

Photosynthesis: Using the Sun to Make Food

Imagine if you could lie out in the sun and soak up all the energy you need to run, play, jump, and live! As humans, we may get a sunburn, but we cannot be energized by the sun's rays. We have to eat to fuel our bodies. Plants are different. They can use the sun's energy to make their own food. This is not the same as buying food at the store and cooking it yourself! Plants actually do a chemical reaction inside of their cells to make food using the energy they get from the sun. Organisms with this ability are called **autotrophs**. Plants can change energy from the sun into **chemical energy** that they use to live and grow. Organisms that have to eat to live (like humans) rely on plants as a food source.

The process by which plants convert energy from the sun into sugar is called **photosynthesis**. In order to do this, there are a few things that plants must have: **sun**, **water**, and **carbon dioxide**. Plants get the water needed for photosynthesis through their roots that go down into the ground. Carbon dioxide is the gas that people and animals breathe out every time they exhale. Plants take this gas in through tiny holes in their leaves called **stomata** and use it to do photosynthesis. When plants take carbon dioxide in, it helps to "clean" the air that we breathe.

Most photosynthesis happens in the green parts of a plant like the **leaves** and the **stem**. Inside the plant cells of the leaves and stem are **chloroplasts**. Chloroplasts are **green** because they are filled with **chlorophyll**, which gives them their color. Chloroplasts do the amazing job of changing the energy of the sun into **sugar** that the plant can use to live and grow!

The sun, water, and carbon dioxide that plants take in is used to make sugar that give plants their energy. Plants also release **oxygen, a gas**, into the air. The oxygen that plants make is in the air that we breathe. We take that oxygen into our lungs and send it throughout our body through our bloodstream.

Once a plant makes its own sugar it either uses it right away or stores it for later. Plants can move sugar around to their different parts using a series of tubes similar to our blood vessels. Plants can also store sugar in many forms. One example is **starch**. Some plants store their sugar in underground parts that are good to eat. Examples are carrots and potatoes.

Plants produce the food that all the other organisms in an ecosystem rely on, so they are very important. We count on these **producers** to make their own food, grow, and provide energy to the next level of the food chain. Without the sun's energy and plants to make use of it, we would not be able to live on this planet.

Name _____

Date _____

Photosynthesis: Using the Sun to Make Food Questions

1. True or False. People can lie out in the sun and get the energy they need to live.
2. What is the term for an organism that can make its own food by carrying out a chemical reaction inside of its cells?
3. _____ is the name of the process that plants use to convert the sun's energy into chemical energy.
4. What gas do we breathe out that plants use?
5. What are the holes in plant leaves called that let carbon dioxide in?
6. What plant parts are doing most of the photosynthesis?
7. Plants have chloroplasts in their cells that are filled with _____ that makes them green.
8. What is the gas that plants release into the air that we can then breathe?
9. What is one form that plants store sugar in?
10. Give an example of a plant that stores its sugar in an underground part.

Name _____

Date _____

Photosynthesis: Using the Sun to Make Food Answers

1. False
2. autotroph
3. Photosynthesis
4. Carbon dioxide
5. stomata
6. Leaves and stems
7. chlorophyll
8. oxygen
9. starch
10. Carrots, potatoes...