كلية المستقبل الجامعة
قسم الانظمة الطبية الذكية
بايولوجي عملي

المحاضرة الاولى

Introduction to the Microscope

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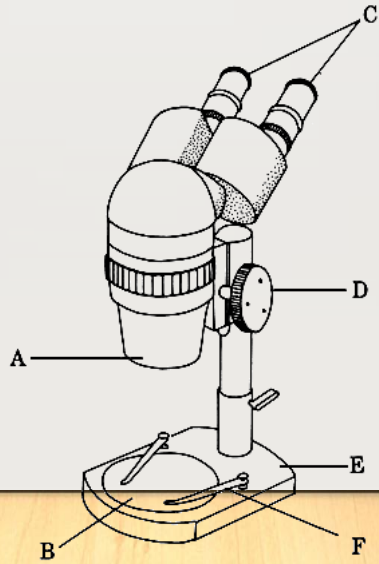
A microscope is an instrument used to see objects that are too small to be seen by the naked eye.

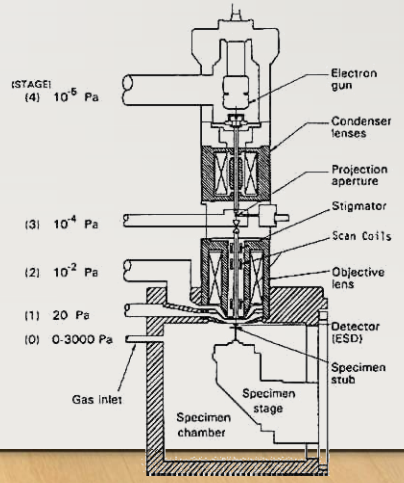
. **Microscopy** is the science of investigating small objects and structures using such an instrument

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.

