To Kiss or Not to Kiss

Name:_____
Date:_____
Period:_____

Introduction: Have you ever wondered what is in a person's mouth? In this lab you will view cheek cells and perhaps some bacteria. After completing this lab, you may ponder the thought "to kiss or not to kiss?????"

Key Question: How are the structures and functions of cells found in your mouth (animal cells) different from onion cells (plant cells)?

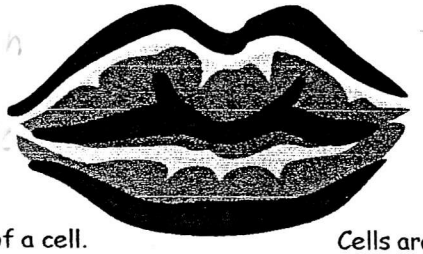
Objective: You will be able to prepare a wet mount slide of cheek cells and observe that animal cells are different from plant cells.

Important points:

- Microscopes make it possible to see that living things are made up of cells.
- All living things are composed of cells, from just one to many millions, whose details usually are visible only through a microscope.

Materials:

- Microscope
- Microscope slide
- Cover slip
- Eye dropper
- Iodine
- Tooth pick



Background Information:

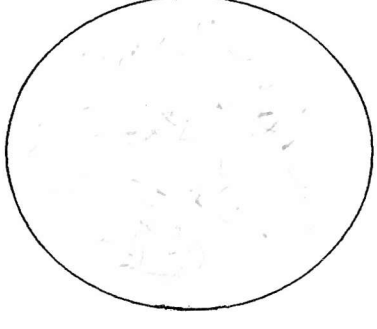
The biochemical activities of a cell are determined by the structural organization of a cell. Cells are categorized into two groups, generalized and specialized. Generalized cells are round or spherical in shape and perform these basic life functions: absorption, taking in food; digestion, breaking down food; synthesis, making new substances; respiration, releasing energy from food; excretion, getting rid of waste products; response, changing and adjusting to the environment; reproduction, dividing and reproducing. Cheek cells are generalized cells. They are flat, basically round, and protect the inside lining of the mouth. Specialized cells efficiently perform one function. This type of cell has a shape suited to its function. For example, cells that are thin and elongated are well suited for conducting material along them. Nerve cells, which are long and thin, provide maximum efficiency in transmitting messages or impulses from one nerve cell to another. The shape of a cell and its function are related. The more advanced an organism is, the higher the degree of cell specialization within that organism. A typical animal cell is different in organization from a typical plant cell. Animal cells have no cell wall, plant cells do. Animal cells do not produce their own food, plant cells do.

Procedure:

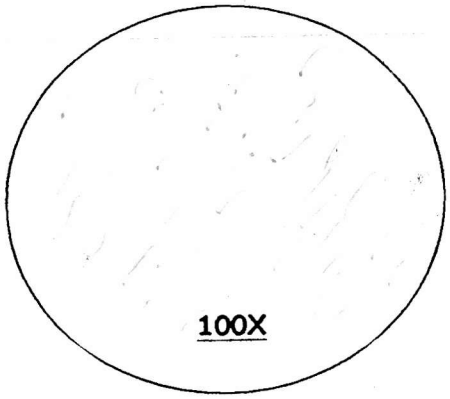
Preparing a wet mount slide of cheek cells

1. Clean a slide and cover slip.
2. Scrape the inside of your cheek with a toothpick. Smear the toothpick on the slide.
3. Place one drop of water on the smear in the center of the slide.
4. Add the cover slip and observe the slide under low power (Red=40X). The cells are small and may be hard to see. The cells may stay hooked together after their removal. Draw what you see.

40X

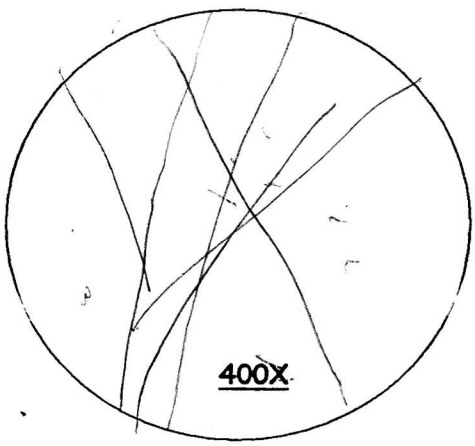


5. Change the microscope to medium power (Yellow=100X) and adjust the focus. Draw and identify the major structures. (Cell membrane, nucleus, and cytoplasm)

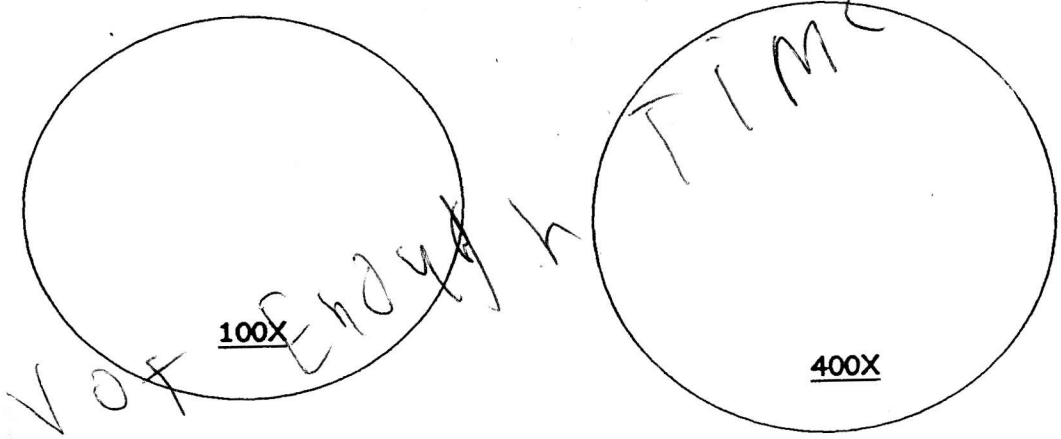


Staining the wet mount slide of cheek cells

6. Lift the cover slip and add a drop of stain (methylene blue) to the cells. Lower the cover slip carefully and observe under high power (Blue=400X). The stain will enable you to see some cell structures that were hard to see before.
7. Draw a few of the stained cells and label the structures that you can see.



8. Get the prepared animal cell slide from the teacher and draw it here.



Answer the following on a separate sheet of paper and staple. Use complete sentences.

Post Lab Questions:

1. What is the shape of the cheek cells?
2. Estimate how many cells are in the high power field of view.
3. Why was the stain added to the cheek cells?
4. Is there a dark round nucleus inside each cell? Do all the cells have a nucleus?
5. Is there cytoplasm in the cells? Describe it.
6. What cell parts did you observe in both the onion and cheek cells?
7. Did you notice a dark outline around the cells? How did this outer boundary compare with that of an onion cell (plant)?
8. What is the outer boundary around the cheek cell called?
9. What is the function of the cell membrane?