

## LABORATORY EXERCISE 4 CARE AND USE OF THE MICROSCOPE

### Instructional Suggestions

1. To stimulate student interest in use of the microscope, you may want to have students prepare wet mounts of pond water and observe the various forms of life present. A plankton net is a helpful device to concentrate pond organisms. Students can be encouraged to bring samples of pond water to class in preparation for this experiment.
2. You may want to provide students with prepared slides of major human organs to examine as a way of increasing their experience with using the microscope.
3. If oil-immersion objectives are available, you may want to provide students with prepared slides of various forms of bacteria to observe using these objectives.



### Critical Thinking Application Answers

Answers will vary depending upon the order of the three colored threads. However, the colored thread on the top will be in focus first, the middle one second, and the bottom one last as the student continues to turn the fine adjustment the same direction.

### Laboratory Report Answers

#### **PART A**

1.  $100\times$
2.  $1,000\times$

#### **PART B**

1. (sketch)
2. About 4.5 mm for scanning power (using 4 $\times$  objective)
3. About 4,500 micrometers
4. About 2.2 mm
5. About 2,200 micrometers

#### **PART C**

1. (sketch)
2. About 1.7 mm (using a 10 $\times$  objective)
3. The diameter of the scanning-power field of view is about 2.6 times greater than that of the low-power field of view.
4. Student is unable to see two adjacent mm lines on the scale in a high-power field of view.
5. Light intensity is decreased when high-power objective is used.
6. (sketch)
7. Upside down and reversed from right to left
8. Left
9. Toward the observer

#### **PART D**

1. f
2. i
3. c
4. a
5. h
6. j
7. d
8. b
9. g
10. e

#### **PART E**

(sketches)