Discovering Cells

by viewing cell walls, nucleii,and vacuoles

Lab procedure: Look at vegetable peelings with Petri & Meeka Microscope.

1. Use a vegetable peeler to get 3 small shavings of your vegetable, but remember, light needs to shine through your sample, so make sure it is thin and not covered with skin.
2. Put one drop of red and one drop of blue on your samples.
3. Use bottom stage light option II or III.

Tomato Cells

1. View tomato cells (fleshy part, not skin)
2. View tomato with Methylene Blue
3. View tomato with Iodine
4. Try to measure the length of your cells

Search carefully through your tomato cells. **Can you find a cell with a nucleus?** Try looking at tomato flesh near the tomato skin stained with Iodine.
Draw what you see

Potato Cells

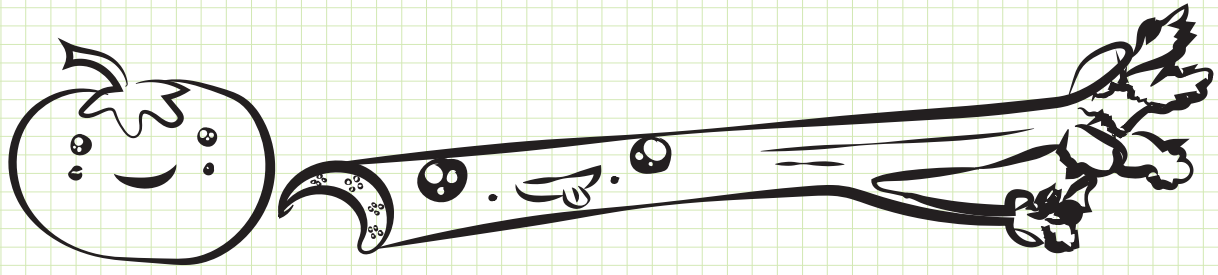
1. View potato cells (White part, not skin)
2. View potato with Methylene Blue
3. View potato with Iodine
4. Try to measure the length of your cells

Search carefully through your potato cells. Can you see the cell walls? Try looking at cell walls stained with Methylene Blue.
Draw what you see packed inside the cells?
Draw what you see

Cells

1. View the cells
2. View cells with Methylene Blue
3. View the cells with Iodine
4. Try to measure the length of your cells

Search carefully through the cells.
Draw what you see



STEMTaught

Name:

Thinking and discussion:

The coolest things to view in these cells are:

- Cell Walls (Use Methylene Blue on any veggie)
- Nucleus (use Iodine on tomato)
- Vacuoles (use either blue or red to see these organelles filling potato cells)
- Chloroplasts (scrape the flesh off a leek leaf and look at the edge where thinnest.

About the Vacuoles (Amyloplasts)

Amyloplasts are non-pigmented organelles found in some plant cells including potatoes. They are responsible for the synthesis and storage of starch granules through the polymerization of glucose. This just means that the vacuoles convert starch into sugar when the plant needs energy. Amyloplasts have a genome of their own and are thought to have evolved from a symbiotic relationship between the plant and bacteria long ago.