tosynthesis

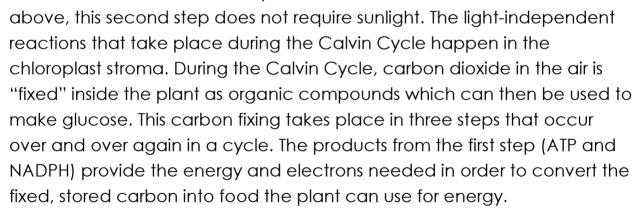
## **Light Reactions | Dark Reactions**

Plants use the energy from sunlight to convert carbon dioxide and water into food. This process is called photosynthesis. Photosynthesis has two main parts. One part requires light, and the other one doesn't. The second part of photosynthesis doesn't require dark, it's just that it happens independently of how much light is available to the plant at the time. Both parts of photosynthesis occur in the chloroplast.

In the first step, sunlight is captured by the chloroplasts when molecules of chlorophyll absorb energy (in the form of sunlight). Water molecules are split into hydrogen and oxygen, and the oxygen is released back out into the atmosphere. The energy is stored in molecules called Adenosine Triphosphate (ATP), which are created in the plant cell. A second product from this first stage, NADPH, helps fuel the

reactions that take place in the second stage of photosynthesis.

The second step in photosynthesis was discovered by a scientist named Melvin Calvin. For this reason, it is referred to as the Calvin Cycle. As mentioned



The process of photosynthesis uses a lot of energy and materials, comparatively, for the net results it achieves. Although viewed as a chemical equation is seems terribly inefficient (it has only .6% efficiency), it is the only known way for an organism to use CO<sub>2</sub> to make sugars.