

# Microscope Lab

## Directions:

Use the microscope to help answer the following questions. Follow the directions for each section.

## I. Microscope Parts

Locate the following parts on your microscope. Check mark each part as you locate it.

_____ Base	_____ Diaphragm
_____ Arm	_____ Objectives
_____ Stage	_____ Body Tube
_____ Stage Clip (or mechanical stage)	_____ Coarse Adjustment
_____ Light and light switch	_____ Revolving Nosepiece
_____ Fine Adjustment	_____ Ocular (eyepiece)

## II. Answer the following questions.

1. What is the magnification of your eyepiece?

2. How many objectives are on your microscope?

List their magnifications from least to greatest:

3. If you were using your lowest magnification objective, what would be the total magnification when you look through the eyepiece?

If you were using your highest magnification objective, what would be the total magnification when you look through the eyepiece?

4. What is the type of diaphragm on your microscope?

What is the function of the diaphragm?

5. When you turn the coarse adjustment knob, what part of the microscope moves?

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## III. To focus prepared slides, follow these directions:

1. Clean the eyepiece and objectives with lens paper. Why should you only use lens paper to clean the eyepiece?
2. Wipe off the lamp and prepare a slide.
3. Hold the slide up to the light and note what you see. What is the purpose?
  
4. Place the slide on the stage with the specimen centered over the stage hole.
5. Starting with the 10x objective, focus while using the coarse adjustment. (You may have to move the slide around to find the specimen.)
6. Use the fine adjustment to get a perfect focus, then adjust the amount of light.
7. Center the specimen in your field of view.
8. Switch to high power and use the fine adjustment for a perfect focus. Readjust the light. When the slide displays a perfect focus under high power, have the teacher initial here: \_\_\_\_\_

## IV. To prepare a wet mount slide, follow these directions:

1. Obtain a clean slide and coverslip.
2. Put a drop of water in the center of the slide.
3. Cut out a lower case “e” from the regular-sized newsprint (not from the headlines or titles of articles.)
4. Place the “e” in the drop of water right side up.
5. Touch the edge of the coverslip to the drop of water; then, gently lower it.
6. Place the slide over the hole in the stage so the “e” is oriented exactly as if you were reading it.
7. Starting with the lowest objective, look at the letter. (Do not forget to adjust the light.)
8. What is unusual about the orientation of the letter “e”?

Can you see all of the letter “e”?

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9. Move the slide to the left. Which way does the “e” move?

Move the slide to the right. Which way does the “e” move?

Push the slide away from you. Which way does the “e” move?

Pull the slide toward you. Which way does the “e” move?

10. Center the letter “e” in your field of view. Now, switch to the next highest objective. Can you see all of the letter “e” this time?

11. Make sure the letter “e” is centered in your field of view, then switch to high power. Can you see all of the letter “e”?

12. What can be said about your field of view as you increase your magnification?

13. Describe in detail, how the letter “e” looks under the microscope.

14. Why is it so important to center your specimen in the field of view before switching to a higher power?

15. When you switch from low power to high power, do you tend to need more light or less light?

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## V. General Questions

1. What two parts of the microscope are used in carrying it?
2. What two parts of the microscope are involved in magnifying?
3. Compare the length of the low power objective to the high power objective.
4. If you were tracking a microorganism which suddenly changed direction and started to move toward the bottom of your field of view, what way would you move the slide to keep it in your field of view?
5. Why did the teacher not have you use the letter “o” when learning orientation with the compound microscope?
6. Why is a microscope an important tool/equipment for research in science?