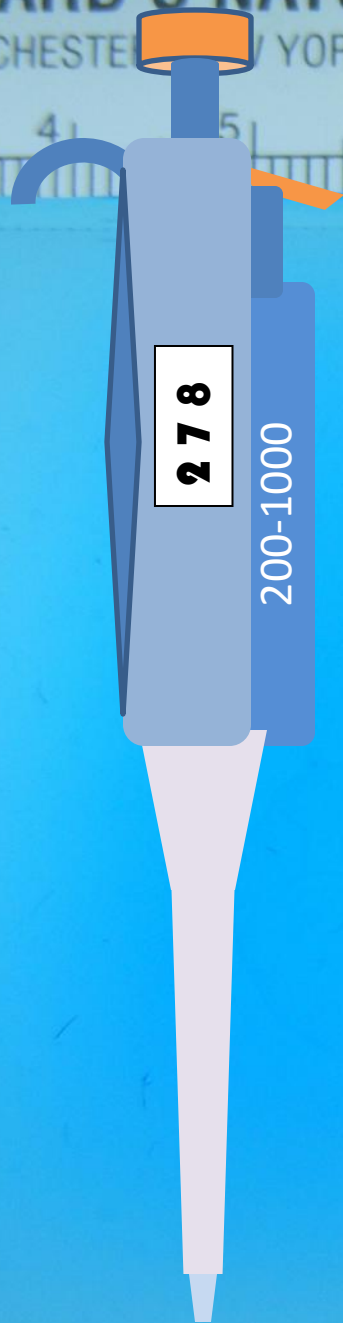


WARD'S NATURAL SCIENCE

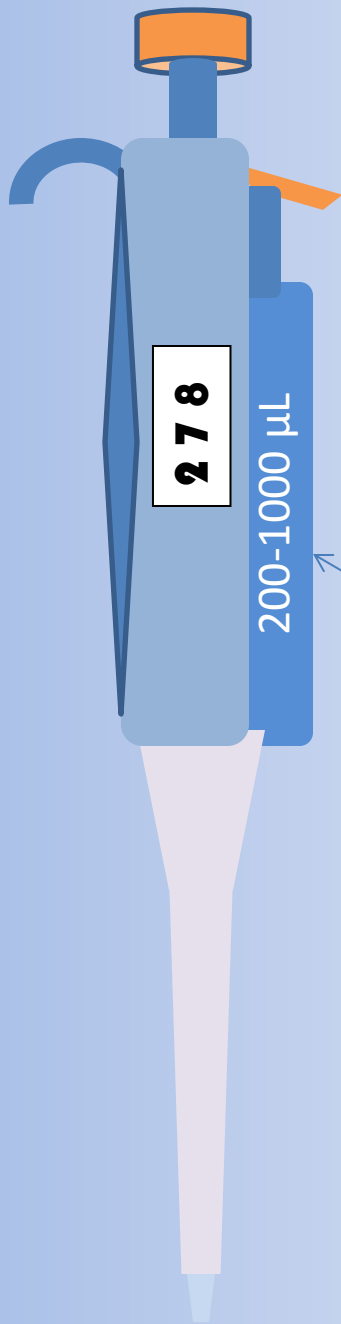
ROCHESTER, NEW YORK • SAN LUIS OBISPO, CALIFORNIA • ST. CATHERINES, ONTARIO

3 4 5 6 7 8 9 10 11 12



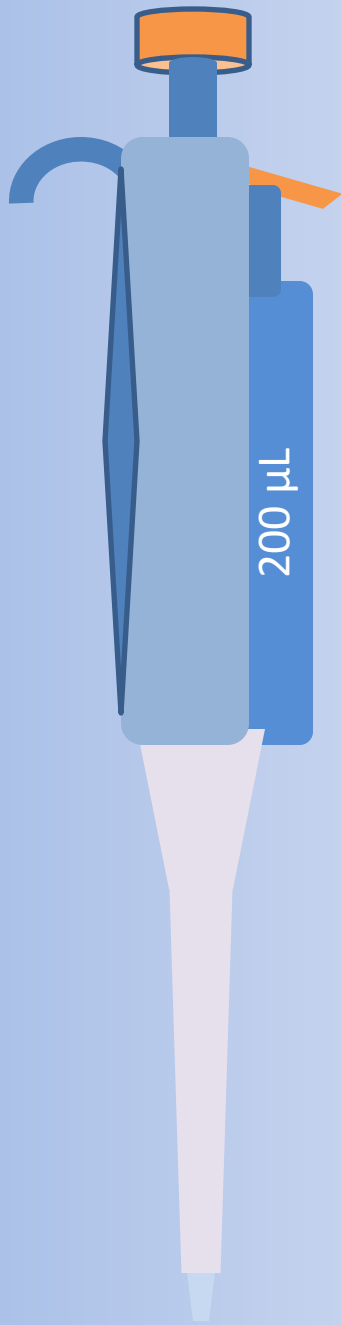
Micropipette Tutorial

**From the Office of
Science Lab
Technical Assistant
CCC**

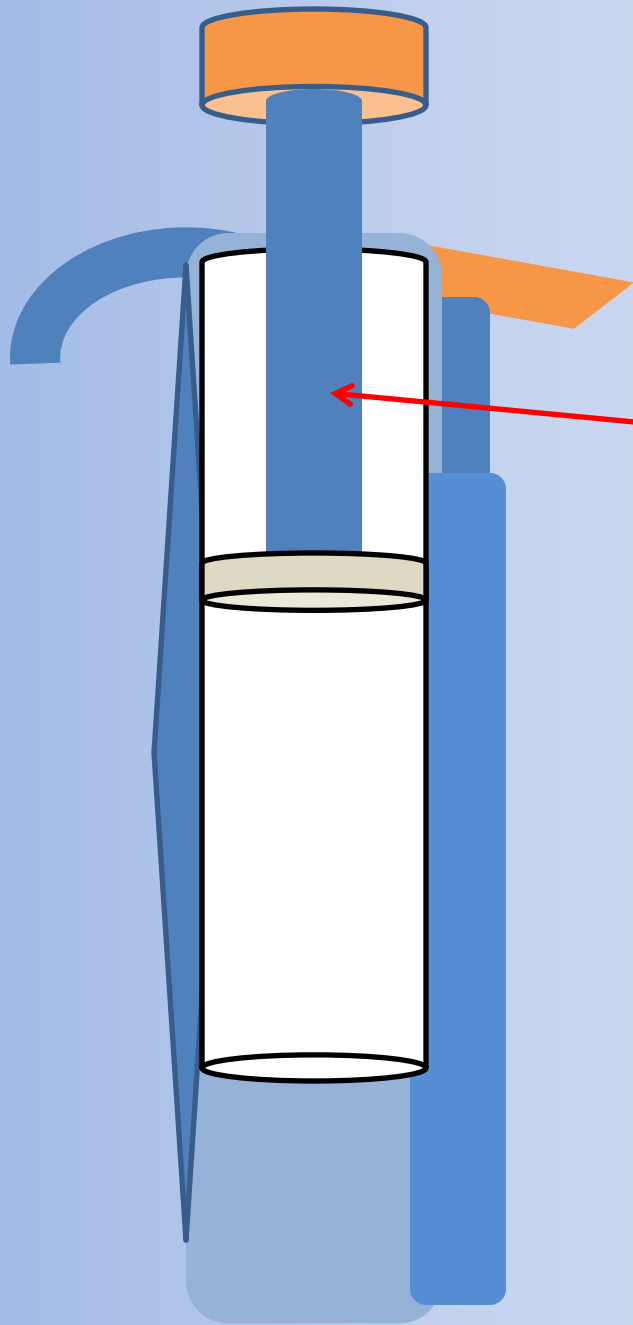


This is a Micropipette it is used to accurately transfer small quantities of liquid.

