

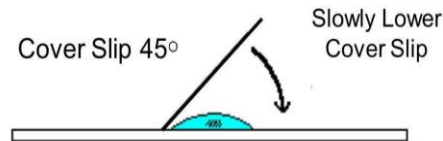


Biological Drawing Practice: Onion Cell Lab

1. Collect materials: slide, coverslip, small piece of onion, tweezers, iodine dropper, absorbent paper

2. Prepare wet mount:

- a. Add one drop of water onto slide
- b. Place a “pinky nail sized” piece of the **inner epidermis** on the slide
(be gentle, it is very thin!)
- c. Place **one drop of iodine** over specimen
- d. Place **coverslip overtop** using this technique:



- e. Touch end of cover slip with **absorbent paper** to draw out excess iodine

3. View specimen under microscope:

- a. **Before you begin:** Make sure the **low power** objective is in place and that the **COARSE adjustment knob** is spun fully **away** from you before starting.
- b. Place the slide on the **stage**.
- c. **Turn on** and adjust the **light source** using the **diaphragm**.
- d. Focus with the coarse adjustment knob by spinning it **toward** you.
- e. When the proper image has been located, **re-center** and **refocus** on the image; put the stage clips on the slide.
- f. Use the **FINE adjustment knob** (from this point on, do not touch the coarse adjustment knob)
- g. Rotate the nosepiece to **medium power**.
- h. Refocus using the **fine adjustment knob** only and **re-center** carefully.
- i. If necessary, rotate the nosepiece to high power.
- j. Focus using **fine adjustment knob only** and re-center carefully.
- k. Take a picture at **whichever power** gives you the clearest image! Make sure to note the total magnification provided by the microscope.

4. **Biological Drawing** - Complete a biological drawing on clean, white sheet of paper. Follow the rules described below.

The purpose of a biological drawing is to make biology easier to understand.

When drawing:

1. Always make your drawing on a **blank piece of paper**
2. Make your drawing **very large** (at least half a page)
3. Place the **drawing on the left-hand side** of the page with **labels on the right hand side**
4. There should be **NO shading**. Only **stippling** and **solid lines**.
5. **Lines (for labels) should be parallel** (use ruler!) with writing **starting at the end point of the line**
6. **Title** the drawing at the top, middle of the page; be **as specific as possible**
7. Put your **name, date, and course code** on the top **right hand side**
8. Print the following at the bottom right hand side.
 - Total magnification
 - Actual size of object (in μm)
 - Magnification of drawing
 - Stain used if any

5. Calculations

→ Estimating Size of Specimen

- a) Were you looking at the specimen at low, medium or high power? _____
- b) What is the **field diameter in micrometers** for this power? _____
- c) **How many** onion cells fit across the FD? _____. Did you count this widthwise or lengthwise?

- d) Calculate the **estimated size** of an onion cell (in μm). Show your work.

- e) Convert to **millimeters** to help with the next step: _____

→ Magnification of Drawing

- a) Using the same dimension as above (width or length), what is the measurement of your drawing in **millimeters**? _____
- b) Calculate the **magnification** of the drawing. Show your work.