

Micropipette Practice & Calibration Lab Sheet

Name: _____ Date: _____

Group Number: _____ Station Assignment: _____

Safety Review Checklist

Before you begin, read and check off each safety rule:

- ☐ I will **never force** the plunger down on the micropipette
 - ☐ I will keep the micropipette tips **clean and dry** before use
 - ☐ I will **handle the micropipette carefully** and not drop it
 - ☐ I will **only use distilled water** during this practice
-

Objective

To practice using a micropipette accurately and understand how to calibrate it by measuring consistent droplet volumes.

Materials

- Micropipette (set to correct volume)
 - Micropipette tips
 - Distilled water
 - White paper
 - Ruler (optional, for measuring droplet size)
-

Procedure

Step 1: Station Setup & Demonstration (5 minutes)

- Listen to your teacher's safety review
- Watch the micropipette handling and calibration demonstration
- Ask questions if anything is unclear

Step 2: Practice Measuring 20 μL (5 minutes)

- Set the micropipette to 20 μL
- Draw water into the tip
- Gently dispense one drop onto your white paper
- Repeat this 2–3 times on the same paper
- Observe the droplet size and shape

Step 3: Practice Measuring 50 μL (5 minutes)

- Change the micropipette setting to 50 μL
- Draw water into a new tip
- Gently dispense one drop onto your white paper (next to your 20 μL drops)
- Repeat this 2–3 times
- Observe how this droplet compares to the 20 μL drops

Step 4: Practice Measuring 100 μL (5 minutes)

- Change the micropipette setting to 100 μL
 - Draw water into a new tip
 - Gently dispense one drop onto your white paper (next to your other drops)
 - Repeat this 2–3 times
 - Observe how this droplet compares to the smaller drops
-

Data Recording Table

Volume	Droplet Appearance (size, shape)	Consistency Notes (same each time?)	Mistakes or Adjustments Made
20 µL			
50 µL			
100 µL			

Observations & Reflection

1. How did the droplet size change as you increased the volume?

2. Which volume was easiest to measure accurately? Why?

3. What did you notice about consistency across your multiple attempts? Were the droplets the same size each time?

4. How do we know if a micropipette is accurate?

5. Describe any mistakes you made during this activity and what you learned from them.

Challenge Question

"Double the size... what mistake did I make from blue to purple?"

When measuring water drops, you noticed that one droplet was much larger than expected. Think about what could have gone wrong with the micropipette or the technique. What calibration error or handling mistake might cause this?

Teacher Comments: