

## Compound Light Microscope

The microscope was very important in the advancement of our knowledge of cells. It will also be a very important tool for us, in grade 8, in our study of cells.

Today we will need to accomplish the following tasks:

1. Review the rules associated with the use and maintenance of our compound light microscopes.
2. Review, then prepare a wet-mount slide
3. Focus the microscope on medium power (100x magnification)
4. Discuss how to appropriately create a sketch of what you see in the microscope.



Your project for this unit will be based on your use of the microscope.

# Microscope Rules

Last year we discussed, in detail, how to properly handle a compound light microscope. Let's review the key details that we discussed:

- Always carry the microscope with two hands, close to your body.
- Unpackage the microscope carefully.
  - > fold bag for storage to eliminate contamination
  - > hold metallic plug end to avoid scratches
- Handle microscope slides carefully, avoiding touching the top and bottom surfaces with your fingers.
  - > only place slides on soft surfaces, or on microscope stage
  - > avoid shifting the slide once it is on the stage
- Do not allow the lenses to touch the stage.
  - > lower your eyes to be in line with stage when changing magnifications
  - > raise lens when going to high magnification
- Store microscope with low magnification in line.
- Wrap cord under light source, not near any of the lenses.
- Wash slide, but do not dry it, lay it on cloth to dry.

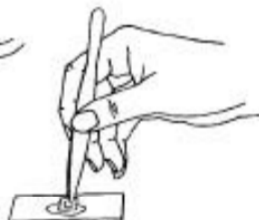
# Preparing a Wet Mount

A wet mount slide is used to contain a sample between a glass slide and a clear plastic slide cover. When preparing a wet mount, it is important not to have too much water, as excess water could spill on the light source, damaging it.

Here are the steps to take in preparing a wet mount slide:



Add a drop of water to a slide.



Place the specimen in the water.



Place the edge of a coverslip on the slide so that it touches the edge of the water.



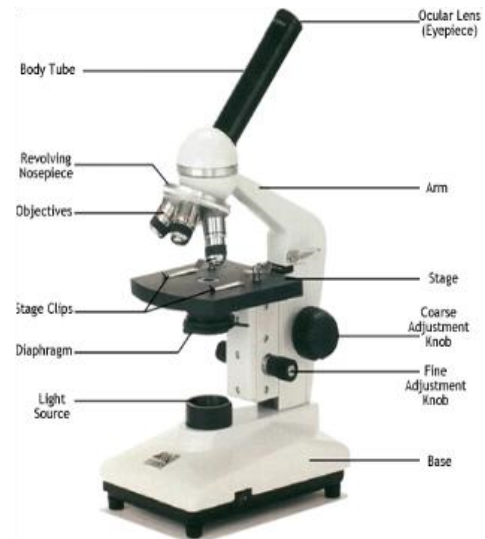
Slowly lower the coverslip to prevent forming and trapping air bubble

# Focusing the Microscope

You will recall that the compound light microscopes have three different magnifications. These are referred to as Low Power (40x), Medium Power (100x) and High Power (400x).

- Always start on low power, progressing only after focusing the image.
- Use the course focus to get a good view of your specimen.
- Once the specimen is clear, use the fine focus to sharpen the image.
- To look around the specimen, move the stage, not the slide.

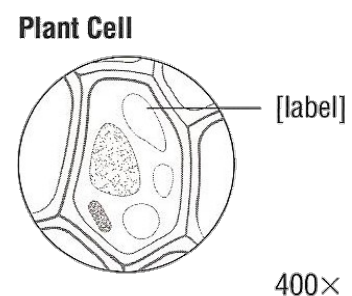
Unfortunately, not all of our microscopes will focus properly at high magnification. Today we will focus on medium magnification.



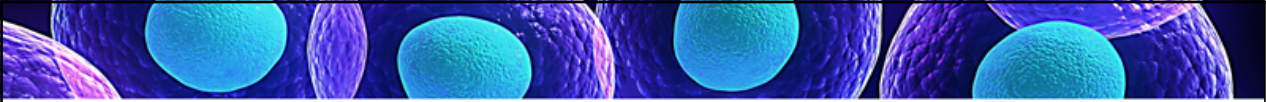
# Microscope Sketches

When making observations with the microscope you will need to create sketches to communicate what you have seen. Those sketches should look like the original image, not simply a series of scribbles.

- You start by drawing a circle to represent your field of view.
- Your image should be proportioned to the circle you have drawn (if the specimen takes up half of your view, it should be half of the circle).
- Lines drawn should be clean, not scribbles.
- Parts should be stippled or lightly shaded, not coloured in darkly.
- Smudging your shading, with your finger, creates a more uniform look.
- You should include a title and the magnification.
- Labels should be made by using a straight horizontal line.



[Checklist](#)



# Compound Light Microscope

It is time to prepare your sample. Because of numbers, you will need to work in groups of two or three. All of you need to be able to display the skills we will practise today.

1. Obtain a small sample (today we will use \_\_\_\_\_)
2. Prepare a wet mount - Show me
3. Focus your sample under medium magnification - Show me
4. Use the images posted on Google Drive to properly sketch an image of a specimen at medium or high magnification -  
Homework - Due: \_\_\_\_\_
5. Properly clean up all of your equipment - Show me



Please bring your phone, for pictures, next class.