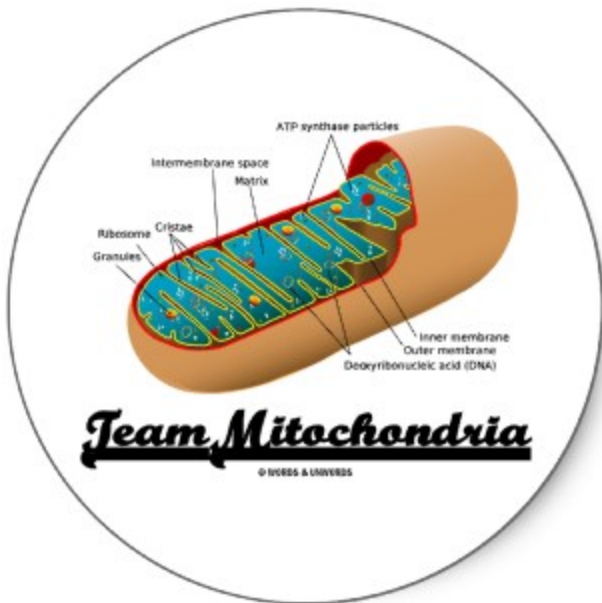


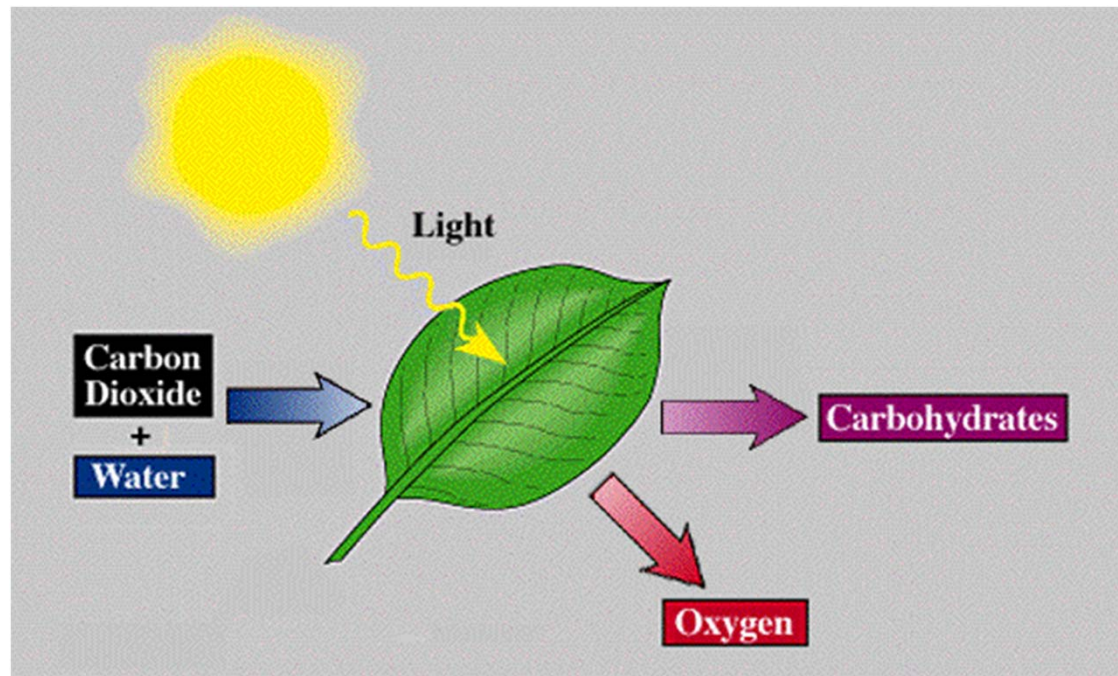


Energy and Cells



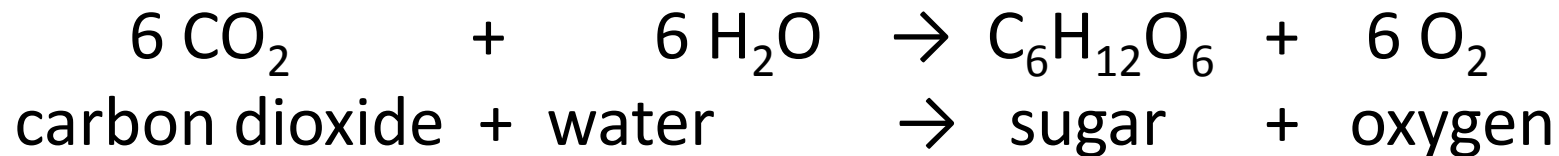
Photosynthesis

- Plants use the energy of sunlight to combine carbon dioxide and water to produce carbohydrates (sugar) and O_2 (Oxygen)

