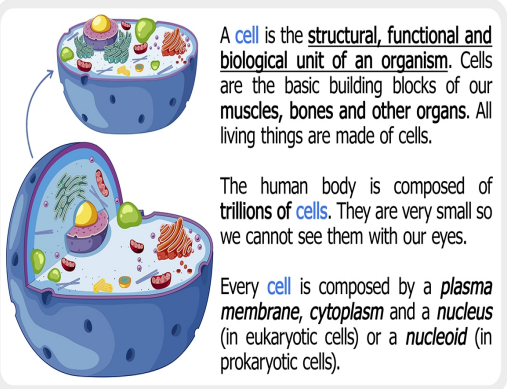
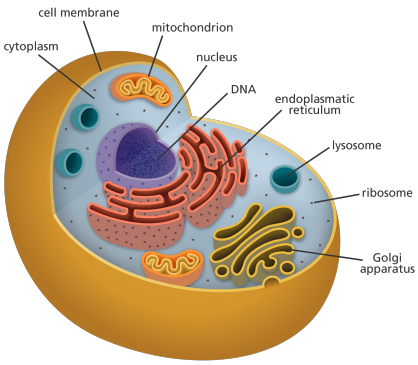
Day 13 – AP Biology - 9-12-24 to 9-13-24

CLASSWORK - Unit 2

NO CELL PHONES, EARBUDS, HEADPHONES

On Schoology - Submit immediately after completing.





1) VIDEO NOTES

1) Endoplasmic Reticulum – Khan Academy
   https://www.youtube.com/watch?v=jDadorSbhi4

2) Lysosomes & peroxisomes – Khan Academy
   https://www.youtube.com/watch?v=OZdmaf2R9ys

3) Protein synthesis – Organic Chemistry Tutor
   https://www.youtube.com/watch?v=8wAwLwJAGHs&t=4s

4) Mitochondria- Structure & Function – Khan Academy
   https://www.youtube.com/watch?v=i1dAnpSFbyI

2) EXPLAIN/DRAW: Fold paper into 4 boxes front & back:

p1 - FRONT

1) Explain the roles of the smooth and rough endoplasmic reticulum (ER) in the cell. https://www.britannica.com/science/endoplasmic-reticulum

2) How do lysosomes and peroxisomes contribute to cellular homeostasis? https://www.rarediseaseadvisor.com/insights/evolving-perspectives-lysosomes-cellular-homeostasis/

3) Describe the process of protein synthesis and transport through the endomembrane system. https://bio.libretexts.org/Bookshelves/Introductory_and_General_Biology/General_Biology_1e_(OpenStax)/2%3A_The_Cell/04%3A_Cell_Structure/4.4%3A_The_Endomembrane_System_and_Proteins

4) Explain how the structure of mitochondria supports their function in cellular respiration. https://www.khanacademy.org/science/ap-biology/cell-structure-and-function/cell-compartmentalization-and-its-origins/a/chloroplasts-and-mitochondria#:~:text=The%20multi%2Dcompartment%20structure%20of,maintained%20in%20different%20%22rooms.%22

p2 - BACK

5) Compare and contrast prokaryotic and eukaryotic cells in terms of their structure and organelles. https://www.osmosis.org/answers/eukaryotic-cell

6) How do chloroplasts contribute to the energy needs of a plant cell? https://www.nature.com/scitable/topicpage/photosynthetic-cells-14025371/

7) What is the role of the cytoskeleton in maintaining cell shape and facilitating cell movement? https://www.khanacademy.org/science/biology/structure-of-a-cell/tour-of-organelles/a/the-cytoskeleton

8) Describe the process of osmosis and how it affects cells in different types of solutions (hypertonic, hypotonic, isotonic).

https://www.khanacademy.org/science/ap-biology/cell-structure-and-function/mechanisms-of-transport-tonicity-and-osmoregulation/a/osmosis#:~:text=If%20a%20cell%20is%20placed%20in%20a%20hypertonic%20solution%2C%20water,and%20the%20cell%20will%20swell.

FREE RESPONSE QUESTIONS (FRQ's)

Fold sheet in half: Two answers front, two answers back. Just ask for another sheet.

p3-FRONT

9) Membrane Structure and Function

The structure of the cell membrane is essential for its function. Explain how the phospholipid bilayer and membrane proteins contribute to the overall function of the membrane. Additionally, describe two specific types of membrane transport and provide examples of substances that utilize each type.

10) Compartmentalization and Eukaryotic Cells

Describe how compartmentalization enhances the function of eukaryotic cells. Focus on the role of organelles such as the nucleus, endoplasmic reticulum, and mitochondria, and how their structure is related to their specific functions.

p4-BACK

11) Cell Communication and Signal Transduction Pathways

Explain the general process of a signal transduction pathway in a cell. Use the example of the insulin receptor to illustrate how cell signaling regulates glucose uptake. Include how receptor activation leads to cascade of events within the cell.

12) Prokaryotic vs. Eukaryotic Cells

Compare and contrast prokaryotic and eukaryotic cells in terms of their structure and function. Highlight the advantages of eukaryotic cellular complexity, and discuss how these differences influence types of organisms that can be supported by each cell type.

Submit the first draft before you leave the classroom.

3) HOMEWORK

1) Complete the **Video Notes**.

2) Complete the **Explain/Draw** assignment.

Submit assignments on Schoology as soon as completed.