

Photosynthesis

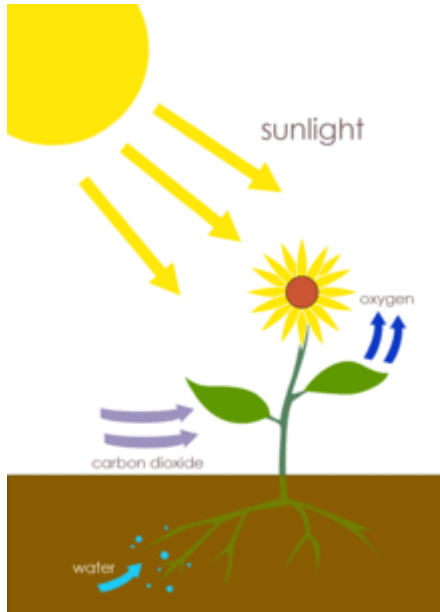
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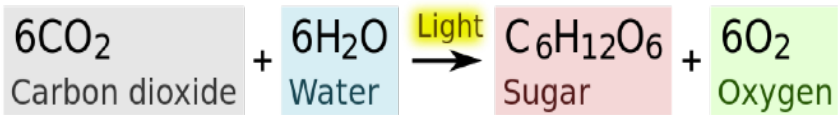
Table of Contents

What is Photosynthesis?	3-4
Why is it important?	5-6
How do We Help?	7-8

What is Photosynthesis?



“Photo” is a Greek word for “light,” and “synthesis” means “put together.” Photosynthesis means to put together using light (sunlight energy). **Photosynthesis** (fōdō 'sinTHəsəs) is the process that plants use carbon dioxide, water, and sunlight to make oxygen and **glucose** (glōokōs), a type of sugar.



This is the chemical equation for photosynthesis. CO_2 is the representation for carbon dioxide. H_2O is the written representation of water. The large “6” in front of each of these means that it’s six **molecules** of each. This shows that a plant will use six molecules of carbon dioxide, six molecules of water, and the sunlight to create one molecule of glucose (represented by $\text{C}_6\text{H}_{12}\text{O}_6$) and six molecules of oxygen (represented by O_2).

Why is it important?

Photosynthesis is an important process to all animals, humans included. Plants take the carbon dioxide from our air. Carbon dioxide is harmful for animals to breathe. Plants filter the harmful carbon dioxide and replace it with oxygen (O_2), which humans and animals need to breathe.



During the photosynthesis process, plants also create glucose. Glucose is a sugar that animals use as an energy source. Plants can make their own glucose, but humans need to get it from a plant source.



How Do We Help?

Plants need carbon dioxide just like we need oxygen. Animals get carbon dioxide from many places such as volcanic eruptions, **car emissions**, and other animals exhaling. We breathe out carbon dioxide that the plants use to make oxygen for us to breathe in.



Plants are important to our ecosystem. We need plants for oxygen and as a food source. We need them to filter out carbon dioxide, which can be harmful to breathe. Plants in turn use the carbon dioxide we exhale, as well as water and sunlight. This cycle keeps us alive. Having a lot of plants in our ecosystem is beneficial to our health and environment.



Glossary

Car emissions: The exhaust from an automobile that contains carbon dioxide, carbon monoxide, nitrogen oxide, lead compounds, unburned hydrocarbons, and more.

Glucose (glōōkōs): A simple sugar created by plants. Used as energy for animals.

Molecule: Atoms bonded together to create the smallest compound.

Photosynthesis (fōdō 'sinTHəsəs): The process in which plants use water, carbon dioxide, and sunlight energy to create oxygen and glucose.

Comprehension Questions

1. What is photosynthesis?
2. How does photosynthesis help humans?
3. How do humans participate in the process of photosynthesis?
4. Why do humans need energy/food from plants?

(answers found on page 11)

1. Photosynthesis is the process plants use in which they take carbon dioxide, water, and sun energy to create glucose and oxygen.
2. Humans need plants to undergo the process of photosynthesis to create oxygen for us to breathe as well as glucose for us to eat for energy.
3. Humans contribute carbon dioxide for plants to undergo photosynthesis. We create carbon dioxide by exhaling and through car emissions.
4. Humans need energy from plants, because we are not able to create our own food source like plants are able to do.

Works Referenced

“Boy planting vegetable garden.” Available under Public Domain License.

“Equation of the overall process of photosynthesis.” Available under Public Domain License.

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“Man breathing cold air.” by Wikipedia available under a Creative Commons Attribution-Share Alike 4.0 International License.

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*All written information by Rochelle Hopkins.

Common Core State Standards

5.S.3.2.1: Communicate how plants convert energy from the Sun through photosynthesis.

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