

8b. Pondwater and Elodea

- a. Prepare two more wet mounts following the steps in 7. Preparation of a wet mount
 - i. **Pondwater:** add a drop of pondwater plus a drop of methyl cellulose on top of the water to slow down the movement of small organisms. Place the cover slip on top of the pondwater and methyl cellulose.
 - ii. **Elodea:** place a single leaf of the aquatic plant *Elodea* on the slide and add a cover slip.

Complete LAB 1B MICROSCOPES WORKSHEET PART F

8c. Clean up wet mounts and put away microscope

- a. Clean the microscope slides and return to the blue box at your lab station. Pieces of onion and leaves should go in the garbage. Throw away the cover slips.
- b. Put away the compound microscope as indicated in **Lab Activity 9**, page 11.

10. Dissecting Microscope (also called stereomicroscope)

The dissecting microscope has two oculars and is capable of magnifications of 4X to 50X. These microscopes provide a significantly greater field of view and depth of field than compound microscopes. This type of microscope is advantageous when viewing larger objects and dissecting.

- a. **Find the dissecting microscope.** Carry it with BOTH hands to your desk.
- b. **Locate all the parts of your dissecting scope** as shown in the diagram on page 2. Your scope may be slightly different than the one in the diagram.
- c. **Practice focusing your dissecting scope** by following the steps below.
 - i. Place a plastic ruler on the stage and turn on the light source which can be obtained from the cabinet at your station. Note the position of the light and its relationship to the specimen and the oculars.

Complete LAB 1B MICROSCOPES WORKSHEET PART G:1-2

- ii. Put the magnification adjustment on the lowest possible setting.
- iii. Look through the oculars and adjust for your interpupillary distance. Make any necessary diopter adjustments by following the steps in LAB ACTIVITY #3, step f.
- iv. Observe the metric scale on the ruler, bringing the scale into sharp focus with the focusing knob.
- v. Practice changing magnification on your dissecting scope, adjusting the focus with the focusing knob.

Complete LAB 1B MICROSCOPES WORKSHEET PART G:3-5

- d. **Observe a penny** under the dissecting scope.

- i. Obtain a penny from the supply table and hold it so that "heads" is up and Abraham Lincoln is facing to the right. Place it in this orientation on the stage.
- ii. Adjust your scope to low power and observe the penny.

Complete LAB 1B MICROSCOPES WORKSHEET PART G:6-9

- e. Observe other objects of your choice (color newsprint, hair, paperclip, fingerprint, ball-point pen tip, etc.) at various magnifications.

11. Put away the dissecting microscope properly.

- i. Turn off the illuminator, wrap the cord around its base
- ii. Make sure the stage of the scope is clean and dry; clean ocular lenses.
- iii. Set the microscope on its lowest magnification.
- iv. Rack the objective down so that it is as close to the stage as possible.
- v. Place in the appropriate cabinet.

Lab 1 B: MICROSCOPES WORKSHEET

D. Preparation of a Wet Mount

In the space provided below, draw an onion cell as observed under high power. Label the NUCLEUS, CELL WALL, and CYTOPLASM.

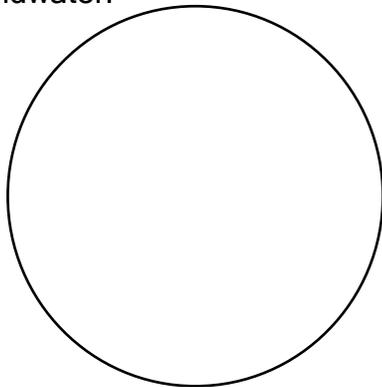
E. Measuring a Cell

1. Estimate the **length** of the onion cell in micrometers _____ μm
2. Estimate the **width** of the onion cell in micrometers _____ μm .

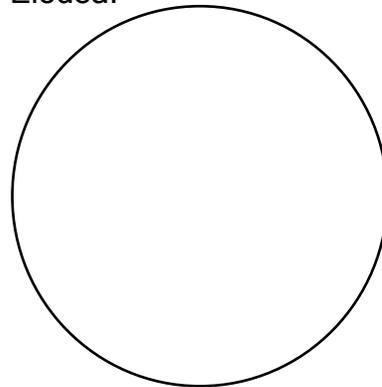
F. Pondwater and Elodea

1. Pondwater: Look for moving organisms (likely heterotrophic protists) and look for things that are green (likely algae), and sketch in the space below.
2. *Elodea*: What are the green circles inside the cells? _____
Sketch the Elodea leaf in the space below.

Pondwater:



Elodea:



G. Dissecting Microscope

1. Is the specimen viewed with transmitted or reflected light? _____
2. In the compound scope, is the specimen viewed with transmitted or reflected light?

3. What is the LOWEST possible TOTAL MAGNIFICATION on your scope? _____
4. What is the HIGHEST possible TOTAL MAGNIFICATION on your scope? _____
5. Which scope can provide greater magnification, the compound or dissecting?

6. Is the image of the penny upside down? _____
7. Is the image of the penny reversed, left to right? _____
8. Does inversion occur on the dissecting scope? _____
9. Comparison of dissecting scope and compound microscope.

	Dissecting Scope	Compound Microscope
Highest Magnification		
Inversion		
Light		