

Name \_\_\_\_\_

### What is Really Happening in the Baking Soda and Vinegar Experiment?

1. What is the Law of Conservation?

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2. What is a physical change?

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3. Lego Experiment (physical change):

- a. Weigh all the single Legos all together. \_\_\_\_\_ grams
- b. Put the Legos together then weigh them again. \_\_\_\_\_ grams
- c. What did you find out and what is your reasoning why?

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4. What is a chemical change?

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5. What is chemical bonding?

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6. What are the eight indicators that show a chemical change has occurred?

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7. Preparing the baking soda and vinegar experiment.

- a. Put a heaping 5 milliliter spoonful of baking soda in the balloon.
- b. Put 30 milliliters of vinegar in the plastic bottle.
- c. Put the open end of the balloon over the open end of the plastic bottle without any of the baking soda getting into the bottle.

8. Weigh the bottle, vinegar, balloon, and baking soda on a scale. \_\_\_\_\_

9. Feel the bottom of the bottle to see what the temperature is. \_\_\_\_\_

10. Write what the two substances are chemically made up of:

a. The make-up of the baking soda is \_\_\_\_\_

b. The make-up of the vinegar is \_\_\_\_\_

11. When the two mix, a chemical reaction will happen breaking the chemical bonding between the chemical particles make up the baking soda and vinegar. The baking soda and vinegar will not exist anymore. Write below what it would look like with all the chemical particles broken apart.

\_\_\_\_\_

12. Once the chemical particles are broken apart, they will begin to bond again in a new way and make new substances. To see this happen, put the balloon upright with the baking soda in it to let the baking soda go into the vinegar.

a. Weigh the bottle with the new products on a scale. \_\_\_\_\_

13. Describe what you observe through your five senses.

Sight: \_\_\_\_\_

Hearing: \_\_\_\_\_

Touch: \_\_\_\_\_

Smelling: \_\_\_\_\_

14. Observe the 5 different chemical change indicators you noticed.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

15. What are three new substances and their chemical make-up?

a. Gas: \_\_\_\_\_

b. Liquid: \_\_\_\_\_

c. Solid: \_\_\_\_\_

16. Notice that all the chemical particles are reused where no elements are destroyed or created.