

Photosynthesis is the process used by plants to convert light energy into chemical energy. This process takes place in the chloroplasts of plant cells, where chlorophyll absorbs sunlight and uses it to convert carbon dioxide and water into glucose and oxygen.

There are two main stages of photosynthesis: the light-dependent reactions and the light-independent reactions. The light-dependent reactions occur in the thylakoid membranes and use sunlight to produce ATP and NADPH. The light-independent reactions, also known as the Calvin cycle, take place in the stroma and use ATP and NADPH to synthesize glucose.

Photosynthesis is essential for life on Earth as it produces the oxygen we breathe and forms the basis of the food chain.