

Biology-Unit 3a Study Guide

Bio1u3asg: Cell Structure

Study Objectives

1. Describe the key events that lead to the discovery of cells. (page 69-71)
 - a) Who was **Hooke** and what role did he play?
 - b) Who was **Leeuwenhoek** and what role did he play in the discovery?
 - c) What are the three essential parts of the "**cell theory**"
 - d) Since those early beginnings, what amazing things have we been able to do with cells?
2. Advocate for the small size of cells. (page 72-73)
 - a) Why is it important for cells to be small?
 - b) How does cell shape relate to cell function?
3. Relate cellular structures to their functions. (page 74-85)
 - a) List and describe the three basic parts of a cell.
 - b) What are the two basic types of cells and how does one tell them apart?
 - c) Create a table of cell structures with column headings of "**name of structure**", "**physical characteristics of structure**", and "**biological role of structure**".
4. Compare and contrast the structures found in typical plant, animal and bacterial cells. (page 87-90)
 - a) Create a Venn diagram depicting the similarities and differences of a plant, animal, and bacterial cell.
 - b) What organelles have their own DNA? What organisms do these organelles resemble?
5. Explain the role of the cell membrane as a highly selective barrier in diffusion, osmosis and active transport. (page 97-106)
 - a) Describe **Passive Transport** and the four ways molecules can move across a membrane when no energy is required.
 - b) Describe **Active Transport** and the three types our cells use.
 - c) What prevents some molecules from crossing the cell membrane?

Vocabulary:

chromosome cytosol prokaryote eukaryote centrioles chloroplast cytoskeleton
cytoplasm bilayer microtubules microfilaments vacuoles lysosomes golgi apparatus
mitochondria peroxisomes ribosomes endoplasmic reticulum homeostasis
active transport passive transport

Assignments:

- Reading from Chapter 4 (pages 69-90); Chapter 5 (pages 97-106)
- Notebook: **10pts**
 - Reading Notes
 - SR's 1-9 (pg71), SR's 1-8 (pg76), SR's 1-8 (pg85), SR's 1-8 (pg90)
 - SR's 1-8 (pg102), SR's 1-9 (pg106)
 - Concept Maps (one CMap for each study objective using appropriate terms from readings and/or vocabulary list)
- Lab: Diffusion in Agar Cells **10pts**
- Lab: Osmosis and Diffusion Investigation **10pts**
- Vocabulary Quiz (3a) **15pts**
- 3a Unit Test **20pts**

Web Resource:

www.cellsalive.com