**Focus Topics for Unit 3: Energy of Life**

1) ATP as an energy carrier-structure and energy storage

-Be able to describe the structure of ATP. Draw it out. Know how and where ATP stores energy. How ADP turns into ATP again. Know the cycle

2) Cellular Respiration Equation: Be able to write out the equation of Cellular Respiration and know where is reactant or product is being used/produced.

3) Glycolysis- Be able to describe what is used and produced. Know how much ATP is used/produced, how NAD+ is made into NADH. Describe the difference between DHAP and and G3P. What is produced at the end of glycolysis. Where does it occur? Is it anaerobic or aerobic?

4) Fermentation- Be able to describe the two types of fermentation. What is the goal of Fermentation? Where does it occur? In what conditions does it occur?

5) Krebs cycle- Be able to describe the breakdown of pyruvate into acetyl-coA. What is used/produced/released. What happens to acetyl coA when it enters the krebs cycle. What is used/produced. How many of each is made/used. Focus on the number of ATP/NADH/FADH2. You do not need to know the names of individual enzymes or reaction products. Exceptions are ATP/NADH/FADH2. Know where CO2 is released.

6) ETC and ATP production-Be able to describe the structure of the ETC. Know where it is located and how it uses water. Know what brings protons and electrons to the chain and where the power comes from to pump protons. Know the final products of the ETC.

ATP

7) Accounting for Cellular Respiration- Know how many ATP are produced in each step of cellular respiration including glycolysis, link reaction, Krebs, and the ETC.

8) Photosynthesis Equation- Know the reactants and products of the photosynthesis equation. Know what locations each is associated with.

9) Photosystems II and PS1- Know the events which occur in photosystem II and photosystem I. know what is used and produced in each system. Know how electrons are sourced, used, and recycled.

10) Stages of Calvin Cycle- Know the 3 stages of the Calvin Cycle. Know what is used and produced at each stage. Know the purpose of each stage.

11) Pigments of Photosynthesis-Know which pigments are used at each part of the PSII and PSI. Know how light is absorbed by these pigments, what wavelengths do they absorb and reflect.