Photosynthesis Bio in Focus pg. 155

1. As a review, define the terms *autotroph* and *heterotroph*. Keep in mind that plants have mitochondria and chloroplasts and do both cellular respiration and photosynthesis!
2. Use the diagram 8.5 to label and identify the two broad stages of photosynthesis. (Draw on Back)
3. What is carbon fixation?
4. What is a photon?
5. Why are leaves green?
6. What happens to chlorophyll when it is hit by light? How does this relate to potential energy?
7. Photosynthesis is not a single process, but two processes, each with multiple steps.
   1. Explain what occurs in the light reactions stage of photosynthesis. Be sure to use NADP+ and photophosphorylation in your discussion.
   2. Explain the Calvin cycle, utilizing the term carbon fixation in your discussion.
8. Some of the types of energy in the electromagnetic spectrum will be familiar, such as X-rays, microwaves, and radio waves. The most important part of the spectrum in photosynthesis is visible light. What are the colors of the *visible spectrum*?
9. Notice the colors and corresponding wavelengths and then explain the relationship between wavelength and energy.
10. Read Figure 8.9 carefully; then explain the correlation between an *absorption spectra* and an *action spectrum.*