**Lab Exercise #1 –REPORT**

**Microscopy**

**How to Use a Compound Light Microscope** Lab Day and Time:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_­­­­\_ Lab Partner\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### HOW TO DOCUMENT WHAT YOU SEE THROUGH THE MICROSCOPE

### *If your classroom has microscope cameras:* You will be obtaining micrographs (pictures taken with a microscope) for all specimens that you are asked to document below. For any micrograph photos that you take, make sure that the scope camera is set to capture the image as the smallest file size possible. If you don’t, the file size of your Word .doc will be huge, possibly too big to upload. Also, make sure the photos you import into this document are large enough on the page to make the cell part labels legible.

### *If your classroom does not have microscope cameras:* Draw what you see.

1. Type the “e”, first how it looks normally; then insert micrographs of the “e” at low and high power. For all of the micrograph photos you will be taking in lab, ALWAYS set the scope camera to the lowest file size for acquiring an image. If you do not know how to do this, ask your instructor.

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| --- | --- | --- |
| looking at the “e” with the ***unaided eye*** on the microscope slide  | the “e” under LOW (100XTM) power. | the “e” under HIGH (400XTM) dry power. |
|  |  |  |

2. Insert micrographs of the elodea leaf under LOW and HIGH power. Label each with the total magnification (xTM) and any cellular structures that can be identified.

3. The elodea leaf has two layers of cells. You were asked to manipulate the fine focus to reveal each layer. You did this to learn about what concept described in the lab exercise?

4. Insert micrographs of the onion cells under LOW and HIGH power. Label each with the total magnification (xTM) and any cellular structures that can be identified.

5. Insert a micrograph of the stained epithelial cheek cell under LOW power and HIGH power. Label each with the total magnification and any cellular structures that can be identified.

Low Power (\_\_\_\_\_\_xTM) High-dry Power (\_\_\_\_\_xTM)

6. Why is the microscope in this lab referred to as a compound microscope? Specifically where are the lenses located?

7. What does “contrast” mean with respect to viewing your specimen? What are the two things that can be done to improve contrast?

8. If, after viewing a specimen at low power, you switch to high-dry power and, after using fine focus, cannot find the specimen, what things could you do to help yourself (before calling me over to assist you?)

Check the level of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ using the dial in the base and/or the iris diaphragm.

Clean the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_with \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_.

Switch to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ objective lens, refocus, and try again.

9. What does it mean that your microscope is *parfocal*?

10. What does the term *field-of-view* mean with respect to your microscope? How does the scopes field-of-view relate to the importance of centering your specimen using the mechanical stage, before switching to the next higher objective magnification?

This material is adapted from the Applied Microbiology Laboratory Manual by Cynthia Schauer. For Power Point slides that correspond to this lab material, see the Virtual Microbiology Classroom of the [Science Prof Online](http://www.scienceprofonline.com) website.