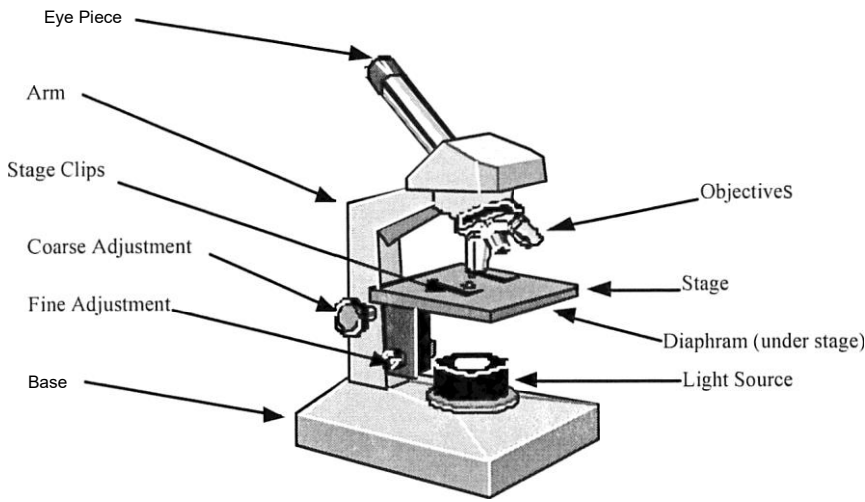


Microscope Review

PIECES & PARTS



CARE OF THE MICROSCOPE:

1. Carry microscopes with TWO hands.
2. Keep microscopes away from the edge of the lab bench.
3. Only use lens paper and cleaner to clean the lenses.
4. Start on LOW power. Focus on LOW power. End on LOW power.
5. Do not use coarse adjustment on high power.

PRE LAB QUESTIONS:

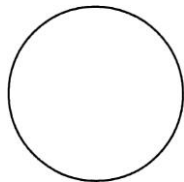
1. Which parts of the microscope magnify?
2. Which part of the microscope is used to adjust the brightness of the field of view?
3. Which parts of the microscope are used for focusing?
4. How does the brightness of the field of view compare from low to high power?
5. Find the total magnification of your microscope by multiplying the magnification of the eyepiece times the magnification of the objective.

High power magnification: _____

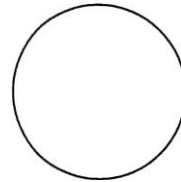
Low power magnification: _____

LAB ACTIVITY

Prepare a wet mount slide of the letter **e** (*lower case*), from the newspaper provided. Make a detailed drawing under low and high power of exactly what you see.



Low power

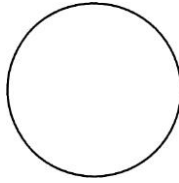


High power

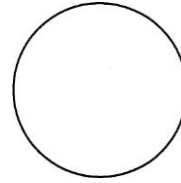
1. Look through your microscope. When you move the slide on the stage, what direction does the image of the letter **e** move? Explain.

2. Describe (in detail) how the letter **e** seen through the microscope differs from the letter **e** on the slide?

Prepare a wet mount of two crossed hairs. (Different colors, if possible) Position the slide so that the hairs cross in the center of the field. Sketch the hairs under low power. Turn to high power. Do NOT change focus. Use only the fine adjustment to sharpen the focus.



Low



High

3. Can you see both hairs sharply at the same focus level?

4. How can you use the fine adjustment knob to determine which hair is crossed over the other?

MEASURING WITH THE MICROSCOPE

Measure the diameter of the low power field of view.

Place the plastic mm rule on the stage under low power. Move the ruler to the right until one of the mm lines moves just out of view. Count the number of mm across the diameter of the low power field of view. Fill in the chart below.

$$1 \text{ mm} = 1000 \text{ microns } (\mu\text{m})$$

Diameter of field of view

OBJECTIVES		Millimeters (mm)	Microns (μm)
Low Power	Measured		
High Power	Estimated		
High Power	Calculated		

5. Estimated height of the Letter **e** _____ mm _____ μm

6. What is the advantage of using microns rather than millimeters for microscopic measurement?

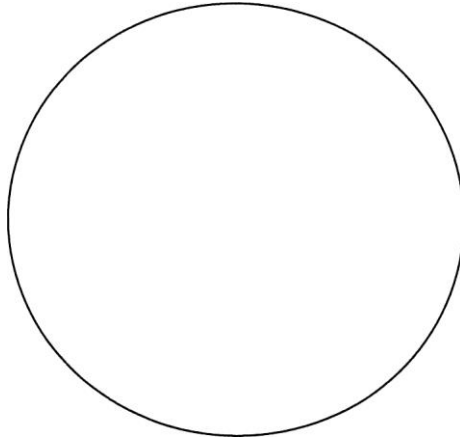
7. Which has the larger field of view, low or high power? How many times larger is it?

8. Is it easier to locate objects under high power or low power? Explain.

9. Describe the relationship between magnification and the diameter of the field of view?

VIEWING ORGANISMS

Examine the slide on low power. Make a sketch of something you see in the space below.



Estimate the objects size in microns. _____ μm

CONCLUSION QUESTIONS:

1. How does working with the microscope apply to forensic science?
2. Why is it important to know scale and magnification?
3. In a forensics lab, what pieces of evidence would you look at under the microscope?