Properties of Matter

Name: _____ Date: _____ Grade: Grade 5

Part A: Multiple Choice

Circle the best answer for each question.

1. A student burns a piece of paper in an open container and finds that the ash weighs less than the original paper. Does this violate conservation of mass?

- A) Yes, because mass was clearly lost when the paper burned.
- B) No, because the missing mass escaped as gases and smoke into the air.
- C) Yes, because chemical changes always reduce the total amount of mass.
- D) No, because ash is a different substance so it should weigh less.

2. Before a reaction, the total mass of the reactants is 50 grams. After the reaction in a sealed container, what is the total mass of the products?

- A) Less than 50 grams because some mass is converted into energy.
- B) Exactly 50 grams because mass is conserved in chemical reactions.
- C) More than 50 grams because new substances are created during the reaction.
- D) It depends on whether the reaction is physical or chemical.

3. Lemonade is made by mixing water, lemon juice, and sugar. Which classification of matter best describes lemonade?

- A) An element because it is a single liquid substance.
- B) A compound because the ingredients are chemically combined.
- C) A heterogeneous mixture because the sugar sinks to the bottom.
- D) A homogeneous mixture because the ingredients are evenly mixed throughout.

4. A student adds 10 grams of baking soda to 20 grams of vinegar in a sealed bag. After the reaction stops and gas fills the bag, what is the total mass?

- A) Less than 30 grams because the gas weighs less than the original liquids.
- B) Exactly 30 grams because all the matter is still inside the sealed bag.
- C) More than 30 grams because the gas takes up more space so it has more mass.
- D) It cannot be determined without knowing what products the reaction made.

Part B: Fill in the Blank

Write the correct answer on each line.

1. In a closed system, the total _____ stays the same before and after any change.

2. Air is classified as a _____ because it contains several different gases mixed together.

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Part B: Fill in the Blank

Write the correct answer on each line.

1. In a closed system, the total **mass** stays the same before and after any change.
2. Air is classified as a **mixture** because it contains several different gases mixed together.
3. H_2O is the chemical **formula** for water, showing it contains hydrogen and oxygen.