



Measuring Small Amounts

Part 1: Using pipets and micropipets



Purpose: to use pipets accurately to measure liquids

1. To compare accuracy of measurements when using graduated cylinders and pipets.
2. To learn techniques of using pipets of various sizes.
3. To practice using pipets to become accurate.



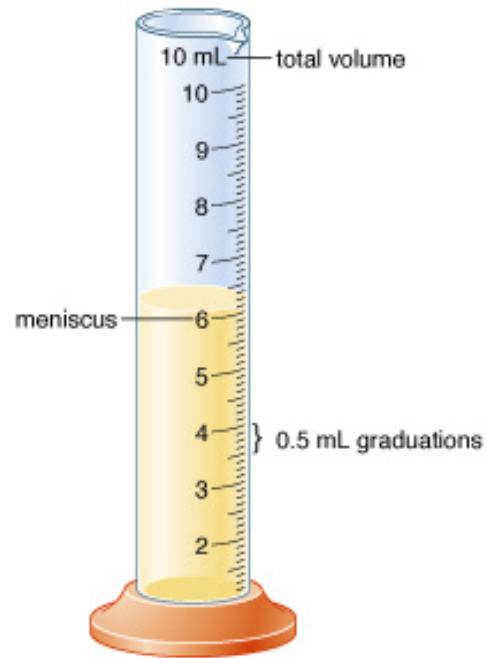
Measuring using the metric system

- What unit are used? What equipment?
- Liquid
- Mass

Units in the Metric System:

Base	1	10^0	1
Deci- d	1/10	10^{-1}	0.1
Centi- c	1/100	10^{-2}	0.01
Milli- m	1/1000	10^{-3}	0.001
Micro- μ	1/1,000,000	10^{-6}	0.000001

Graduated Cylinder



Pipets - Serological

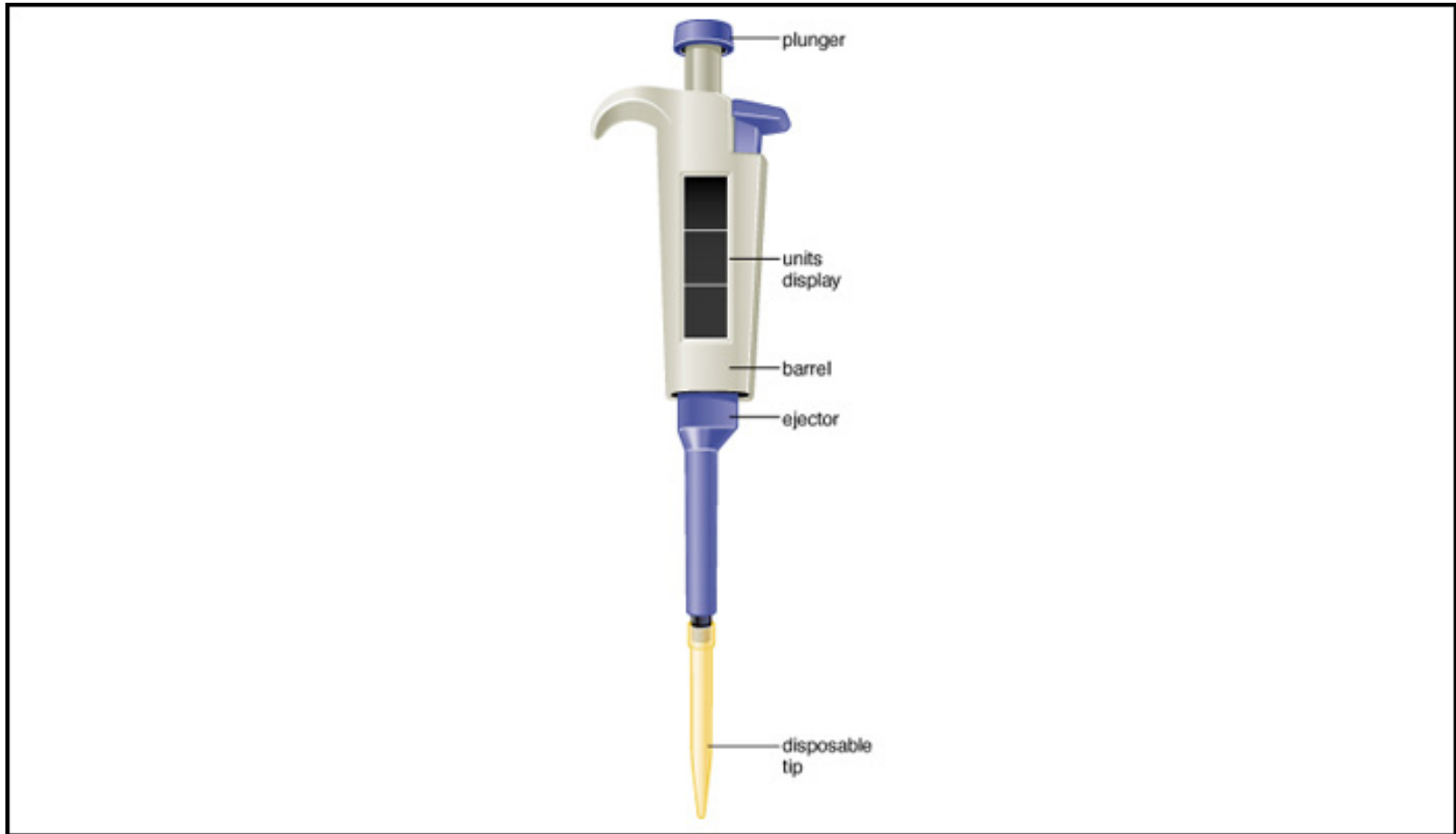


Pipets

- What does it measure? Units?
- What sizes are available?
- What range of amounts can each pipet size be used to measure?
- Practice measuring:

<input type="checkbox"/> 1.0 mL	2.6 mL	5.0 mL
<input type="checkbox"/> 7.2 mL	8.4 mL	10.0 mL

Measuring very small volumes: Micropipet, measuring μL





Lab practice- Micropipet

- a. Dial the micropipet to the listed amount in microliters (μL).
- b. Place 1 drop of each amount on a piece of Parafilm. Check to determine if the size of the drops are the same. Repeat if needed.
- c. Determine the mass of the drop using the digital balance. Record your data.

Volume to pipet: 3 μL 20 μL
 90 μL 125 μL 170 μL