

Name: \_\_\_\_\_

Per.: \_\_\_\_\_

Date: \_\_\_\_\_

## The "e" Lab

Purpose: To examine a variety of objects using a compound light microscope.

Materials:

Scissors	Pipette	Slide	Cover slip
Water	2- pieces of thread	2-newspaper clips	ruler

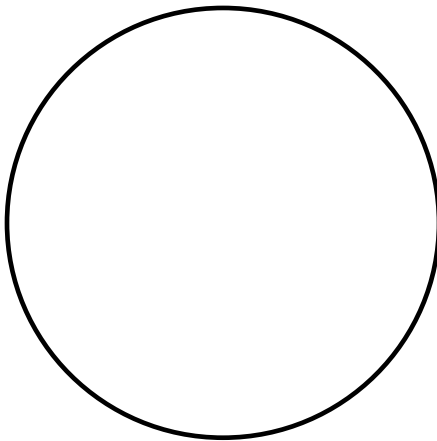
### Procedure #1: Setting up your "e"

1. CUT the a lower-cased "e" from the newspaper.
2. Place the "e" **RIGHT SIDE UP** on the glass slide. (fig. 1)
3. Add a **SMALL** drop of water. (fig. 2)
4. Apply cover slip as shown (fig. 3)

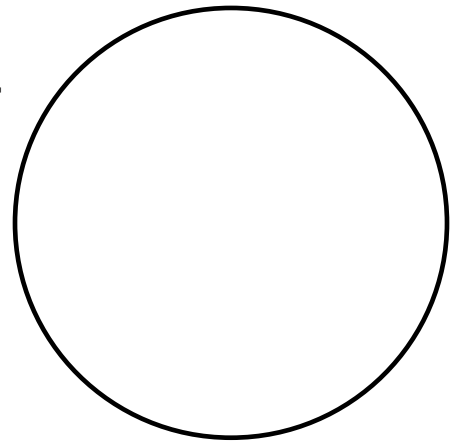
### Procedure #2: Using the Microscope

1. Check to be sure the low power objective is in place.
2. Place the slide on stage with the "e" right side up.
3. Look at the slide while using the coarse adjustment.
4. Look into the eyepiece and use fine focus knob to focus.
5. Draw **EXACTLY** what you see through the eyepiece in the circle **LOW Power** then record what you see under **HIGH Power**. Record your observations in the table.

**LOW  
Power**



**HIGH  
Power**



When you push the slide <b>forward</b> the "e" moves in which direction?	When you push the slide to the <b>left</b> , the "e" moves in which direction?	When you push the slide to the <b>right</b> , the "e" moves in which direction?	When you rotate to <b>HIGH</b> power do you see more or less of the "e"?	What is the magnification of the microscope at <b>HIGH</b> power?

**Procedure #3: The Field of View (What you can see)**

1. Remove the slide from the stage and begin at **LOW power**.
2. Place the ruler across the stage so that you can see the measurement marks through the eyepiece.
3. Place a millimeter mark on the **LEFT** edge of your field of view. Count the number of marks from one side to the other. Estimate any fractional part of a millimeter for **ALL** of the objectives (powers) to the nearest 0.1 mm.
4. Convert the diameter measurement to micrometers ( $\mu\text{m}$ ). **1 mm=1000  $\mu\text{m}$**
5. Determine the magnification for **ALL** objectives. (**eye piece X objective = total magnification**)

Power/Objective	Diameter in mm	Diameter in $\mu\text{m}$	Magnification
Low			
Medium			
High			

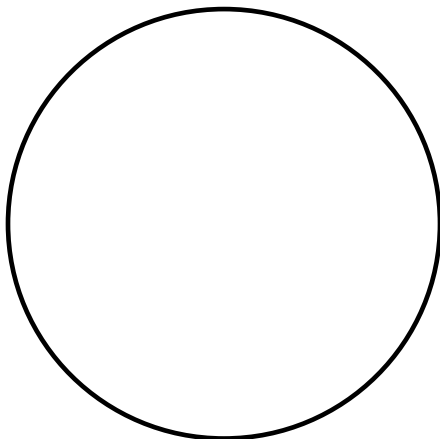
**Procedure #4: Observing & Drawing Hair**

1. Prepare your slide with a piece of **YOUR HAIR** and **YOUR PARTNER'S HAIR**. Use **STEPS 3 & 4 from Procedure #1**.
2. Check to be sure the low power objective is in place.
3. Look at the slide while using the coarse adjustment.
4. Look into the eyepiece and use fine focus knob to focus.
5. Observe both hairs under the microscope. Use the ruler and estimate in microns the **WIDTH** of each hair and record.

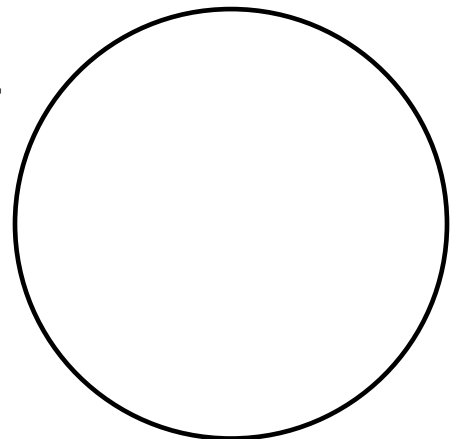
Hair Color	Diameter estimate in $\mu\text{m}$	Place an 'X' next to the widest hair

4. Draw the **WIDEST** hair on **LOW** power and **HIGH** power in the circles below.

**LOW  
Power**



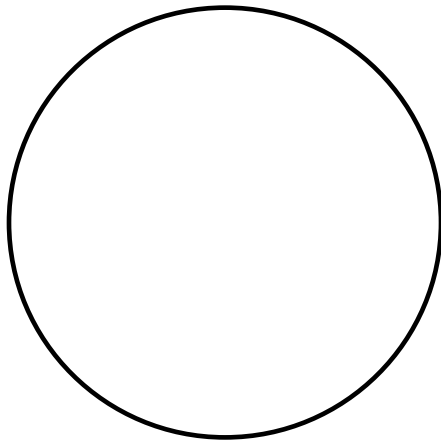
**HIGH  
Power**



### **Procedure #5: Observing & Drawing Thread and a Color Photo**

1. Prepare your slide with a piece of **THREAD**. Use **STEPS 3 & 4** from Procedure #1.
2. Check to be sure the low power objective is in place.
3. Look at the slide while using the coarse adjustment.
4. Look into the eyepiece and use fine focus knob to focus.
5. **Make one drawing of the thread on MEDIUM power. Draw EXACTLY what you see!!**
6. Now prepare the slide with a color photo.
7. **Make one drawing of the photo on MEDIUM power. Draw EXACTLY what you see!!**

**MEDIUM  
Power  
Thread**



**MEDIUM  
Power  
Photo**

