

The Human Cheek Cell

Objective:

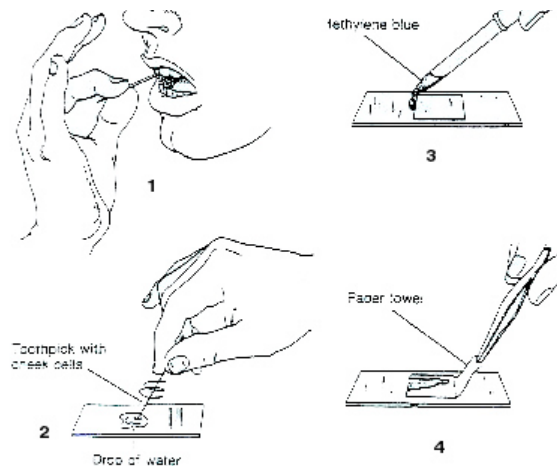
Practice microscope technique while observing cheek cells

Introduction:

Many things that are viewed using a microscope, particularly cells, can appear quite transparent under the microscope. The internal parts of the cells, the organelles, are so transparent that they are often difficult to see. Biologists have developed a number of stains that help them see the cells and their organelles by adding color to their transparent parts. While many biological stains are for advanced study only, there are some that are easy to obtain and use. Some readily available stains are: food coloring, iodine, malachite green, and bromothymol blue. Food coloring can be found at a grocery store, and iodine can be found at a pharmacy. You will be experimenting with the one of these stains listed above to see certain parts of your cheek cells.

Procedure:

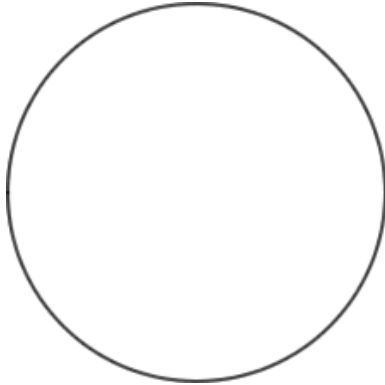
1. Cells from the inside lining of your cheek are good for learning how to stain. Gently scrape the inside of your mouth with the flat side of a toothpick. This scraping will collect some of your cheek cells. (Don't worry; these cells are constantly being shed from your mouth so they will not be missed!)
2. Transfer the cells onto a flat slide. Now Mrs. Reese will add stain to the slide. After the stain is added, place your cover slip onto the slide and position a piece of paper towel against one side of the cover slip. The paper towel will soak up the excess dye, drawing the stain under the cover slip around the cell. Drawing the stain under the cell is called "wicking."
4. Use the Low power/ 4x objective to focus, look at the stained slide under the microscope. **You probably will not see the cells at this power.** Sketch what you see on the back side and place the magnification next to the drawing.
5. Switch to medium power. **Cells should be visible, but they will be small and look like nearly clear blobs (stained cells will be easier to see). Solid dark objects are probably not cellular. Sketch what you see on the back side and place the magnification next to the drawing.**
6. Once you think you have located a cell, switch to a high power and refocus. (**DO NOT use the coarse adjustment knob at this point**). Sketch what you see on the back side and place the magnification next to the drawing.



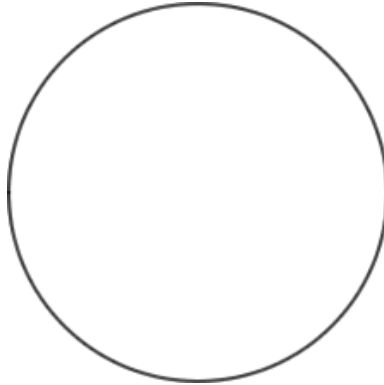
Sketch the stained cells at low, medium and high power. Label the nucleus, cytoplasm, and cell membrane. Draw your cells to scale and include the magnification.

Data:

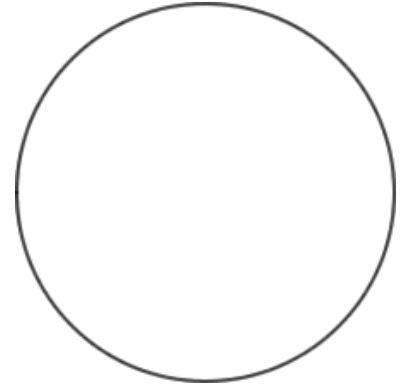
Low



Medium



High



Ocular lens (eyepiece) 10X

Objective lens _____X

Total magnification _____X

Ocular lens (eyepiece) 10X

Objective lens _____X

Total magnification _____X

Ocular lens (eyepiece) 10X

Objective lens _____X

Total magnification _____X

Conclusion Questions:

1. Why is the methylene blue stain used when observing cheek cells (how would they look without it?)
2. Why might a person have trouble viewing their cells with the microscope?
3. What does it mean to draw a cell "to scale?"