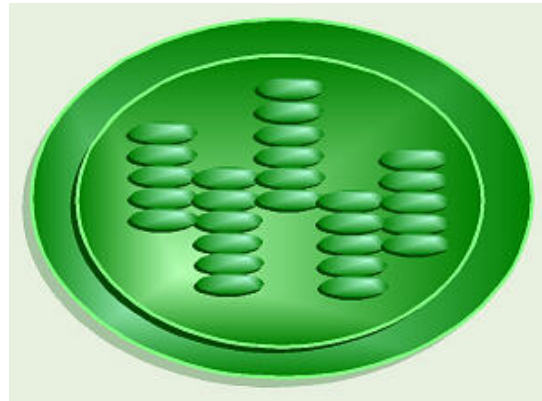


Chloroplasts

- Photosynthesis occurs in the chloroplasts of plant cells, where the energy from the sun powers this reaction:



- Chloroplasts contain a green pigment called chlorophyll

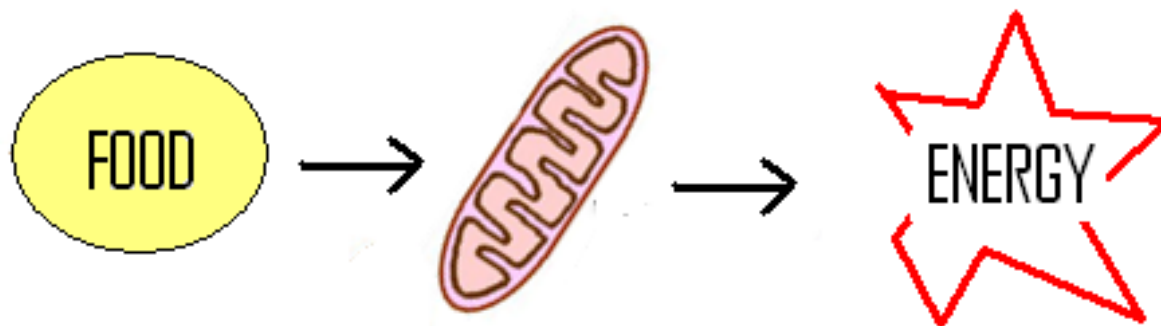


Converting light to food

- Chlorophyll traps energy from the sun and converts it to chemical energy in the sugar molecule
- Sugar molecules are the basic building block for: proteins, wood, leaves, fat, muscle, hormones, and pretty much every chemical in living things. This means that all those things store energy, and are food for other living things.

Cellular Respiration

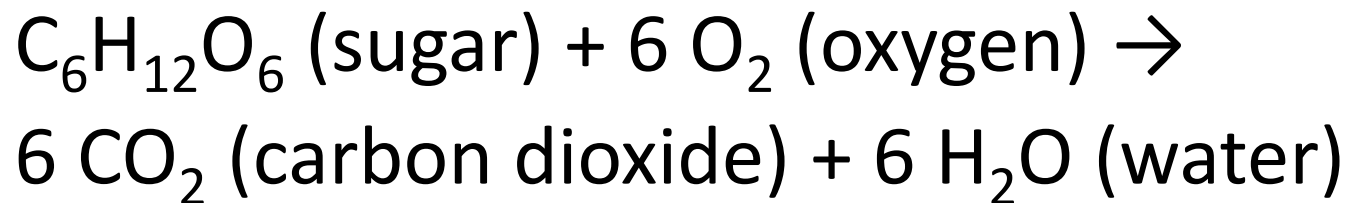
- The process of cells breaking down food into energy
- Occurs in the mitochondria



Aerobic Respiration

- Within the mitochondria, sugar and oxygen combine to produce water and carbon dioxide, and to release energy.

- Chemical reaction:



Storing and releasing energy

- Photosynthesis and cellular respiration are opposite reactions.
- Photosynthesis stores the energy, cellular respiration releases it.

