

Microscope Introduction Lab

"Micro" refers to tiny, "scope" refers to view or look at. Microscopes are used to make more detailed observations and measurements of objects too small for the naked eye. The compound light microscope is the most common instrument used in education today. It is an instrument containing two lenses, which magnifies, and a variety of knobs to resolve the picture. It is a rather simple piece of equipment to understand and use.

Material

- Microscope
- Newspaper
- Eyedropper
- Water
- Cork

Part 1: Wet mount of Letter "e"

- 1) Cut out the letter "e" and place it on the slide face up.
- 2) Add a drop of water to the slide.
- 3) Place the cover slip over the "e" and water at a 45-degree angle. Lower slowly with a pencil to keep air bubbles out.
- 4) Place the slide on the stage and view in low power. Center the "e" in your field of view. Draw what you see. Move the slide to the left, what happens? Move the slide to the right, what happens? Up? Down?
- 5) View the specimen in high power. Use the fine adjustment only to focus (this keeps from breaking or scratching glass slides and objectives). Draw what you see.
- 6) Examine a piece of color print from the newspaper, notice how it is printed as compared to what we see.

Part 2: Calculating Magnification

- 1) Fill in the magnification of each objective and the eyepiece of your microscope.
- 2) To determine the total magnification, multiply the magnification of eyepiece by the objective lens.

Objective	Eyepiece Magnification	Objective Magnification	Total Magnification
Low Power			
Medium Power			
High Power			

Part 3 - Robert Hooke's Cells

In 1665 Robert Hooke was the first to look at cells and other materials. In fact, he was the person who first called them cells. You will repeat Hooke's experiment using cork.

- 1) See your teacher to obtain a thin section of the cork.
- 2) Prepare a wetmount of the cork.
- 3) Draw what you observe under the highest magnification you can get. Label the cell wall.
- 4) Rinse and dry the slide.

Analysis

- 1) What did Robert Hooke call the small units in the cork that can be seen under high power? Why?
- 2) Do these units appear filled or empty? Explain.
- 3) Does a plant or an animal produce cork? What evidence from the cell structure do you have?