



Biology 11 Tutorial

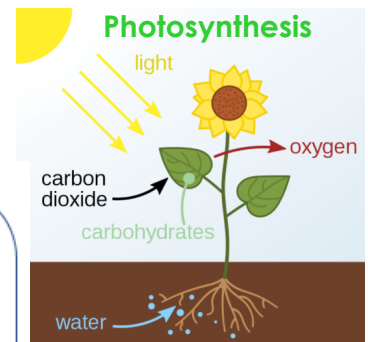
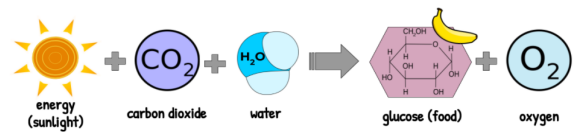
Introduction to Photosynthesis

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Energy is..... the ability to do work, it can be converted but never created or destroyed.

The original energy that fuels all organisms comes from the **Sun** in the form of photons and is converted into usable energy (glucose) during the process of **photosynthesis**.

This process converts molecules of **H₂O** and **CO₂** into a larger molecule called glucose.

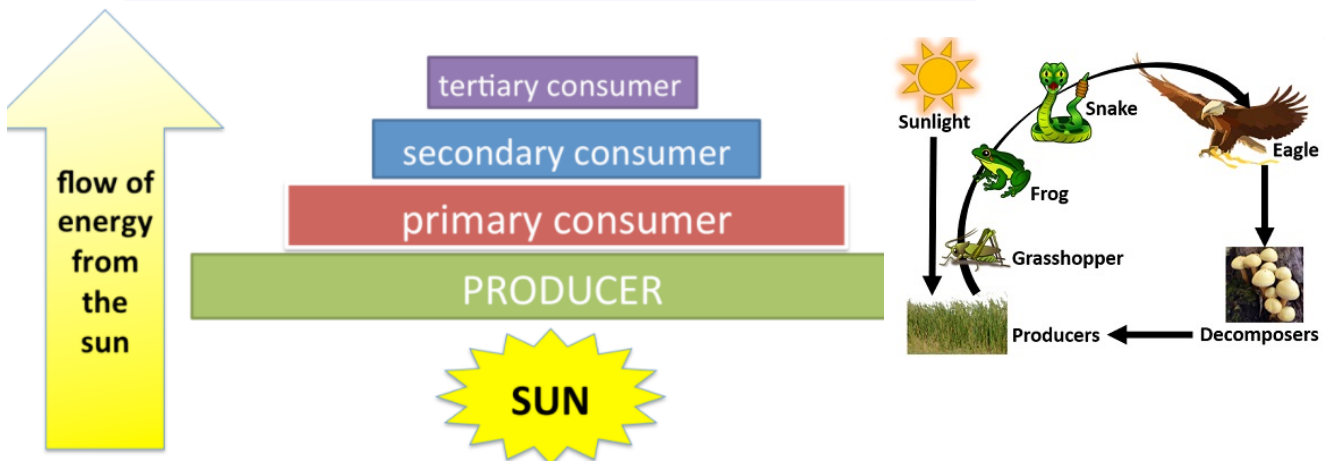


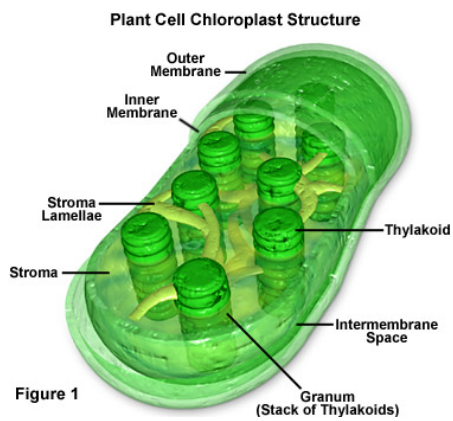
Organisms that make their own food are called **autotrophs**. These organisms are what carry out the process of photosynthesis. Other organisms that rely on others to gain their energy are called **consumers**.

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Biomass is energy that is found within living or previously living organisms. The greatest amount of energy within a food chain is found at the **producer or 1st trophic** level. As energy moves **up** the food chain from primary to tertiary, energy is **lost**.