On this model the desired volume can be adjusted within the range of microliters (μL).



Some Micropipettes have preset volumes and cannot be adjusted. This pipette will only deliver 200µL.

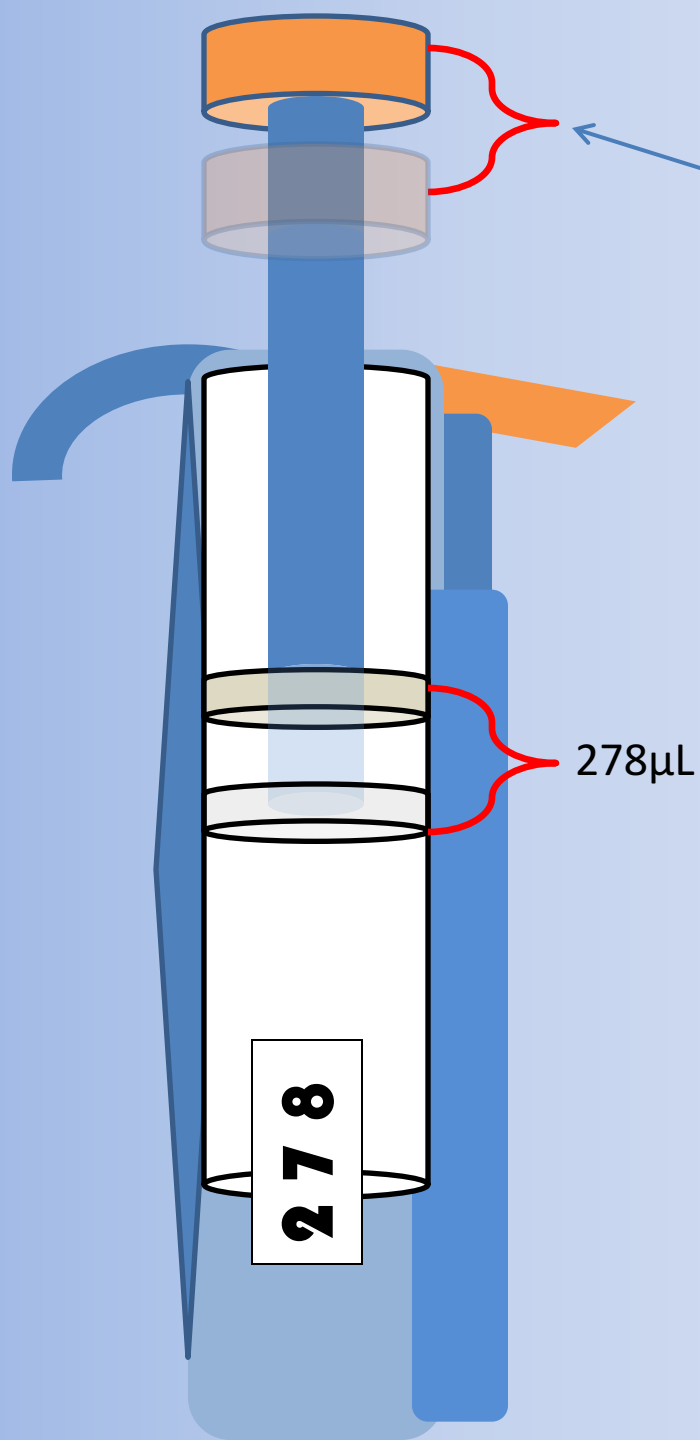


How does it work?

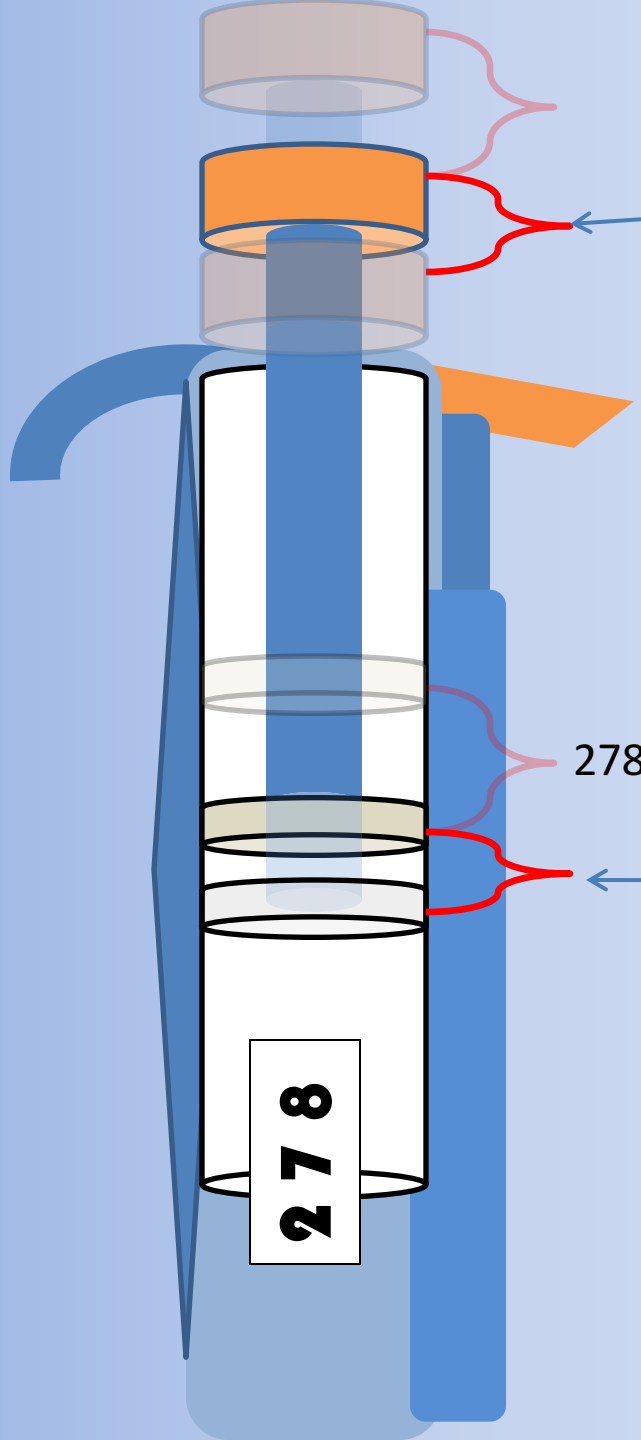
It works much like a syringe that would deliver an injection.

Inside there is a spring loaded piston that moves up and down.





