

How to Use a Light Microscope

Transporting Your Microscope

1. Carry the microscope from the cabinet using both hands. One hand should be holding the arm (the long curved part in the back) and the other should be holding the base.
2. Place the microscope gently on the bench with the arm away from you. Do not push the microscope on the bench. **Always lift and replace.** Unwind the cord and plug into the outlet on the bench.
3. Unlock the ocular lens and swing it gently towards you before locking it securely.

Cleaning Your Microscope

Condenser and objective lenses: use lens paper to gently clean, light wiping works, but it does not work inform the TA.

Ocular lenses: moisten a cotton swab with lens cleaning solution and gently wipe in a spiral motion, starting from center moving outward. Use a dry swab to dry clean in a similar pattern.

Operation of Your Microscope

4. Bring the stage all the way down with the coarse adjustment knob and make sure that objective lens is on 10x lens position, mount your slide with specimen side up; secure your slide with the slide holder.
5. Turn on the microscope light switch and use the stage adjustment knobs to move the specimen into the light source, making sure that the iris diaphragm is allowing a full circle of light through.
6. Use the coarse adjustment knobs to bring the stage all the way up, as close to the objective lens as possible. Adjust the ocular distance of the lens for your eyes until you see only one circle.
7. Begin to bring the specimen into focus by turning the coarse adjustment knobs in one direction, and looking into the ocular lens at the same time.
8. Once you have located the specimen on the slide and begin to see it, use the fine adjustment knobs to bring it into better focus. Switch the objective lens to the 40x lens, **without** moving the coarse adjustment knobs. Make sure you see your specimen at 40x lens before moving to 100x objective lens. The 100x objective lens is also the oil of immersion lens; you will need a tiny drop of oil of immersion before switching over to the 100x objective lens. To add the oil of immersion, you will need to rotate the nosepiece to a midway position between 40x and 100x lenses. Swing the 100x objective into place, without allowing the 40x to pass the slide at all.
9. Once at the 100x lens, focus on your specimen using only the fine adjustment knobs and use the stage adjustment knobs to "find" an area on the slide where individual cells can be visualized better (not clustered) and center that area on the stage.

Tip: If the image does not move when you move the stage, what you are seeing is not the specimen.

*Note: You **must not** return to the 40x lens if you cannot find the specimen at this point. Inform the TA if that is your situation.*

10. When you are finished viewing your slides:
 - a. Move your 4x lens into position.

- b. Center and lower the stage completely before removing the slide. Clean the slide with ethanol if it is a cover slip sealed prepared slide, else discard.
- c. Lower the light intensity to the minimum, turn off the light.
- d. Wrap the cord around the arm of the microscope.
- e. Clean any oil of the lenses, stage, etc. Use only cotton swabs or lens paper.
- f. Lift the microscope with both hands and return to the storage cabinet, with the arm closer to you.