

Lab. # 2 - Plant and Animal Cells - bj

Objectives:

Students will discover that onions are made up of cells.
Students will observe onion cells under a microscope.
Students will discover that their skin is made up of cells.
Students will observe cheek cells under a microscope.

Key Questions:

What are cells?
How are cells similar to the bricks of a building?
How are animal cells different from plant cells?
What are the three main parts of a cell?

Materials:

microscope, two glass slides, iodine stain, methylene blue stain, two cover slips, an onion, and a toothpick

Procedures:

onion cells

1. Peel a translucent piece of tissue from the onion. (The smaller the piece the better.)
Translucent means that you can see light through the specimen, but it is not transparent.
2. Place the piece of onion on a glass slide and add a drop or two of the iodine solution. Cover the slide with a cover slip using your best wet-mount making techniques.
3. Observe the onion cell under both low and high power. Make a drawing of one onion cell, labeling all of its parts as you observe them.
(At minimum you should observe the nucleus, cell wall, and cytoplasm.)

cheek cells

1. To view cheek cells, gently scrape the inside lining of your cheek with a toothpick. **DO NOT GOUGE THE INSIDE OF YOUR CHEEK!** (We will observe blood cells in a future lab!!)
2. Gently tap the toothpick onto the center of a glass slide. Some of the cheek cells should fall onto the slide.
3. Add a drop of methylene blue stain (specific for animals) and cover with a cover slip.
4. Observe the cheek cells under both low and high power of your microscope. Draw a diagram of one cheek cell and label its parts. (At minimum you should observe the cell membrane, nucleus, and cytoplasm.)

Observation:

The following labeled drawings should be completed on your own paper. These neat drawings **MUST** be completed using a pencil.

1. Onion Cell Drawing (low power)
2. Onion Cell Drawing (high power)
3. Cheek cell drawing (any power but preferably high)

Conclusions and Questions:

1. Complete the following chart

Cell organelle	Found in plant, animal, or both	Function
nucleus
cell wall
chloroplast
cytoplasm
cell membrane

II. Why do we stain specimens?

III. Why must the specimen you observe be very thin?

IV. Onion cells are plants. Therefore, why were there no chloroplasts in the onion cells you observed?

V. Remember to take a look at your key questions and complete them as well.