

Name \_\_\_\_\_

Period \_\_\_\_\_

Partner \_\_\_\_\_

Date \_\_\_\_\_

Recognizing Chemical and Physical Change

Prelab Questions

1. Classify each of the following as a SOLID, LIQUID, or GAS:

Sugar solution	_____	Sugar powder	_____
Water vapor	_____	Carbon dioxide	_____
Salt water	_____	Baking soda	_____

2. Classify each of the following as a CHEMICAL or PHYSICAL change:

Burning a match	_____	Ice melting	_____
Water boiling	_____	Ripping a piece of paper	_____
Digestion of food	_____	Rusting of iron	_____

Procedure

Put on your safety goggles and proper lab clothes. You must obey all lab rules.

Record on this page the observations that you make when the chemicals are mixed.

After completing each of the reactions, carefully clean the test tube or beaker before going on to the next station. Use the test tube brush provided. IF the tube is very milky rinse it with some acetic acid and then wash it.

Before you leave the laboratory, wash your hands thoroughly with soap and water.

Mix the chemicals for each reaction listed in the table. Use the amounts specified. The exact amount is not crucial since you are only making qualitative observations.

Data Table

Reaction Mixture	Chemicals Mixed	Initial Observation
1	Ammonium chloride (1 scoop) + water (~10 mL’s)	
2	Calcium chloride (1 scoop) + water (~10 mL’s)	
3	Sodium bicarbonate (1 scoop) + acetic acid (1 pipet full)	
4	Calcium carbonate (1 scoop) + acetic acid (1 pipet full)	
5	Sodium hydroxide solution (1 pipet full) + phenolphthalein (1 drop)	
6	Acetic acid (1 pipet full) + phenolphthalein (1 drop)	
7	Calcium Chloride (1 pipet full) + Sodium carbonate (1 pipet full)	
8	Starch (1 scoop) + water (~10 mL’s) + iodine solution (1 drop)	

## Post Lab Questions

You may answer many of these questions by listing the reaction number.

It is important to be able to classify the changes that you observe in the lab.

1. In which of the mixtures did you observe a temperature change?
2. Did the temperature go up or down?
3. In which of the mixtures did you observe a color change?
4. In which of the mixtures did you observe the formation of a gas?
5. How did you know that a gas was produced?
6. In which of the mixtures did you observe the formation of a precipitate? A precipitate is a solid that settles out of a solution.
7. In which mixtures did you observe no reaction?
8. Give four examples of chemical changes that you observed in this experiment.

## One Step Further

Based upon what you saw, make an educated guess about what would happen if you mixed the following:

1. Magnesium carbonate + acetic acid
2. Sodium carbonate + acetic acid
3. Ammonium hydroxide + phenolphthalein
4. Hydrochloric acid + phenolphthalein
5. Sodium bicarbonate + hydrochloric acid
6. Hydrochloric acid + sodium hydroxide