

Name: _____

Date: _____

Life Science

Period: _____

The Cell: *Microscopes*

Lab: Introduction to the Compound Light Microscope

Magnification

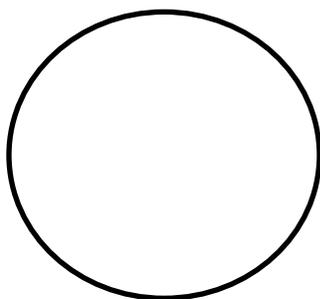
- Examine your microscope. Review the parts of the microscope and their function.
- Observe the lenses:
 - What is the magnification of the ocular lens (eyepiece)? _____x
 - What magnification is written on the low power objective? _____x
 - What magnification is written on the medium power objective? _____x
 - What magnification is written on the high power objective? _____x
- The total magnification using the lenses can be determined by multiplying the objective with the ocular lens (eyepiece). What is the total magnification of a specimen viewed with each objective?

Low power obj. _____ x **Medium** power obj. _____ x **High** power obj. _____ x

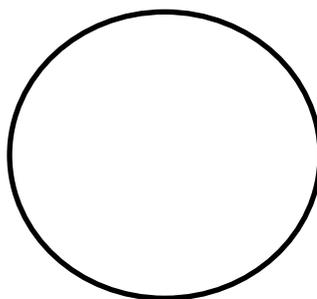
The Letter 'e'

- 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 low power objective to view the letter and use the coarse adjustment knob to focus. Diagram the 'e' in the field of view below **exactly** as you see it under the objective. Repeat using the medium power objective, and finally (if available) the high power objective.

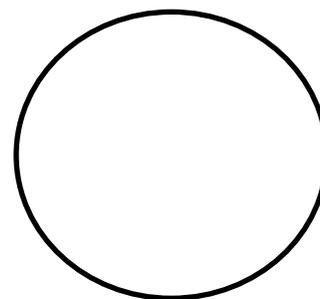
Note: the pointer should not be included in diagrams.



Low power



Medium power



High power

Have your lab partner push the slide to the left while you view it through the lens. To which direction does the 'e' appear to move?

To the _____

Depth Perception

5. Obtain a slide with 3 different colored threads on it. View the slide under low and then medium power.
6. You should note that you can only focus on one colored thread at a time. Figure out which thread is on top:
 - a. Adjust the coarse objective knob to lower the stage all the way.
 - b. Slowly raise the stage until the thread comes into focus.
 - c. The first thread to come into focus is the one on top.
7. Answer the following questions:
 - a. Which color thread is on top? _____
 - b. Which color thread is in the middle? _____
 - c. Which color thread is on the bottom? _____

True or False

When you have completed your work with the microscope, answer the following questions with either "True" or "False".

8. On high power, you should use the coarse adjustment knob. _____
9. The diaphragm determines how much light shines on the specimen. _____
10. The lower power objective has a greater magnification than the medium power objective. _____
11. The fine focus knob moves the stage up and down. _____
12. Images viewed in the microscope will appear upside down. _____
13. If a slide is thick, only parts of the specimen may come into focus. _____
14. The type of microscope you are using is the scanning microscope. _____
15. For viewing, microscope slides should be placed on the objective. _____
16. In order to switch from low to high power, you must rotate the revolving nosepiece. _____
17. The total magnification of a microscope is determined by adding the ocular lens power to the objective lens power. _____