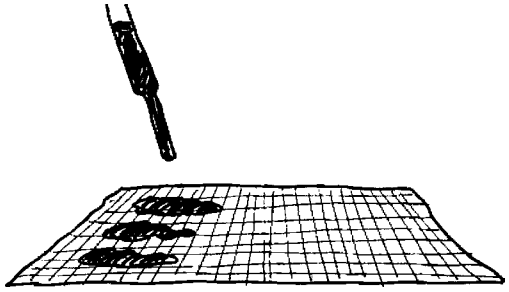
Work Sample Suggestion for Let's Stick Together



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 lightly colored water onto an overhead transparency of graph paper. Count the number of squares covered by the drop of water. Repeat two more times and then 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.

Each team repeats the activity to determine their own average. The same student should drip the water drops and use the same procedure as demonstrated

Record and average the results. Graph the results.

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

- a differently colored water
- more than one drop of water
- water of a different temperature
- water with a drop of soap
- a different student dropping the drop
- drop water from a different height
- use a different dropper, etc.

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.

Let's Stick Together

FORM

When I use a pipette to drip colored water on a card, one drop covers an average of 5 2mm x 2mm squares on the card. Water is cohesive, it sticks to itself. Water has a high cohesive force and forms tall, round drops compared to soapy water.

What would happen if I used a pipette with a wider opening?

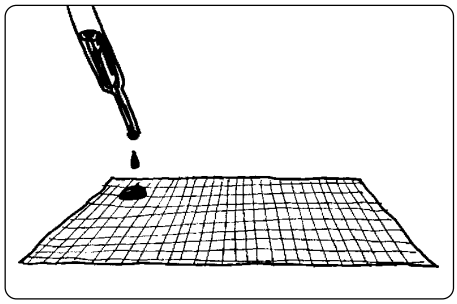
I think each drop will cover more squares since the drop will be larger when it falls from the larger opening in the pipette.

DESIGN

I am going to:

1. Drip a drop of colored water onto a plastic graph paper card.
2. Look down from above the drop and count the number of squares covered by the drop.
3. If there's part of a square covered, I'll put it together with other parts to make a whole square or ignore it.
4. Repeat 1, 2, 3 so that I have three results to average

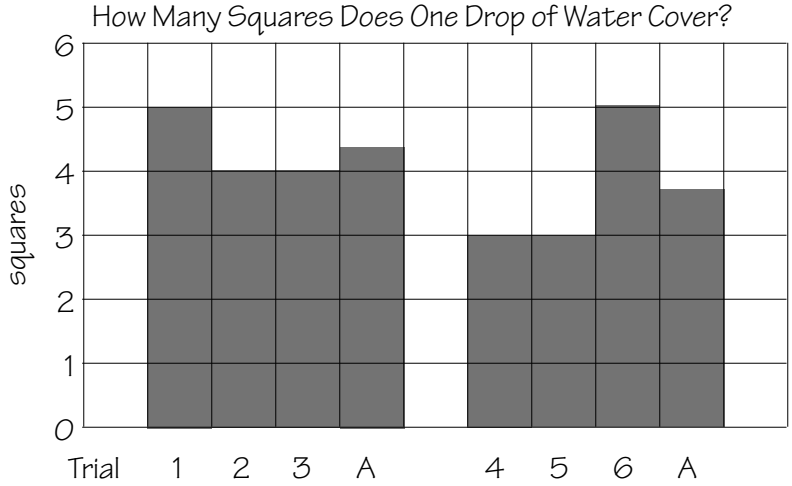
5. Repeat 1, 2, 3 with a pipette that has a larger opening.



COLLECT

Trial #1: 5 squares
Trial #2: 4 squares
Trial #3: 4 squares
Average: 4.33 squares

Trial #4: 3 squares
Trial #5: 3 squares
Trial #6: 5 squares
Average: 3.66 squares



ANALYZE

I did not get the results I predicted. I thought a wider pipette would create a bigger drop. The drop from the wider pipette covered less area (3.66 squares instead of 4.33 squares a difference of .67 squares). I'm not sure why there was less area covered. I think I should try the experiment again to see if I get the same results.