

Lab 1 : Microscopic

Microscope discovered by Antony Van Leaven hock in 1674 (Holland)
Which observed bacteria by his lens and named animalcules.

((He was an amateur grinder lens in Holland))

Microscope is an instrument used to study the cells and microorganisms .

Microscopes are divided into two categories :

- 1- Light Microscope
- 2- Electron Microscope

The light microscopes are subdivided into:

- 1- Bright – field microscopes
- 2- Fluorescent microscopes

The Electron microscopes are subdivided into:

- 1- scanning electron Microscope
- 2- Transmission electron microscopes

Head

- 1-Ocular (eye pieces) : Monocular 10x , Binocular 10x
- 2- Revolving disc (nose pieces)
- 3- Objective Lenses (4x, 10x, 40x and 100x)

Arm

- 1- Stage (Mechanical stage)
- 2- Adjustment knob : Coarse focus adjustment , Fine adjustment
- 3- Mechanical stage clip
- 4-Condenser
- 5-Diaphragm

Base (foot)

Illuminator Condenser

How Use The Compound Microscope

Use a compound Microscope :

- 1-Always carry the microscope by holding the arm of the microscope with one hand and supporting the base with the other hand
- 2- Place the microscope on a flat surface , the arm should be positioned toward you
- 3- Look through the eye age piece , Adjust the diaphragm so that the light comes through the opening in the stage.
- 4-Place a slide on the stage so that the specimen is in the field of view .Hold it firmly in place by using the stage clips .
- 5- Always focus first with the coarse adjustment and the low- power objective lens .Once the object is in focus on low power , the high power objective can be used .Use only the fine adjustment to focus the high power .

Make A wet Mount :

Wet mount are named as such because the object to be viewed is prepared or mounted in water , follow these steps to make a wet mount :

- 1- Obtain a clean microscope slide and a coverslip, Add drop or two of water to the center of the microscope slide.
- 2- Place the specimen in the drop of water.
- 3-Pick up the coverslip by its edges. Do not the surface of the coverslip. Stand the coverslip on its edge next the drop of water.
- 4- Slowly lower the coverslip over the drop of water and the specimen .
- 5- Make sure that object is totally covered with water if is not remove the coverslip, add a little more water and replace the coverslip.

Stain a slide :

Staining a slide can make it easier to view a specimen. Stains enhance contrast ant and can call out certain features . for example using iodine as a stain will cause carbohydrates in the specimen to become bluish –black in color .the following indicate one way to stain a microscope slide .

- 1- Prepare a wet mount , as indicated in the steps on the previous page .
- 2- Obtain the stain from your teacher .Using a dropper , place a drop of the stain at one end of the coverslip.
- 3- Place a paper towel at the end of the coverslip opposite the stain .The towel will draw the stain under the coverslip staining the specimen .

