Facts about Photosynthesis

Photosynthesis is the single most important chemical process on earth. It is the process by which plants use solar energy to manufacture food. The term means "putting together with light," and the process of photosynthesis uses solar energy to form simple sugars from water and carbon dioxide gas. Later these sugars are converted into starch, protein, or fat; and we eat them as fruits and vegetables. Thus photosynthesis changes light energy into food (chemical) energy.

Photosynthesis sustains green plants and as a result all other living things as well. Both directly and indirectly green plants generate most of the world's chemical energy. Wood and fossil fuels — coal, oil and natural gas formed from plants and animals that lived millions of years ago — provide much of our electricity and heat. Green plants are the source of gasoline that we use to power buses and cars. Fresh fruits, vegetables and grain, as well as meat from animals that eat plants, give us the energy to work and play and think.

All of this energy originally came from the sun, and it is available to us only as a result of photosynthesis. People have dreamed of duplicating this process, and biochemists are still trying to unravel its complexities. They know that it involves a sequence of chemical changes that takes place in a millionth of a second. They also know that most chlorophyll molecules and certain plant pigments act as antennas which receive and absorb solar energy, then transmit it to a pair of very special chlorophyll molecules that convert it to chemical energy. When the chemical dynamics of this process are finally understood, people will be closer to the extraordinary goal of converting sunlight directly to chemical energy. Until that goal is achieved, **we remain totally dependent on green plants for life**.