Types of Microscopes

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

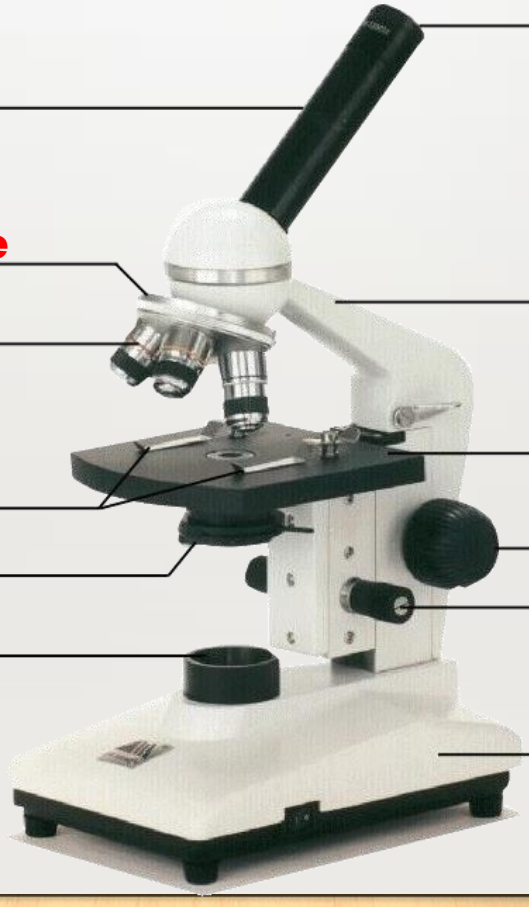




Microscope Care

- 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

Microscope Parts



Ocular lens

Body Tube

Revolving Nosepiece

Arm

Objective Lens

Stage

Stage Clips

Diaphragm

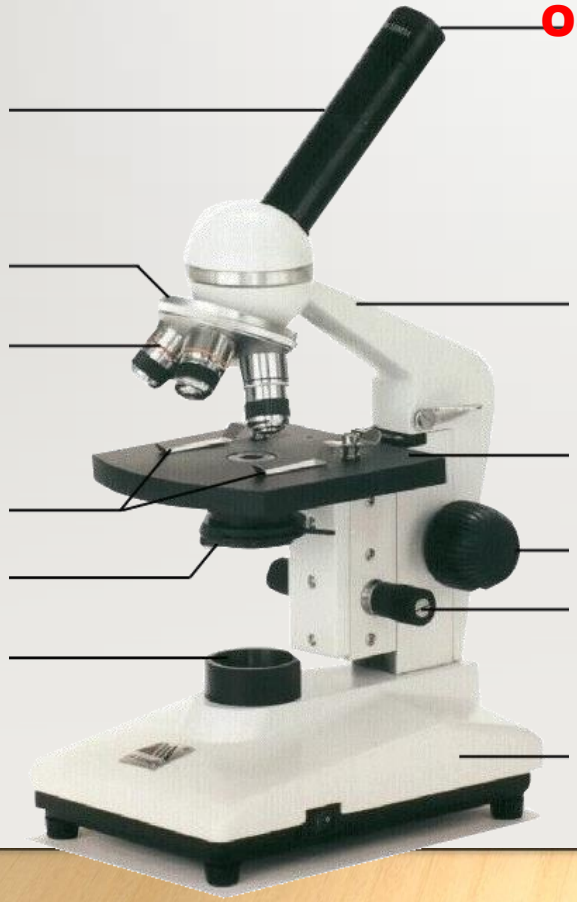
Coarse adjustment knob

Fine adjustment knob

Light

Base

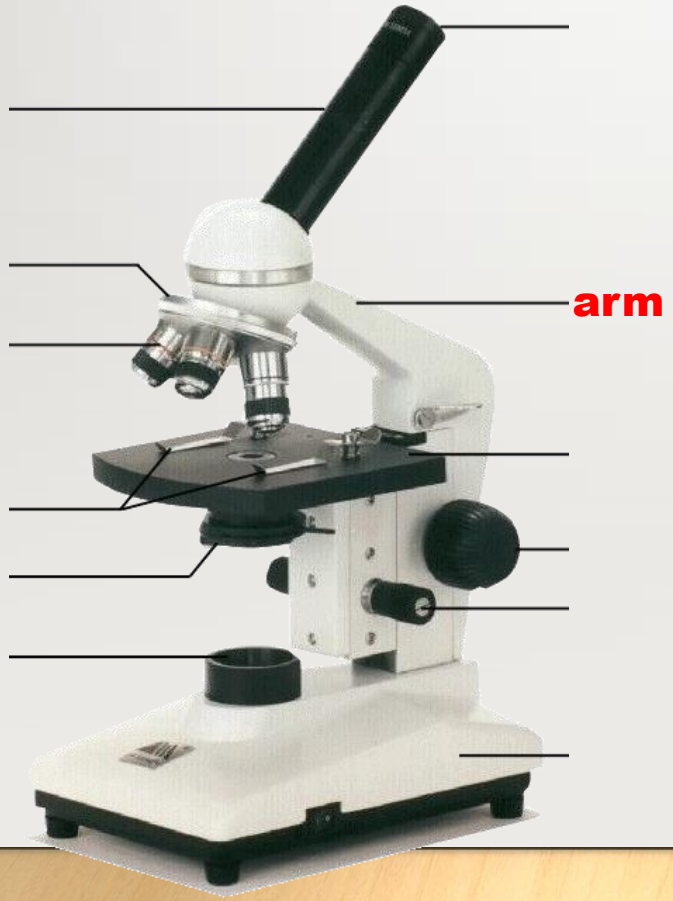
Ocular Lence



magnifies; where you look through to see the image of your specimen.

