Name: _____ Date: _____

Laboratory Skills: Physical and Chemical Changes

Materials Needed

- 2 clear drinking glasses
- water
- antacid tablet
- piece of wood
- sandpaper
- hand lens
- instant ice pack
- milk
- vinegar
- strainer
- cabbage juice
- ice cube

Introduction

When a physical change occurs, the chemical components making up a substance do not change. For example, the chemical formula of water, H_2O, does not change when water is frozen, boiled, or poured into another container. These are all physical changes. A chemical change does change the substance chemically. Evidence of a chemical change might include a sudden temperature change, production of gas, formation of a precipitate, or a color change.

Getting Ready

In this activity, you are going to work with various substances and pieces of lab equipment. Which of the following safety precautions do you think you will need to take? (Check all that apply.)

- ☐ Wait for an adult to be present to perform the activity.
- ☐ Avoid practical jokes and horseplay.
- ☐ Keep your work area clean and uncluttered.
- ☐ Avoid eating and drinking anything while doing the activity.
- ☐ Wear safety goggles and a lab coat.
- ☐ Wear latex gloves.
- ☐ Wear close-toed shoes.
- ☐ Pull back any loose clothes and hair and take off dangling jewelry.
- ☐ Keep any electrical cords or gas tubes out of the way.
- ☐ Use tongs to move the heated beaker.
- ☐ Smell the water by wafting it.
- ☐ Seal the beaker before heating it.

Have your teacher check your responses before moving on to the activity.

Procedure

1. Experiment 1: Fill the glass water. Drop the antacid tablet in it. Record your observations in the table below.

2. Experiment 2: Use a piece of sandpaper to sand a piece of wood. Record your observations in the table below.

3. Experiment 3: Follow the directions on the package to use an instant ice pack. Record your observations in the table below.

4. Experiment 4: Mix 50 mL of milk with 50 mL of vinegar. Poor the liquid through a strainer. Record your observations in the table below.

5. Experiment 5: Mix 50 mL of cabbage juice with 50 mL of vinegar. Record your observations in the table below.

6. Experiment 6: Set an ice cube in a drinking glass and wait 5 minutes. Record your observations in the table below.

Experiment	Observations
1	
2	
3	
4	
5	
6	

7. Clean up your lab station.

Questions

1. Describe some of the signs that a chemical change has occurred. _____

_____

_____

_____

_____

2. In the table below, identify whether a chemical change or physical change occurred during each of the experiments. In the third column of the table, justify your answer.

Experiment	Chemical change or physical change	Justification
1		
2		
3		
4		
5		
6		