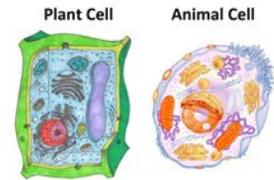


Unit #2: Viewing Plant and Animal Cells using Microscopes

Group Member Names: _____



Background: In the early 19th century, German biologists Schleiden & Schwann realized that **ALL** living things are made of cells. This understanding eventually established the cell theory. **The 3 basic components of the cell theory are:**

- 1) *all living things are made of cells*
- 2) *cells come from pre- existing cells*
- 3) *cells are the basic unit of organization for all living things.*

Lab Objective: Using compound light microscopes, students will view, identify, and **compare/contrast** the general structures of **plant** and **animal** cells.

Materials:

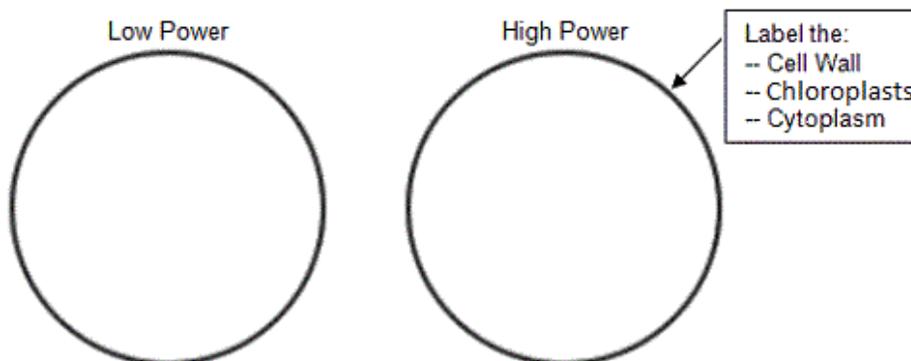
Compound light microscope
Aquatic Plant
Glass Slides (glass rectangle)

Prepared slide of human cheek cell
Coverslips (small squares)
Dropper bottle containing water

Plant Cells: Aquatic Plant

PROCEDURE:

1. Place 1 aquatic plant leaf on the glass slide (rectangle shaped) and add **2 drops of water over the leaf**. Make sure the leaf **DOES NOT** fold...it must remain flat! Cover leaf with a cover slip (small square)
2. Place the slide on microscope and focus the slide under **scanning power (4x red) FIRST**. Be sure to have the leaf in the center of your field of view and make sure it is focused, **BEFORE** turning the lens to the next magnification, **low power (10x yellow)**.
3. Once focused under low power (yellow 10x), observe and **DRAW the cells you see** under low (10 x) and *then* turn to **high power (40x- blue)**. Draw one cell under high power and label the structures you can see.



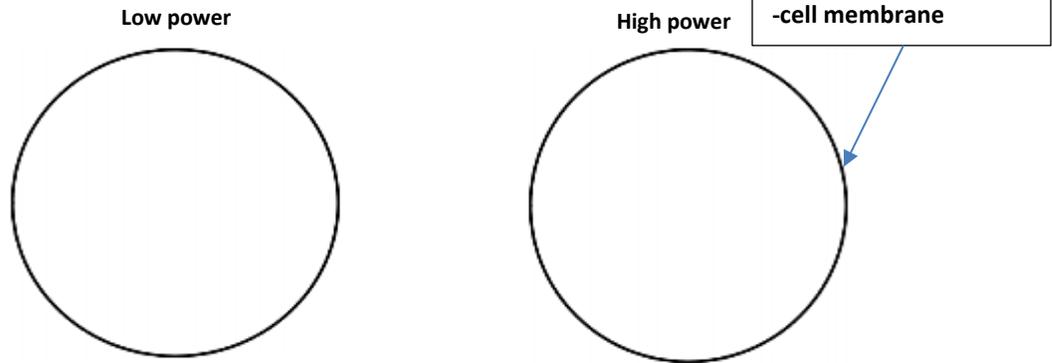
Plant QUESTIONS:

1. Describe the shape of the aquatic plant cell: _____
2. Is a cell wall present? _____
3. The nucleus lies in the jelly-like _____ of the cell.
4. What is the function of the cell's nucleus? _____
5. What other organelles could you easily view in the plant? _____
6. What is the function of the chloroplast? _____

Animal Cells: Human Cheek Cells

PROCEDURE:

1. Observe already prepared slides of human cheek cells.
2. REPEAT STEPS #2 & 3 from the plant cells, focusing the slide under the scanning lens (RED) first, before going to low power.
3. Sketch the cheek cell at low and high power-include magnification.
4. **Label the nucleus, cytoplasm, and cell membrane of a single cell.**



Questions:

7. Is a cheek cell a prokaryote or a eukaryote? Why? _____
8. How do the cheek cells differ from the plant cells? _____

9. Fill out the Venn Diagram below to show the differences and similarities between the plant cells and the animal cells.

PLANT CELL

ANIMAL CELL

