



HOW TO USE A MICROSCOPE ?

A **compound microscope** is a microscope that uses multiple lenses to enlarge the image of a sample.

1. STRUCTURAL COMPONENTS OF A MICROSCOPE

The vast majority of microscopes have the same 'structural' components:

1. Ocular (eyepiece) lens
2. Objective turret or Revolver (to hold multiple objective lenses)
3. Objective
4. Focus wheel to move the stage
5. Frame
6. Light source, a light or mirror
7. Diaphragm or condenser lens
8. Stage (to hold the sample)
9. Base
10. Phototube (for attaching a camera)



2. HOW TO USE THE MICROSCOPE ?

1. Turn the revolving turret (2) so that the lowest power objective lens (eg. 4x) is clicked into position.
2. Place the microscope slide on the stage (6) and fasten it with the stage clips.
3. Look at the objective lens (3) and the stage from the side and turn the focus knob (4) so the stage moves upward. Move it up as far as it will go without letting the objective touch the coverslip.
4. Look through the eyepiece (1) and move the focus knob until the image comes into focus.
5. Adjust the condenser (7) and light intensity for the greatest amount of light.
6. Move the microscope slide around until the sample is in the centre of the field of view (what you see).
7. Use the focus knob (4) to place the sample into focus and readjust the condenser (7) and light intensity for the clearest image (with low power objectives you might need to reduce the light intensity or shut the condenser).
8. When you have a clear image of your sample with the lowest power objective, you can change to the next objective lenses. You might need to readjust the sample into focus and/or readjust the condenser and light intensity. If you cannot focus on your specimen, repeat steps 3 through 5 with the higher power objective lens in place. **Do not let the objective lens touch the slide!**
9. When finished, lower the stage, click the low power lens into position and remove the slide.

3. HOW TO CALCULATE THE TOTAL MAGNIFICATION ?

The total magnification is calculated by multiplying the magnification of the ocular lens by the magnification of the objective lens.

- ⤴ Do not touch the glass part of the lenses with your fingers. Use only special lens paper to clean the lenses.
- ⤴ Always keep your microscope covered when not in use.
- ⤴ Always carry a microscope with both hands. Grasp the arm with one hand and place the other hand under the base for support.

Your microscope slide should be prepared with a coverslip over the sample to protect the objective lenses if they touch the slide.