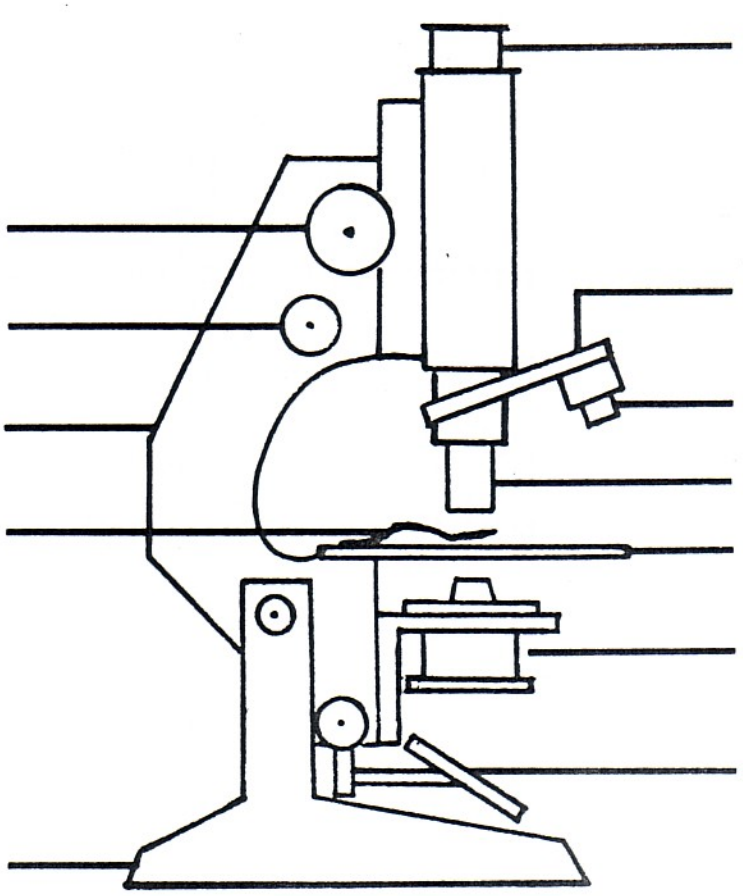
Name: _____ Date: _____

WORKSHEET 5.1-1: THE STUDENT MICROSCOPE

Instructions: Label the parts of the microscope



Name: _____ Date: _____

HANDOUT 5.1-2: FUNCTIONS OF MICROSCOPE PARTS

Ocular: This is the eyepiece lens that usually magnifies by a power of 10. (*Note*: To determine the power of the microscope, one multiplies the power of the ocular by the power of the objective lens being used.)

High-power objective: It is located just above the stage. It is the longer of the objectives. Its lens has a magnifying power usually of 43.

Low-power objective: It is located just above the stage. It is the shorter objective. Its lens has a magnifying power usually of 10.

Stage: This is a horizontal platform just below the objectives that supports the microscope slide for observation.

Revolving nosepiece: The objective lenses are attached to this part. It can be manually rotated to select the objective lens that you wish to use.

Stage clips: They clamp over the edges of the microscope slide to secure it to the stage.

Diaphragm (or condenser): Located just below the stage, it can be hand adjusted to regulate the amount of light entering the microscope. An image viewed through the microscope should not be dark but should have plenty of light.

Mirror: This is adjusted to reflect light from the microscope lamp up into the microscope. Although the mirror is sometimes used to regulate the amount of light entering the microscope, this is not good technique.

Coarse adjustment: This is used to focus the microscope. It is always used first, and it is used *only* with the low-power objective.

Fine adjustment: This is used to focus the microscope. It is used with the high-power objective to "fine tune" the focus.

Arm: This is the back of the microscope and it is used along with the base to transport the microscope.

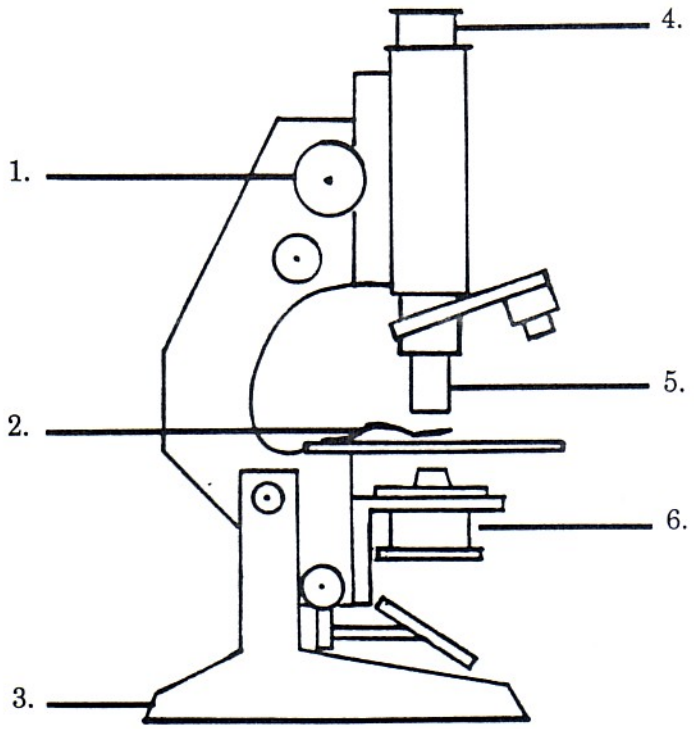
Base: This is the bottom of the microscope and it is used along with the arm to transport the microscope.

Note: Both eyes should be open when viewing through the microscope. This prevents eye fatigue, which occurs when the non-viewing eye is kept closed. Keeping both eyes open does take some practice, but it is highly recommended.

Name: _____ Date: _____

WORKSHEET 5.1-3: EVALUATION EXERCISE

Instructions: Label the following six parts of the microscope:



Learning Matchups: Fill in the blanks in the left hand column with the letter of the proper answer from the right-hand column.

_____ 1. Can be hand adjusted to regulate the amount of light entering the microscope.

_____ 2. Used first and with low-power objective in focusing.

_____ 3. The lens that has a magnifying power usually of 43.

_____ 4. The lens that magnifies the image usually by a factor of 10; also referred to as the eyepiece.

_____ 5. The two parts used in carrying the microscope.

_____ 6. Can be manually turned in selecting the objective lens that you want to use.

a. mirror
b. ocular
c. arm and base
d. fine adjustment
e. stage
f. high-power objective
g. coarse adjustment
h. low-power objective
i. diaphragm
j. stage clips
k. revolving nosepiece
l. base and ocular

Name: _____ Date: _____

Worksheet 5.1-3 (cont'd)

Questions:

1. Explain the important thing to remember as you turn the high-power objective into place.
   _____
   _____

2. How do you determine the power of a microscope?
   _____
   _____

3. What is the power of your classroom microscope when you are using the high-power objective?
   _____
   _____

4. What should you always remember when using the coarse adjustment?
   _____
   _____

5. Under what conditions would you use the diaphragm?
   _____
   _____

6. What should you remember when handling microscope slides (prepared or otherwise)?
   _____
   _____

7. Why should you never use direct sunlight as a source of light for the microscope?
   _____
   _____

8. What is the function of the stage clips?
   _____
   _____

9. In terms of your eyes, what should you try to learn as you use the microscope?
   _____
   _____