

How Much Liquid Do I Have?

Version 032610

In this activity, students will each use a 20–200 μL micropipette to determine how much liquid is in the tip!

Laboratory Safety

1. Wear lab coats, gloves, and eye protection as required by district protocol.

Materials Required

Set up for 8 workstations, with students working in groups of 3

Item	Quantity needed for 8 workstations
20 - 200 μL micropipette	8
Pipette tips	32
0.65 mL microcentrifuge tubes	32
Diluted food coloring, 3 colors	Color 1 - 700 μL Color 2 - 1.25 mL Color 3 - 1.5 mL

Teacher Preparation

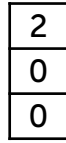
1. Dilute your color dyes
2. Dispense 75 μL of color dye #1 into eight 0.65 mL microcentrifuge tubes
3. Dispense 125 μL of color dye #2 into eight 0.65 mL microcentrifuge tubes
4. Dispense 150 μL of color dye #3 into eight 0.65 mL microcentrifuge tubes
5. Print student instructions on page 3 and 4

Student workstations to include:

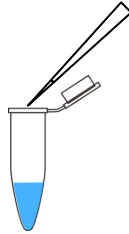
- 1 tube of color dye #1
- 1 tube of color dye #2
- 1 tube of color dye #3
- 20-200 μL pipette
- Pipette tips
- Print out of student instructions

Student Instructions

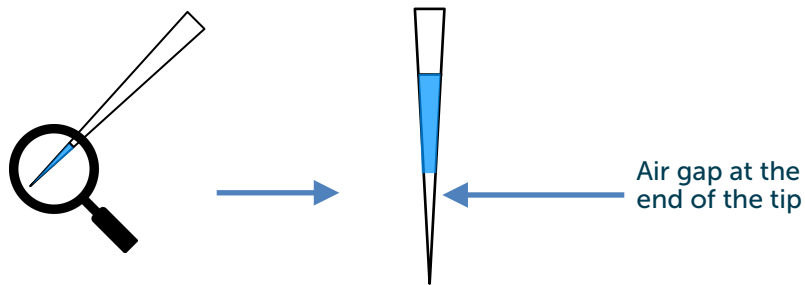
1. Set your 20-200 μL pipette to 200 μL .



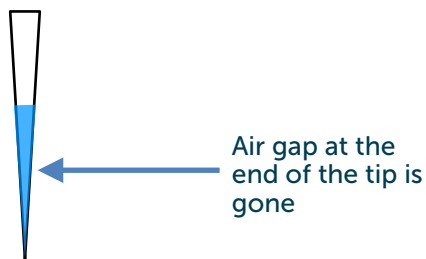
2. Add a tip to the end of the pipette, draw all of color dye #1.



3. Observe how much liquid is in your tip, you should also have an air gap at the end of the tip



4. Adjust the volume down by turning the volume adjustment barrel. Continue to adjust until the air is pushed out of the tip.



5. Look at the numbers on the volume dial and record in the table below.
6. Dispose of your tip.
7. Repeat steps 1-5 with color dye #2 and color dye #3

Tube Name	Color dye #1	Color dye #2	Color dye #3
Volume (μL)			