Name _____ Date _____ Class _____

Surface Tension of Water: Observations and Analysis

Background Information
Surface tension is when the surface of a liquid is strong. The surface of the water holds the water droplet together in a ball shape. Some small things can float on a surface because of surface tension, even though they normally couldn't float. Some insects, like the water strider, can run on the surface of water because of this. This property is caused by the molecules in the liquid being attracted to each other. When water molecules attract and bond with each other, it is called **cohesion**. When water molecules attract to other things, like a piece of wax paper or the side of a glass, it is called **adhesion**.

In the absence of other forces, including gravity, drops of virtually all liquids would be perfectly spherical. Observe the diagram to the right. This diagram shows the strength of the surface of water. The water molecules in the middle of the water droplet are stretched in all directions. The water molecules on the surface are stretched to the sides and towards the middle. This makes them stronger.
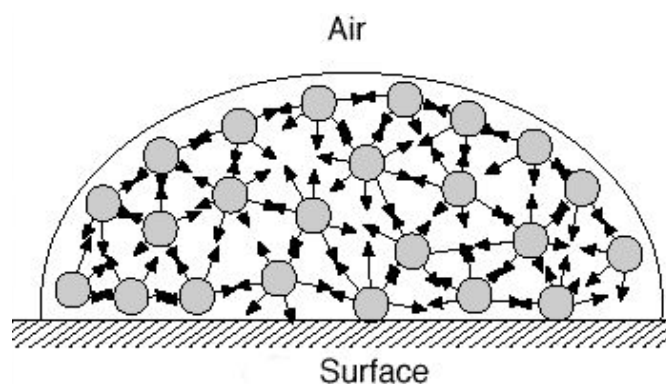
In this activity, you will test the surface tension of water by predicting how many drops of water will fit on the surface of a penny. You will then add soap to the water to determine how it will change the surface tension of water.

Part 1: Baseline Data
1. Place three drops of water on the wax paper. Record your observations in the chart below.
2. Next, take the toothpick and poke the water droplet with it.
3. Now, dip the toothpick into soapy water. Touch the water droplet again.

Water Droplet Observations	Poking Water Droplet with Toothpick Observations	Poking Water Droplet with Soapy Water Observations

4. Predict how many drops of water and soapy water will fit on the surface of a penny.

I predict _____ drops of water will fit on the surface of a penny.

I predict _____ drops of soapy water will fit on the surface of a penny.

5. Results

Trial	Number of Water Drops on the Penny	Number of Soapy Water Drops on the Penny
#1		
#2		
Average		

6. Conclusion Statement

- Restate your hypothesis. In this experiment, I hypothesized that…..
- Was your hypothesis supported by the data? Or was it unsupported by the data?
- Identify and explain one source of error that could have 'messed up' your data collection
- Identify and explain two things you learned about water by completing this experiment