

Name and Class: \_\_\_\_\_

## **Introduction to the Light Microscope**

### **Part A**

1. Examine your microscope. Familiarize yourself with the parts of the microscope.

The magnification written on the ocular lens (eyepiece) is \_\_\_\_\_

2. The magnification written on:

the low power objective is \_\_\_\_\_ x

the medium power objective is \_\_\_\_\_ x

the high power objective is \_\_\_\_\_ x

3. 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:

a) LOW POWER objective. \_\_\_\_\_ b) HIGH POWER \_\_\_\_\_ c) MEDIUM POWER \_\_\_\_\_

4. Examine the diaphragm. Some of the microscopes have numbers written on the edges.

Does yours? \_\_\_\_\_ If there are numbers on the edge, they range from 1 to \_\_\_\_\_.

5. Which diaphragm setting provides the most light on the specimen. \_\_\_\_\_

6. What is the purpose of the stage clips? \_\_\_\_\_

7. Look into the eyepiece, twist it left and right. Notice the line inside that moves as you twist. What do you think this is for? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

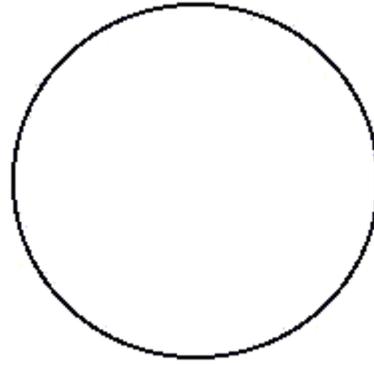
**(If you do not have this on your microscope, look through one that does have it.)**

### **Part B**

1. Place the slide (Letter **e**) on the microscope so that the letter is over the hole in the stage and is right side-up. Check the diaphragm setting, it should be at 1. Click the low power objective (the smallest one) into place and use the coarse adjustment knob (the largest one) to focus the slide. **If you cannot get a focus at this point, ask for help.**

2. Sketch the letter **e** as it appears under **LOW** power in this circle. Do not change anything.

The circle represents the viewing field of the microscope. It is called the **Field of View**



3. Draw your **e** to scale. (Draw it exactly how it appears in the microscope, does it take up the whole circle, part of the circle or some of the circle) Be accurate – this is your observation section of the lab. (observation skill)

4. Also note the orientation of the "**e**". Is it right side up or upside down when viewed through the lens of the microscope?

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5. While viewing your letter e take your left hand and slowly push the glass slide to the right. What happens? Which direction does the **e** appear to move?

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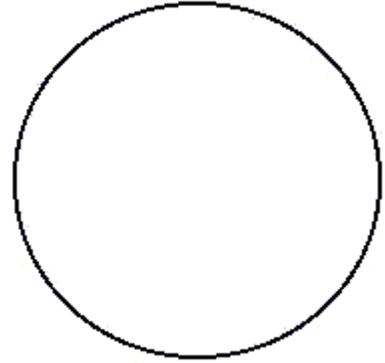
6. Why do you think it might be important for someone to know that microscopes reverse the image?

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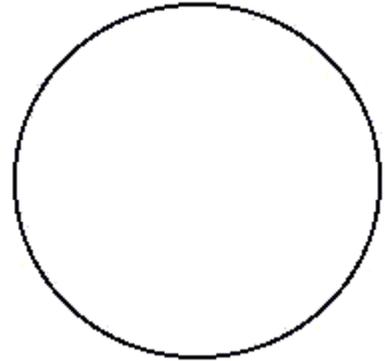
7. Switch the objective to **MEDIUM** power

Use the coarse adjustment knob to bring the slide back into focus. Sketch how the "e" appears now in the circle. Draw it to scale again. (observation skill)



Medium Power

8. Now, rotate the nosepiece to the **HIGH** power The lens should be **very close to the slide**. At this point **DO NOT** use the coarse adjustment knob. The image should only be focused using the **fine adjustment** knob. Sketch how the **e** appears now in the circle. If your microscope shows nothing for you to draw, then use a different microscope. (observation skill)



High Power

9. Slides often get cracked because someone uses the coarse adjustment while on HIGH power. What should you do to avoid cracking the slide?

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