

## Work Sample Suggestion for Drips on a Penny

This activity can be demonstrated by the teacher and then completed by teams of students or individual students.

Demonstrate how to complete the activity: drip one drop of water at a time onto the Lincoln head side of a penny. Count the number of drops that can be dropped into the pool on the penny before the water spills off the penny onto a paper towel. Dry the penny and repeat two more times and average the three numbers.

Discuss the cohesiveness of water.

Work as a class to write up the "What do you know?" part of FORM. Ask each student or team of students to write their question and their hypothesis. When this is complete, they bring papers to the teacher for a quick review and their materials.

Give each team of three students one penny, a paper towel, and an eyedropper in a cup of water.

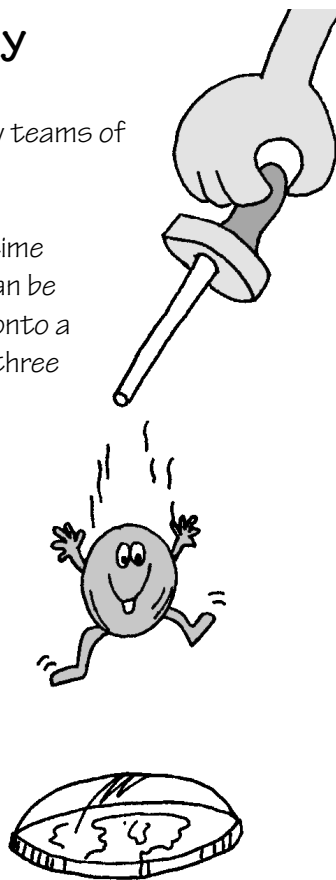
Each team places a penny on the paper towel. The same student on the team drips one drop of water at a time onto the penny until the water on the penny spills off the coin onto the paper towel. The second student on the team counts the number of drops until the spill. The third student dries off the coin and resets the materials for the activity. Each team should conduct the activity three times and average results.

Record, average, and graph results.

To use the activity as an inquiry work sample, repeat after making one change to the activity. For example, a team may choose:

- a different person dropping the water
- the Lincoln Memorial side of the coin
- a coin that has been cleaned with vinegar
- a coin cleaned by sand or salt
- a different coin
- colored water
- water with a drop of soap

Following this is an example of a write-up for this activity. I tried to fit it on one page to make it easier to present in parts to students or to use as a teacher reference.



# Drips on a Penny

## FORM

When I drip water on a penny, I can get an average of 26 drops on the penny before it spills. Water is cohesive, it sticks to itself.

What would happen if I had someone new drop the drops on the penny?

I think we would probably have the same results, as long as the person followed the procedure.

## DESIGN

I am going to:

1. Place a penny on a paper towel, Lincoln head side up.
2. Drip water, one drop at a time, onto the penny, letting it make a pool of water.
3. Continue dripping water from the dropper, counting the number of drops, until the water spills off the penny.
4. Do 1, 2, 3 three times and then average and graph the results.
5. Do 1, 2, 3 three times with a new person dripping the drops, average and graph the results.

## COLLECT

Trial #1: 26 drops

Trial #2: 28 drops

Trial #3: 24 drops

Average: 26 drops

Trial #4: 28 drops

Trial #5: 30 drops

Trial #6: 26 drops

Average: 28 drops

## ANALYZE

My hypothesis was incorrect. We were able to average two more drops on the penny using a different person. I think the person was more careful and knew what to do, like wait until the pool of water was calm after lots of drops were on the penny before dropping more drops.

