**Unit 3: Cells**  Chapter 3: Cellular Structure and Function

Study Guide Chapter 4: Cells and Energy

What Do I Need To Know?

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| **SB1. Obtain, evaluate, and communicate information to analyze the nature of the relationships between structures and functions in living cells**  *a. Construct an explanation of how cell structures and organelles (including nucleus, cytoplasm, cell membrane, cell wall, chloroplasts, lysosomes, Golgi, endoplasmic reticulum, vacuoles, ribosomes, and mitochondria) interact as a system to maintain homeostasis.*  *d. Plan and carry out investigations to determine the role of cell transport (e.g., active, passive, and osmosis) in maintaining homeostasis.*  *e. Ask questions to investigate and provide explanations about the roles of photosynthesis and respiration in the cycling of matter and flow of energy (e.g., single-celled alga)* |
| 1. Name the 3 parts of the cell theory? 2. What two organelles are found in animal cells and not plant cells? 3. What two organelles are found in plant cells and not in animal cells? 4. KNOW all the organelles and the function of each. (See Cell Organelles Structures and Functions Chart) 5. What is the difference between cilia and flagella? How are they the same? 6. Draw a Venn diagram on the differences and similarities between a plant and animal cell. 7. What are the parts of the cell/plasma membrane and the function of each? 8. Why is the plasma (cell) membrane called a phospholipid bilayer? 9. Why is the plasma (cell) membrane known as selectively permeable? 10. What is the function of the proteins in the cell/plasma membrane? 11. Why is the cell/plasma membrane known as the fluid-mosaic model? 12. Polar head that loves water is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_? 13. Non- Polar tail that hates water is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_? 14. Draw a picture of the cell membrane and label them hydrophobic and hydrophilic. 15. Draw a Venn diagram on the differences and similarities between prokaryotic & eukaryotic cells. 16. What is another name for a prokaryotic cell? 17. What is the difference between passive & active transport? 18. What is active transport? 19. List the 3 types of active transport and give a description of each. 20. Does active transport go with or against the concentration gradient? Explain. 21. What is passive transport? 22. List the 3 types of passive transport and give a description of each. 23. Does passive transport go with or against the concentration gradient? Explain. 24. What is facilitated diffusion and what part of the cell/plasma membrane assists with this process? 25. What are the 3 types of osmosis? Draw a picture representing each type. 26. How does ATP provide energy? Draw a picture. 27. Why are chloroplasts mainly in the leaves of plants? 28. Why do leaves change colors in the Fall/Autumn? 29. Write the equation for photosynthesis.     1. Underline the reactants and put a box around the products.     2. Where in the cell does this occur?     3. Write what each part means. 30. Write the equation for cellular respiration.     1. Underline the reactants and put a box around the products.     2. Where in the cell does this occur?     3. Write what each part means.     4. How many ATP are produced from cellular respiration? 31. What are the 2 types of fermentation? 32. What organisms undergo alcohol fermentation? 33. If no oxygen is present in cellular respiration, this is called\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ respiration? |

My cell quiz is on \_\_\_\_\_\_Thursday, February 6th

My transport quiz is on \_\_Monday, February 10th

My Unit 3 Cells test is on \_\_\_\_\_\_\_Friday, February 14th

**What should I use to study for my test?**

* *Powerpoint notes*
* *This study guide*
* *Handouts given in class*
* *My quiz*

*Be sure to review the following items:***Macromolecules (in food), Greenhouse Effect/Global Warming, Dehydration Synthesis/Hydrolysis, Polarity, Independent and Dependent Variables**