

Botany Cell Lab

I. *Elodea* slide

A. *Elodea* is a green aquatic plant. See photo to right:

1. We will make a **wet mount slide**

a. Gather a ...

1) slide

2) coverslip

3) leaf of *Elodea*

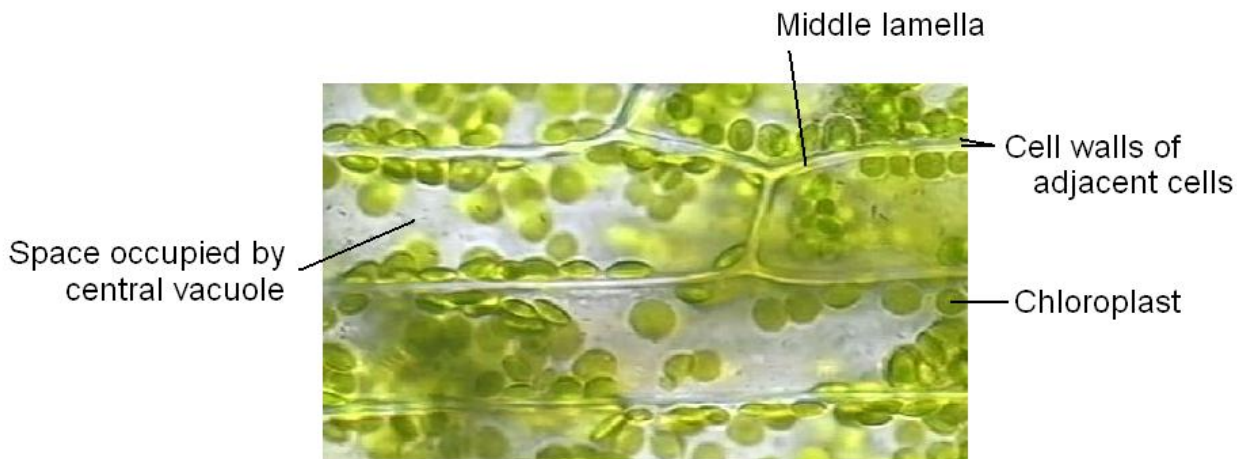
b. Put a large drop of water on the slide

c. Set the leaf on the drop of water

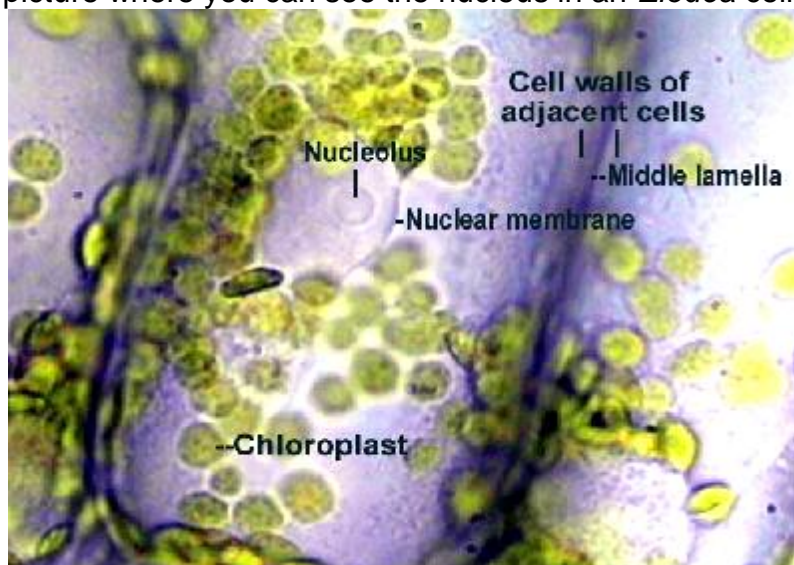
d. Cover with a coverslip

2. Get the slide in focus using the 10X objective

3. Notice the **green chloroplasts**. They appear “squished” next to the cell walls because the central vacuole is taking up most of the space in the middle of the cells.



Look at this cool slide picture where you can see the nucleus in an *Elodea* cell!



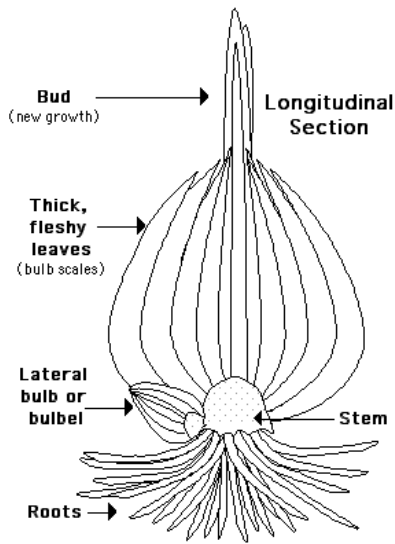
B. **Cyclosis** – a flowing or streaming of cytoplasm within living cells