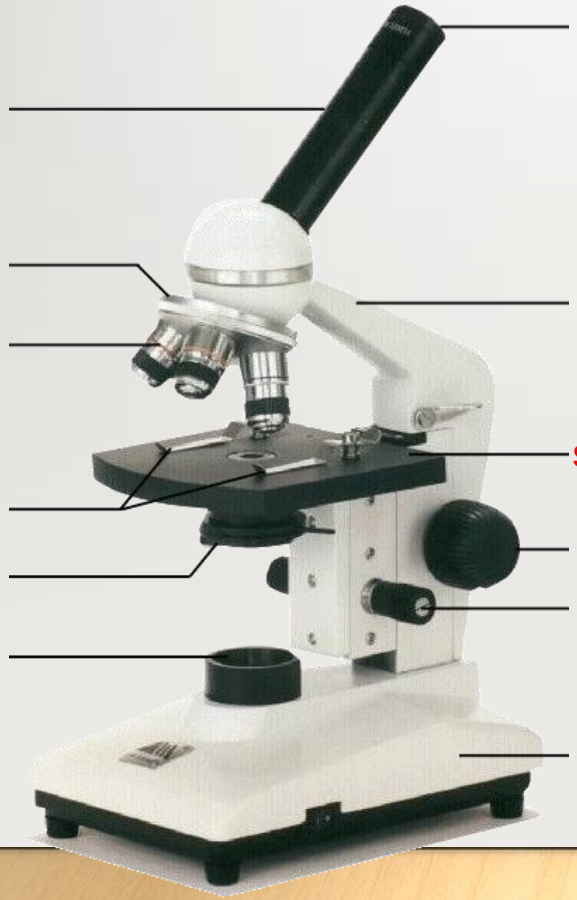
They are usually 10X

Arm



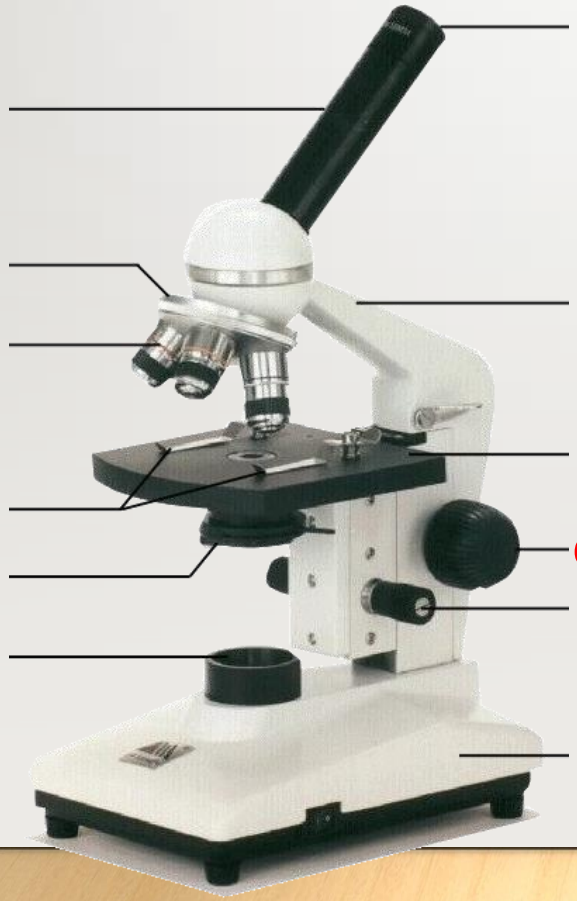
supports the tube and connects it to the base

