

Science

Name _____ Date _____

Photosynthesis

Photosynthesis is one of the first things that happens in the complex food-chain of which humans are members. Without photosynthesis, there wouldn't be any plants. Without plants, we wouldn't be able to survive.

Photosynthesis means "putting together with light". It is the process by which a plant takes water from the soil, and a gas from the air called carbon dioxide, and combines them, using the energy from sunlight. Photosynthesis takes place in the chloroplasts inside the cell. The chloroplasts contain a pigment called chlorophyll, which gives plants their green color. Water enters the plants through the roots. Chlorophyll interacts with sunlight to split the water into its basic parts (hydrogen and oxygen). Carbon dioxide enters through small holes in the leaves called *stomata*.

The product that water and carbon dioxide form is called glucose. Some glucose is used immediately by the plant for energy, some glucose is transformed and is used for growth, and some glucose is stored as starch. Starch is stored in the stems, roots, seeds, and fruits of the plant. When we eat these parts of the plant, we gain access to the stored energy.

As photosynthesis occurs, oxygen is produced. Oxygen escapes through the *stomata* into the air. Oxygen is necessary for all life on Earth. Living animals inhale oxygen and exhale carbon dioxide as they breathe. Plants take in carbon dioxide and give off oxygen during photosynthesis. The larger the plant, the more oxygen it is able to produce. Rain forests have been called "the lungs of the Earth" because of the large amount of oxygen they produce through photosynthesis.