

Full Name:

Grade/Homeroom:

Date:

Assignment: Cell Parts

LO: Describe the structure of eukaryotic cells.

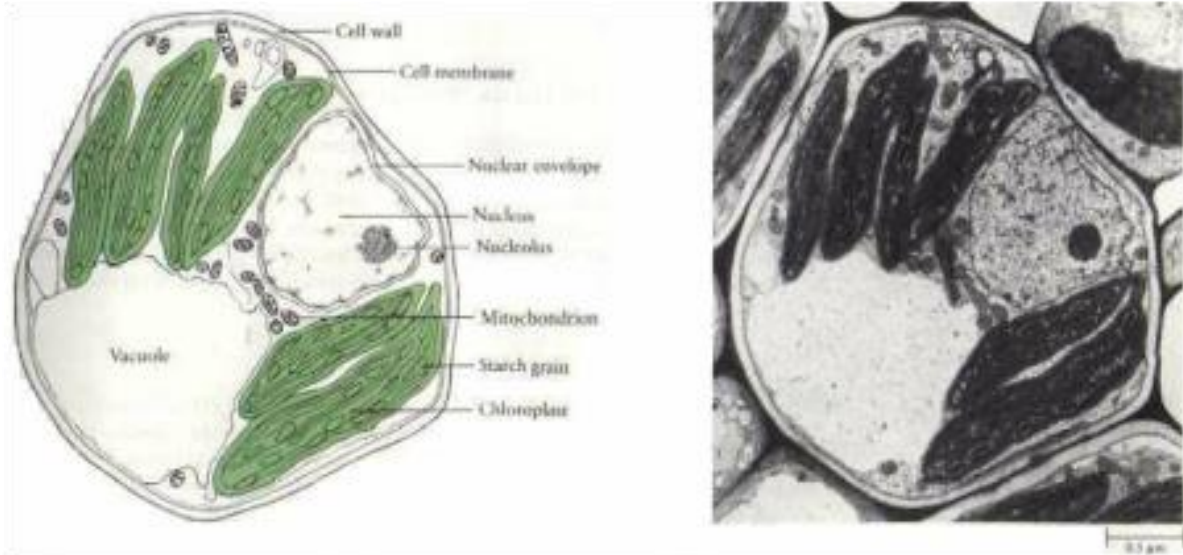
SLE: Work collaboratively.

1. Onion cells. Draw 2 or 3 cells below. If you can see the cell wall, cell membrane, and/or nucleus, include and label them.

Magnification: $\frac{\text{_____}}{\text{[eyepiece]}} \times \frac{\text{_____}}{\text{[objective lens]}} = \frac{\text{_____}}{\text{[total magnification]}}$

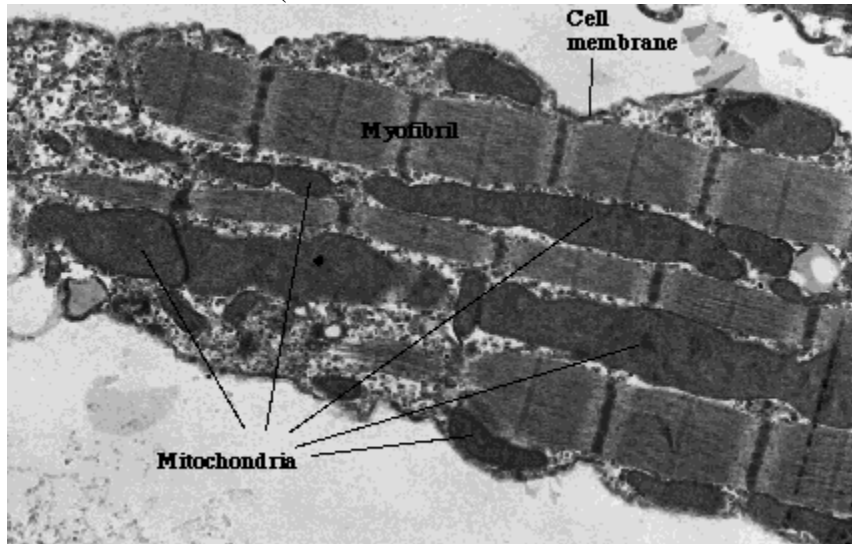
2. Electron micrographs. These are images obtained with **electron microscopes**, which provide greater detail than what you can get with light microscopes like the ones you are using. Note how different cells look when seen in microscope images of thin slices, as opposed to the cartoons in your textbook.

