

Microscopy

Binocular stereoscopic microscope

- A microscope that allows easy observation of 3D objects at low magnification.

Brightfield microscope

- A typical microscope that uses transmitted light to observe targets at high magnification.

Total Magnification:

- **The total magnification of the specimen being viewed is calculated using the ocular lens multiplied by the objective lens.**
- **For example, if the ocular lens is 10x and the objective lens is 45x then the total magnification would be 450x.**

- If the ocular lens has a magnification of 10x and the objective lens being used is 100x, the total magnification would be

1,000 x

- Images viewed through the eyepiece of compound microscopes will appear upside-down and backwards.

Phase contrast microscope

- A microscope that visualizes minute surface irregularities by using light interference. It is commonly used to observe living cells without staining them.

Fluorescence microscope

- A biological microscope that observes fluorescence emitted by samples by using special light sources such as mercury lamps. When combined with additional equipment, brightfield microscopes can also perform fluorescence imaging.

Electron microscope

- These microscopes emit electron beams, not light beams, toward targets to magnify them.
- Transmission electron microscope (TEM)
- Scanning electron microscope (SEM)

Sections in flat organs

- Cross
- Paradermal
- Longitudinal

Sections in columnar organs

- Cross
- Radial longitudinal
- Tangential longitudinal
- Paradermal

Slicing

Sawing

Staining

Stains for Cell Components and Organelles