THE BINOCULAR MICROSCOPE: ITS FEATURES AND CARE

24 June 1987, latest rvsn, 16Dec96, 7July97, 17Sept97, 30June98, 7July00, 25June01, 2Jan03, 26Sept04, 19Sept05, 25Sept07
http://biology.clc.uc.edu/fankhauser/Labs/Microscope/Microscope_Features&Care.htm

CARDINAL RULES FOR MICROSCOPE USE:

1. **To carry a microscope**: grasp the arm firmly, lift and support under the base with other hand, set on a cleared desk. Remove and store its dust cover in cabinet under desk. Unwrap power cord, loop *once* around gas outlet at rear of desk, plug into electrical outlet in front of desk.
2. **Clean the lenses: use *ONLY* lens paper.** Polish the objectives and oculars: breathe on them lightly for moisture. (Polish **slides** with Kimwipes.) If the view is still foggy, ask for help.
3. Always begin set-up with the **stage lowered** and the **4x objective in place** (lowest power).
4. **Focus only by LOWERING the stage** to the focal point. NEVER raise the stage using the coarse focus during focusing (the objective may ram the slide which can damage both).
5. **Use only the fine focus with higher power objectives.** The lenses are *parfocal*, meaning you need make only minor focal changes with the fine focus when you change objectives. If you totally lose focus, return to a lower objective to find the focal point. Do not use the 100x objective unless you have received specific instructions on its use (oil immersion procedure).
6. Carefully follow microscope use instructions. (See *Using and Evaluating the Microscope*.)

LEARN AND ILLUSTRATE THE FEATURES OF THE MICROSCOPE:

1. Using proper carrying technique (see rule 1 above), place microscope on a cleared desk.
2. Note how the cord is neatly wrapped around the base (we hope): not twisted or bent back, and the plug is securely tucked in under the cord. Always rewind the cord in this configuration.
3. Draw a right side view of the microscope (oculars point to L), label or explain all of the following. Briefly note various functions. (You may be *tested* on any of these...):

base	stage	achromatic coating
lamp and housing	slide retainer and thumb knob	nosepiece or turret
power switch	mechanical stage, retaining screws	optical head
light path	mech stage positioning knobs	optical head retaining screw
iris diaphragm & lever	lamp rheostat	oculars
condenser	coarse focus (show dir'n to lower)	adjustable ocular
arm	fine focus	binocular focus (L ocular)
condenser positioning knob	objective lenses (parfocal)	interpupillary distance

NOTE ESPECIALLY:

a. **Lamp rheostat** use at as low a setting which produces adequate lighting (around 6-7, beyond yellow). Too high a setting generates excessive heat and reduces the life of the $50 bulb.
b. **Iris diaphragm lever**: move side to side while viewing through the ocular. What happens?
c. **Coarse and Fine focus**: Which direction do you rotate the coarse focus knob to lower the stage? Memorize this direction. Note: the fine focus moves the stage almost imperceptibly.
d. **Nosepiece** (turret): With the stage lowered, rotate the nose piece so that each of the objectives is successively pointing down, clicking when the objective is in place.
e. **Ocular**: What is the magnifying power of the ocular? What would the power of magnification be if you were using the 4x objective with this ocular?

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MICROSCOPE STORAGE GRADE SHEET

Date:											/10

cord
wrapped around base, tucked in

Seat number:

dust cover
4x objective

adjustable ocular
in place
mechanical stage
returned to position
lowered fully
rvsd 6 July 09

no trace of oil
rheostat

returned to zero
returned to lowest setting
on lens or stage
power switch

turned off

Score: