**Cell Observation Labs** Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Objective:

-At the completion of this lab students will be familiar with the differences between animal cells, and plant cells.

-Students will learn how to use a compound microscope on all 3 of the settings

-students will learn how to prepare a wet-mount slide

**Materials:**

Compound microscope

1 slide

2 coverslips

1 pick of onion skin cells

1 toothpick

1 drop of methyl blue or iodine

1 small beaker of water

1 dropper

**Procedure:**

**Section 1-Plant cells-The Onion Skin**

1. Peel the delicate transparent tissue from the inner surface of a pick of onion
2. Place a square piece of the tissue on the slide.
3. Place a drop of iodine on the onion skin.
4. Place a cover slip over the onion.
5. Take them back to your lab table.
6. Place your slide on your stage of the microscope.
7. Turn the objective lenses so that the low power objective lens is over the slide
8. Using the course adjustment move that lens down as far as it will go.
9. While looking in the microscope use the course adjustment to move the objective lens until the onion cells come into focus.
10. Once they come into focus use the fine adjustment to make them appear clearer.
11. Once you have observed the plant cells on low power turn the objective lens to the medium power, 10x.
12. Use the fine adjustment to bring the onion cell into focus.
13. Repeat the process with the 40x high power objective.

**Section 1 questions:**

1. Draw a picture of the onion skin cells at each of the different magnifications. **Label cell wall, cytoplasm & nucleus.**

Low Medium High

1. What is the shape of the cells?
2. Are all the cells similar in shape?
3. What color is the living cytoplasm?
4. What is the outer edge called?
5. What is the appearance of the nuclei?
6. Are the nuclei always in the same position in the cell?
7. What kind of cell is the onion cell?
8. Why do you think the onion cell does not have chloroplasts?

**Section 2: Cheek cells:**

1. From the front counter grab a toothpick, a slide, and a coverslip.
2. With the flat end of the toothpick, gently scrape the inside of your cheek.
3. Wipe that cheek swab on the slide in a drop of water. Make a circle about the size of a dime.
4. Place 1 drop of Methyl Blue or Iodine stain on the slide and cover with the cover slip.
5. Repeat the microscope observation procedure from the onion cell section, starting with the low power objective.

**Section 2 questions:**

1. Draw a picture of the cheek cells at each of the different magnifications. **Label cell membrane, cytoplasm and nucleus.**

Low Medium High

1. What organelles are visible in these cheek cells?
2. Methyl blue/Iodine stains DNA. Why do you suppose the nucleus is darker than the rest of the cell?
3. What kind of cell is the cheek cell?
4. What is the appearance of the nuclei?
5. What is the outer edge of the cell called?

General Questions:

1. Were these cells you observed prokaryotic or eukaryotic?
2. What are a couple of differences between the plant and animal cells?(Look at 8.2 Powerpoint)