

# Gen bio 1 'the cell' lab



**ASSIGN  
BUSTER**

Lab 4 – The Cell Answer Key Procedure 4. 3 Draw a picture of a single Elodea cell and label all visible structures. See the diagram in your lab manual.

Without staining, the only structures that should have been clearly visible should have been the cell walls and the green chloroplasts. Is this cell prokaryotic or eukaryotic? \_\_\_\_\_Eukaryotic\_\_\_\_\_ What evidence do you have to support this claim? The presence of organelles (chloroplasts) and its large size. Does this cell have a plasma membrane, a cell wall, or both? \_\_\_\_\_Both\_\_\_\_\_ How does this cell obtain the glucose it needs to make ATP? Photosynthesis What are the green organelles that are present in Elodea cells? \_\_\_\_Chloroplasts\_\_\_\_\_ Observe some of the cells for a minute or two and describe any motion that you observe within the cytoplasm. You should have been able to see cytoplasmic streaming (the movement of chloroplasts and other organelles within the cell. Procedure 4. 5 What cellular structure(s) are more visible after staining? The cell walls and the nucleus.

Onions are plants and yet onion bulb cells do not have chloroplasts. Why? The bulb of an onion (the part we eat) grows underground and thus, is not exposed to sunlight. Photosynthesis requires the presence of sunlight, so chloroplasts are useless. Procedure 4. 7 What is a plastid? Organelles where food is made and stored. Why are potato amyloplasts dark purple after staining with iodine? Amyloplasts are used to store starch and iodine turns purple when it binds to starch molecules. Why would a potato plant need to store away starch?

Like all living cells, potato tuber cells need to make ATP, a process that requires glucose. Since potato tuber cells are unable to make their own

glucose via photosynthesis, they can break down starch into glucose when needed. Procedure 4. 8 Draw a picture of a cheek cell in the space below. Label all visible structures. Nucleus Plasma membrane Procedure 4. 9 Draw a picture of an amoeba. See the photo in your lab manual. How does an amoeba acquire and digest its food? Phagocytosis followed by lysosomal digestion.

How does the amoeba appear to move from place to place? It carries out a process known as “ cell crawling”, forming cellular extensions known as pseudopodia. What cytoskeletal filaments are responsible for its movement? Actin microfilaments and the motor protein myosin. Procedure 4. 10 What cellular structures does a Paramecium use to move from place to place? Cilia What cytoskeletal filaments are required for its movement? Microtubules and the motor protein dynein. How does a Paramecium acquire and digest its food? Phagocytosis followed by lysosomal digestion.