

## Properties of Water

### Introduction:

As we discussed in class, there are two types of covalent bonds, polar and nonpolar. Molecules joined by polar covalent bonds are not "sharing" the electrons evenly and will have resulting areas of partial charge around different areas of the molecule. Molecules joined by nonpolar covalent bonds are "sharing" the electrons evenly and will not have areas of partial charge around the molecule. Ions are single atoms or groups of atoms that have gained or lost electrons and now have a resulting charge. This information is important in understanding how solutes and solvents will combine.

### Part A. Pennies

Using the pennies and dropper provided – each team member should perform and compete at this activity. Compete with each other for “who can place the most drops of water on the penny WITHOUT spilling off the penny” and who can place the most drops of alcohol on the penny without spilling off the penny.”

Name of team member	Number of drops of water on penny	Number of alcohol drops on penny

### Analysis Question

1. What property of water is being evaluated with this experiment? Why did you get the results that you observed?

### **Part B. Pepper**

Shake some pepper on top of water in a small dish that is provided. Using the toothpicks that I provide, touch first one end of the toothpick and then the other in the water. One appears darker in color so that you will be able to record your results. What happens to the water and pepper when each end is touched?

#### **Analysis Question**

1. What do you think – is pepper polar? Why do you think this?
2. What do you think about the material on the opposite end of the toothpick – is it polar? Why do you think this?

### **Part C. Wax Paper**

Place a small drop of water on a piece of wax paper. Describe its shape. Try cutting it in half with a toothpick that does not have two different colors. What happens to the drop?

#### **Analysis Questions**

1. What property of water is being evaluated with this experiment?
2. Would it matter if you place the droplet of water on loose leaf paper as opposed to wax paper? Why or why not?

### **Part D. Needle**

Place some water in an evaporating dish and float a needle on top of the water. Describe the difficulty or ease in doing this.

#### **Analysis Question**

1. What property of water is being evaluated with this experiment? Is this a difficult task?