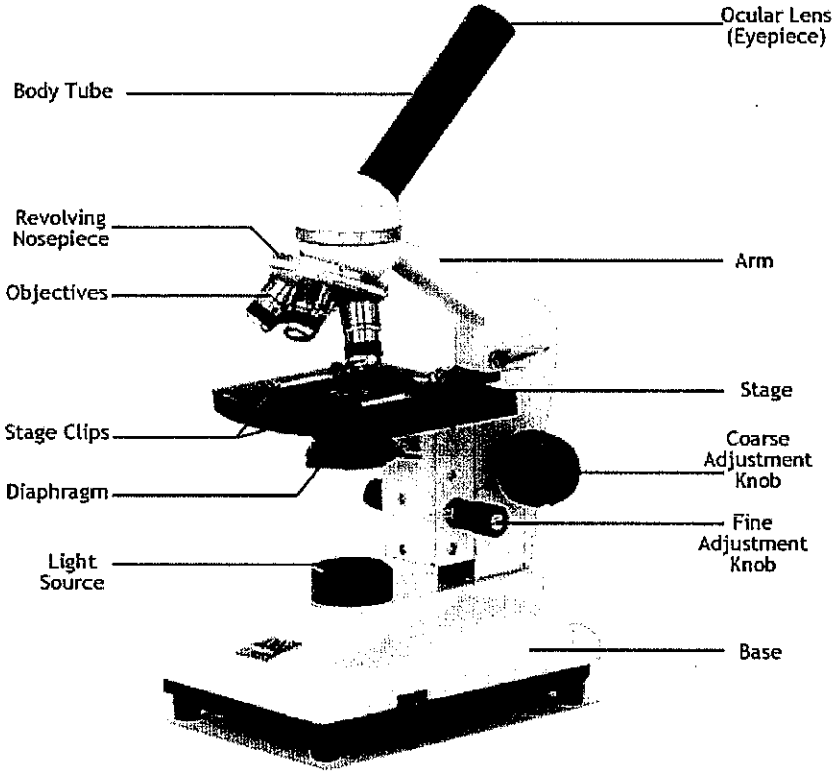
MICROSCOPE PARTS AND FUNCTIONS



Microscope Part	Function
Arm	Supports the body tube and lenses.
Base	Supports the entire microscope.
Ocular/Eyepiece	The lens in the upper part of the microscope. Magnifies object 10x.
Body Tube	Reflects light towards the eye.
Revolving Nose Piece	A revolving device that holds the objectives.
Objective Lenses	Three lenses with different magnification powers.
Stage	The horizontal platform upon which the slide rests.
Stage clips	Holds slide in place.
Diaphram	Lens found beneath the stage that concentrates light before it passes through the specimen to be viewed.
Coarse Focus Adjustment Knob	Large knob located on either side of the arm. Moves the stage (or body tube) up or down to the correct distance to **coarsely** focus object.
Fine Focus Adjustment Knob	Small knob located on either side of the arm. Moves the stage (or body tube) up or down to the correct distance to **finely** focus object.
Light	Provides illumination of the specimen. Typically located within the condenser region of a toy microscope.

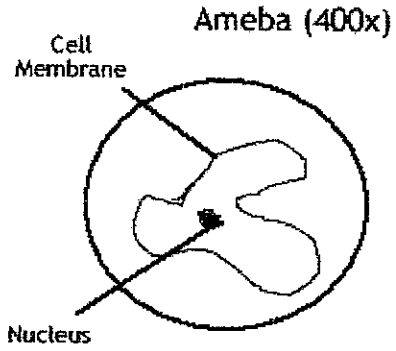
TIPS ON MAKING GOOD DRAWINGS

1. Don't even think of starting your drawing unless you have a **PENCIL! Drawings in PEN are UNACCEPTABLE!** This is for two reasons:
   (a) You can **erase** pencil!
   (b) You can **shade in areas** more easily in pencil.

2. Each Drawing must be **1/4 page** in size, and **must include clear, proper labels!** In the upper left hand corner of each circle include the specimen name **as written on the slide label.** In the upper right hand corner, include the **magnification** (100x or 400x).

