Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Science 8-\_\_\_\_\_

Physical and Chemical Properties

**Purpose:** to observe properties of substances independently and when mixed

**Materials:** baking soda, vinegar, sugar, beaker, metal scoop, balance, graduated cylinder

Procedure:

1. **Complete the data chart for “Physical properties before”**
2. Put the medium sized beaker (empty) on the balance.
3. Press the (ON/OFF ZERO) button so it reads 0.0 grams
4. Using the metal scoop, scoop out the baking soda into the medium beaker until you have 5 grams
5. Measure 25 mL of vinegar
6. SLOWLY add vinegar to baking soda.
7. Repeat steps 2-6 but use sugar instead of baking soda
8. Repeat 2-6 again but this time measure 2.5 grams of sugar and 2.5 grams of baking soda. Be sure to record observations of the 2 powders before adding the vinegar.
9. Record observations below the data table

**Data:**

|  |  |
| --- | --- |
| substance | Physical properties before |
| Baking soda |  |
| vinegar |  |
| Sugar |  |

Observations when mixed and allowed to sit for 30 seconds:

Baking soda and vinegar

Sugar and vinegar

Sugar and baking soda

Sugar, baking soda, and vinegar

Analysis:

For each mixture, how did the individual components not change? How did they change, if they changed? How do you know they changed? Give specific evidence that you stated above.

|  |  |  |  |
| --- | --- | --- | --- |
| mixture | Things that didn’t change | Things that changed  | evidence |
| Baking soda and vinegar |  |  |  |
| Sugar and vinegar |  |  |  |
| Sugar and baking soda |  |  |  |
| Sugar, baking soda, and vinegar |  |  |  |

Conclusion:

What properties are consider physical properties? (List examples)

Were there any chemical properties that were witnessed? List and them.

If you didn’t know something’s chemical properties what would you need to witness?