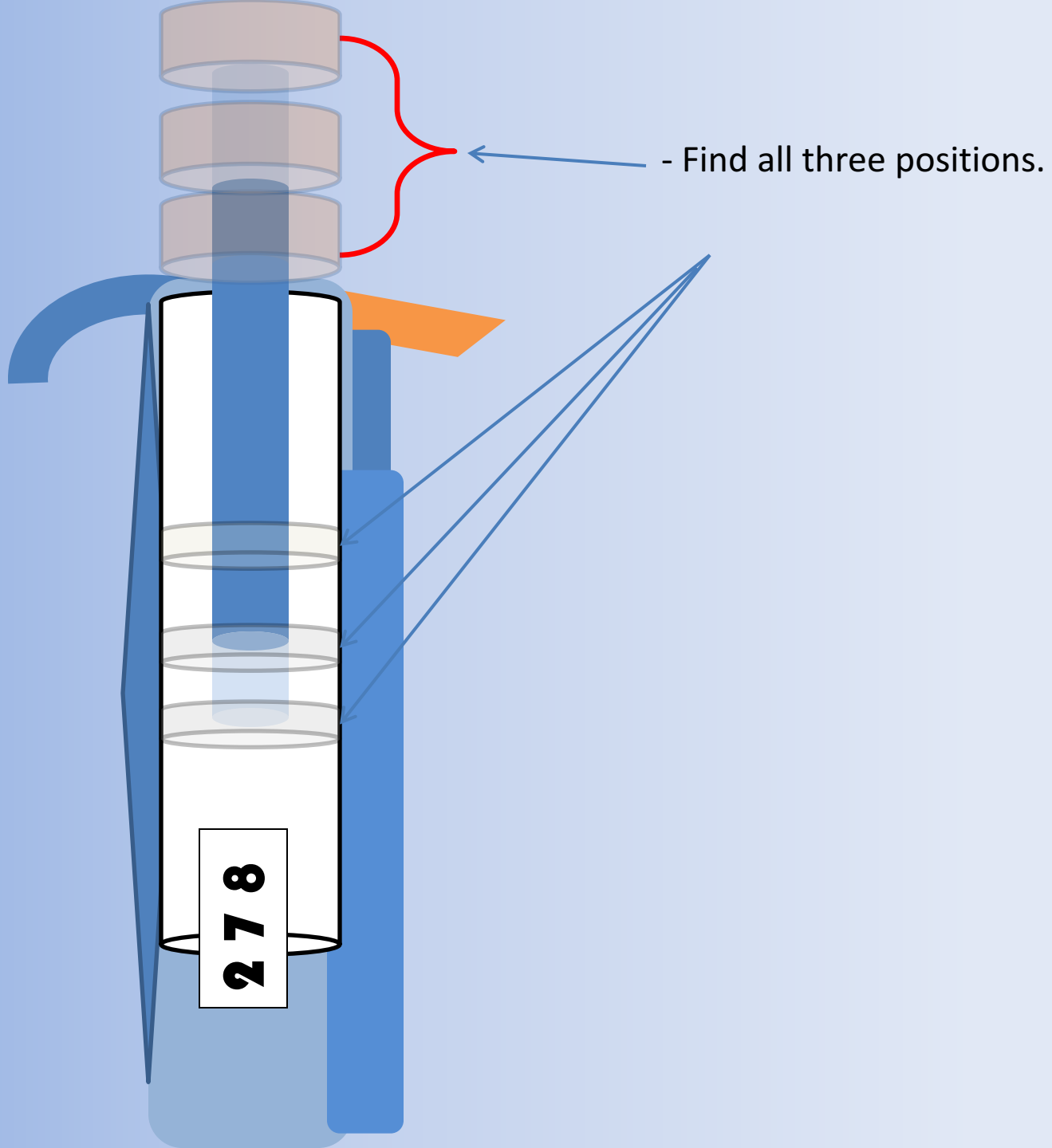
The plunger has two stops:
- at the First Stop the piston moves through the volume that is set on the pipette. (In this case 278 μL)

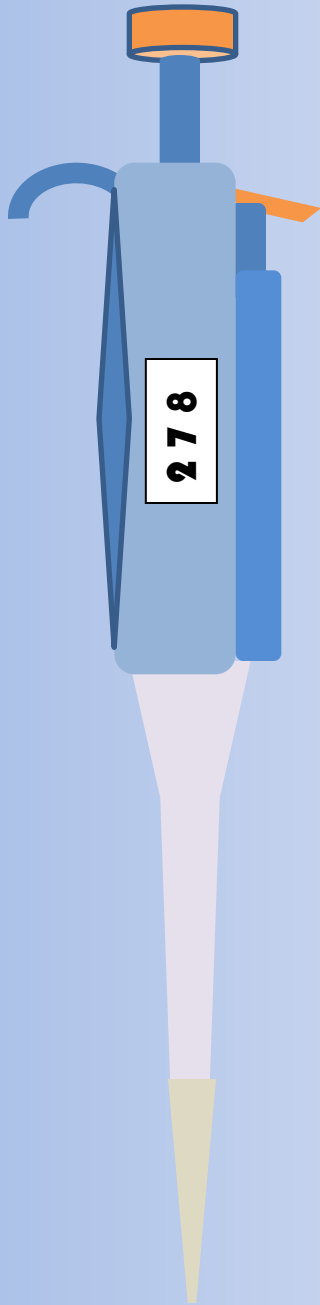


- The second stop is extra travel used for certain circumstances like evacuating the tip, or drawing up more than the volume indicated on the pipette

278 μL

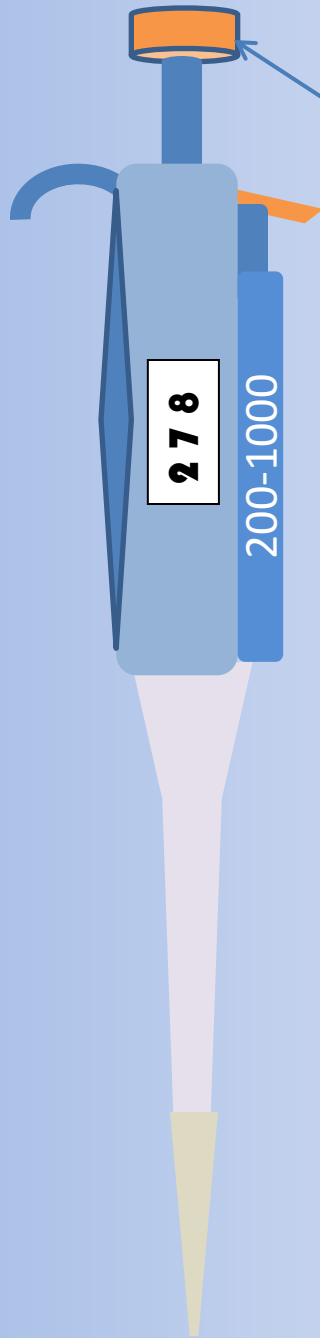
- Extra volume (? μL)





Proper Use 😊

Setting Volume

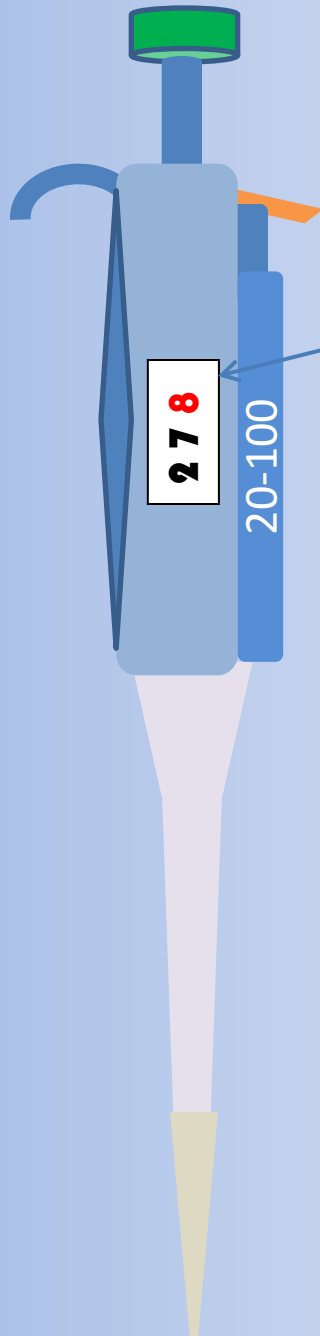


Set the correct volume on your micropipette by turning the adjustment knob (typically the plunger button).

This pipette's range is 200-1000 μL and is set to deliver 278 μL

278

Setting Volume



Settings can vary between models and manufacturer s.