3. Labels should start on the **outside** of the circle. **The circle indicates the field of view as seen through the eyepiece.** All arrows should end with **the point touching the object to be labeled!** ⟶

example



4. Animal cells should **always** include **at least** the following **five** labels: *Cell membrane, Nuclear membrane, Nucleus, Chromatin, Cytoplasm.*

5. Plant Cells should **always** include **at least** the following **seven** labels: *Cell membrane, Cell wall, Nuclear membrane, Nucleus, Chromatin, Cytoplasm, Chloroplast* (this last does not exist in *certain* plant cells).

6. **Remember:** I don't want you to ***Look*** at the cells; I want you to ***SEE*** them! In order to do that, you ***MUST:***

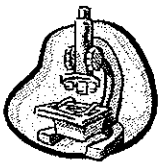
   Apply your knowledge of ***cell structure*** to your drawings!
   *An **unlabeled drawing** is nothing more than **scratches on a piece of paper!***

HOW TO MAKE A WET MOUNT

1. Gather a **thin** slice/piece of whatever your specimen is. If your specimen is too thick, then the coverslip will wobble on top of the sample like a see-saw:

2. Place **ONE** drop of water **directly over** the specimen. If you put **too much water** over the specimen, then the coverslip will float on top of the water, making it harder to draw the specimens **as they float past the field of view!**

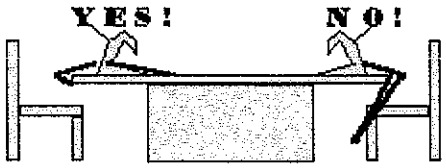
3. Place the coverslip at a 45 degree angle (approximately), with one edge touching the water drop, and **let go.**



PROPER USAGE OF THE MICROSCOPE

1. Make sure all backpacks are **out of the aisles** before you get a microscope! Always carry the microscope with one hand on the **Arm** and one hand on the **Base.** Carry it **close to your body.**

2. Remove the cover, plug the microscope in, and place the excess cord **on the table!** If you let the excess cord dangle over the edge, your knee could get caught on it, and the next sound you hear will be a **very expensive crash.** I will bill you later!



3. Always start and end with **Low Power!** The *Green* means *GO!* –
"*Go ahead* and put the slide on the stage."
"*Go ahead* and use the Coarse focus knob."
"*Go ahead* and remove the slide from the stage."
"*Go ahead* and put the microscope away."

NOTE: Some of the colors may be different on your Microscope. Write the correct color next to the sentence above.

4. Place the slide on the microscope stage, with the specimen directly over the **center** of the glass circle on the stage (directly over the light). Then you have a 9 out of 10 chance of finding the specimen **as soon as you look through the eyepiece!**

NOTE: *If you wear **glasses**, take them **off**; if you see only your **eyelashes**, move **closer.** Be sure to **close**, or **cover** your **other** eye!!*

NOTE: If you see a **dark line** that goes *part way* accross the *field of view*, try turning the eyepiece. That dark line is a pointer that will be ***very valuable*** when you want to *point out* something to your *lab partner*, or your *teacher*!

5. If, ***and ONLY if***, you are on ***LOW POWER***, lower the objective lens to the **lowest point**, then focus using first the coarse knob, then the fine focus knob. **The specimen will be in focus when the *LOW POWER* objective is close to the *lowest point,* so start there and focus by *slowly* raising the lens.** If you can't get it **at all** into focus using the coarse knob, then switch to the fine focus knob.

6. Adjust the **Diaphragm** as you look through the **Eyepiece**, and you will see that **MORE** detail is visible when you allow in **LESS** light! ***Too much*** light will give the specimen a ***washed-out*** appearance. ***TRY IT OUT!!***

7. Once you have found the specimen on Low Power (100x), unless **specifically asked** to draw it on low power, **center** the specimen in your field of view, then, **without changing the focus knobs,** switch it to High Power. If you don't center the specimen you will lose it when you switch to **High Power (Yellow)**. [See Above]

8. Once you have it on **High Power** remember that you **only use the fine focus knob! The *Yellow* means *CAUTION!* -- *"Caution, use only the fine focus knob." "Caution, do not remove the slide when it is on High Power."*** -- The High Power Objective (400x) is **very close** to the slide.