Pyramid of biomass
Only 10% of the energy from each level is passed on





Chloroplast

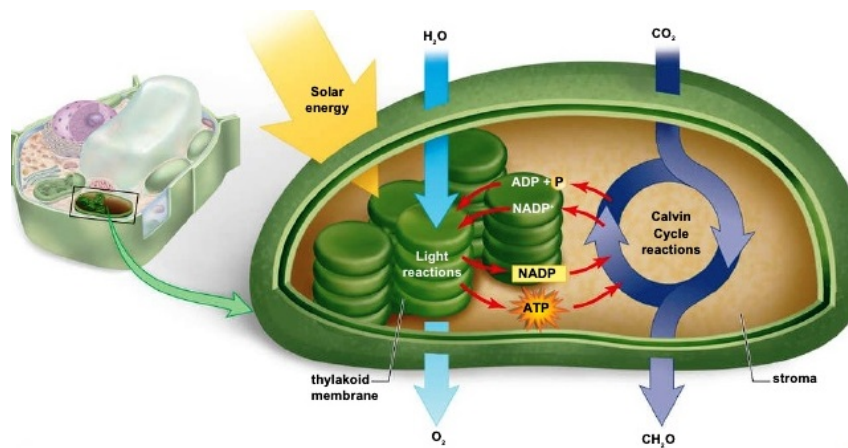
The disk-like structures within the chloroplast are called **thylakoids**. They contain a pigment called **chlorophyll** and are the location for the 1st process in photosynthesis. Stacks of these structures are called **granum**.

The area surrounding the disk-like structures is called the **stroma**. It is where the 2nd process in photosynthesis takes place.

The **chloroplast** is an organelle within the **cells** of plants, algae and photosynthetic bacteria. It is the location where **photosynthesis** takes place.

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Chlorophyll is a pigment that absorbs packets of energy from the sun called **photons** to kick-start the process of photosynthesis where **chemical** energy is converted into **potential** energy.

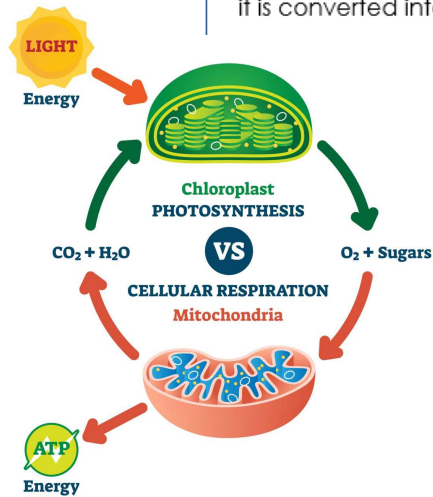


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ATP

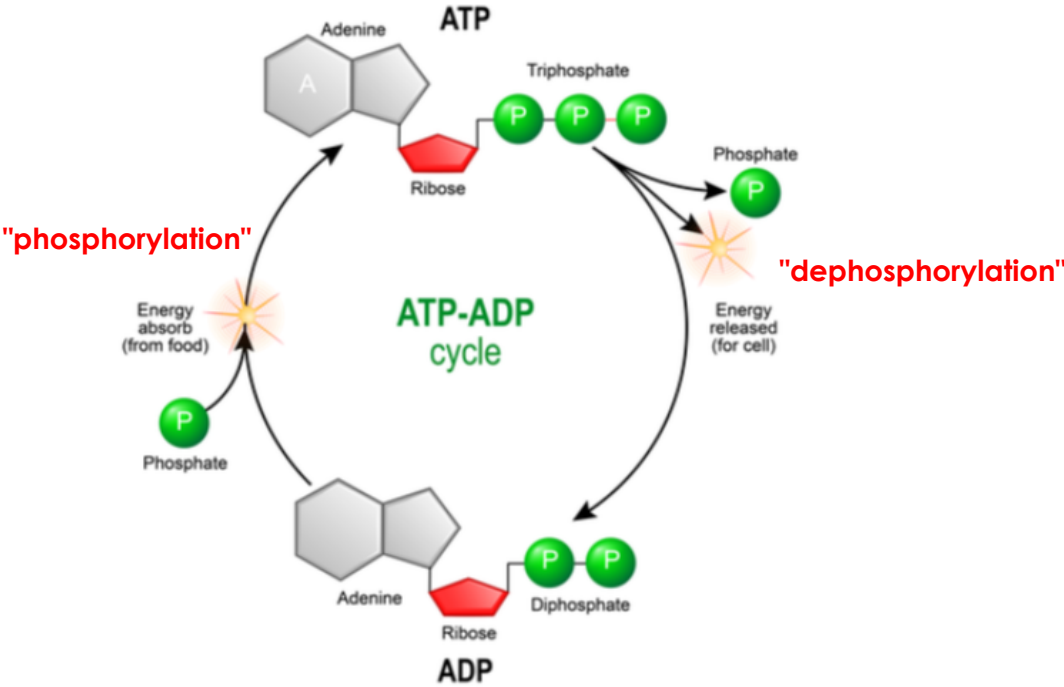
Glucose is then broken down into usable energy called **ATP** through the process of **cellular respiration** in the mitochondria. This process occurs in most organisms.

In animals, glucose is the large molecule of energy consumed in the form of carbohydrates that is delivered through your blood to reach your cells. Once there it is converted into ATP by the mitochondria.



ATP = Adenosine Triphosphate
(potential energy)

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