Stage



the flat platform where you place your slides

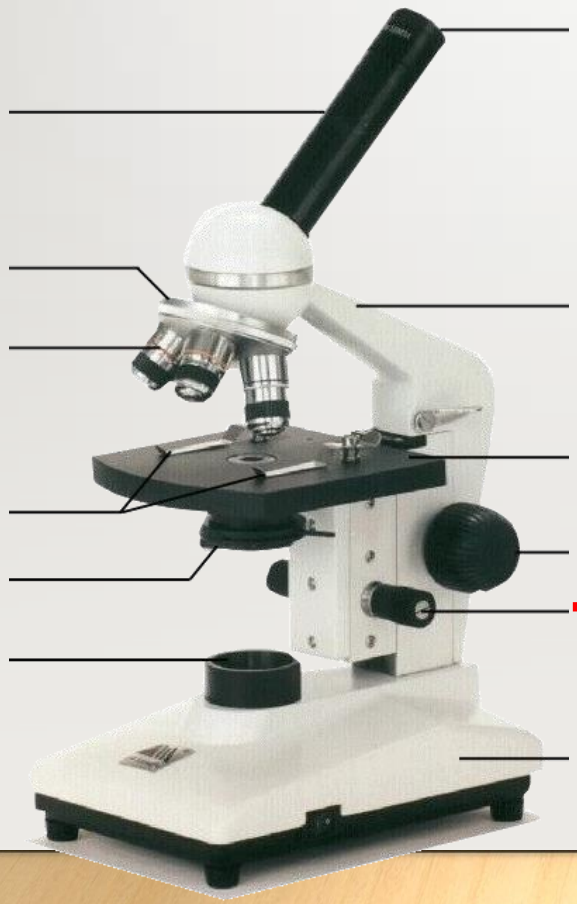
coarse adjustment knob



moves stage (or body tube) up and down

coarse adjustment knob

fine adjustment knob

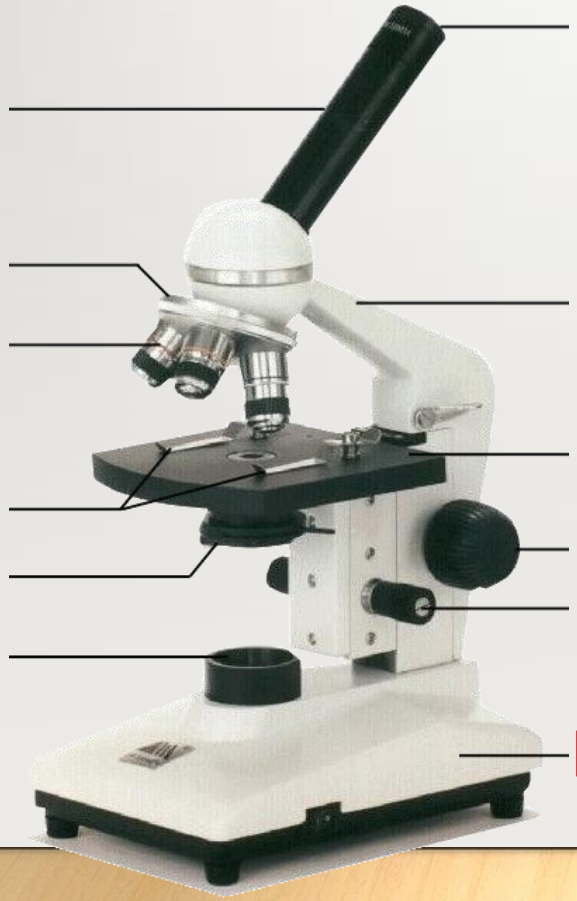


small, round knob on the side of the microscope used to fine-tune the focus of your specimen

