

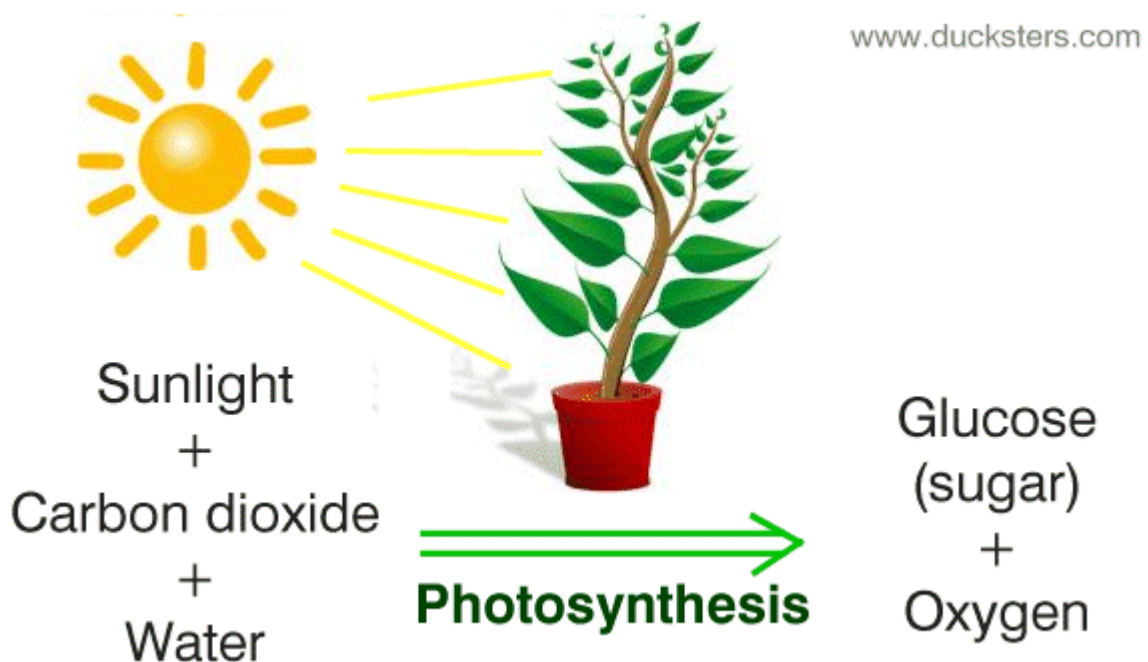
# Biology for Kids

## Photosynthesis



### What is photosynthesis?

Have you ever noticed that plants need sunlight to live? It seems sort of strange doesn't it? How can sunlight be a type of food? Well, sunlight is energy and photosynthesis is the process plants use to take the energy from sunlight and use it to convert carbon dioxide and water into food.



### Three things plants need to live

Plants need three basic things to live: water, sunlight, and carbon dioxide. Plants breathe carbon dioxide just like we breathe oxygen. When plants breathe carbon dioxide in, they breathe out [oxygen](#). Plants are the major source of oxygen on planet Earth and help keep us alive.

We know now that plants use sunlight as energy, they get water from rain, and they get carbon dioxide from breathing. The process of taking these three key ingredients and making them into food is called photosynthesis.

### How do plants capture sunlight?

Plants capture sunlight using a compound called chlorophyll. Chlorophyll is green, which is why so many plants appear green. You might think at first that it's green because it wants to absorb and use green light. However, from our study of [light](#), we know that the color we see is actually the color of light that is reflected. So chlorophyll actually reflects green light

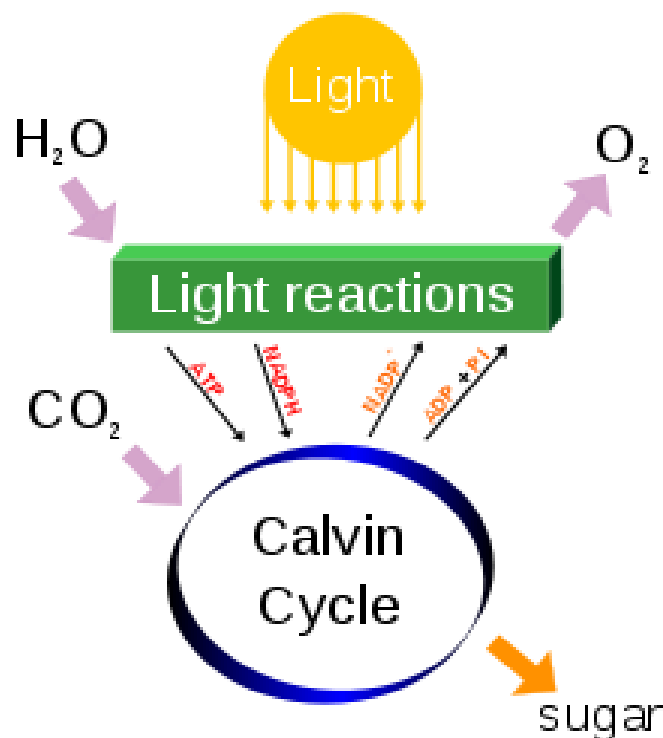
and absorbs blue and red light.

### More details on Photosynthesis

Inside a plant's cells are structures called chloroplasts. It's in these structures where the chlorophyll resides.

There are two main phases to the process of photosynthesis. In the first phase, sunlight is captured by the chloroplasts and the energy is stored in a chemical called ATP. In the second phase, the ATP is used to create sugar and organic compounds. These are the foods plants use to live and grow.

The first phase of the process must have sunlight, but the second phase can happen without sunlight and even at night. The second phase is called the Calvin Cycle because it was discovered and described by scientist Melvin Calvin.



Even though plants need sunlight and water to live, different plants need different amounts of each. Some plants need just a little water while others need a lot. Some plants like to be in the direct sunlight all day, while others prefer the shade. Learning about the needs of plants can help you learn where to plant them in your yard and how best to water them so they will flourish.

### Summary

Now we know that plants need sunlight, water, and carbon dioxide to live. They take these three components and use chlorophyll to help convert them into food, which they use for

energy, and oxygen, which they breathe out and we use to live. All plants use photosynthesis, so they all need some sunlight.