Name:_____

Introduction to the Light Microscope

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 scanning objective (this is the first and largest number written on it) _____ x

the low 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:

Scanning power objective. _____ Low power objective _____

High power objective _____

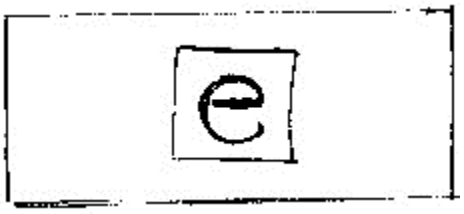
3. Examine the diaphragm (underneath the stage). The numbers on the edge of it range from ONE to _____

4. 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?
_____

5. Preparing a wet mount of the letter "e".

With your scissors cut out the letter "e" from the newsprint.

- Place it on the glass slide so as to look like (e).
- Cover it with a clean cover slip. See the figure below.



- Using your eyedropper, place a drop of water on the edge of the cover slip where it touches the glass slide. The water should be sucked under the slide if done properly.
- Turn on the microscope and place the slide on the stage; making sure the "e" is facing the normal reading position (see the figure above). Using the course focus and low power, move the body tube down until the "e" can be seen clearly.

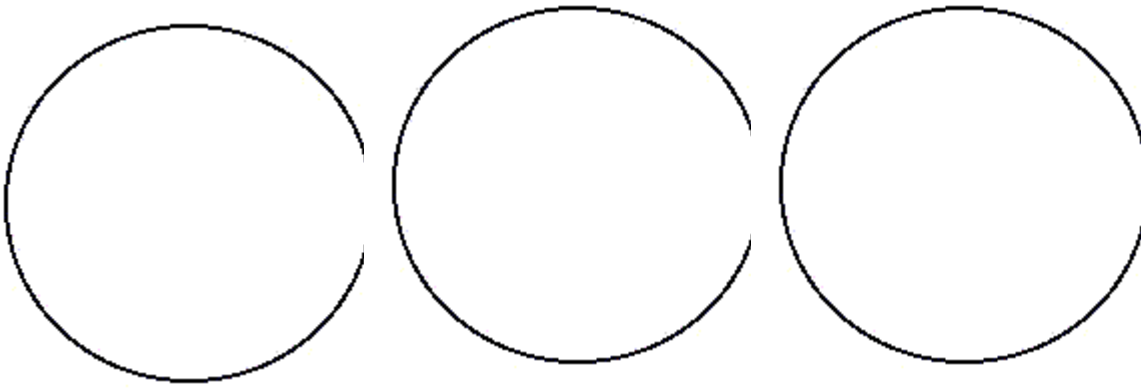
Use the scanning objective to view the letter and use the coarse knob to focus. Repeat on the low power objective. Finally, switch to high power. Remember at this point, you should only use the FINE adjustment knob.

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?)

SCANNING

LOW

HIGH

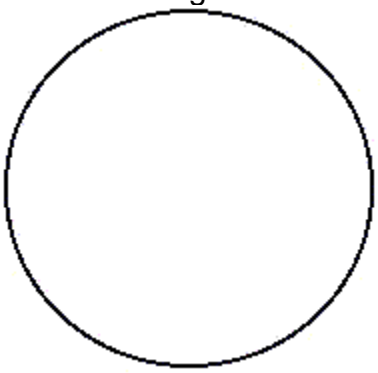


Have your partner push the slide to the left while you view it through the lens. Which direction does the **e** appear to move?

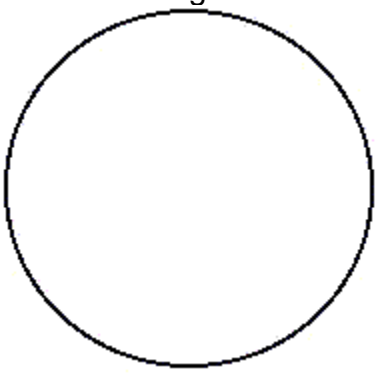
6. Choose 2 specimens from the box of "common things". Use the circles below to sketch your specimens under SCANNING and LOW power. You may practice focusing with the high power, but you do not need to sketch it. Label your specimens from the name written on the slide.

Specimen 1 **Specimen 2** _____

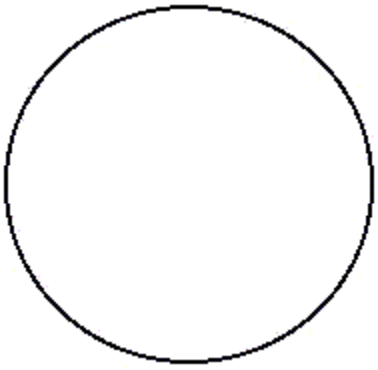
Scanning Power



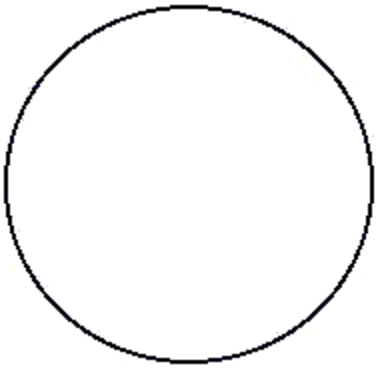
Scanning Power



Low Power



Low Power



7. 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 scanning objective.
_____ The fine focus knob 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.