

## How to Use Your Compound Microscope

- **Set your microscope on a tabletop or other flat sturdy surface** where you will have plenty of room to work. Plug the microscope's power cord into an outlet, making sure that the excess cord is out of the way so no one can trip over it or pull it off of the table.
- Switch on your microscope's light source and then **adjust the disc diaphragm** to the largest hole diameter, allowing the greatest amount of light through.
- **Rotate the nosepiece** to the lowest-power objective (usually 4x for 40x magnification). It is easiest to scan a slide at a low setting, as you have a wider field of view at low power.
- **Place a microscope slide on the stage**, either under the stage clips or clipped onto the mechanical stage. Move the slide until the specimen is under the objective lens.
- Look at the **stage** from the side. Carefully turn the **coarse adjustment knob** to lower the **body tube** until the **low power objective** almost touches the slide.
- Looking through the eyepiece, VERY SLOWLY turn the fine adjustment knob until the specimen comes into focus.
- To switch to the **high power objective**, look at the microscope from the side. CAREFULLY revolve the nosepiece until the high-power objective lens clicks into place. Make sure the lens does not hit the slide.
- Looking through the eyepiece, turn the **fine adjustment knob** until the specimen comes into focus.

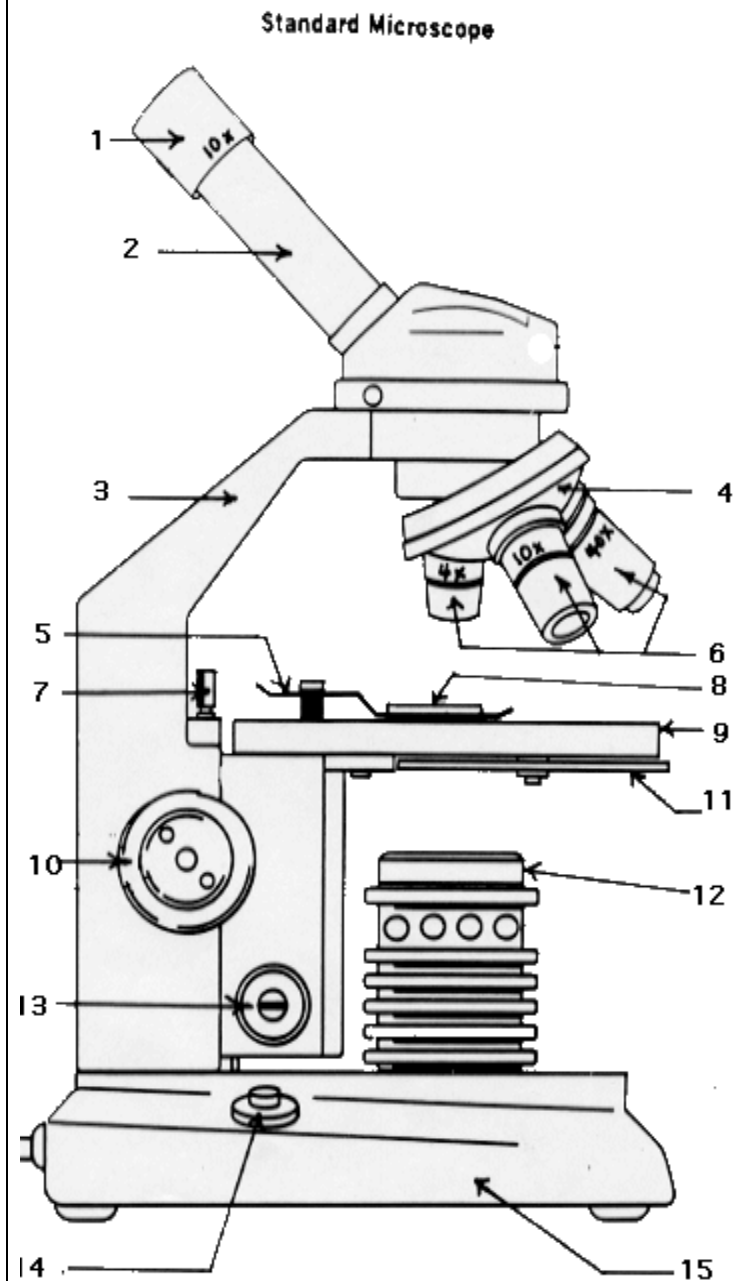
### Some Microscope Usage Rules

1. Always carry the microscope with two hands - one on the arm and one underneath the base of the microscope. Hold it up so that it does not hit other objects.
2. Do not touch the lenses. If they are dirty, ask the teacher for special lens paper or ask your teacher to clean the lenses for you.
3. If using a microscope with a mirror, do not use direct sunlight as the light source. Blindness can result. If using a microscope with a light, turn off light when not in use.
4. Notify teacher if a slide or cover slip breaks. Students should not handle broken glass.
5. Always clean slides and microscope when finished. Store microscope set on the lowest power objective with the nosepiece turned down to its lowest position (using the coarse adjustment knob). Cover microscope with dust cover and return it to storage as directed by your teacher.

### Other Points About the Compound Microscope

1. Always begin focusing on the lowest possible power. Remember to center the specimen you are observing in the field of view before switching to a higher power. Make certain that you move the objectives away from the specimen when focusing so there is no collision between the objective being used and the slide/cover slip which may damage the objective lens.
2. As you switch from low to high power, the field of view becomes darker. To deal with this the diaphragm needs to be opened to allow in more light. (Frequently on low power the diaphragm needs to be partially closed as it is too bright.)
3. As you switch from low to high power the field of view becomes smaller.

## Compound Microscope Parts & Functions



1. **Eyepiece:** where you look through to see the image of your specimen.
2. **Body tube:** long tube that holds the eyepiece and connects it to the objectives
3. **Arm:** part that is grasped when one carries the microscope
4. **Nosepiece:** rotating part of the microscope at the bottom of the body tube; it holds the objectives
5. **Stage clip:** shiny, clips on top of the stage which hold the slide in place
6. **Objectives:** low (short) , medium & high (long) power objectives-- *high power objective* -- used for high power magnification of the specimen (the longer objective lens); *low power objective* -- used for low power magnification of the specimen
7. **stage stop**
8. **aperture:** hole in the stage in which light goes through to illuminate the specimen.
9. **stage:** flat surface where specimen is placed.
10. **coarse adjustment knob:** used for focusing on low power
11. **Diaphragm:** controls the amount of light going through to the specimen
12. **light:** source of light usually found near the base of the microscope; makes the specimen easier to see
13. **fine adjustment knob:** small, round knob on the side of the microscope used to fine tune the focus of your specimen after using the coarse adjustment knob
14. **on/off switch**
15. **base:** supports the microscope