This pipette's range is 20-100 μL and is set to deliver 27.8 μL

However you might see the following readings for this exact setting on different pipettes:

278

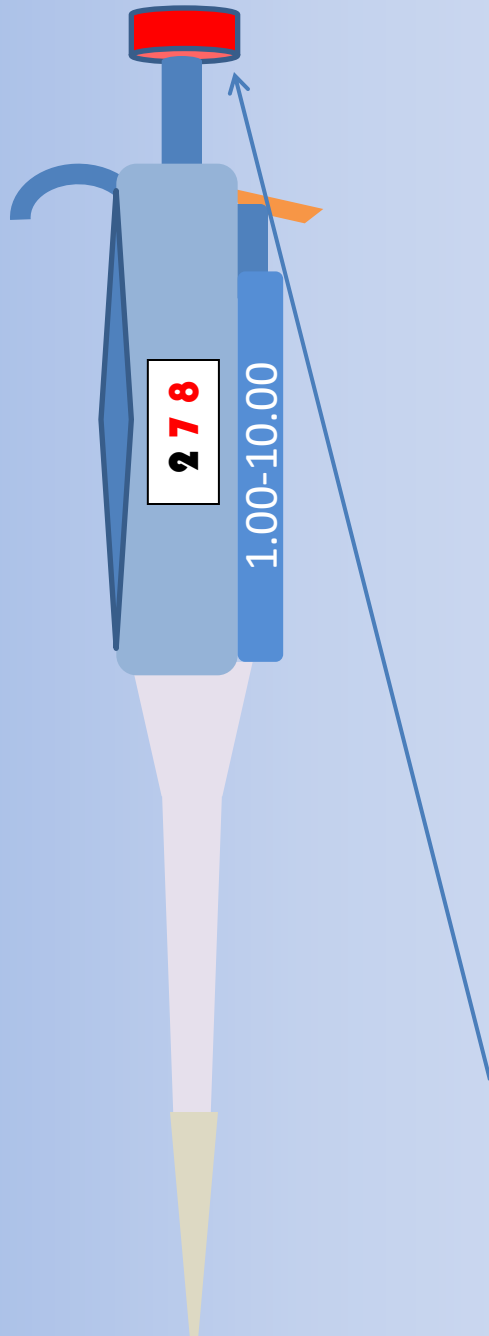
27.8

278

The first two make the decimal places obvious,

while the last one implies the tenths place if you know the range.

Setting Volume



Settings can vary between models and manufacturer s.

This pipette's range is 1-10 μL and is set to deliver 2.78 μL

However you might see the following readings for this exact setting on different pipettes:

2 7 8

2 . 7 8

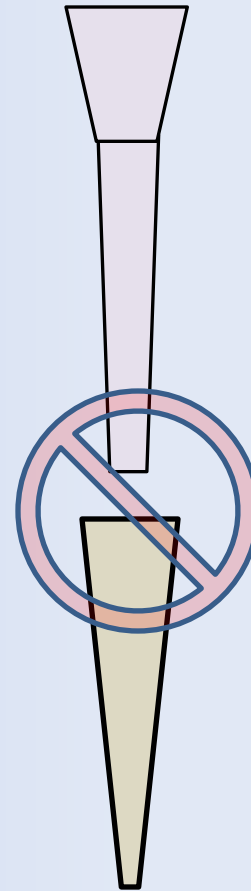
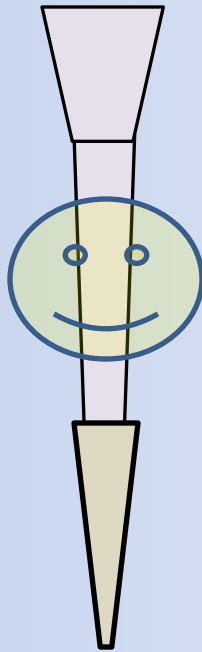
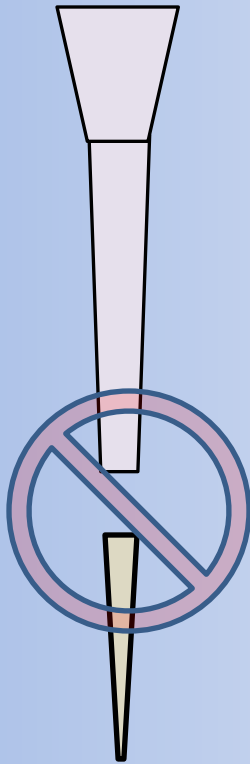
2 7 8

Some companies will change the color of the plunger button.



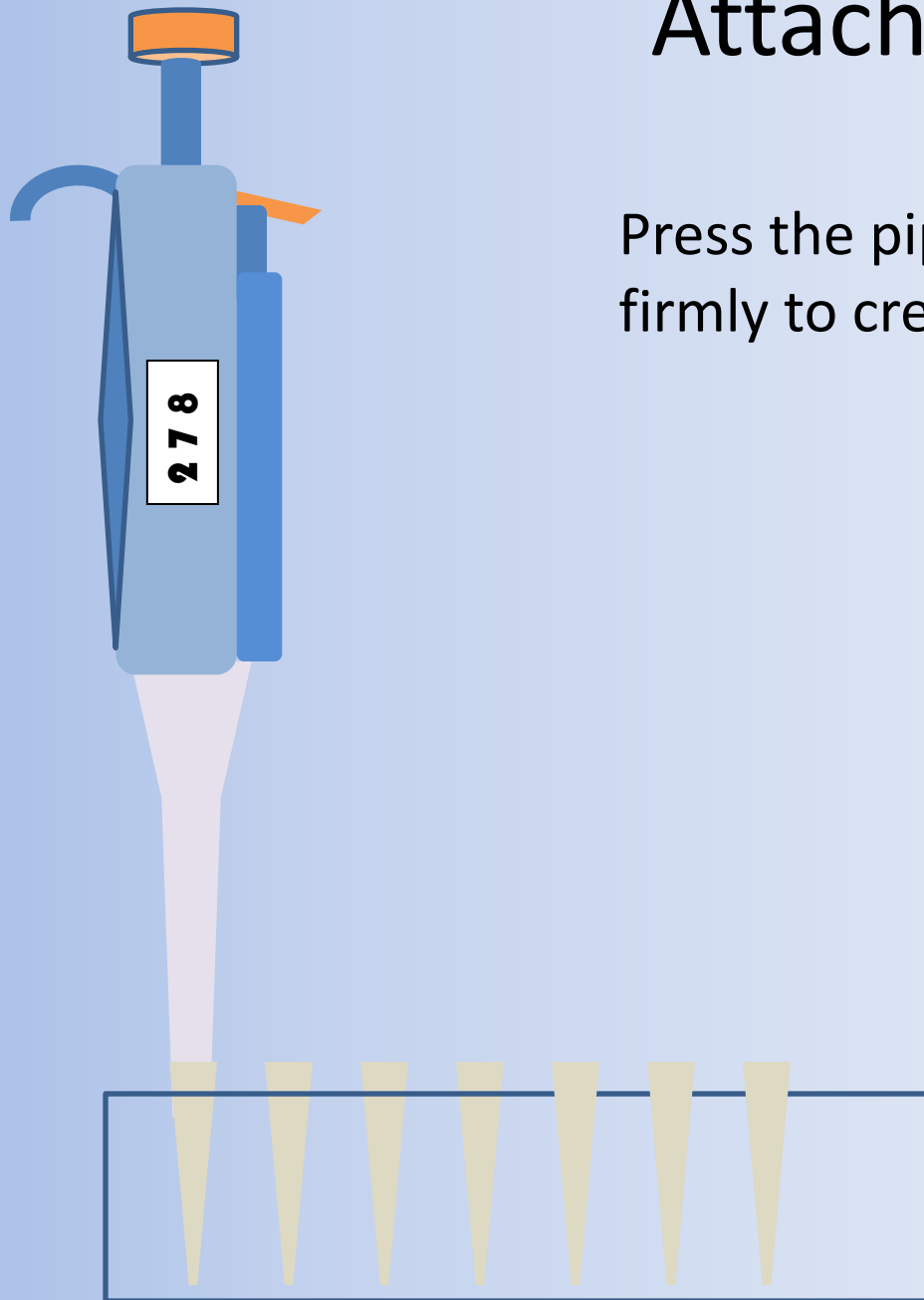
Attaching tip

Be sure to choose the proper size tip.