fine adjustment knob

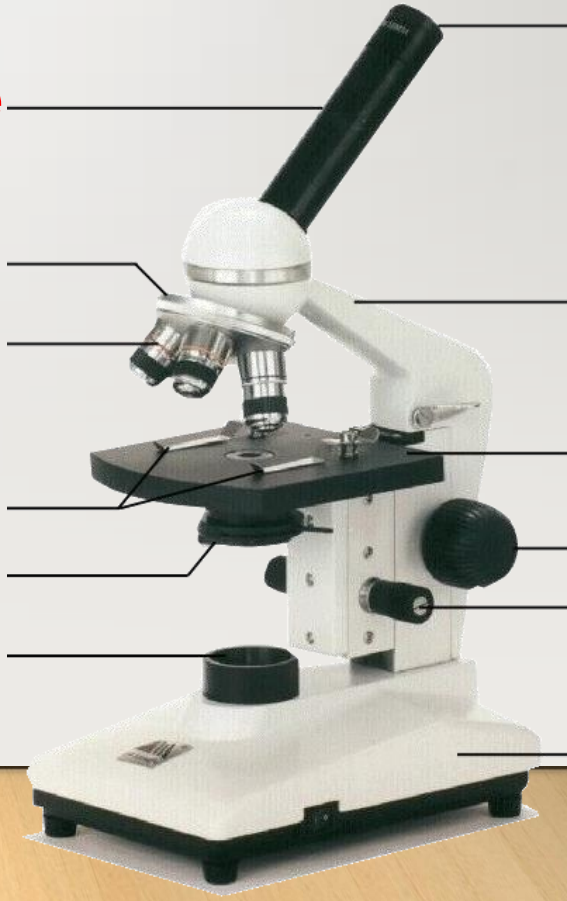
after using the coarse adjustment knob

base



the bottom of the microscope, used for support

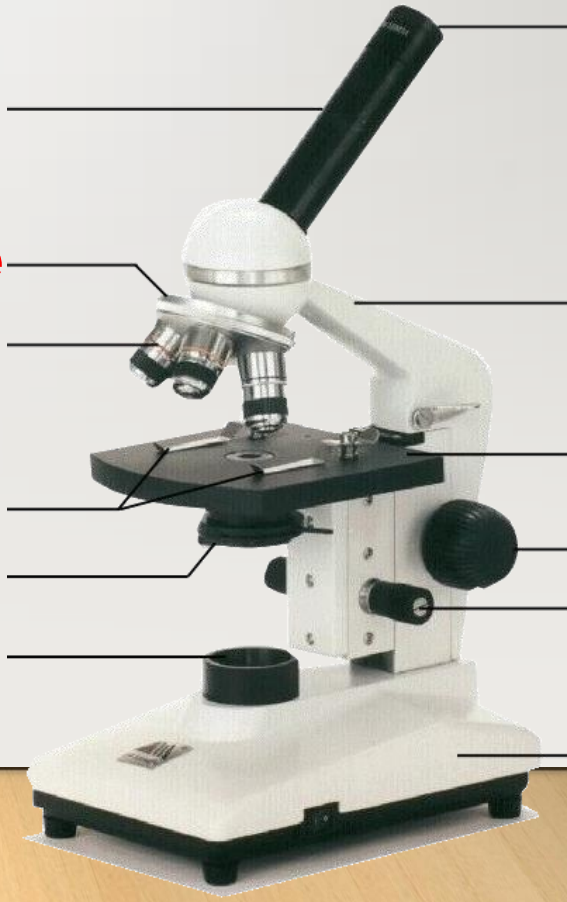
body tube



connects the eyepiece to the objective lenses

revolving nosepiece

the part that holds two or more objective lenses

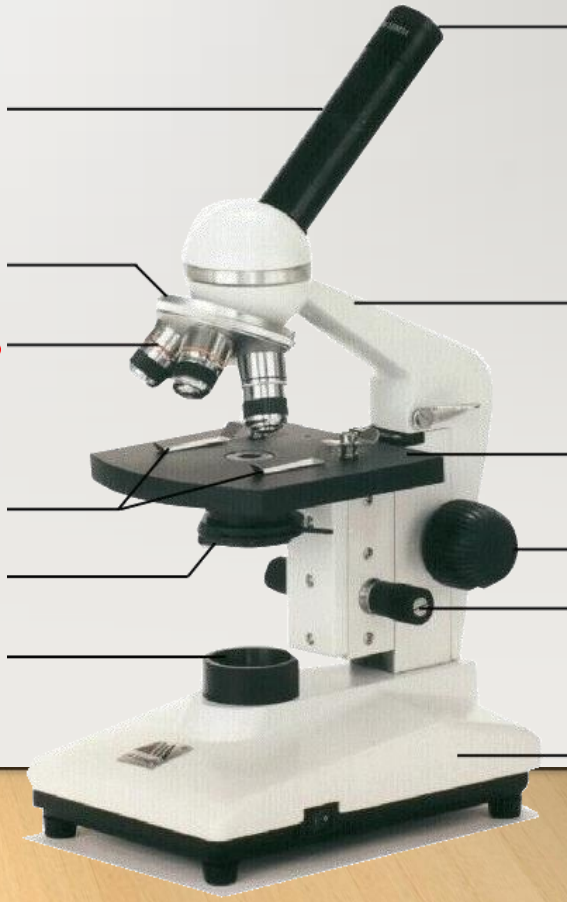


