

# Microscope Parts and Functions

## History

- Compound microscope first developed in 1590 by Dutch scientist Janssen
  - Compound microscope – uses more than 1 lens to magnify image
- Anton van Leeuwenhoek – father of microscopy
  - First scientist to discover microscopic organisms and live cells

## Parts and Functions

- Eyepiece = allows you to view the specimen on the stage
  - Ocular lens = magnification of 10x
- Body tube = maintains distance between the eyepiece and the objective lens
  - Allows light to pass up to the eyepiece to view the specimen
- Arm = allows you to carry the microscope
  - Supports the upper portion of the microscope
- Revolving nosepiece = allows you to turn and change objective lenses
- Objective lens = magnifies the specimen
  - Low power = 4x (see more of the specimen)
  - Middle power = 10x
  - High power = 40x (allows to see more detail)
  - Total magnification of specimen = objective lens power x eyepiece (always 10x)
- Stage = holds the slide to view the specimen
  - Opening allows for light to pass through
- Stage clips = holds the slide in place
  - Do not bring in contact with the opening of the stage
- Diaphragm = adjusts the amount of light coming through the stage
- Coarse adjustment knob = large knob on the side of the arm that physically moves the stage to focus on a specimen
  - Always use for low and middle power objective lenses
- Fine adjustment knob = small knob below the coarse adjustment knob that slightly sharpens the image of your specimen
  - Always use for only high power objective lens
- Light source = source of light to view your specimen
- Base = allows you to carry the microscope
  - Supports the microscope

## Procedure To Use Microscope

- Always carry the microscope by the arm and the base
- Always start with low objective lens and move the stage closer to the lens using the coarse adjustment knob – look at from the side, then through the eyepiece
- Rotate the revolving nosepiece to the middle power objective lens and adjust the position of the stage using the coarse adjustment knob – look at from the side, then through the eyepiece

- Rotate the revolving nosepiece to the high power objective lens (look from the side), and adjust the clarity of the image by turning the fine adjustment knob slightly (approx.  $\frac{1}{4}$  turn)
- Only clean lenses of microscope with special lens paper to avoid scratching the lens