

Unit 4 Guide for Students-Part 1 Cell Transport/Cell Energetics

Key Content Vocabulary	Key Understandings & Guiding Questions	Higher Level Thinking Application	Textbook Correlation
<ul style="list-style-type: none"> • cellular respiration • homeostasis • photosynthesis • diffusion • osmosis • semi-permeable membrane • concentration gradient • porous membrane • glycolysis • fermentation • cellular respiration • ATP • metabolic pathways • aerobic respiration 	<p><i>Different substances move across the membrane by diffusion, osmosis, or active transport to maintain homeostasis for the organism.</i></p> <p>— How do active and passive transport differ? — How does the plasma membrane assist cells in maintaining homeostasis?</p> <p><i>Some organisms are capable of converting light energy into chemical energy (glucose) through photosynthesis.</i></p> <p>— What is the process of photosynthesis? — What organisms carry out photosynthesis?</p> <p><i>All organisms extract energy from glucose to produce ATP.</i></p> <p>— What is the process of cellular respiration? — What organisms carry out cellular respiration?</p>	<p><u>Osmosis/Diffusion</u> Page 198, # 26, 34, 35</p> <p><u>Active Transport</u> *What is the main way that active transport differs from diffusion? *What mechanism is used to move small molecules into the cell against a concentration gradient? Draw an illustration to describe this process?</p> <p><u>Photosynthesis</u> *Why are light dependent reactions important to the Calvin cycle? *The Calvin cycle is sometimes described as the light independent reactions. Give evidence to support the idea that the Calvin cycle does not depend on light.</p> <p><u>Cellular Respiration</u> *In certain cases, regular exercise causes an increase in the number of mitochondria in muscle cells. How might that situation improve an individual's ability to perform energy-requiring activities? *You previously learned that certain substances are involved in chemical cycles. Draw a sketch that illustrates how cellular respiration fits into one of those cycles.</p>	<p>Chapter 7/3-cell boundaries</p> <p>Chapter 1 pg. 19 –homeostasis</p> <p>Chapter 8- photosynthesis</p> <p>Chapter 9- cellular respiration</p>

This document is an educational guide and is meant to be supplemental to materials provided in class.

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Key Process Vocabulary	Activity/ Notes/ Lab Correlation	TEKS Correlation	Online Supplemental
<p>Compare Explain Recognize Describe</p>	<p><u>Osmosis/Diffusion</u> Guided Reading pg. 244-246 Vocabulary Egg Labs</p> <p><u>Active Transport</u> Guided Reading pg. 244-246 Vocabulary Performance Indicator Egg Lab</p> <p><u>Photosynthesis</u> Guided Reading pg. 249-255 Poem Illustration Draw Chloroplast</p> <p><u>Cell Respiration</u> Chapter 9 Vocabulary Review 109-11</p> <p>Performance Indicator: CSCOPE 2010-Photosynthesis & Cellular Respiration Construction Activity</p>	<p>B.9B Compare the reactants and products of photosynthesis and cellular respiration in terms of energy and matter</p> <p>B.4A Investigate and explain cellular processes, including homeostasis, energy conversions, transport of molecules, and synthesis of new molecules</p>	