

Biology - Using the Microscope

Name _____

Period _____

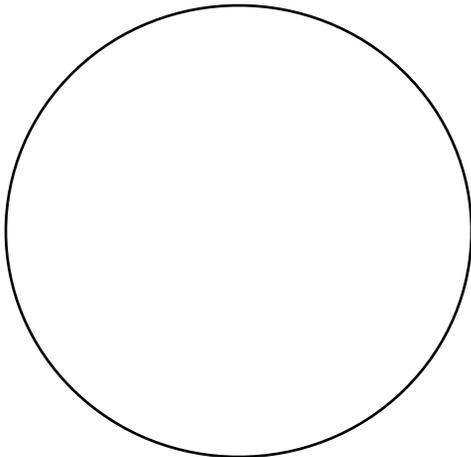
Objectives

1. Demonstrate how to carry, clean and store the microscope. **Lab partner's initials** _____
2. Demonstrate how to use each part of the microscope to obtain the best field of view by completing a laboratory assignment requiring these skills.

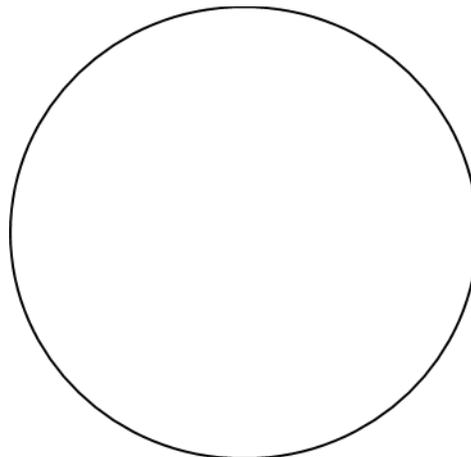
Procedures

1. Locate the following parts of the microscope. Describe each of their functions and manipulate each part properly. Pass them off to your lab partner and have them initial it when complete.

a. base	f. stage clips	k. body tube
b. arm	g. light source	l. eyepiece
c. plug and cord	h. diaphragm	m. coarse adjustment knob
d. power switch	i. objective lenses	n. fine adjustment knob
e. stage	j. nose piece	lab partner's initials _____
2. The eyepiece magnification is _____ power.
3. What is the total magnification of the observed object with the:
4X objective? _____ 10X objective? _____ 40X objective? _____
4. Obtain a prepared slide. Mount the slide on the stage and examine with the lowest (4X) power objective. Focus using the coarse adjustment knob and then with the fine adjustment knob. Notice that you can observe most of the object and much of it is in focus. Center to a part of the object you wish to study more closely by carefully moving the slide with your fingers. Adjust the diaphragm to obtain the best light for observation.
5. Make a **detailed drawing** showing exact size in the circle provided.
6. Now rotate the nose piece to the 10X objective lens. Use the fine adjustment knob to focus. Center the object again and adjust the diaphragm (light) as needed. **Note the difference in the field of view, and the size and detail of the object when compared with the 4X lens.**
7. Now rotate the nose piece to the 40X objective lens. Again focus, center, and adjust the diaphragm as needed. Here the object is magnified _____ times its actual size. Notice that you will only be able to keep a part of the object in focus at any given moment.
8. Make a **detailed drawing** showing the exact size in the circle provided.



4X objective lens



40X objective lens

9. Why is it best to begin your observation using the lowest power objective?
10. Describe **two advantages** of the low power (4X) objective lens.
11. Describe **two advantages** of the higher power (10X and 40X) objective lenses.

12. Obtain a blank microslide and cover slip. Prepare a wet mount by placing a drop of pond water containing organic debris and algae on a microslide. Place a cover slip on the sample. Be sure the cover slip sits flat on the microslide.
13. Using the microscope, examine the organisms in the sample adjusting the focus, diaphragm (light), and objective lenses to obtain the best possible view.
14. Distinguish between living and nonliving things you see on your slide. **What are some helpful guidelines that you can use to distinguish between living and nonliving things?**

15. Choose an organism and study it carefully. Record your observations (at least three for each organism) in the space provided. Include such things as their design, internal structure, method of movement, their response to things around them or what they are doing.
16. Make a **detailed drawing** of the organism in the circle provided. Draw larger than actual size filling the space in the circle. Do **NOT** draw the surrounding debris.
17. Choose two more organisms and repeat steps **d** and **e**.

Drawings

Observations

1. _____

2. _____

3. _____