and can be rotated to easily change power

objective lenses

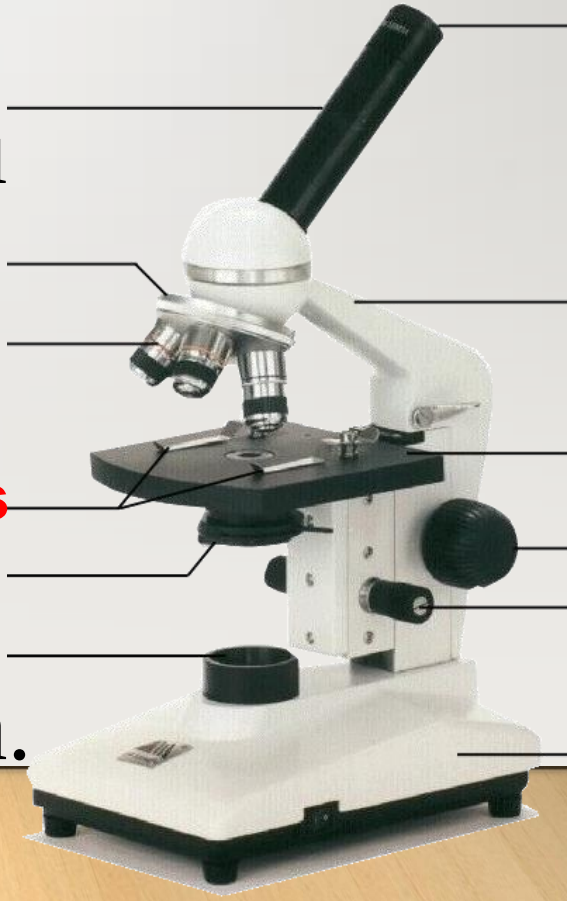
used to the magnifes

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



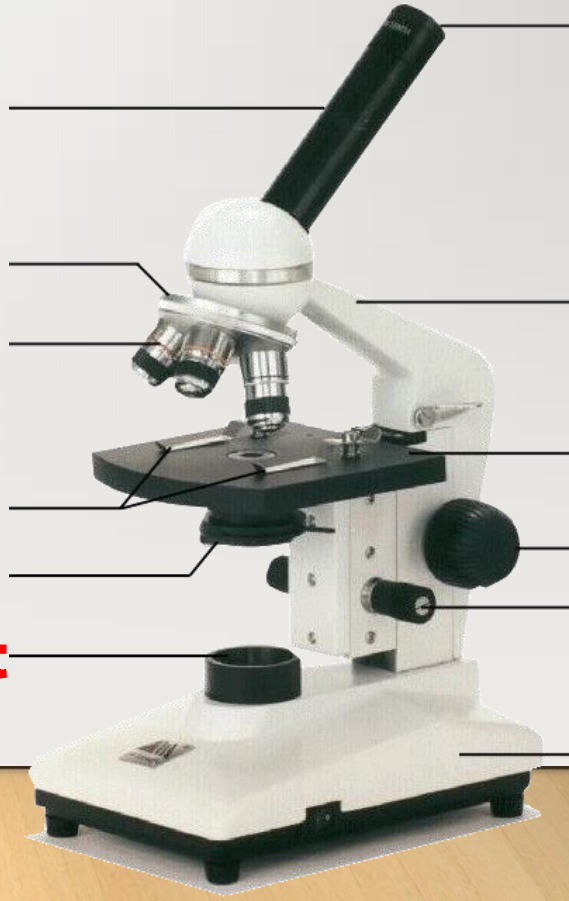
stage clips

Stage clips hold the slides in place. If your 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.