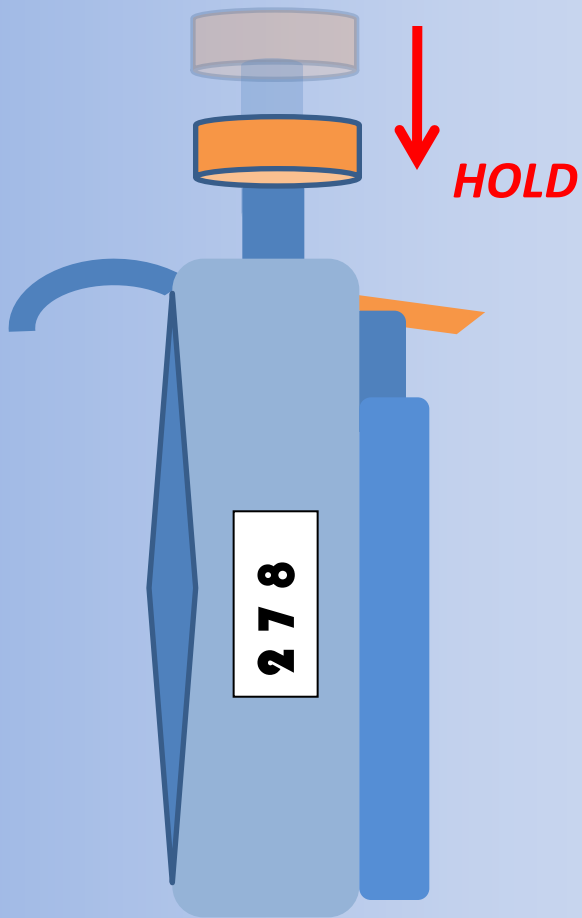


Attaching tip

Press the pipette into the tip firmly to create an airtight seal.



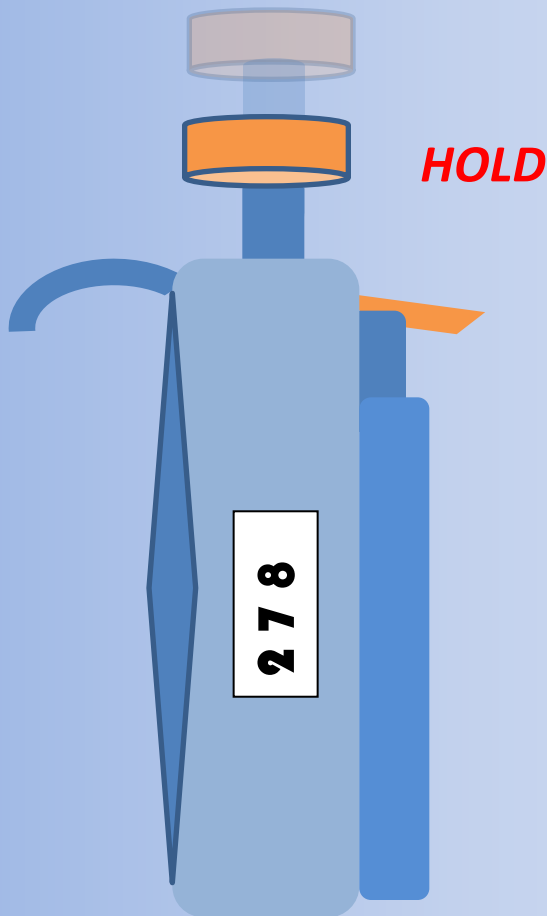
Attaining a Sample



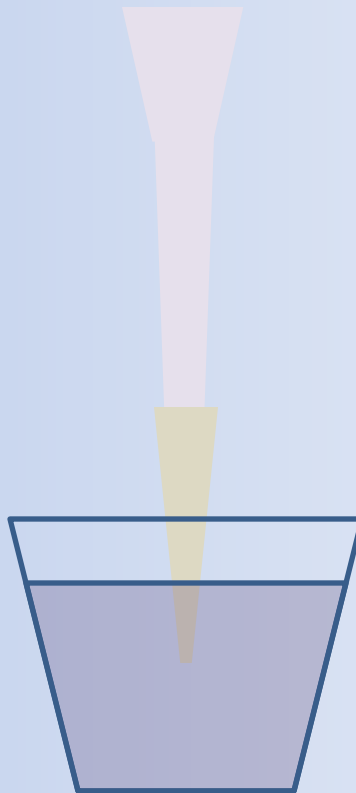
STEP ONE – press plunger to first stop and *hold*.



Attaining a Sample

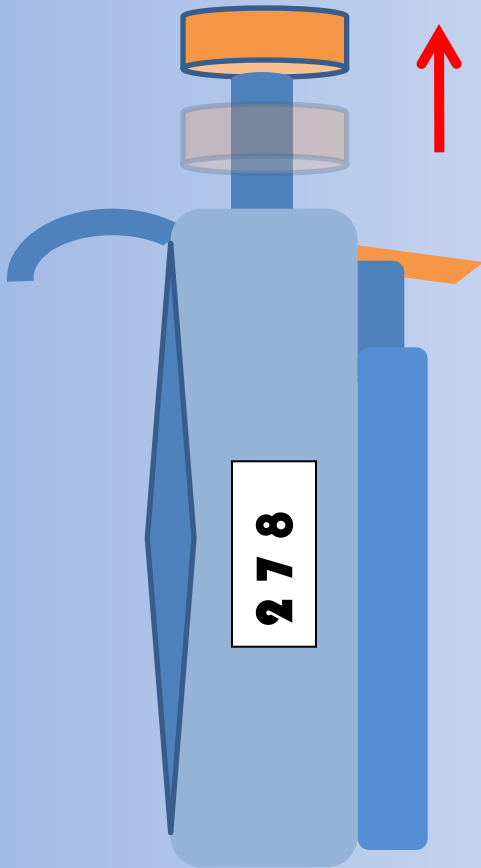


STEP TWO – Insert tip into sample only far enough to ensure it stays submerged but not to the bottom where it will get blocked

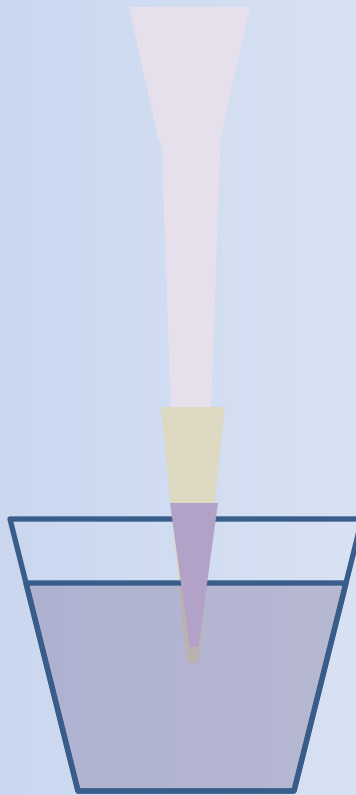


KEEP the pipette VERTICAL at all times

Attaining a Sample

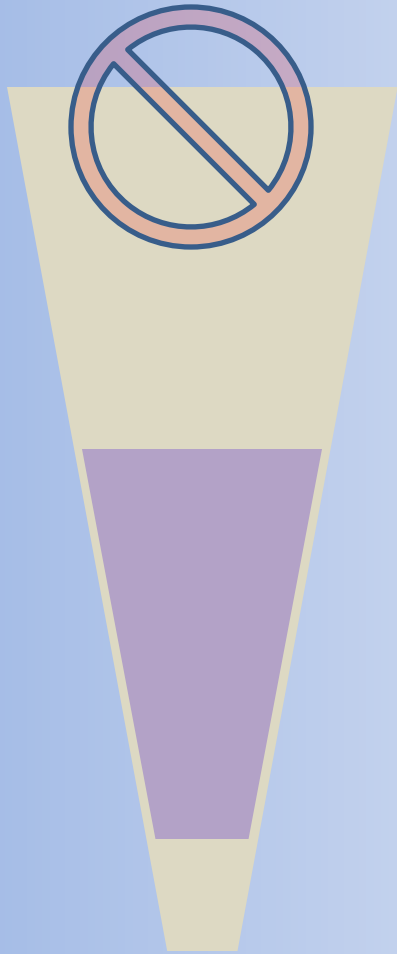


STEP THREE – Allow plunger to return to the home position ***SLOWLY*** so you don't draw in air bubbles, or splash sample up into tip or the pipette itself.

