

Physical and Chemical Changes LAB

- 1) Please obtain a sugar ($C_{12}H_{22}O_{11}$) cube. Using a mortar and pestle grind it until it becomes powdery. Record your observations on the data table. (Keep the sugar for the next step.)
- 2) Place approximately 50 ml of water in a small beaker. Place the ground sugar into the water. Stir with a glass stirring rod. Record your observations. Dispose of the solution in the sink. Clean the mortar, pestle, and beaker.
- 3) Obtain a small piece of magnesium (Mg). Place the piece of magnesium in crucible tongs and use an evaporating dish to catch the ashes produced. Using a Bunsen Burner place the magnesium (using the crucible tongs) into the flame but DO NOT look directly at the magnesium. It can damage your eyes! Turn off the Bunsen burner. Record your observations. Clean up the lab table.
- 4) Place approximately 1 teaspoon of cornstarch ($C_6H_{12}O_5$) in a beaker. Add a few drops of water and stir. Continue adding 2-3 drops of water at a time until the mixture appears wet/shiny. Pour some of the mixture into your palm and start trying to roll it into a ball. Dispose of the chemicals in the sink. Rinse out the beaker and record your observations.
- 5) Remove the Play-dough from the container. Tear it up into many pieces. Make a cool design with it. Record your observations. Put the Play-dough back into the container.
- 6) Place approximately 25 ml of water in a small beaker. Using a thermometer, find the temperature of the water. Place 10 g calcium chloride into the beaker. Mix it with a glass stirring rod. Find the temperature of the water. Record your observations.
- 7) Get a clean cup from the back table. Using the bottle of water, fill the cup $\frac{3}{4}$ full with water. Place a scoop of Kool-aid power in the cup. Mix up the liquid with the straw. Record your observations. Drink the Kool-aid if you want!

Activity	What form of matter is each starting substance(s)?	Draw a picture representing the atoms/molecules of the starting substance(s).	List a physical and chemical property for each starting substance(s)	Observations/Clues of Change	Type of Change
Grinding Sugar					
Sugar + H ₂ O					
Burning Magnesium					
Cornstarch + H ₂ O					
Molding Play-dough					
CaCl ₂ + H ₂ O				Temperature 1 _____	
				Temperature 2 _____	
Kool-aid					

Interview Questions:

- 1) What is the difference between a physical change & a chemical change?
- 2) What are 4 clues that a chemical change has occurred?
- 3) What type of change occurs during melting, freezing, boiling or condensing? Why?