Introduction to the Light Microscrope

Name _____
Date _____
Block _____

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

The magnification written on the ocular lens (eyepiece) is _____

The magnification written on:
The low power objective (this is the first and largest number written on it) _____ x
The medium 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. _____ The MEDIUM power _____ The HIGH power _____

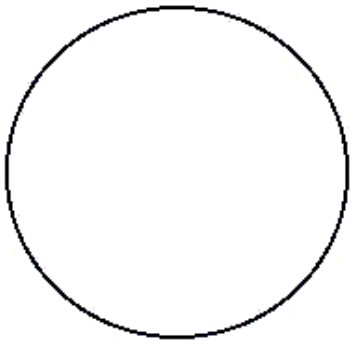
3. Look into the eyepiece, twist it left and right. Notice the line inside that moves as you twist. (Some microscopes do not have this, see if you can find one that does in the room). What do you think this is for?

_____
_____

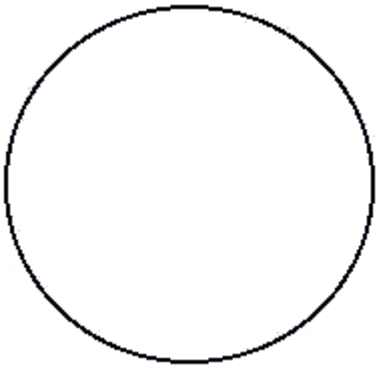
4. Place the slide of the "letter e" on the stage so that the letter is over the hole and is right side up. Use the scanning objective to view the letter and use the coarse knob to focus. Repeat on the low power objective. Finally, switch to high power. Remember at this point, you should only use the FINE adjustment knob.

Draw the "e" as it appears at each magnification. Drawings should be drawn to scale and you should note the orientation of the e in the viewing field (is it upside down or right side up?)

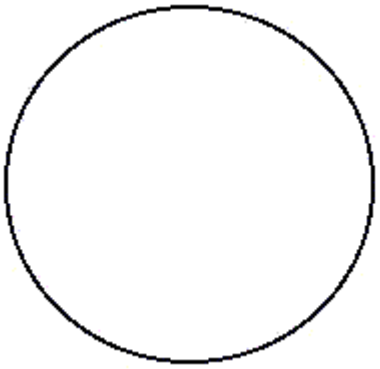
Low Power



Medium Power



High Power



Have your partner push the slide to the left while you view it through the lens.

Which direction does th **E** appear to move? _____

6. Depth Perception

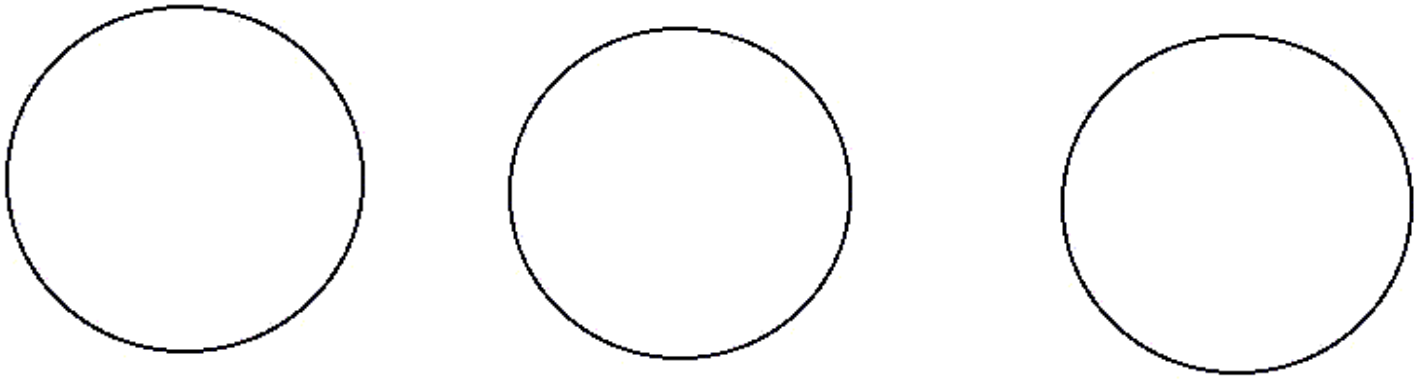
Obtain a slide with three different colored threads on it. View the slide under scanning and then low power. You should note that you could only focus on one colored thread at one time. Figure out which thread is on top by lowering your stage all the way, then slowly raising it until the thread comes into focus. The first thread to come into focus is the one on top.

Which color thread is on top? _____
Which color thread is in the middle? _____
Which color thread is on the bottom? _____

7. Measuring Field of View

Using a ruler, measure how many millimeters you can count at each power in your field of view. Draw what you see:

Low Power = _____ mm Medium Power = _____ mm High Power _____ mm

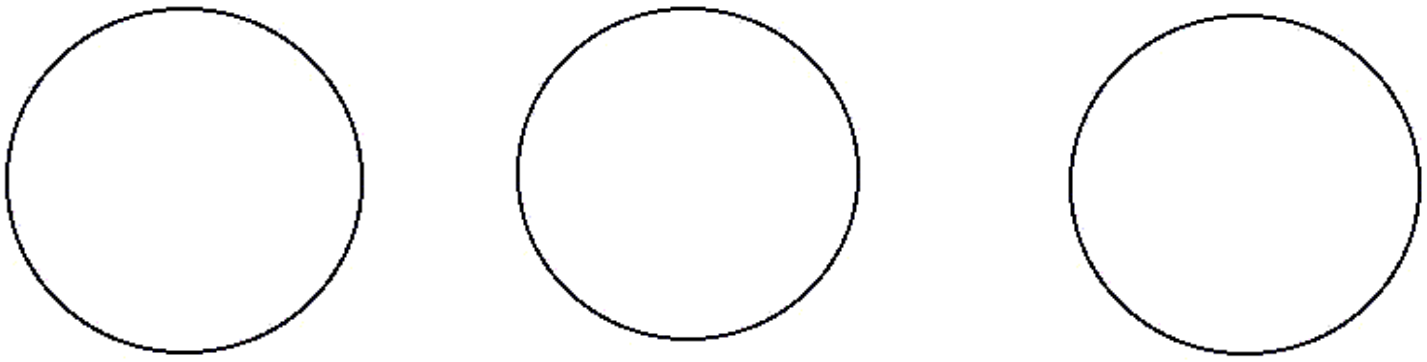


8. Random Specimens

Take a slide that Ms Enders will make available. Use the circles below to sketch your specimen under Low, Medium and High power. Make sure to avoid getting fingerprints on the slide. Label your specimen from the name written on the slide.

Specimen Name _____

Low Power Medium Power High Power



9. 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 medium power objective.
_____ The fine focus knob visibly moves the stage up and down.
_____ Images viewed in the microscope will appear upside down.
_____ 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.

10. Your friend was away for the microscope lab, and doesn't know how to use the microscope. Write detailed, step by step instructions on how to use the microscope, what all the parts are for, and how to focus.

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