light

makes the specimen easier to see

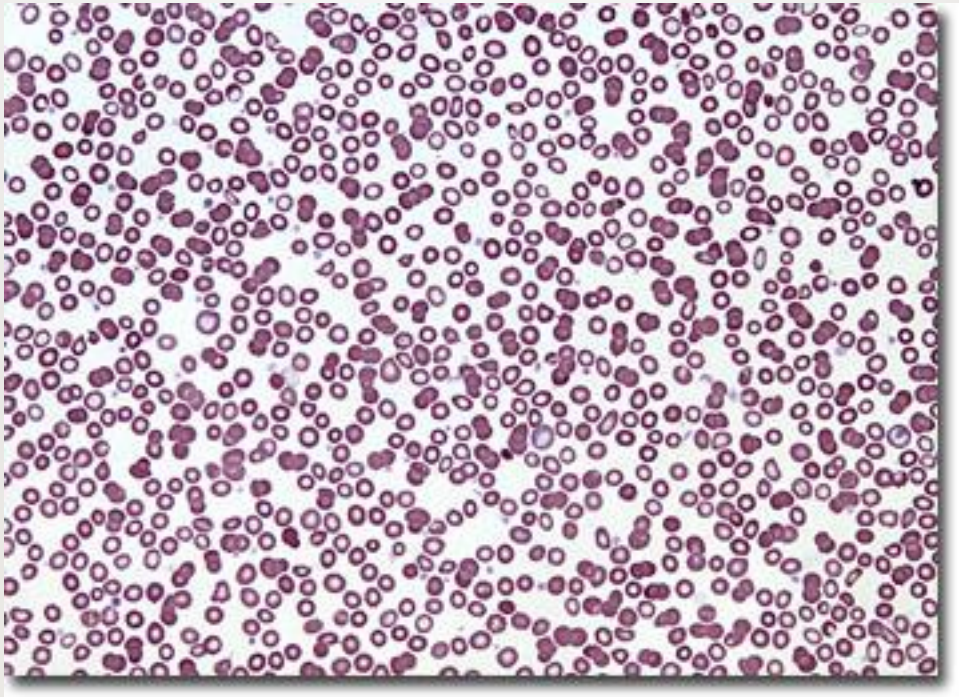


- **Magnification** is the ratio of an object's image size to its real size

- **Magnification power Of microscope =**

Magnification power of eye piece × Magnification power of objective lens

Blood Smear under light microscope



