Name: _____ **Date:** _____ **Period:** _____

STUDENT LAB SHEET

Properties of Water: Surface Tension & Cohesion

1. BACKGROUND & CONTEXT

Cohesion is the force of attraction between water molecules. Because water molecules stick tightly to one another, they create a flexible "skin" across the top layer of water, known as **surface tension**. In this activity, you will test how many drops of plain tap water versus soapy water a penny can hold before surface tension breaks.

2. HYPOTHESIS

Complete the hypothesis statement before beginning the lab:

If plain tap water and soapy water are tested on a penny, then [**plain water** / **soapy water**] will hold MORE total drops because

_____

_____

3. MATERIALS CHECKLIST

- 1 Standard Penny
- 1 Plastic Eyedropper / Pipette
- 1 Cup of Plain Tap Water
- 1 Cup of Water + Dish Soap
- Paper Towels
- Safety Goggles

4. DATA COLLECTION TABLE

Record the total number of drops added for each trial until the water overflows the coin.

Liquid Type	Trial 1	Trial 2	Trial 3	Average Drops
Plain Tap Water				
Soapy Water				

5. ANALYSIS & POST-LAB QUESTIONS

1. Identify the key experimental variables:

a. **Independent Variable:** _____

b. **Dependent Variable:** _____

c. **Controlled Variables (List 2):** _____

2. Explain what happened to the total drop count when dish soap was added. Use the term "surface tension" in your explanation.

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3. Did your lab group use the HEADS or TAILS side of the penny? Do you think coin side impacts the overall results? Explain why or why not.

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4. Multiple Choice: Which property of water allows water molecules to stick to OTHER water molecules?

[ ] A. Adhesion

[ ] B. Cohesion

[ ] C. Viscosity

[ ] D. Evaporation

5. Multiple Choice: What impact does dish soap have on water's surface tension?

[ ] A. Soap increases surface tension, creating a stronger dome.

[ ] B. Soap breaks cohesion, reducing surface tension.

[ ] C. Soap causes water molecules to evaporate faster.

[ ] D. Soap has no measurable impact on surface tension.