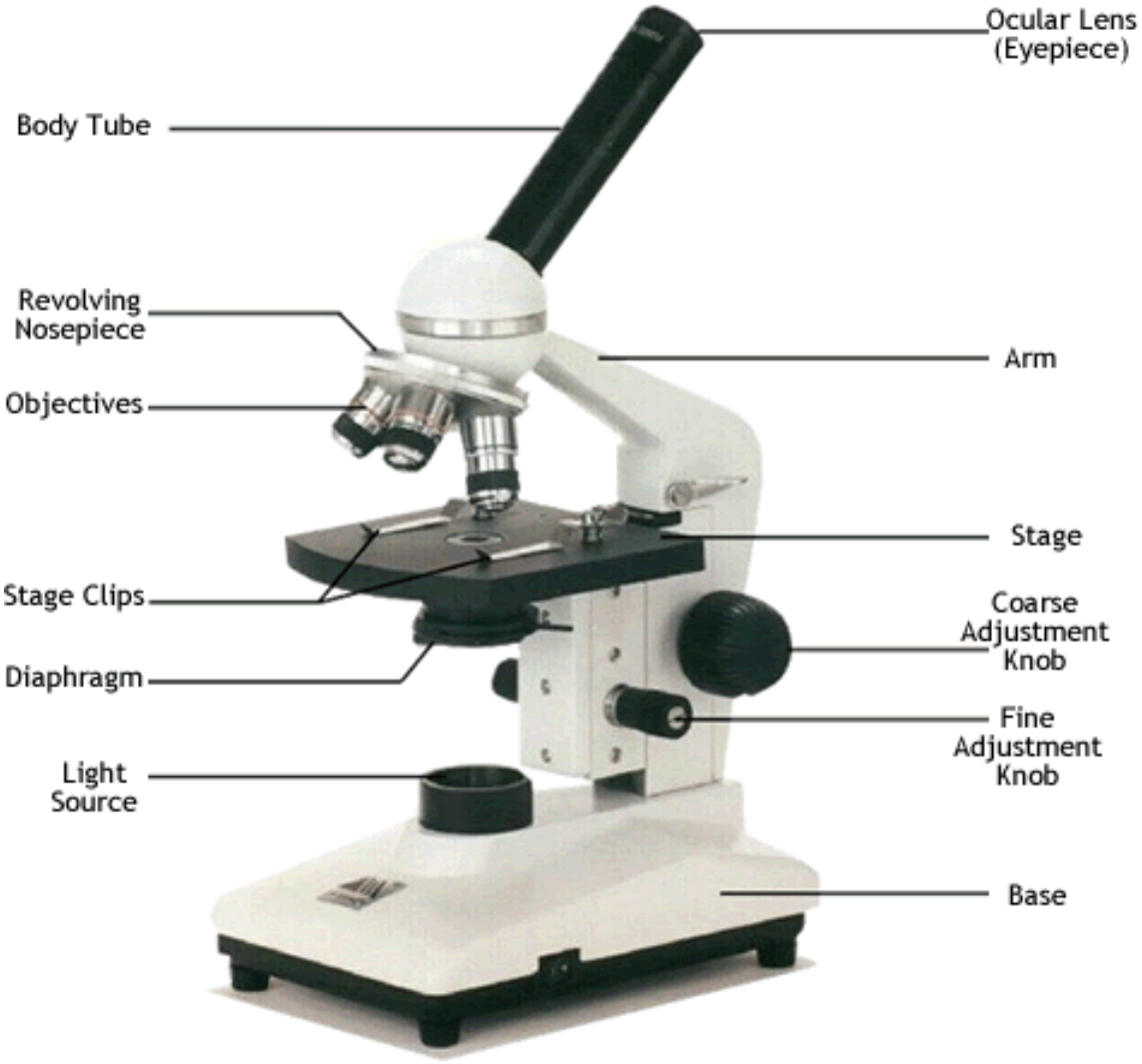
How to Use the Microscope

Light Microscope - the models found in most schools, like ours, use compound lenses to magnify objects. The lenses bend or refract light to make the object beneath them appear closer. Common magnifications: 40x, 100x, 400x and 1000x

Parts of the Microscope



Magnification

Your microscope has 4 magnifications: 4x, 10x, 40x and 100x. Each objective will have written the magnification. In addition to this, the ocular lens (eyepiece) has a magnification. The total magnification is the ocular x objective.