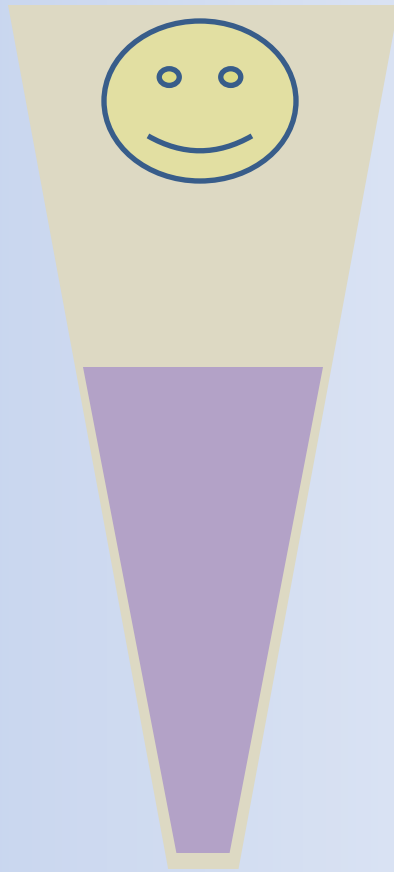


KEEP the pipette VERTICAL at all times

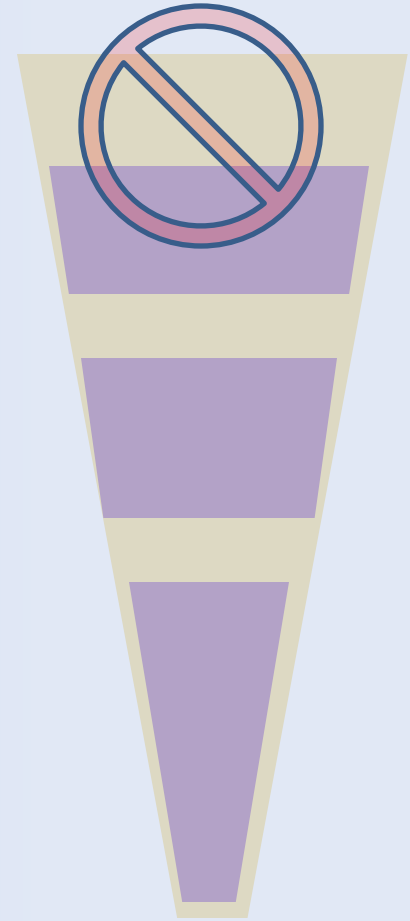
Attaining a Sample



Removed tip from sample before the plunger was all the way home

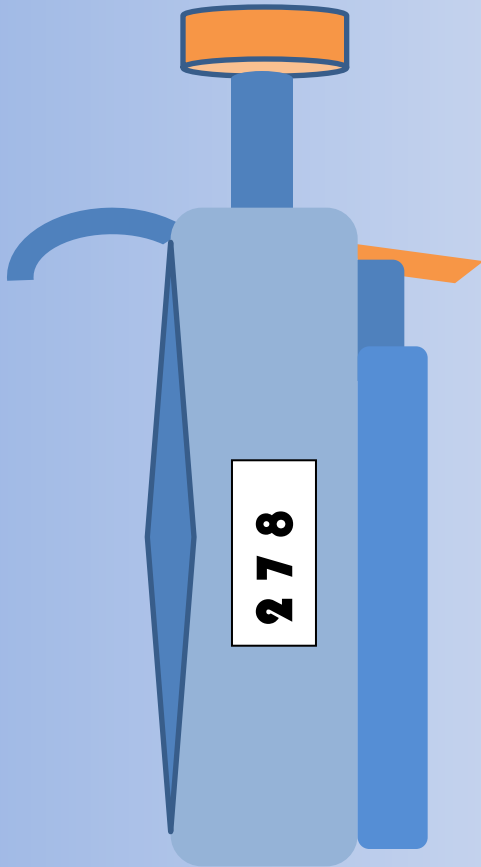


CORRECT

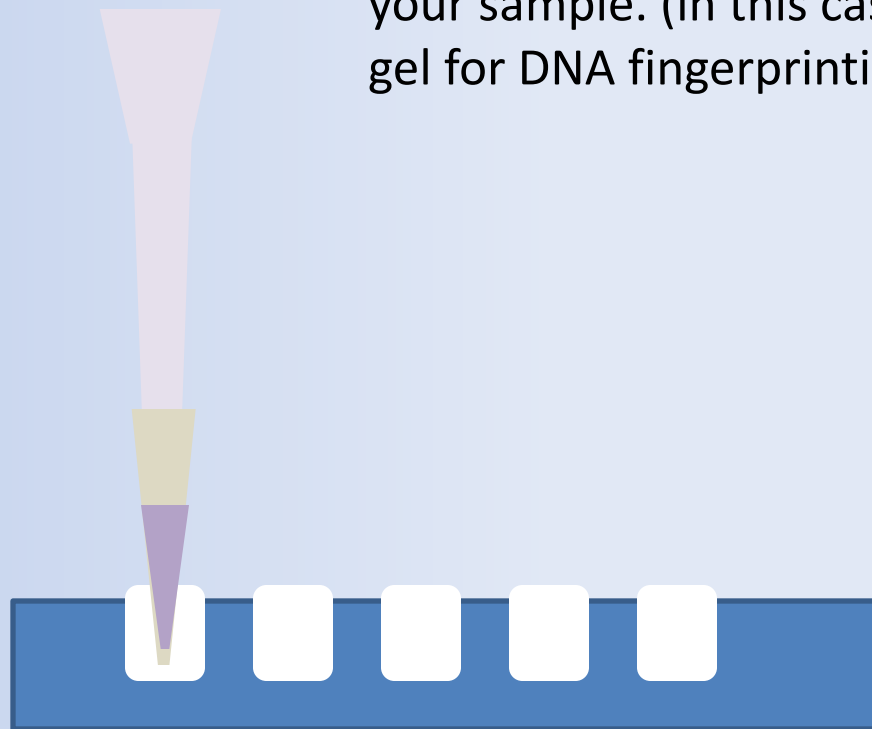


Likely allowed the plunger to move to home too quickly.