a. corn cell (from innolearn.weebly.com/bio-cell.html)



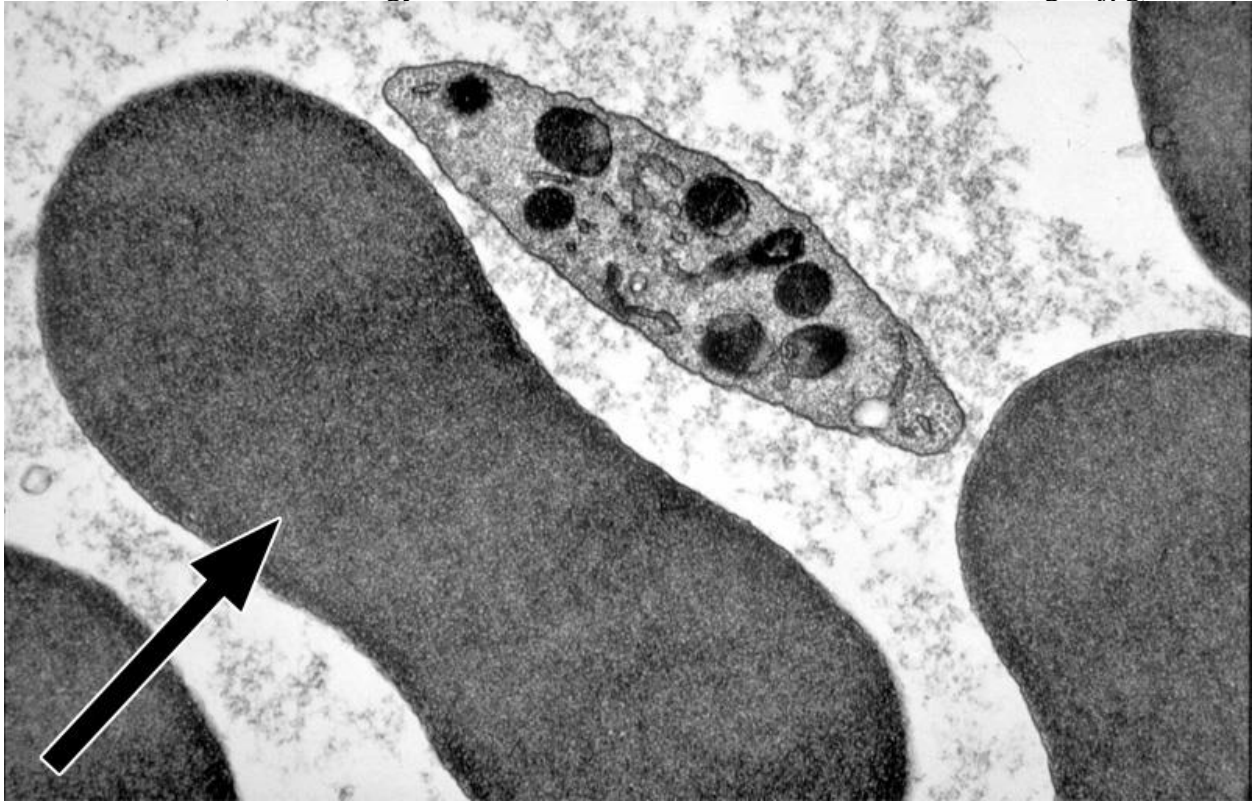
Do you think this cell is from the leaf of the corn plant, or from the root? Briefly explain your reasoning.

b. heart muscle cells (from ruf.rice.edu/~bioslabs/studies/mitochondria/mitotics/myocyte.gif)



For most muscle cells (like those in the muscles of your arms and legs), about 2% to 4% of the cellular space is taken up by mitochondria. Based on the picture above, estimate what this percentage is for muscle cells in the heart. Why might heart muscle cells have a different percentage than other muscle cells?

c. red blood cell (from histology.medicine.umich.edu/sites/default/files/blood_img_5.jpg)



Mature red blood cells are missing most of the usual organelles! Their main job is to carry oxygen, which they do using a protein found in their cytoplasm (hemoglobin). Since this is their main job, why might it be good for these cells to be lacking the usual organelles (which contain other proteins, not hemoglobin)?