Electron microscope

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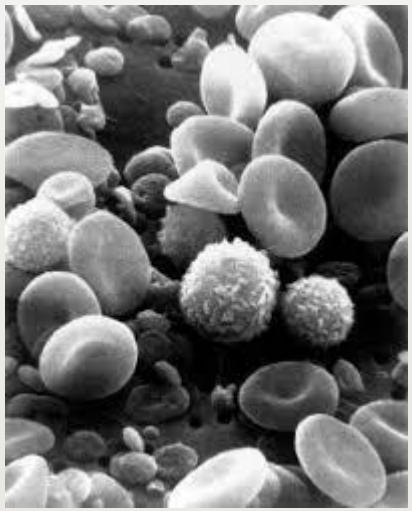
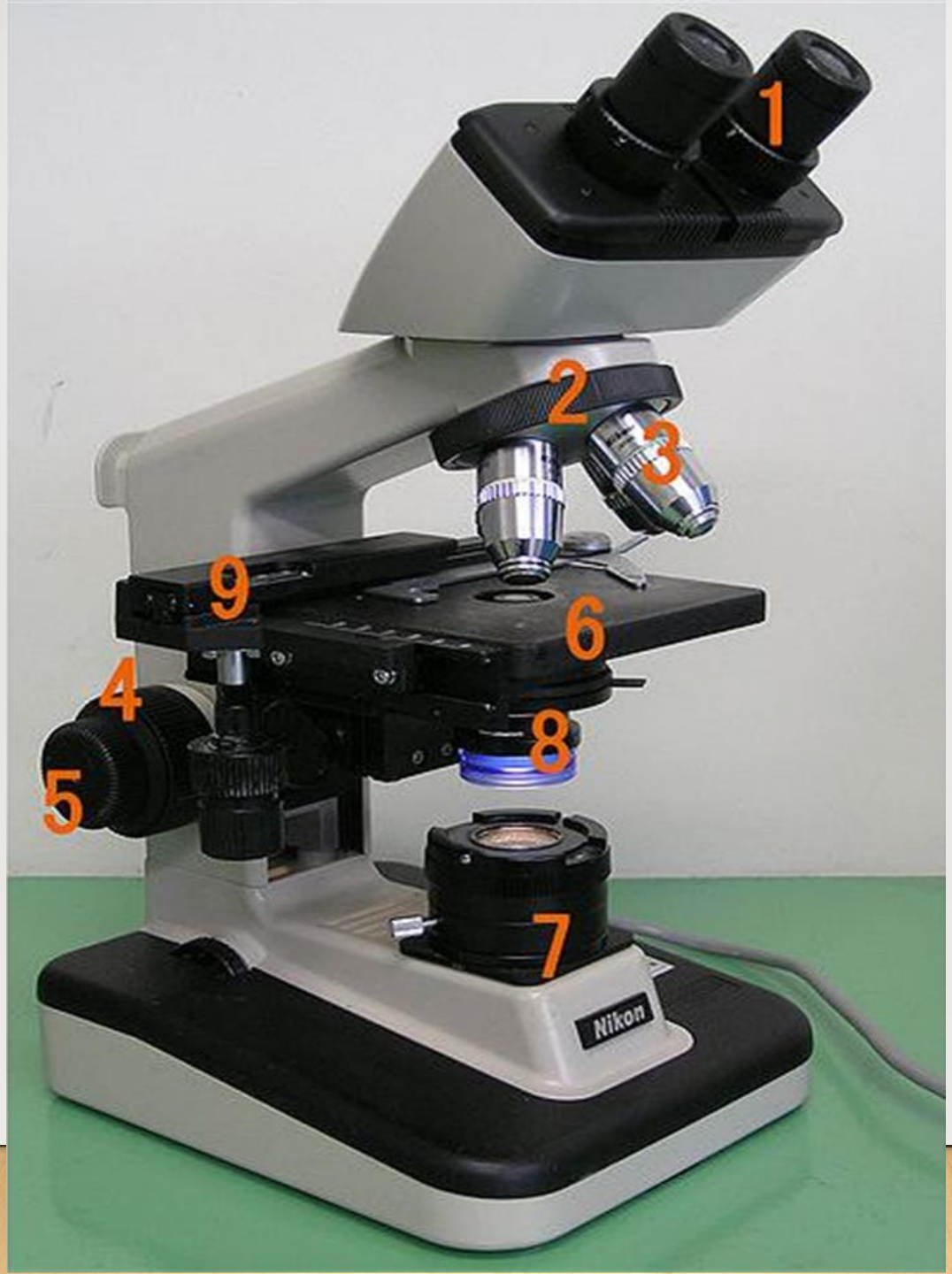
- Dissection Microscope

Blood smear under electron microscop

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Thank You