Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block \_\_\_\_\_ # \_\_\_\_\_

**Lab #1 (of 3): Introduction to the Compound Optical Light Microscope**



1. Examine your microscope. Familiarize yourself with the parts of the microscope. Lens should always be cleaned with lens paper!

The magnification of the ocular lens (eyepiece) is \_\_\_\_\_
The magnification of:

the scanning objective \_\_\_\_\_ x

the low power objective is \_\_\_\_\_\_x

the high power objective is \_\_\_\_\_\_x

2. The total magnification using the lenses can be determined by **multiplying** the objective lens with the ocular lens. What is the total magnification of an item viewed with the:

LOW power objective? \_\_\_\_\_ HIGH POWER? \_\_\_\_\_\_\_ SCANNING? \_\_\_\_\_\_\_

3. Examine the diaphragm (underneath the stage). Turn the lever while looking through the ocular lens. What does the diaphragm regulate?
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. What do you think this is for? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. **Random Specimen** Choose 1 specimen from the box of "common things". Use the **scanning objective** to view the specimen and use the **coarse knob** to focus. Then, fine focus.

1. **While looking through the ocular, use the knobs to move the slide. Move the slide to the right. How does it appear to move? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
2. **Now, move the slide up. How does it appear to move? \_\_\_\_\_\_\_\_\_\_\_\_\_.**
3. **Make a drawing (IN PENCIL)** of the specimen on scan. Scale your drawing appropriately with the field of view. Before going to low power, make sure your specimen is carefully **centered** on the slide. Click the **low power objective in place.** Only use the **fine focus knob** to focus. Make a drawing on low power, scaled appropriately. C) Finally, switch to **high power**. Remember at this point, you should **ONLY** use the **FINE adjustment knob**. Can you view the entire specimen under high power? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. As you increase magnification, does the field of view become lighter or darker? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. How could you ‘correct’ it? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Return the slide to the box. Repeat the above procedure with a **second** specimen.

**Specimen #1: What slide did you choose? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**



**Specimen #2: What slide did you choose? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**



6. **Answer True or False to each of the statements:**

\_\_\_\_\_\_\_\_\_\_ On high power, you should use the coarse adjustment knob.
\_\_\_\_\_\_\_\_\_\_ The diaphragm determines how much light shines on the specimen.
\_\_\_\_\_\_\_\_\_\_ The low power objective has a greater magnification than the scanning objective.
\_\_\_\_\_\_\_\_\_\_ The fine focus knob visibly moves the stage up and down.
\_\_\_\_\_\_\_\_\_\_ When the slide is moved to the right, it appears to move left while viewing through the ocular lens of the microscope.
\_\_\_\_\_\_\_\_\_\_ If a slide is thick, only parts of the specimen may come into focus.
\_\_\_\_\_\_\_\_\_\_ The type of microscope you are using is a scanning microscope.
\_\_\_\_\_\_\_\_\_\_ For viewing, microscope slides should be placed on the objective.
\_\_\_\_\_\_\_\_\_\_ In order to switch from low to high power, you must rotate the revolving nosepiece.
\_\_\_\_\_\_\_\_\_\_ The total magnification of a microscope is determined by adding the ocular lens power to the objective lens power.