Name _____ Date _____ Period _____

The Cell Lab – Student Report Page

Pre-Lab Questions:

1. What is the function of the chloroplast?

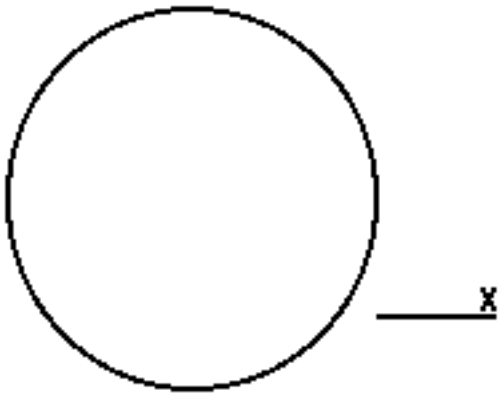
2. Name two organelles found in plant cells but not in animal cells.

3. What are three structures found in plant and animal cells?

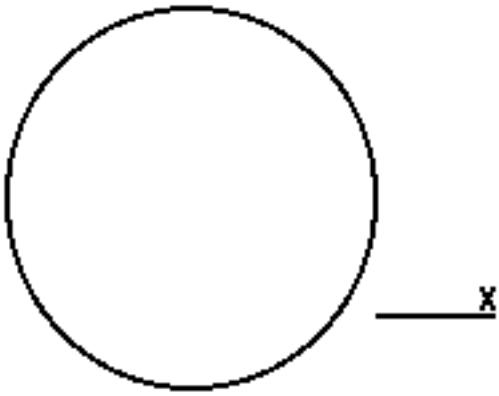
4. In prokaryotes, plants, and fungi, what structure surrounds the cell membrane and provides cell support?

Important Drawing Directions

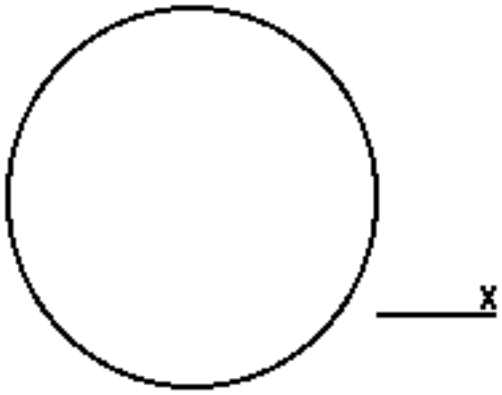
1. For each specimen that you draw do not fill in the entire circle with cells. Just draw 4 cells for each circle.
2. The **four cells** (per circle) must be clear drawings. Take your time and draw what you see.
Cartoons WILL NOT receive full credit.
3. All drawings must be the size that you see them in the Field of View. Do not draw them larger or smaller than they appear!
4. All drawings should include the following information:
   A. The magnification used while drawing the cell (e.g., 400X). **You will see more detail at higher power.**
   B. Label the appropriate cell structures.



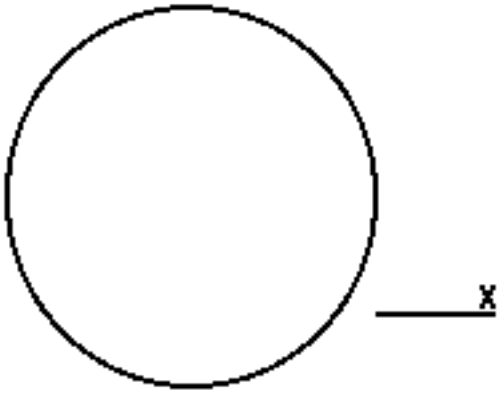
Cork Cells - unstained
Label – cell wall



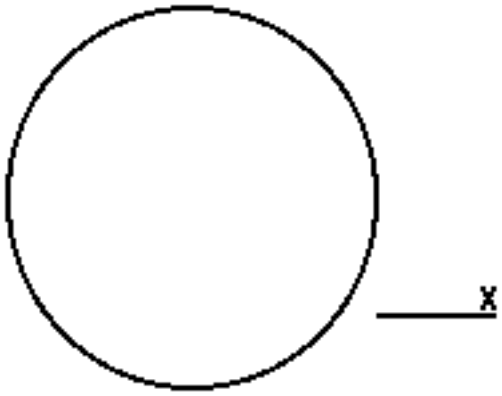
Onion Cells – unstained
Label – cell wall, cell membrane, cytoplasm, and nucleus



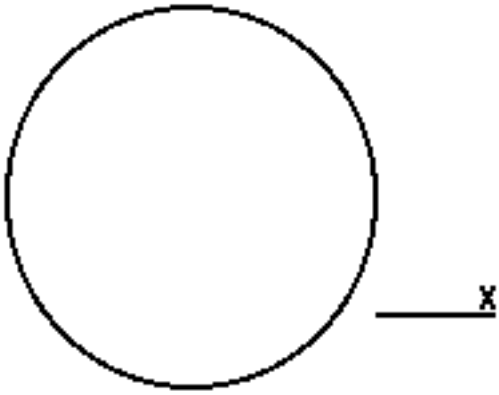
Onion Cells – stained
Label – cell wall, cell membrane, cytoplasm, and nucleus



