

Learning Objective – Describe the membrane-bound structures of the eukaryotic cell.

Learning Objective – I can explain how internal membrane and membrane-bound organelles contribute to compartmentalization of eukaryotic cell functions.

### **AP Biology Topic 2.10 – Cell Compartmentalization**

1. Cells have a \_\_\_\_\_ that allow them to establish and \_\_\_\_\_ environments that are different from their \_\_\_\_\_.
2. \_\_\_\_\_ have additional internal membranes and \_\_\_\_\_ that compartmentalize the cell.
3. What do cellular compartments allow to happen?

#### **Cellular Components: Lysosomes**

4. What do membranes do to competing interactions?
5. The hydrolytic enzymes of the lysosome function at an \_\_\_\_\_.
6. How does having compartmentalization help the lysosome?
7. What would happen if the membranes of the lysosome were damaged?

#### **Cellular Components: Mitochondria**

8. How does membrane folding help the mitochondria?
9. \_\_\_\_\_ occur in the inner mitochondrial membrane.
10. What does folding of the inner membrane do for the mitochondria?

#### **Cellular Components: Chloroplasts**

11. Membrane folding
12. What does membrane folding do for the thylakoid compartments?

#### **AP Practice Question**

Some viral infections can lead to the rupture of the lysosome membrane. Which prediction of the effect of this disruption of cellular compartmentalization is most likely correct

- A. Enzymes will be released that will specifically target the virus.
- B. Cellular osmotic concentrations will change, preventing viral entry into the cell.
- C. Hydrolytic enzymes will be released, which will cause cell death.
- D. Intracellular digestion of organic materials will increase, which will increase the energy available to the cell for fighting the virus.

#### **Explain your answer choice:**