**Penny Lab**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**How many drops can fit on a penny?**

Take a guess: \_\_\_\_\_\_\_

**Materials Needed:**

Penny

Pipette

Paper towel

Graduated cylinder

Scale

Water

3 grams of other material-either soap, sugar, or salt

**Part A: Perform a CONTROL test for comparison with later results.**

**Step 1**: Rinse a penny in tap water and dry completely.

**Step 2**: Place penny on paper towel.

**Step 3**: Use an eye dropper to place drops of WATER on the penny (one at a time) until ANY amount of water runs over the edge of the penny.

**Step 4**: Record the number of drops for that trial in the table.

Repeat Steps 1-4 three more times, then calculate your average.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Trial 1 | Trial 2 | Trial 3 | Trial 4 | Average |
|  |  |  |  |  |

**Part B: Perform tests with the TESTING LIQUID.**

**Step 1**: Mix your solution, either soap, sugar, or salt. Add 3 grams of the substance to 30 mL of water and stir.

**Step 2**: Start with a “clean” penny. Rinse the penny in tap water and dry completely. Be sure to remove as much residue as possible-without using soap!

**Step 3**: Place penny on dry spot on a paper towel. Place drops of WATER on the penny (one at a time) until ANY amount runs over the edge of the penny.

**Step 4**: Record your observations and the number of drops for that trial in the table.

Repeat Steps 2-4 three more times before calculating the average.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Trial 1 | Trial 2 | Trial 3 | Trial 4 | Average |
|  |  |  |  |  |

**Clean up your area.**

**Part C: Answer each question related to the experiment.**

1. Put both of your average number of drops on the white board.
2. Determine which variables were the independent, dependent and control.
3. Explain your results from both parts of the experiment in terms of cohesion and surface tension.
4. Define solution and explain how that changed the expected number of drops.
5. How do your results compare to the other groups in your class? Provide at least 2 possible reasons for any similarities and differences you identified.
6. Graph the results using the data from the class.