Delivering the Sample

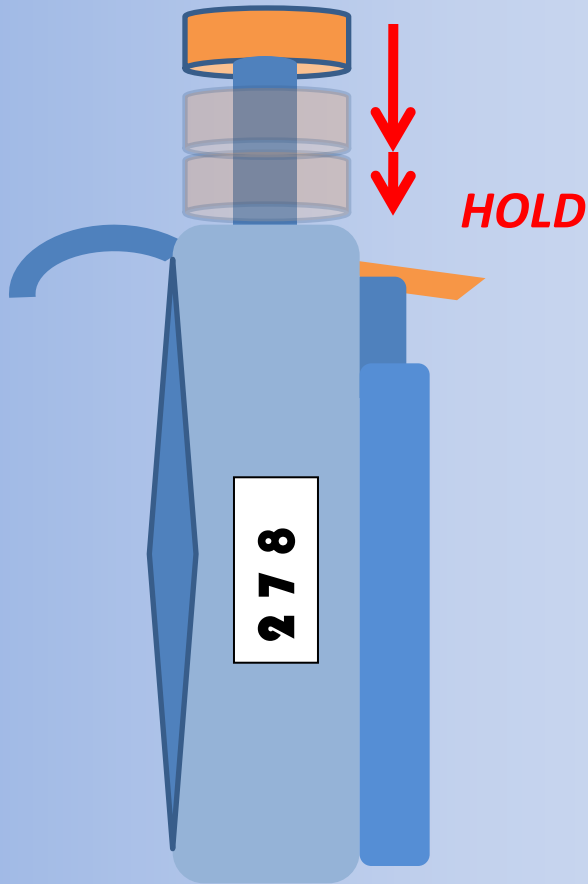


STEP FOUR – insert tip into the area you wish to deliver your sample. (in this case a gel for DNA fingerprinting)

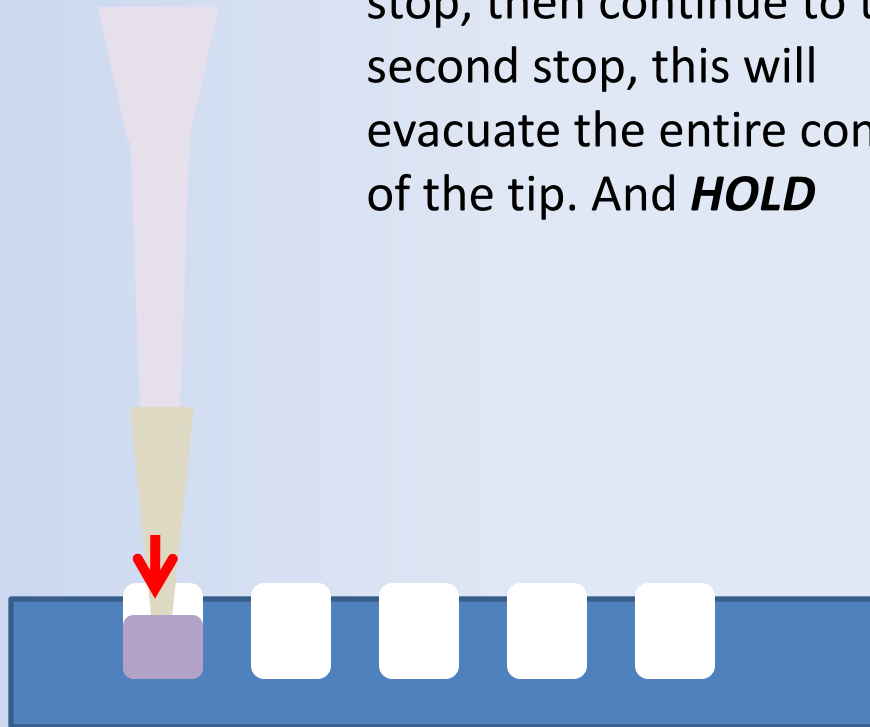


KEEP the pipette VERTICAL at all times

Delivering the Sample



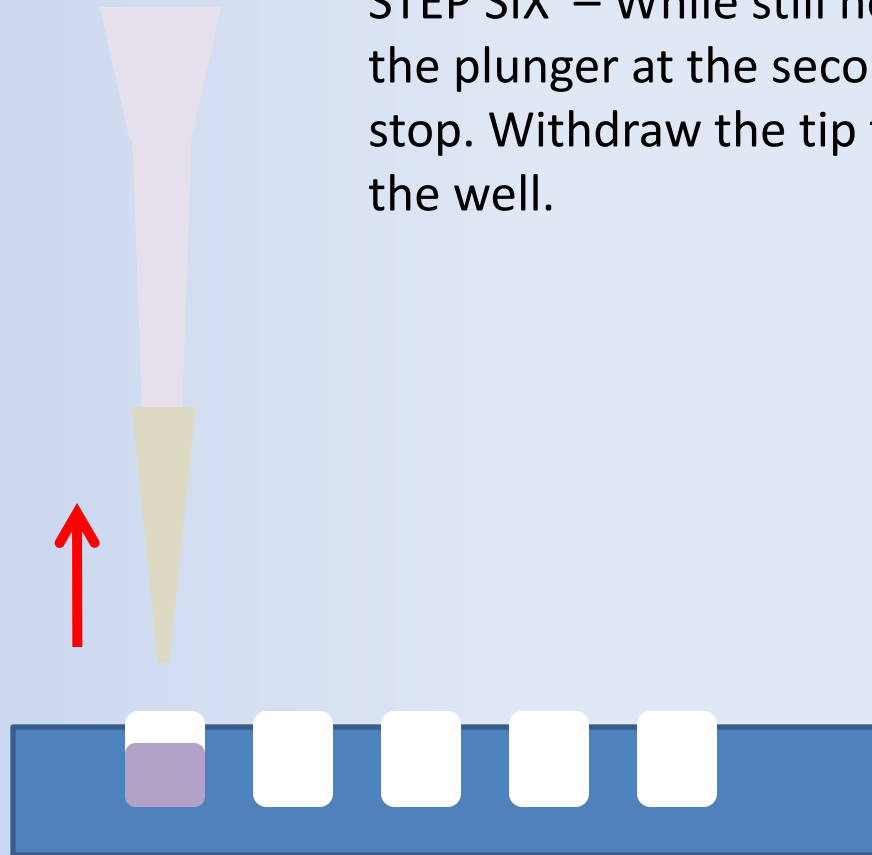
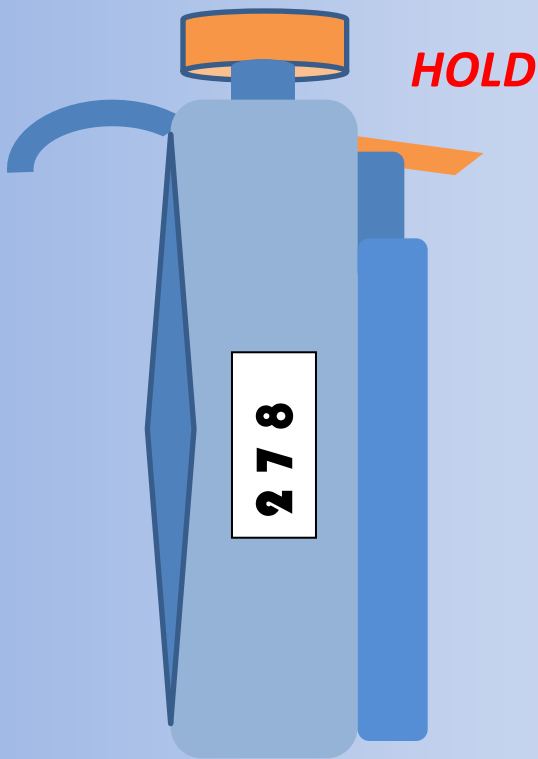
STEP FIVE – depress the plunger slowly to the first stop, then continue to the second stop, this will evacuate the entire contents of the tip. And ***HOLD***