	Magnification	Ocular lens	Total Magnification
Scanning	4x	10x	40x
Low Power	10x	10x	100x
High Power	40x	10x	400x
Very high Power	100x	10x	1000x

General Procedures

1. Make sure all backpacks and coats are out of the aisles and off the tables.
2. Plug your microscope in to the electricity socket.
3. Store with cord wrapped around microscope and the scanning objective clicked into place.
4. Carry by the base and arm with both hands.

Focusing Specimens

1. **Always start with the scanning objective (4x)**. Odds are, you will be able to see something on this setting. Use the Coarse Knob (the big one) to focus, image may be small at this magnification, but you won't be able to find it on the higher powers without this first step. Use the wheels below the stage to try moving the slide around until you find something.

2. **Once you've focused the smallest magnification, switch the next magnification (40x)**. Use the Coarse Knob to refocus. Again, if you haven't focused on this level, you will not be able to move to the next level.

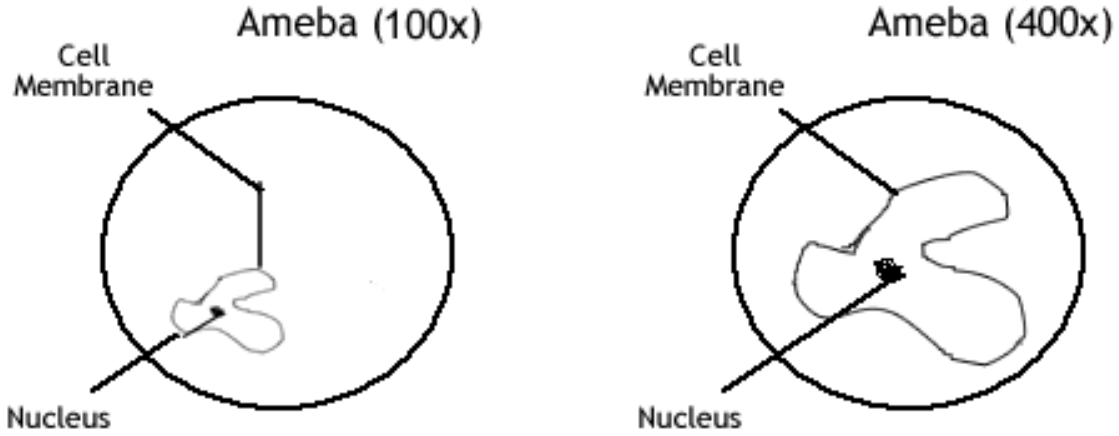
3. **Now switch to High Magnification (400x)**. At this point, ONLY use the Fine Adjustment Knob (The small one) to focus specimens.

4. If the specimen is too light or too dark, try adjusting the diaphragm below the stage.

Drawing Specimens

1. Use pencil - you can erase and shade areas
2. All drawings should include clear and proper labels (and be large enough to view details). Drawings should be labeled with the specimen name and magnification.
3. Labels should be written on the outside of the circle. The circle indicates the viewing field as seen through the eyepiece, specimens should be drawn to scale. If your specimen takes up the whole viewing field, make sure your drawing reflects that.

Example:



Making a Wet Mount

1. Gather a thin slice/peice of whatever your specimen is. If your specimen is too thick, then the coverslip will wobble on top of the sample like a see-saw, and you will not be able to view it under High Power.

2. Place ONE drop of water directly over the specimen. If you put too much water, then the coverslip will float on top of the water, making it hard to draw the specimen, because they might actually float away. (Plus too much water is messy)

3. Place the coverslip at a 45 degree angle (approximately) with one edge touching the water drop and then gently let go. Performed correctly the coverslip will perfectly fall over the specimen.

How to Stain a Slide

1. Place one drop of stain (iodine, methylene blue… there are many kinds) on the edge of the coverslip.

2. Place the flat edge of a piece of paper towel on the opposite side of the coverslip. The paper towel will draw the water out from under the coverslip, and the cohesion of water will draw the stain under the slide.

3. As soon as the stain has covered the area containing the specimen, you are finished. The stain does not need to be under the entire coverslip. If the stain does not cover as needed, get a new piece of paper towel and add more stain until it does.

4. Be sure to wipe off the excess stain with a paper towel.

Cleanup

1. Store microscopes with the scanning objective (4x) in place.
2. Take off the cords and store them in their box.
3. Place the microscopes facing with the back towards you on its shelf.
3. Wash slides in the sinks and dry them in the place indicated by your teacher.
4. Do the same with the coverslips.