you know?*

Part 2: Chemical Change

6. **Predict:** Do you think the weight of the bag containing vinegar and baking soda will be the same or different after the ingredients are mixed together? Why do you think so?

7. Place one plastic bag containing the vinegar and baking soda on one side of the balance. **Be careful not to mix the ingredients in this bag!** Then without opening the **second** plastic bag, remove the cap on the vial and pour out the vinegar so it mixes with the baking soda. **Remember not to open the plastic bag!** Then place this bag on the other side of the balance. Record your results on the data table by writing “Same” if both sides of the balance are equal or “Different” if both sides aren’t equal.

Data Table

Beginning Substance	Final Substance	Same or Different Weight?
Vinegar and baking soda	Fizzing mixture with gas	
Lego molecules of vinegar and baking soda	Lego molecules of mixed vinegar and baking soda	

8. Place the bag containing the Lego molecule of baking soda and the Lego molecule of vinegar on one side of the balance. Then place the bag containing the 3 other molecules on the other side of the balance. Record the results on the data table (above) by writing “Same” if both sides of the balance are equal or “Different” if both sides aren’t equal.

9. Use the data from your data table and the Lego models to answer the focus question: *Is matter created or destroyed when it changes? How do you know?*
