Name:_____ Period:_____

Plant Cell vs. Animal Cell Lab

Objective: observe cells under the microscope and determine the differences between plant and animal cells

Hypothesis #1: In a plant cell, I will be able to observe _____

Hypothesis #2: In an animal cell, I will be able to observe _____

Materials:

- Microscope
- 2 glass slides
- 2 coverslips
- Dropper
- Methylene blue stain
- Flat toothpick
- Elodea leaf
- Water

Cheek Cell Procedure:

1. Ask your teacher to put a drop of stain on a slide. Gently scrape the inside of your cheek with a toothpick.
   CAUTION: Do not scrape hard enough to injure your cheek.
2. Rub the toothpick in the stain and leave it there for 30 seconds.
3. Remove the tooth pick from the stain and coverslip.
4. Break the toothpick in half and discard it in the trash.
5. Cover the slide with a coverslip.
6. Use a microscope: Look at the cheek cells under low power, then under high power.
7. Locate the nucleus, cytoplasm, and cell membrane. Fill in the table by putting a check mark in the box if the cell part can be seen.
8. Draw and label the nucleus, cytoplasm, and cell membrane of a cheek cell.

Elodea Cell Procedure:

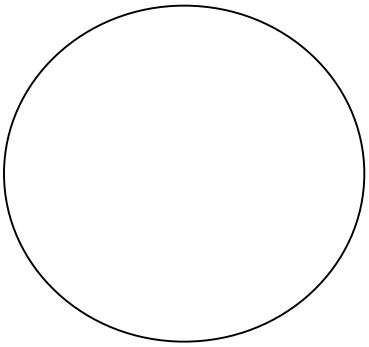
1. Ask your teacher for an Elodea leaf. Put a drop of water on your slide, then place the Elodea leaf onto the drop of water. Add a coverslip.
2. Look at the Elodea cells under low power, then under high power.
3. Locate the cell wall, chloroplasts, nucleus, and cytoplasm. Fill in the table below.
4. Draw and label the cell wall, chloroplasts, nucleus, and cytoplasm of an Elodea cell.

Observations:

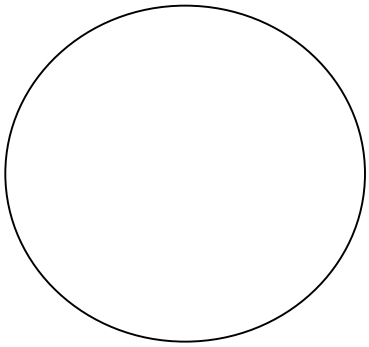
Fill in the table below based on the structures present in an animal versus plant cell:

Cellular Structures	Cheek Cell	Elodea Cell
Cytoplasm		
Nucleus		
Chloroplast		
Cell Wall		
Cell Membrane		

Cell Diagrams:
Be sure to label all visible organelles and color each accordingly.



Cheek Cell 400X



Elodea Cell 400X

Post Lab: Analysis Questions

1. Describe the shape of a cheek cell

2. Describe the shape of an Elodea cell.

3. Compare: What parts did you see in both cells?

4. What parts are found in plant cells that are absent in animal cells?

5. What are the functions of the cell parts found **only** in plant cells?

6. Which parts of a plant cell give shape to the cell?

7. Apply: Why don't animal cells have chloroplasts?

8. Are these cells prokaryotic or eukaryotic? What organelle makes this determination?

9. Most cells contain a nucleus; one exception is mature human red blood cells. How is the structure of the red blood cell an example of "structure fitting function"?