1. Because chloroplasts are green, we can actually see them tumbling in the cytoplasm in this slide.

Watch a video of cyclosis in action: http://www.youtube.com/watch?v=PFtzs_cUddI

II. Onion cell slide

Sprouting Bulb



A. What is an onion?

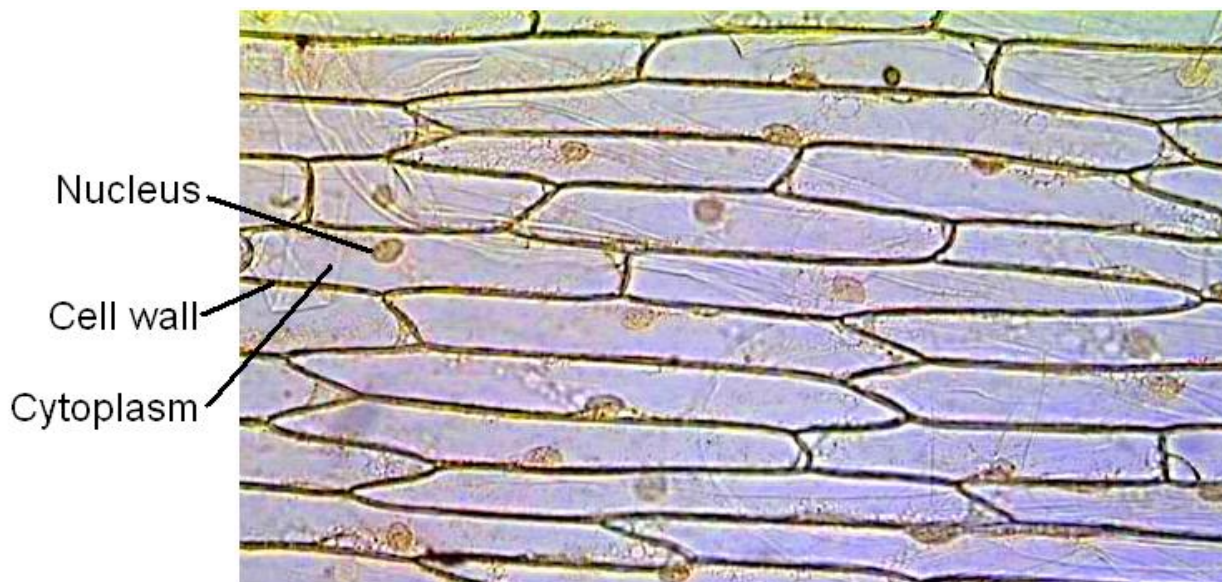
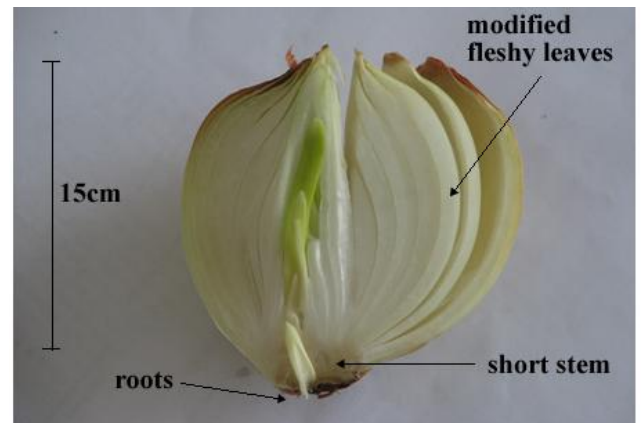
1. A **bulb** – an underground food-storage organ that consists of fleshy leaves that surround and are attached to a small stem.

B. Again, we are making a wet mount slide

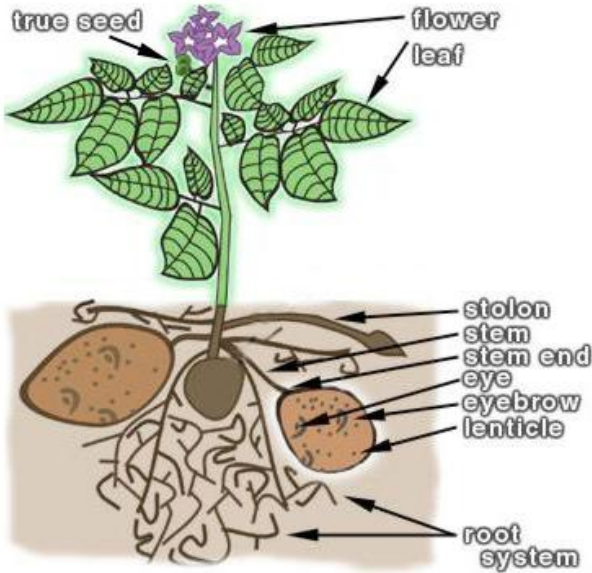
1. As demonstrated by the instructor, obtain a thin skin of an onion leaf
2. Smooth the onion cells onto a drop of water
3. Stain with **acetocarmine** (a red stain)
4. Cover with the coverslip
5. Get the slide into focus using the 10X objective

C. Are there any chloroplasts? Why or why not?

D. Can you see any cellular organelles? If so, which ones?



III. Potato slide



- A. What is a potato?
1. A **tuber** – a swollen, fleshy underground stem that functions in food storage
- B. Prepare a wet mount slide
1. As demonstrated by the instructor, obtain a THIN slice of potato
 2. Lay it on a drop of water on the slide
 3. Stain with **iodine** (an amber colored stain)
 4. Cover with the coverslip
 5. Get the slide into focus using the 10X objective
- C. What color did the iodine stain the potato cells?

D. We are looking at a tissue called **parenchyma**.

1. These parenchyma cells are storing starch
 - a. Starch is a macromolecule consisting of a long chain of simple sugars
2. The blue-purple lumps in the cells are **starch grains**

