

Name _____

Evidence of Chemical Change



Goggles must be worn at all times during this investigation!

The chemicals used are poisonous, keep away from your mouth!

Background Information: All matter has physical and chemical properties by which it can be classified. The **physical properties** useful to the scientist are color, odor, density, hardness, structure, solubility, melting point, and boiling point.

Chemical properties are determined by the reaction of a substance with other substances. Examples of chemical properties are combinations with acids and bases, reactions with oxygen and other active gases, and the reactions of the substance with other compounds.

Changes in which the physical or chemical properties of a substance are changed are considered physical or chemical changes.

To tell if a change is a chemical change or a physical change, ask yourself this question: Does the change alter the type of substance? If the shape, size, or physical state is changed but the chemical composition, or type of matter remains the same, the change is a **physical change**.

In a **chemical change**, which is also called a **chemical reaction**, the atoms of a substance are rearranged. A chemical change requires that the new substance have a chemical composition that is different from the composition of the original substance.

Some signs of chemical changes are: color change, bubbling and fizzing (a gas is produced), light or heat production (the release of energy), and the formation of a solid.

Mass is not destroyed or created during any chemical change. The **law of conservation of mass** states that the mass of what you end with is always the same as the mass of what you start with

Procedure:

1. There are four stations set up around the room. Each station has a task card with instructions and all of the supplies & materials you will need to complete the instructions.
2. AS A TEAM, move through each station, read the instructions of the task card, and record your observations on this answer sheet.
3. You may move through the stations in any order.

Data:

Substance	Physical Properties	Observed Changes
Baking soda		
Calcium chloride		
Water		
Cornstarch		
Water		
Iodine		

Substance	Physical Properties	Observed Changes
Epsom salts		
Washing soda		
Water		
Copper penny		
Salt		

Vinegar		

Questions & Conclusions:

1. Identify 4 signs that indicate that a chemical change has taken place.

2. For each station, describe the evidence that a chemical change took place.

- ▼ Baking soda / calcium chloride:

- ▼ Cornstarch / iodine:

- ▼ Epsom salts / washing soda:

▼ Penny / salt / vinegar:

3. What do all of the changes you observed have in common?
