

Biology Laboratory Safety



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General Practices to avoid Lab accidents:

- 1) **READ** the laboratory safety guidelines in your lab manual, and that are provided with specific equipment and reagents.
- 2) **WEAR:** Goggles, gloves, coat, closed-toed shoes!
- 3) **LISTEN** to your professor and our lab technicians when they give specific instructions for proper handling and disposal of lab chemicals and equipment.
- 4) **Be CLEAN and ORGANIZED:**
 - a) **WASH HANDS and LAB BENCH** as soon as you enter, and before you leave the Lab Room.
 - b) Keep your **lab bench uncluttered** – only Manual/Notebook, and NECESSARY reagents and equipment/instruments
 - c) Keep the **floor unobstructed** (chairs in and backpacks stored)
 - d) **Turn OFF Bunsen burners** as soon as you stop using it. Even for a few minutes!
 - e) **DO NOT TOUCH** your face or put **ANYTHING** in your mouth **while in the Laboratory!!**
 - Don't Chew pens, use makeup or chapstick, NO food or drink.

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Areas of Greatest Safety Concerns in the Lab:

1) Fire

- Bunsen burners, electrical, hot plates, water baths
- Action: Extinguisher, shower, water faucet, smother, blanket



2) Chemical

- Acids, Bases, Solvents, Dyes, oxidizers
- Action: Goggles, gloves, coats, hood, containment, eye wash

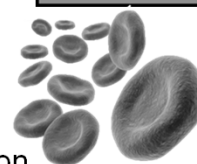


3

Areas of Greatest Safety Concerns in the Lab:

3) Biohazard

- Any human or other animal tissues/fluids, bacteria, water samples, protistans
- Action: Prevention. Washing, proper protection.



4) Sharps

- Broken glass (slides, pipettes, cover slips, beakers), scalpels, razor blades, skewers, needles
- Action: Preventative. Careful and proper disposal.

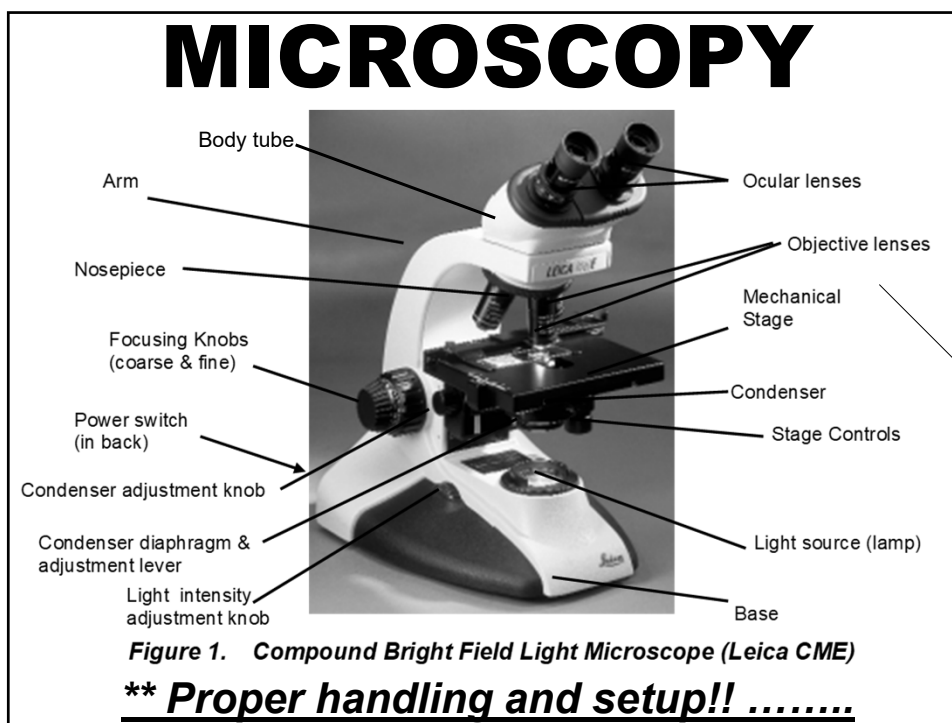


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BIOL 240 Lab Requirements:

- 1. Pre-Lab Writeup EVERY Tuesday:**
 - a) Summary and goals: **What? How? Why?** Are we doing in lab? (on BOTH Mon. and Wed.!!)
 - b) Propose a **SCIENTIFIC QUESTION**, and a possible **ANSWER (HYPOTHESIS!!)** and predicted result to the Question: "If _____, then _____." format.
- 2. Be ON TIME at 9:35 AM, or 12:45 PM!!**
- 3. Complete ALL Data, Calculations, Drawings and other Observations before leaving the laboratory each day.**
 - a) Check with your instructor!
 - b) Keep a **COMPLETE** and detailed **LAB MANUAL / NOTEBOOK!!**
- 4. Thoroughly clean up your lab bench and all shared areas before leaving lab every day. Return ALL SUPPLIES to their proper place!!**

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Key Steps in Setting up your Microscope:

1. Set objective lenses to low power. **CLICK** into position.
2. Put slide between **stage clips**, with specimen centered over the condenser & under the objective.
3. Turn on and adjust lamp to your comfort level.
4. Turn **Coarse Focus** knob to bring stage to top, then ½ turn **DOWN** to get specimen close to focused.
5. Use ONLY FINE Focus after this point, and ONLY with 40X and 100X lenses.
6. Adjust (close) **CONDENSER DIAPHRAGM** to increase contrast! (see more details!)
7. Keep specimen CENTERED before changing to higher power! (or else your image/specimen will be lost.)
8. Lower stage and switch to low power, and turn lamp to low, before turning off microscope and removing slide.

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Important MICROSCOPY Concepts and Terms:

- 1) Parfocal lens mounting
- 2) Magnification (compound)
- 3) Resolution
- 4) Refractive index
- 5) Immersion oil
- 6) Field of view (width; centered)
- 7) Stereoscopic
- 8) Depth of Field (focal plane)
- 9) Condenser diaphragm – when and why to use.
- 10) Fine vs. coarse focus (Bright Field)



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