LIGHT MICROSCOPE

Parts and Functions

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Tube:
Connects the eyepiece to the objective lenses.

Arm:
Used to carry the microscope.

Ocular Lens (Eyepiece):
The lens (or lenses) at the top of the microscope through which we look at the slide. They are usually 10X power. It may have a built-in pointer.

Light Source:
Either an electric light source or a mirror that reflects light from an external source (like sun light). The light from the source can be modified by *filters* and focused onto the specimen by a *condenser*.

Filter and Condenser

Light Switch

Light intensity adjustment knob

Base:
The bottom of the microscope. Supports the microscope.

Stage clips

<u>Stage:</u>
The flat platform where the slides are placed. ***Stage clips*** hold the slide in place. With a *mechanical stage*, we are able to move the slide around by turning two knobs. One moves it left and right, the other moves it backwards and forwards. This is done to bring the part we want to examine into the path of light.

Stage position
adjustment knobs

Course Adjustment Knob:
Moves the stage up/down a great distance bringing the image into general focus.

Fine Adjustment Knob:
Moves the stage up/down a small distance bringing the image into fine focus.

Revolving Nosepiece:
This is the part that holds the objective lenses and can be rotated to easily change power.
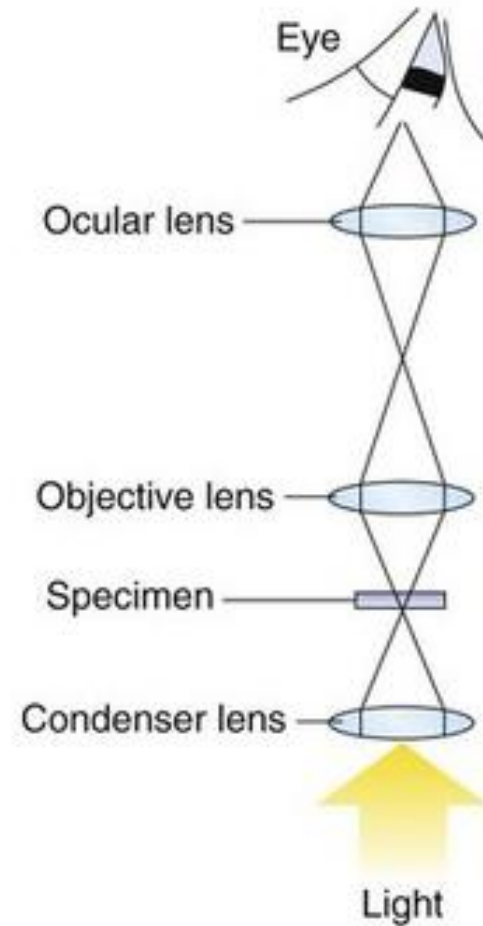
Objective Lenses:
They are the main image magnifiers. There are, usually, 3 - 5 objective lenses on a microscope. They almost always have 4X, 10X, 20X, 40X, and 100X powers. They differ in length and color code according to their power.

Total Magnification = Eyepiece power X Objective Lens power

Principle of bright-field light microscope

- Light, from the source, is focused on the specimen by the condenser.

- Light passing through the specimen is then collected by the objective lens to form a magnified image.

- The image is further magnified by the ocular lens.

Eye

Ocular lens

Objective lens

Specimen

Condenser lens

Light

The End

Knowledge is power