

Al-Mustaqbal University

College of Engineering and Technologies

Biomedical Engineering Department



Practical Biology

Lecture: 2

The Light Microscope

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The Light Microscope

The Microscope: is an instrument used to see objects that are too small to be seen by the naked eye.

Types of Microscopes

- ✚ Light Microscope .
- ✚ Dissection Microscope .
- ✚ Scanning Electron Microscope (SEM).
- ✚ Transmission Electron Microscope (TEM).

Light microscope: is a type of microscope that used to magnified object by using the visible light and lenses system, visible light is passed through the object and then through glass lenses.



Microscope Care

- ❖ Always carry with 2 hands.
- ❖ Never touch the lenses with your fingers.
- ❖ Only use lens paper for cleaning.
- ❖ Always store covered.
- ❖ Turn the instrument off when it is not in use.

Parts of Light Microscope:

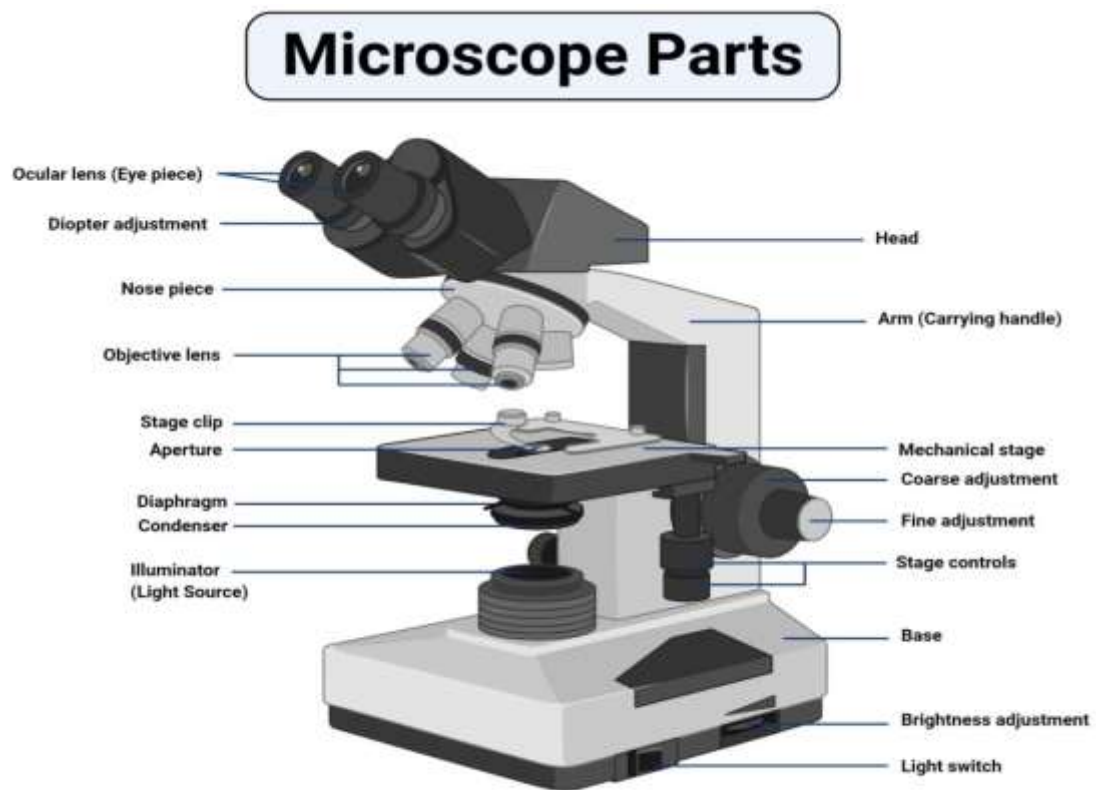
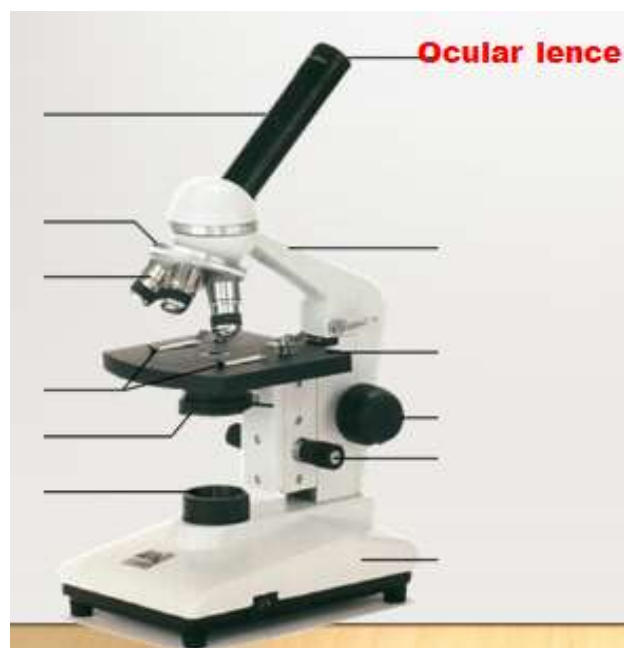


Figure: Parts of a microscope, Image Copyright © Sagar Aryal, www.microbenotes.com

1. Ocular Lenses

- magnifies; where you look through to see the image of your specimen.
- They are usually **10X**.



2. Objective Lenses

- Used to magnify.
- Usually you will find 3 or 4 objective lenses on a microscope. They almost consist of 4X, 10X, 40X and 100X powers.



