Lab 3: Microscopy and Cells

pp. 14-25, 28, 43-44

GOALS:

-Understand the difference between light microscopes and electron microscopes.
-Describe the types of specimens viewed with each of the following:
    dissecting microscope
    compound light microscope
    transmission electron microscope (TEM)
    scanning electron microscope (SEM)
-Name the major parts of the compound light microscope.
-Correctly use the compound light microscope using low & high power objectives.
-Demonstrate how to make a wet mount.
-Distinguish between:
    prokaryotic and eukaryotic cells
    plant & animal cells.
-Correctly use the dissecting microscopes.

KEY TERMS:

light microscope	TEM and SEM	dissecting microscope
ocular lenses	low power objective	high power objective
coarse adjustment knob	fine adjustment knob	condenser
diaphragm	parfocal	total magnification
diameter of field	depth of field	wet mount
nucleus	cytoplasm	plasma membrane
cell wall	prokaryotic cell	eukaryotic cell

I. Light & Electron Microscopes:

pp.14-15: Read, then answer questions at the bottom of p. 15.

II. Binocular Dissecting Microscope:

pp.16-17: label photo & follow procedures. View the provided samples (no plastomount).

III. Compound Light Microscope:

pp.18-19: label photo & answer questions
pp.19 -23 (top): Read & follow all procedures through Table 2.4

IV. Microscopic Observations:

pp. 23 - 25 (top): Read & follow all procedures through Table 2.5

V. Prokaryotic vs. Eukaryotic Cells:

pp. 43-44: (SKIP Observation at the end of the section).
Make a wet mount of Anabaena sp. (a cyanobacterium) and contrast it with the eukaryotic cells you already viewed. HINT: What is Anabaena missing?

VI: Review:

p. 28: Answer questions 7-21 (SKIP # 20)