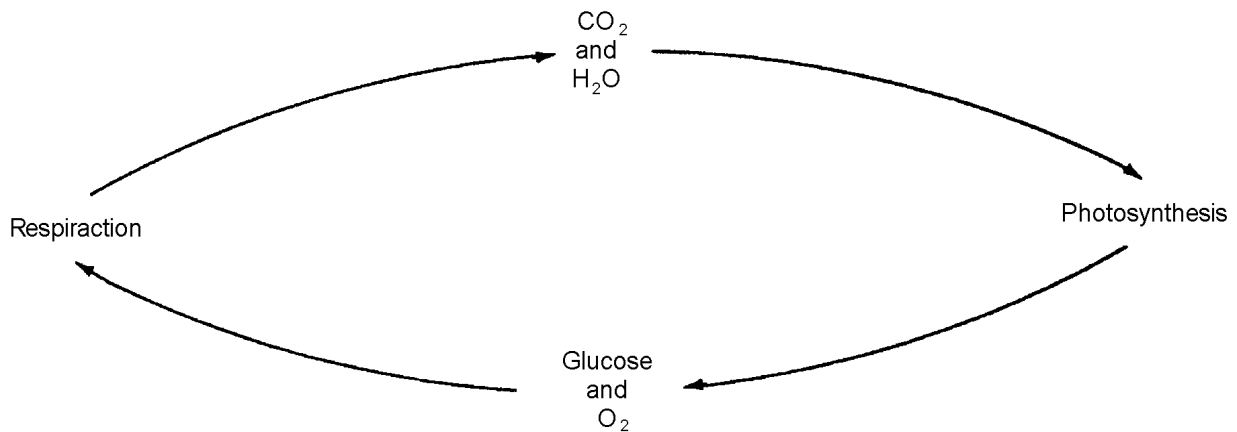


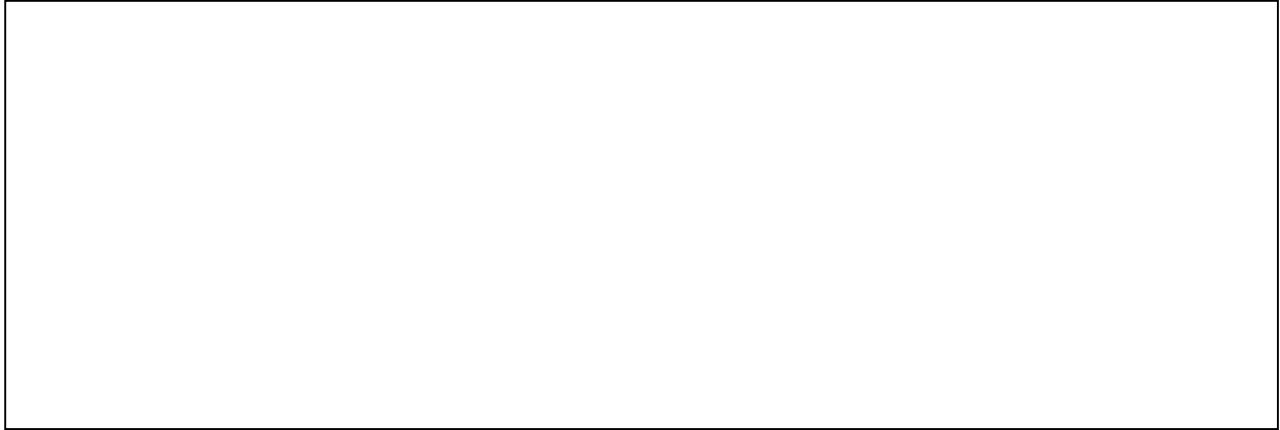
During photosynthesis, green plants use carbon dioxide and water to produce food in the form of glucose. During respiration, the glucose is broken down to be used as energy by both animals and plants. As the glucose is broken down during respiration, carbon dioxide and water are formed. During photosynthesis, autotrophs form glucose and release oxygen as a waste product. Carbon dioxide, oxygen, and water form a continuous cycle during these two processes.

**Figure 1**

Study the diagram of the carbon cycle that is shown in Figure 1. Then answer the questions, based on the diagram and your knowledge of photosynthesis and respiration.

