

Name

Hour

Surface Tension Lab

Purpose: The purpose of this experiment is to determine which substance, water or soapy water, will affect the number of drops that a penny can hold.

Background Information: There are two properties at work in this experiment: cohesion and surface tension. Cohesion is the attraction of like molecules to one another.

Water's surface tension is based on the attractions between water molecules at the surface and the water molecules in the rest of the water. A water molecule beneath the surface feels attractions from all the molecules around it. But the molecules at the surface only feel attractions from the molecules next to them and beneath them. These surface molecules are pulled together and inward by these attractions. This inward pull has the effect of compressing the surface molecules which form a tight arrangement over the water's surface. This tight arrangement at the surface is called surface tension.

The molecules in soap will reduce the number of water molecules present.

Hypothesis: I think a penny will hold more drops of _____

because _____

Materials: Penny, pipette, water, soap

Procedure:

1. Put the penny on a flat surface.
2. Use the eye dropper to drop water on the penny, one drop at a time.
3. Count the number of drops until the water spills over the edge of the penny.
4. Record your data.
5. Repeat steps 1 -4 for a total of 3 trials with water
6. Repeat steps 1-4 for a total of 3 trials with soapy water.

Data:

Comparing surface tension of water and soap water

Substance	Number of drops			
	Trial 1	Trial 2	Trial 3	Average
water				
Soapy water				

Data Analysis:

1. Did you get the exact same data each time you performed the investigation?
Why or why not?

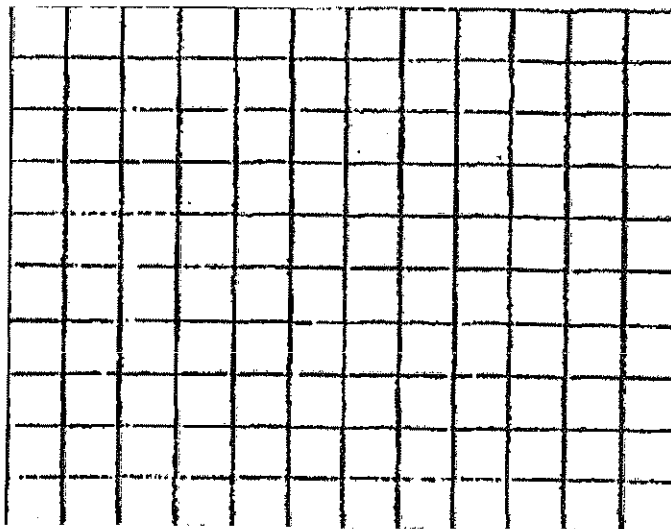
2. Compare your results to the results of your classmates. Did everyone in the class get the same results? Why or why not?

3. What type of things might have been changed (possible errors) from group to group to cause the differences in data?

4. What was the independent variable? _____

5. What was the dependent variable? _____

Graph:



Conclusion questions: (Claim, Evidence, Reasoning)

1. Claim: The penny will hold more drops using the _____

2. Evidence: The data shows that there was _____ using the water only and _____ with the soapy water.

3. Reasoning: There are more drops using _____

Because (use information from background info) _____
