

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Grade: \_\_\_\_\_

**“Scientific Method”** is a word used to describe one way scientists solve problems about the world. They make observations, ask questions, make hypotheses, test and evaluate ideas and draw conclusions. Scientists may follow different paths in an investigation to generate evidence to support ideas.

**1. Ask a Question – about something you observe:**

**2. State Your Hypothesis – a possible answer to your question that can be tested:**

If \_\_\_\_\_ then, \_\_\_\_\_  
because \_\_\_\_\_ .

**3. Control Variables (many):**

**Dependent Variables (what is measured):**

**Experimental Independent Variable (one):**

**My Class Hypothesis**

**Bigger and More Drops:**

**No Change in Drops:**

**Smaller and Less Drops:**

**4. Materials: 2 cups, 1 penny, 1 pipette, water, soap, worksheet**

**5. Procedure – test your hypothesis with trials:**

**6. Results – interpret and analysis data:**

My Class Drops Total	
Water	
Soap Water	

**7. State Your Conclusion:**

**My data does – does not support my hypothesis.**

## Investigation Sheet

## Drops on a Penny

## CSI Case of the Mystery Stain

Follow class instructions to investigate properties of water. Complete the "Science Method" sheet to investigate how many drops of water and soapy water can fit onto a penny. Record your observations.

### PROCEDURE and RESULTS

**Predict How Many Water Drops can Fit on a Penny?** \_\_\_\_\_

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

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

Step 2: Place the penny on paper towel.

Step 3: Use a pipette to place one drop of WATER at a time on the penny until any water runs over.

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

Repeat Steps 1 - 4 three more times. Move the penny to a dry part of the towel each time.

Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Total Drops

Show your drawings and work here:

**Predict How Many Soap-Water Drops can Fit on a Penny?** \_\_\_\_\_

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

Step 1: Start with a "clean" penny. Rinse the penny in tap water and dry completely. Do not use soap!

Step 2: Place penny on dry spot on a paper towel.

Step 3: Use the pipette to add 5 drops of soap to your water cup. Replace the lid on the soap and return it.

Step 4: Stir and place drops of SOAP-WATER on the penny until ANY amount of water runs over the edge.

Step 5: Record your observations and the number of drops for that trial in the table.

Repeat Steps 1 - 4 three more times. Move the penny to a dry part of the towel each time.

Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Total Drops

Show you drawing and work here: