

Grade 7

Sunny Synthesis



Plants are unique in the world of living things because of their ability to utilize light energy from the Sun to make food by photosynthesis. Plants have green chlorophyll in the cells of their leaves to capture the Sun's energy, and use this energy as "fuel" during the process of building or synthesizing glucose sugars during photosynthesis. The only other raw materials needed to begin this process are carbon dioxide gas and water. Without the food and oxygen gas produced by plants, photosynthetic protists, and blue-green algae during photosynthesis, most other organisms on Earth would not be able to survive.

During the "Sunny Synthesis" learning experiences, students are actively engaged in exploring the substances that are used and produced during photosynthesis. They design experiments to show that plants take in carbon dioxide gas, and give off oxygen gas through the stomata of their leaves. Microscope skills are practiced as students observe Elodea cells and observe leaf stomata. Students observe evidence of glucose sugars being converted into starch when they test plant leaves with iodine. After they experience the raw materials used and products produced during photosynthesis, they design their own photosynthesis experiment to answer their questions about this important process that feeds the world.

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