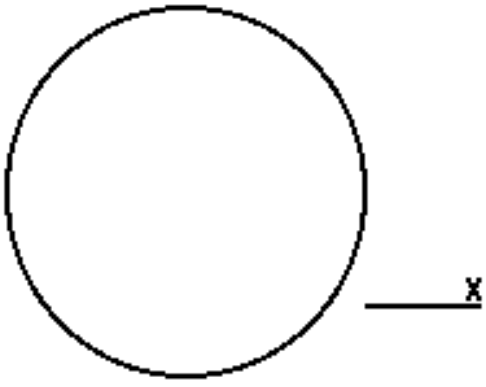
Elodea Cells - unstained
Label – cell wall, cell membrane, cytoplasm, nucleus (if seen), chloroplast, and vacuole (if seen)



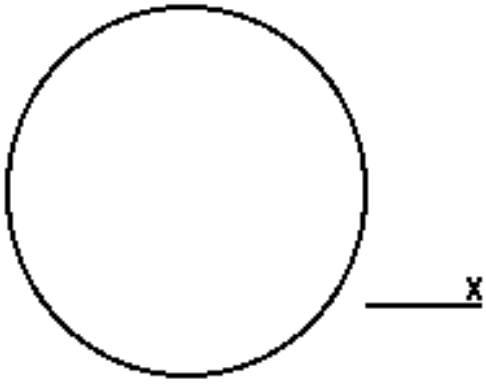
Cheek Cells - unstained
Label – cell membrane, cytoplasm, and nucleus



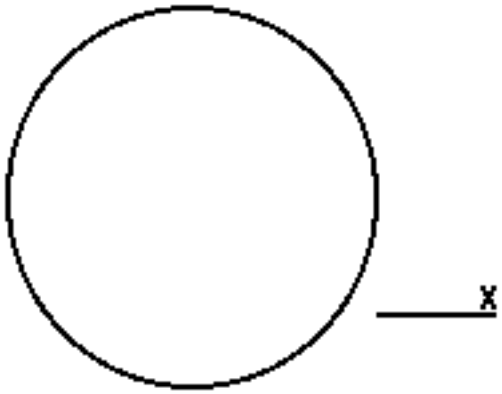
Cheek Cells - stained
Label – cell membrane, cytoplasm, and nucleus



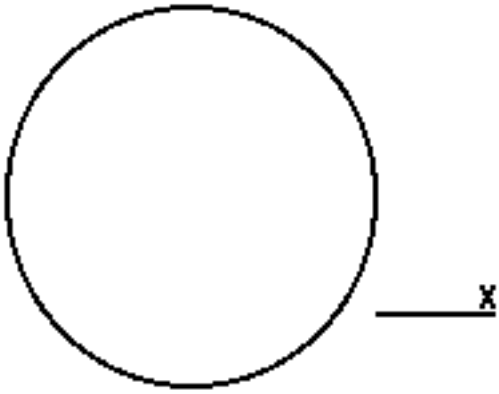
Potato Cells - stained
Label – cell wall, cell membrane, cytoplasm, and amyloplast



Bell Pepper Cells – unstained
Label – cell wall, cell membrane, cytoplasm, and chromoplast



Frog Blood Cells
(prepared slides)
Label – cell membrane, cytoplasm, and nucleus



Bacteria Cells
(prepared slides – label the type of bacteria)
Label – cell wall, cell membrane, and cytoplasm

Questions (respond in the space provided)

A. Cork cells:

1. What difference did you notice about the cells near the edge of your slice compared to the cells near the center of your slice? Explain!

2. What cell structures do you see when looking at cork cells?

3. Why do the cork cells appear to be empty?

B. Onion cells:

4. What microscopic evidence shows that the onion cell is a plant cell?

5. What structures can be seen in an unstained onion cell.

6. How do the stained onion cells appear differently than the unstained onion cells?

7. Do the onion cells have chloroplasts? Why or why not?

C. *Elodea* cells:

8. How are *Elodea* cells the same and/or different than the onion cells?

9. What are the functions of a cell wall?

10. With regard to cytoplasmic streaming, what might be the function of this phenomenon?

D. Cheek cells:
11. How are cheek cells different from the plant cells you have studied?

12. What is the purpose for staining cells?

E. Potato cells:
13. What structure can be seen with the aid of the iodine stain?

14. Why are potatoes a good source of carbohydrates?

F. Red Bell Pepper cells:
15. What structure is visible in the bell pepper cell and not in any other cell in this investigation?

16. What is a similarity in the functions of the chloroplast and chromoplast?

G. Frog Blood cells:
17. What structures were present in the frog blood cells that were present in your cheek cells?

H. Bacteria cells:
18. Were any internal cell structures present? Why or why not?

19. Compare the size and shape (appearance) of a bacterium cell to any one of the other cells observed.

20. Are bacteria single cell or multicellular organisms? What evidence did you observe to support your answer?
Hint: compare them to other organisms observed in this investigation!

* Complete the following chart below based on "what you know" using **"yes" or "no" and "E" or "P"**

	Cell wall	Cell membrane	Has Chloroplast, or Chromoplast, or Amyloplast (Please state which one if **yes**)	Nucleus	Eukaryotic or Prokaryotic
Onion					
Cheek					
Elodea					
Cork					
Frog blood					
Bell pepper					
Potato					
Bacteria					