Observing Cells

Name_____

Date_____

Per_____ Page_____

Objective:_____

Research:

Organization in Living Things:

1. All living things are made up of tiny units called _____
2. There are many kinds of cells:
   Examples: a. _____ are long and thin
   b. _____ are square or rectangular
   c. _____ are like doughnuts
3. Cells differ in the jobs they do. The shape of the cell _____
   _____
4. CELLS → TISSUES → ORGANS → ORGAN SYSTEMS → ORGANISM
   a. cells:_____
   examples: blood cells, nerve cells
   b. tissues:_____
   examples: skin tissue, muscle tissue
   c. organs: _____
   examples: heart, lung
   d. organ systems:_____
   examples: circulatory system, respiratory system
   e. organism: _____
   examples: dog, amoeba

cell parts: _____

epithelial cell:_____

stain: _____

iodine is for onion, methylene blue is for cheek cell

animal cells:_____

plant cells:_____

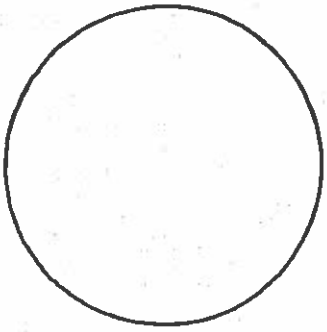
PROCEDURE:

PART A: ANACHARIS

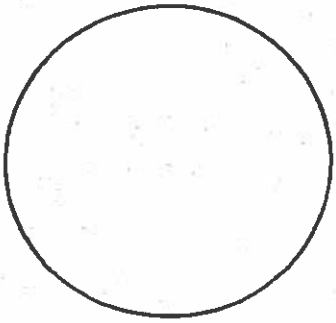
1. Carefully remove a single leaf from a sprig of Anacharis.
2. Place the leaf on a microscope slide, adding a drop of WATER to make a wet mount. Make sure you add a cover slip.
3. Observe the leaf under low power. Carefully focus until you can see the rectangular cells of the leaf. *Draw what you see* in the space provided.
4. Observe the cells on medium power and draw what you see.

5. Observe the cells under high power and examine the contents of a single cell. Draw a single cell and label the following parts:
   cell wall, cell membrane, cytoplasm, chloroplasts (you may try looking for vacuoles and a nucleus, but typically they are hard to see)

LABEL CELL PARTS!



low power
magnification:____



medium power
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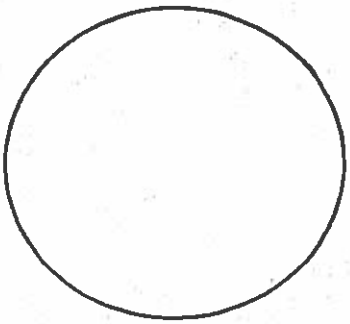
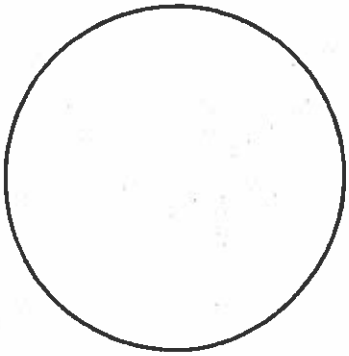


high power
magnification:_____

PART B: ONION SKIN CELLS

1. Remove the Anacharis from your slide and dry your slide.
2. Obtain a piece of onion skin tissue and place it on the microscope slide.
   (make sure your peel is flat and not folded on top of itself)
3. Make your wet mount with **one drop of Iodine.** Add a cover slip.
4. First focus on low power, but make drawing of your onion cell on medium or high power. Label the following cell parts: cell wall, nucleus, cell membrane, cytoplasm



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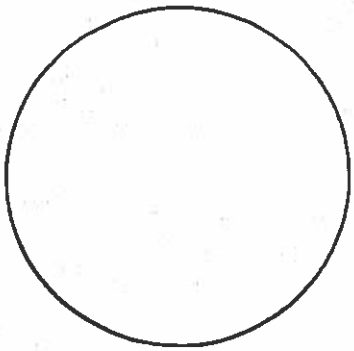
PART C: EPITHELIAL CELLS

1. CLEAN YOUR SLIDE. Using the flat end of a toothpick, GENTLY scrape the inside of your cheek to obtain some cells.
2. Deposit the material on the end of the toothpick onto your slide and smear it around in a circle.
3. Stain it with **one drop of methylene blue.** and **add a cover slip.**
4. Begin focusing on low, but try to get to high power with a cell or two in focus. Draw what you see and label the following cell parts on at least one cell:
   cell membrane nucleus cytoplasm



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FOLLOW-UP QUESTIONS:

1. List three organelles that are found in both plant and animal cells:
   _____
2. Name three cell parts you know about but could not find in any of the microscope slides:_____
3. Why do you think you could not find them?_____
4. What cell part gives Anacharis its shape?_____
5. How might a plant benefit from having many chloroplasts in its cell?_____
   _____
6. Both onion skin cells and Anacharis are plant cells. Why does one have chloroplasts but the other does not? Explain which one has chloroplasts and one doesn't and the reason:_____
   _____
   _____