

17.4: Procedures

You will test the properties of surface tension.

Two Sides to a Coin

1. Place the coins on the table such that each coin has a “heads” facing up and a “tails” facing up. Discuss which one each person thinks will hold the most drops of water. Record which surface you think will hold the most drops of water.
2. Draw a table in which to record your data. **Do not fill in data until you have read the instructions for obtaining that data.**

Table 17.4.1: Two Sides to a Coin

Coin	Surface	1st Predictions	Adjusted Predictions	Actual Number of Droplets
Penny	Heads			
Penny	Tails			
Nickel	Heads			
Nickel	Tails			

3. Fill the beaker about half full of water. Place the pipette into the beaker, and draw some water into the pipette by first squeezing the bulb and then allowing it to expand. The pipette will not be completely full. Squeeze a few drops of water from the pipette onto the table. Based on the size of the water droplets, predict how many water drops can be placed on each coin surface before the water will spill over the edge. Record your 1st predictions. Each person on the team may have different predictions.
4. **Shhh, do not give away your counting to other teams.** Add one drop of water at a time to the top of your first coin surface, counting the number of drops, until the water spills over. Record the actual number of droplets.
5. Discuss whether any changes to the original predications should be made based on your first result. Record your adjusted predictions for the other three surfaces.
6. Test each of the remaining coin surfaces, and record the actual number of droplets for each surface.

Magic Paper Clip

7. Fill the 3 oz paper cup to over the brim with water, such that there is a “bubble” of water above the top of the cup. Gently place a small metal paper clip on top of the water, so that it floats. If the paperclip sinks, keep trying until a paperclip stays on top of the water. Write or sketch what you observe.
8. Once the paperclip stays on top of the water, add drops of liquid soap to the water until the paperclip sinks. Then make at least 3 attempts to float another paperclip on the top of the water. Record your observations.

Clean-up

- Discard water outside (water plants)
- Thoroughly dry each coin, and your beaker
- Retrieve the paperclips from the paper cup
- Thoroughly rinse and dry the paperclips
- Dispose of the paper cup
- Squeeze as much water as you can out of the pipette and place on drying towel

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