

NAME: _____

DATE: _____

BLOCK: _____

Microscope Lab: The Letter “e”

Purpose:

Microscopes are only as accurate as their users. If you do not know how to use a microscope properly, you will have a difficult time finding specimens/cells in this unit. The letter “e” is something everyone should be familiar with (or at least I hope so). We all know that an “e” is round with a line connecting the upper half. Today, you will use that knowledge to determine how a microscope works.



You have three objectives to fulfill by the end of this lab:

1. Properly use and focus a microscope from a low power to a high power objective lens.
2. Determine what happens to the image of a specimen in the microscope.
3. Determine the field of view at low, medium, and high power.

Materials:

- Microscope
- Slide
- worksheet
- Ruler

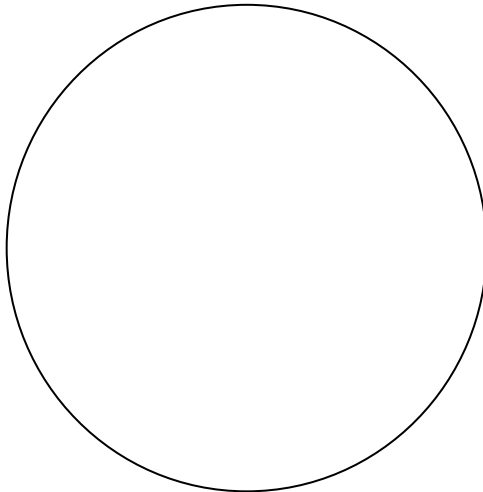
Procedures:

Part A: Getting familiar with the microscope

1. Notice the eyepiece, what is the magnifying power of the **eye piece**? _____
2. Notice the **low-power objective lens**: It reads “4X lens.” It is used to view the whole slide. If total magnifying power of this lens is determined by multiplying the magnifying power of the eyepiece by the magnifying power of the objective, what is the total magnifying power of this objective? _____
3. Notice the high-power objective lens: It reads “Holds 40X lens.” Used to view object in even greater detail. What is the total magnifying power of this lens? _____

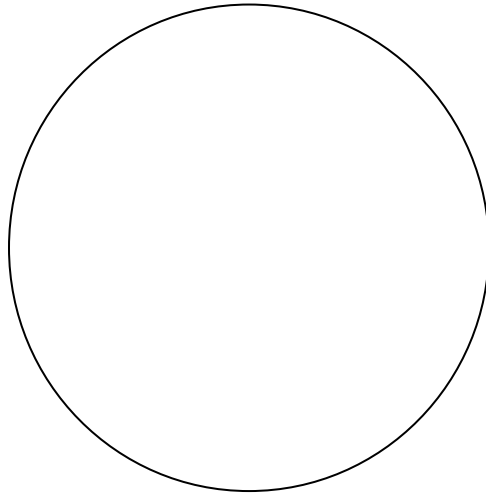
Part B: Focusing the letter “e”

1. Lower the **stage** using the **coarse adjustment** knob.
2. Place the **slide** of the letter “e” on the **stage** and stabilize it with the **stage clips**. Center the “e” the best you can on the stage.
3. Place the lowest (ie. **4X Objective Lens**) into position.
4. Looking into the eyepiece. **SLOWLY** use the **coarse adjustment** to raise the **stage** closer to the **objective lens** until the object (ie. “e”) comes into focus.
5. Once the object is seen, it may be necessary to adjust the amount of light. To increase or decrease contrast, rotate the **iris diaphragm** slightly.
6. Use the **fine adjustment** knob to sharpen focus if necessary.
7. In the space provided, draw an outline of the letter “e” as it appears through the **eyepiece**.



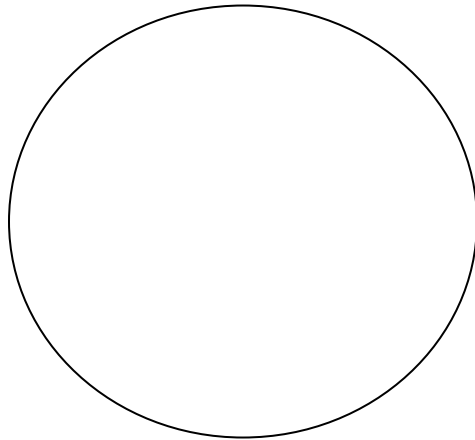
Magnification: _____

8. Change Magnification. Place the **10X (medium power) objective lens** into position. Follow procedures 6 – 8. Draw the outline of the letter “e” as it appears through the eyepiece.



Magnification: _____

9. Lower the **stage**. Place the **40X objective lens** into position. Follow procedures 6 – 8. Draw the letter “e” as it appears through the eyepiece.



Magnification: _____

Discussion Question: (full sentences)

1. When you looked through the eyepiece, was the image of “e” “right side up” or “upside down”?

2. What happens to the microscope image when you move the microscope slide towards you?
hint: think about the direction of the image

3. What happens to the image when you move the microscope slide away from you?

4. When looking through the eyepiece, how do you move your eyepiece image to the right?
