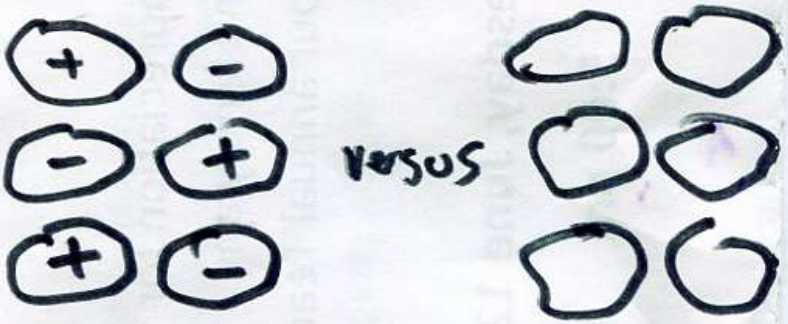
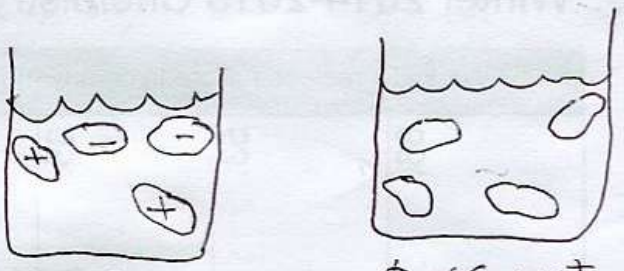
PURPOSE IN LAB,
DISCOVER WHAT HOLDS MATTER TOGETHER.

WARMUP (copy)



The substance on the left is more strongly held together b/c it has + and − charges.

CONDUCTING ELECTRICITY



DOES CONDUCT ELECTRICITY

DOES NOT CONDUCT

Homework

FINISH THE LAB QUESTIONS

Name_____ **Hour**_____**Date**_____

Ionic and Molecular Compounds Lab

Problem
What forces hold matter together?

Introduction
Some molecules are charged, some are neutral. Today in lab we will attempt to disintegrate six different compounds. By observing the ease with which the molecules come apart we can hypothesize what holds them together.

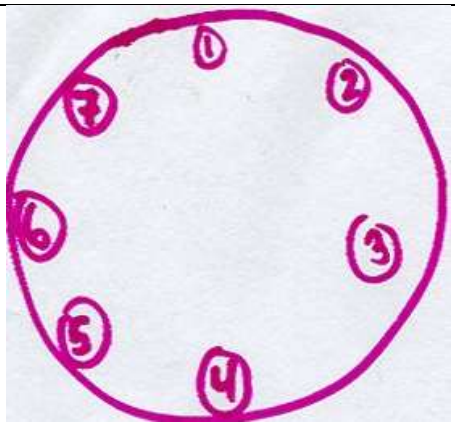
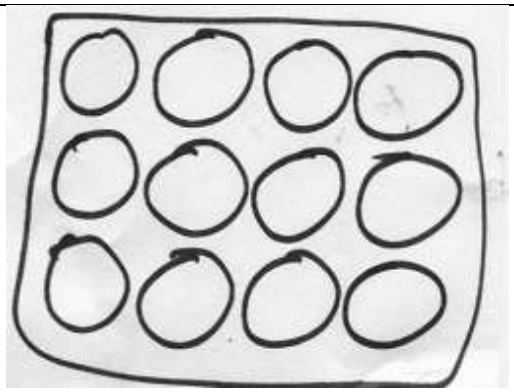
FIGURE A

FIGURE B

Data/Observations
1. Write nothing here until you read the directions.

Name	Description	Melting Point	Did the bulb light?
Water (H_2O)			if the bulb lights in pure water STOP; something is dirty or you didn't use distilled water
Dextrose ($C_6H_{12}O_6$)			
sugar ($C_{12}H_{22}O_{11}$)			

sodium chloride (NaCl)			
potassium chloride (KCl)			
citric acid ($H_3C_6H_5O_7$)			
Phenyl Salicylate ($C_{13}H_{10}O_3$)			
Copper sulfate ($CuSO_4$)			

Draw a sketch to plan where you will place each substance:	 the metal lid with dry powders	 the well plates with dry powder mixed with DISTILLED water

Directions

1. Assume the equipment is filthy. Wash with water and brushes or scrubbies. Dry with a paper towel.

2. **Partner 1 start here** Place the ring of a ring stand. Position the ring so it is about an inch above the wick of the candle.

3. Place a few crystals (like five to ten grains!) of each substance in separate locations on the ring as you drew in the circle above. Do not allow the samples of crystals to touch.

4. Before you begin write a brief description of each of the solids in your data table.

5. Light the candle. Record which substance melts first, second, third, etc.

6. After 3 minutes, record which substance did not melt. Blow out the candle and allow the can lid to cool completely before cleaning.

7. **Partner 2 start here** Half-fill seven wells with distilled water.
8. Add substances to the well plate in the locations you wrote in the square above. Add enough water (must be distilled!!) to dissolve the substance in that well.
9. Use the conductivity testers provided by your teacher to test each well. Carefully place the tips of the tester into the solution. Be sure to rinse well with distilled water between trials. Record your observations.

Cleaning Up 

1. Clean up all materials and wash your hands thoroughly.
2. All wastes can go in the trash can and sink.

Name_____ Hour_____Date_____

Prelaboratory Questions

1. What has to happen to the wires for the bulb to light?

2. What does the water look like for a substance that does light the bulb? What does it look like for a substance that doesn't light the bulb?

Analysis Questions

1. Organize the substances into two groups according to similar properties.

2. List the properties of each group. Are these properties chemical or physical in nature?

3. Explain what happened when you added water to the solutions that caused the bulb to light by using molecular level pictures. This video might help: www.tinyurl.com/salt-solution