Unit 5: Photosynthesis & Cellular Respiration

Fundamental life processes depend on the physical structure and the chemical activities of the cell.

- The cellular processes of photosynthesis and respiration involve transformation of matter and energy.
- Describe significant similarities and differences in the basic structure of plant and animal cells.
- Usable energy is captured from sunlight by chloroplasts and is stored through the synthesis of sugar from carbon dioxide.
- The role of the mitochondria is to make stored chemical---bond energy available to cells by completing the breakdown of glucose to carbon dioxide.

Key Vocabulary	Assignments	Due Date
Acetyl CoA ADP Aerobic Cellular Respiration ATP Calvin cycle Carbon dioxide Chlorophyll Electron Transport Fermentation Glucose Glycolysis Hydrogen Krebs Cycle Light reactions Mitochondria NAD+ NADH NADP+ NADPH Oxygen Photosynthesis Photosystem I, II Pigments Yeast	**#1 - Read section 15.5 (pages 422 to 423)** a. What does the author mean by "Cellular respiration in humans is generally aerobic"? b. What are the three stages of Cellular Respiration? C. What is occurring during each of those three stages. **#2 - Read pages 15.10 (pages 427 to 428)** a. How is oxygen involved in cellular respiration? **#3 - Read pages 19.3 (page 544)** a. What are the three major events of Photosynthesis? b. How are the light reactions different from the Calvin Cycle?	

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Photosynthesis		**Cellular Respiration**	
Photosynthesis is the process by which autotrophic organisms use light energy to make sugar and oxygen gas from carbon dioxide and water	**Autotrophs**	**Heterotrophs**	Cellular respiration is a series of reactions that break down organic molecules into carbon dioxide, water and ATP (energy).
Chlorophyll	**Chloroplast**	**Mitochondria**	**Energy**
			Energy is the ability to do work
Light Reactions		**Glycolysis**	
Dark Reactions - The Calvin Cycle		**Krebs Cycle**	
ATP	**NADPH**	**Electron Transport System**	
Light	**Why do plants look green?**	**Anaerobic Respiration**	
		Anaerobic respiration works in the absence of oxygen	Fermentation