KEEP the pipette VERTICAL at all times

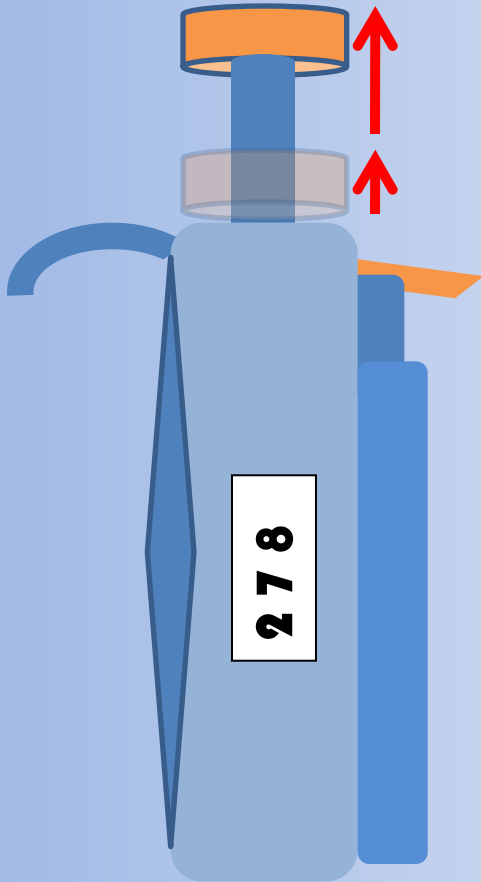
Delivering the Sample

STEP SIX – While still holding the plunger at the second stop. Withdraw the tip from the well.

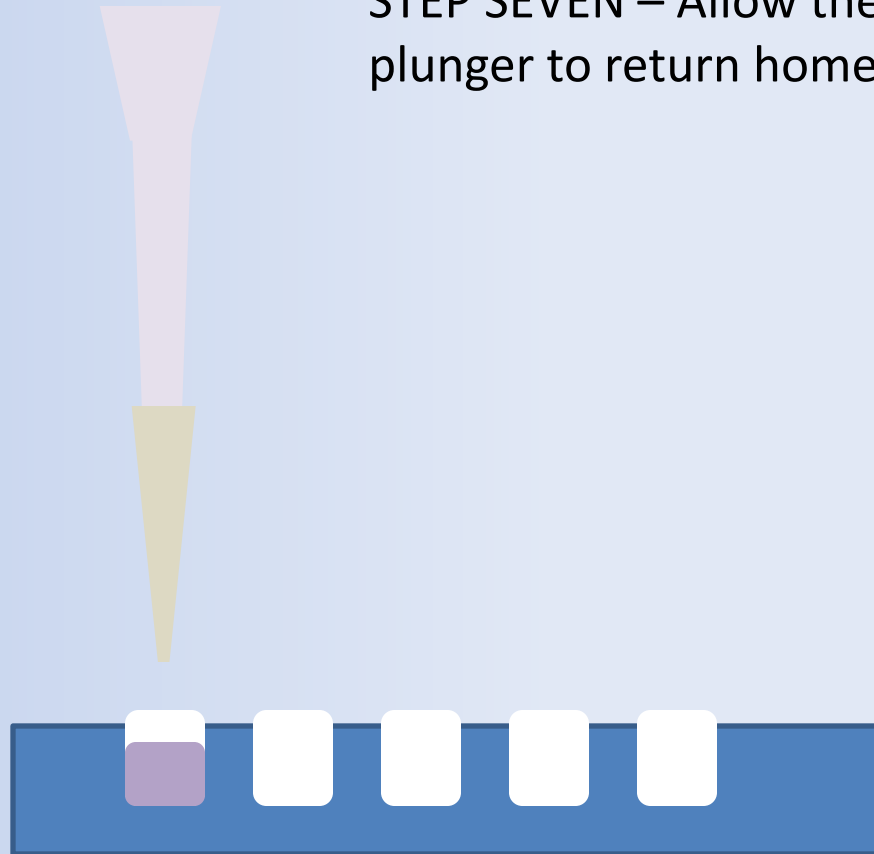


KEEP the pipette VERTICAL at all times

Delivering the Sample

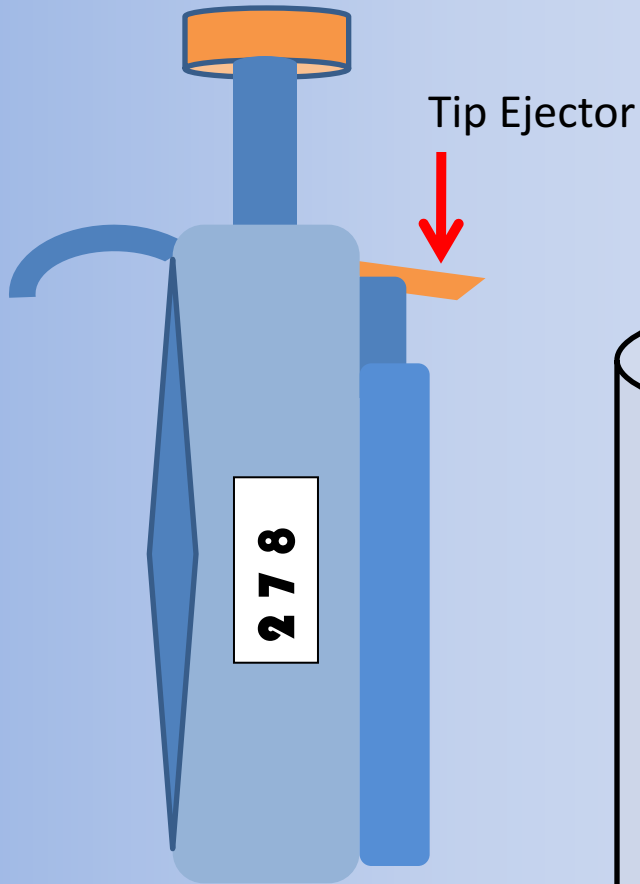


STEP SEVEN – Allow the plunger to return home.



KEEP the pipette VERTICAL at all times

Discarding the Tip



STEP EIGHT – Place tip into the opening of the waste container, then depress the tip ejector.



Be sure to use a new tip each time.

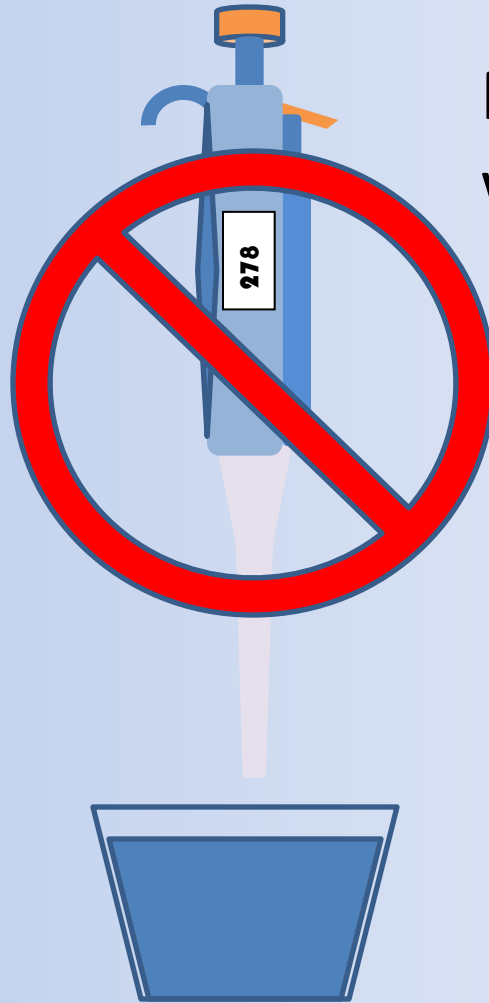
KEEP the pipette VERTICAL at all times

Things to AVOID !!



Never use a pipette
in anything but a
vertical orientation.

Things to AVOID !!



Never use a pipette
without a tip.

HAPPY PIPETTING