1. The concentration of CO<sub>2</sub> in the atmosphere remains at a stable 0.03 percent. Which two processes keep this concentration stable?
2. Plants depend upon the activities of animals for a continuing supply of which substance?
3. Which process removes CO<sub>2</sub> from the atmosphere?
4. Which process adds CO<sub>2</sub> to the atmosphere?
5. Into which organic compound does photosynthesis convert CO<sub>2</sub>?
6. After plants are eaten by animals, what process changes the glucose back to CO<sub>2</sub>?

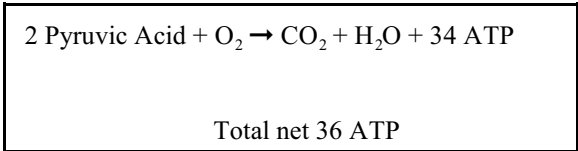
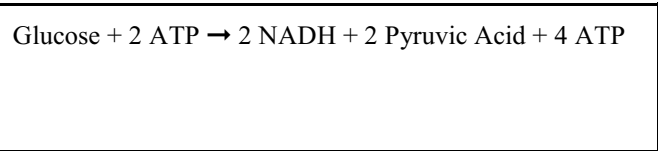
7. Respiration and photosynthesis play a role in the O<sub>2</sub> cycle. In the box below, make a diagram that shows how photosynthesis and respiration take part in the O<sub>2</sub> cycle.



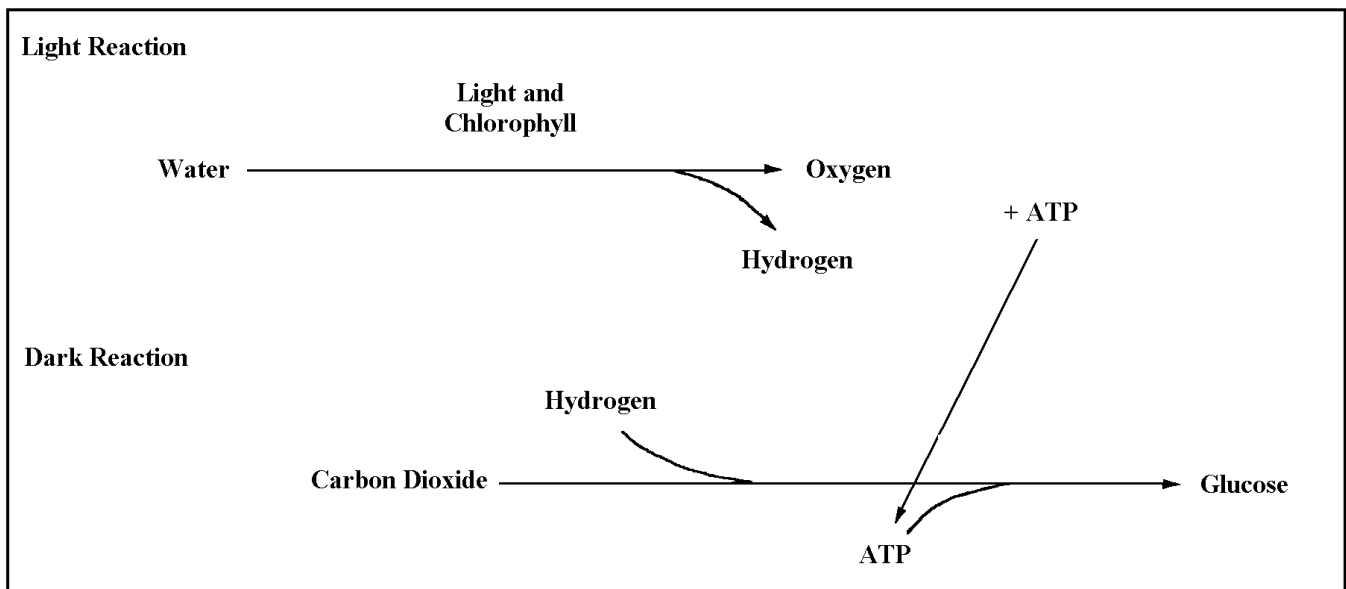
Use the following boxes to summarize the relationship between the anaerobic and the aerobic phases of respiration. **Circle** the raw materials and put a **line** under the products.

8. Anaerobic phase (in cytoplasm)  
I. Glycolysis

9. Aerobic phase (in mitochondria)  
II. Krebs Cycle  
III. Chemiosmosis / ETC



10. Summarize the light and the dark reactions of photosynthesis. **Circle** the raw materials and put a **line** under the products.



11. Write the *balanced* chemical equation for the process called **cellular respiration**.