The Microscope

Akimel 6th Grade Science
Microscope

- A microscope is an instrument for viewing objects that are too small to be seen easily by the naked eye.

- *Micro* - means very small.

- *Scope* - is a device to look at something.

- Uses more than one lens - the image magnified by one lens can be further magnified by another.

Molecular Expressions Photo Gallery
How to Make a Simple Microscope

- Get 2 magnifying glasses and a sheet of printed paper.
- Hold one magnifying glass a short distance above the paper. The image will look a bit larger.
- Place the second magnifying glass between your eye and the first magnifying glass.
- Move the second glass up or down until the print comes into sharp focus.
Types of Microscopes

- **Compound Microscope**
  - Containing two or more lenses
  - Uses light to magnify
  - High magnification/Low resolution
  - Most commonly used microscope
  - $150 - $1,500

- **Transmission Electron Microscope** (TEM)
  - Used to study parts inside cells
  - Uses electron beams used to magnify
  - High magnification/High resolution
  - $50,000
Microscope Terms

- **Magnify**
  - To make an object look bigger

- **Reflect**
  - To throw back light rays that strike a surface

- **Refraction**
  - The bending of light rays as they pass through one substance to another
A. Eyepiece

- Contains the ocular lens you look through
- Top part of the microscope
J. Course Adjustment Knob

- Moves the stage up and down for focusing
- Moves the objective lenses toward or away from the specimen being viewed
I. Fine Adjustment Knob

- Moves the stage slightly to sharpen the image
- Used after first using the coarse adjustment knob
B. Nosepiece

- Holds the high and low power objective lenses
- Can be rotated to change magnification
C. Objective Lenses

- Magnification ranges from 10x to 40x
- The lens that first receives the light rays from the object to be viewed.
E. Stage

- Supports the slide being viewed
D. Stage Clips

- Hold the slide in place
H. Diaphragm

- Regulates the amount of light on the specimen
- Generally a five-holed disc under the stage
F. Light Source

- Projects light upwards through the diaphragm, the specimen and the lenses
K. Arm

- Used to support the microscope when carried
- Connects the tube to the base
G. Base

- Supports the microscope
- Is used to carry it
- Bottom part of the microscope
Using the Microscope

- When carrying a microscope, grasp the arm with one hand and put your other hand under the base. You will NOT move the microscopes in the lab.
- Start by adjusting the nosepiece to the lowest power objective tube (the shortest one)
- Make sure your slide is on the stage.
- Looking through the eyepiece, slowly adjust the coarse adjustment knob until the specimen comes into focus
- Make sure the lens does not hit the slide
- Slowly adjust the fine adjustment knob until the specimen comes into focus