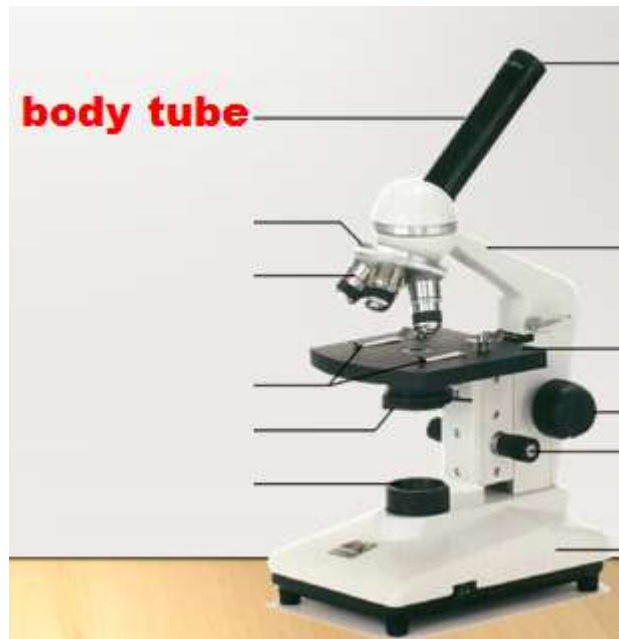
3. Revolving Nosepiece

- the part that holds objective lenses and can be rotated to easily change power.



4. Body Tube

- Connects the ocular lenses to the objective lenses.



5. Arm

- supports the tube and connects it to the base.



6. Stage

- the flat platform where you place your slides.



7. Coarse Adjustment knob

- moves stage (or body tube) up and down.



8. Fine Adjustment knob

- small, round knob on the side of the microscope used to fine-tune the focus of your specimen after using the coarse adjustment knob.



9. Base

- The bottom of the microscope, used for support.



10. Stage Clips

- Stage clips hold the slides in place. If the microscope has a mechanical stage, you will be able to move the slide around by turning two knobs.
- One moves it left and right, the other moves it up and down.



11. Light

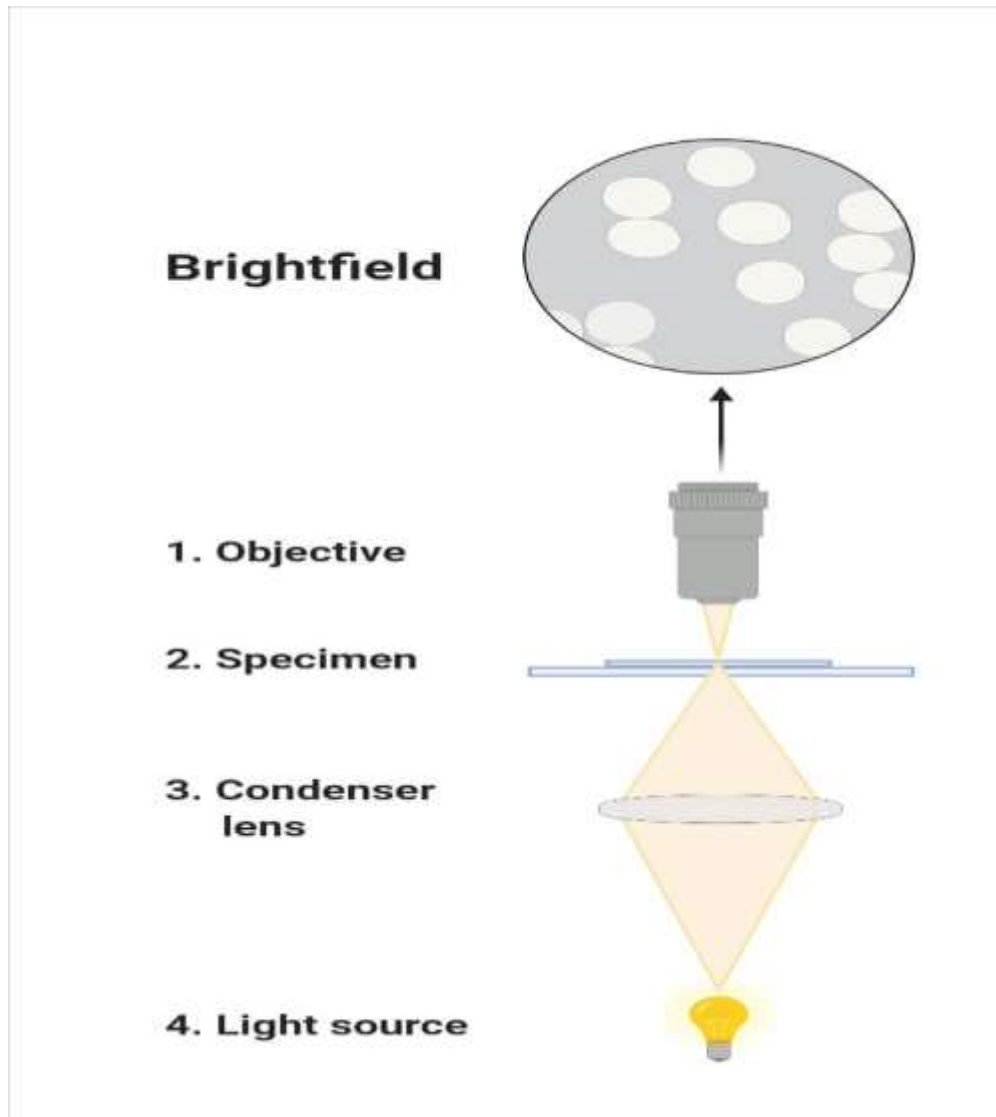
- makes the specimen easier to see.



Magnification: is the ratio of an object's image size to its real size.

Total Magnification power Of microscope =

Magnification power of ocular lenses \times Magnification power of objective lenses.



References

- <https://microbenotes.com/light-microscope/>.