

Photosynthesis



Chapter 8

Chapter 8.1 Energy & Life

Where does the energy that living things need come from?

The sun is the primary source of energy for all living things.

Autotrophs: organisms that make their own food

Heterotroph: organisms that obtain energy from foods they consume



All organisms must release the energy into sugars and other compounds



Autotroph

Heterotroph



Autotroph



Autotroph

Heterotroph

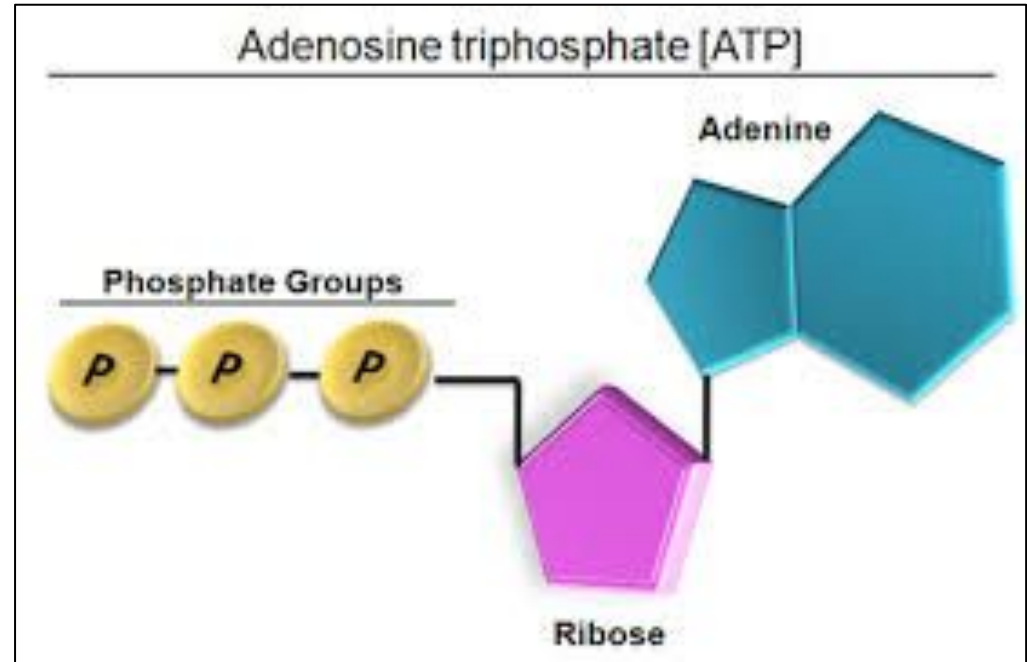


Heterotroph

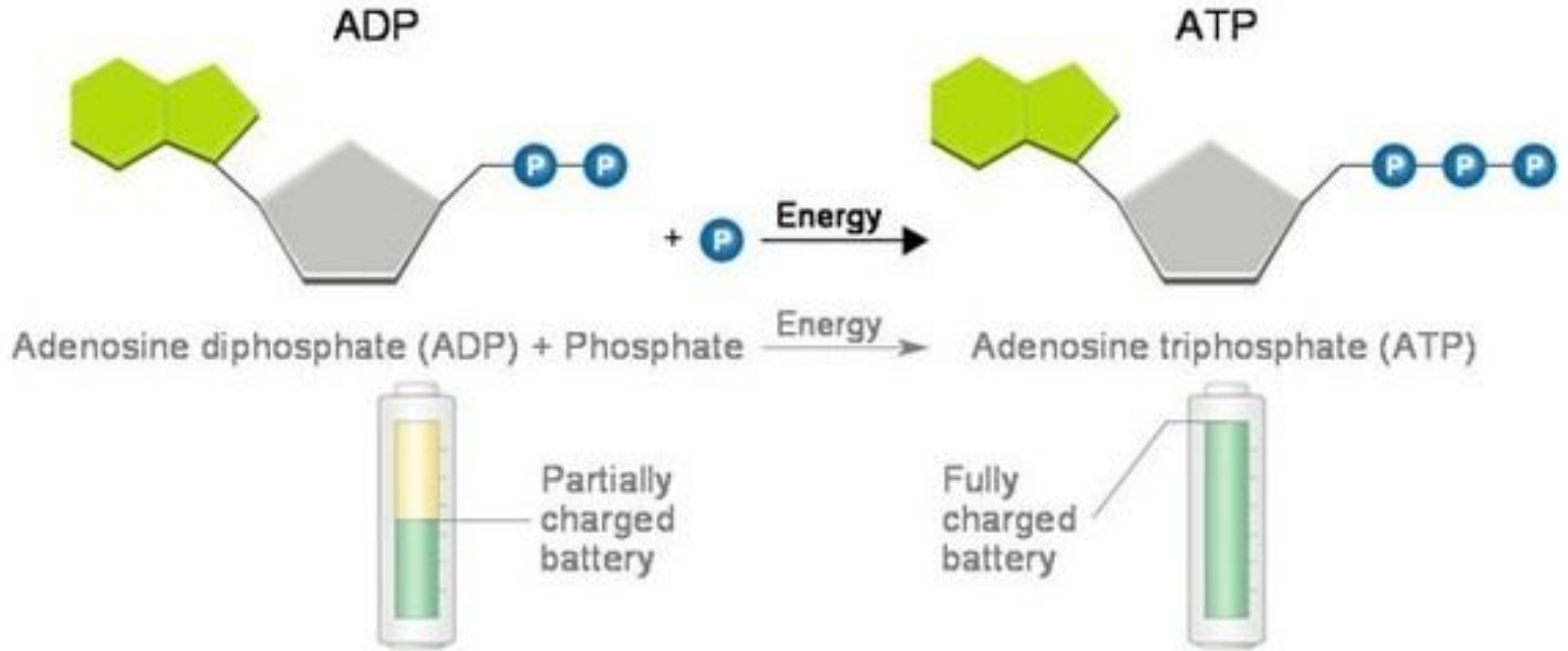
8.1 Chemical Energy & ATP

Energy can be stored in chemical compounds, which organisms use as chemical fuel.

Adenosine triphosphate (ATP): the principal compounds that cells use to store and release energy



Adenosine diphosphate (ADP) is a compound that looks like ATP except it has 2 phosphate groups instead of 3.

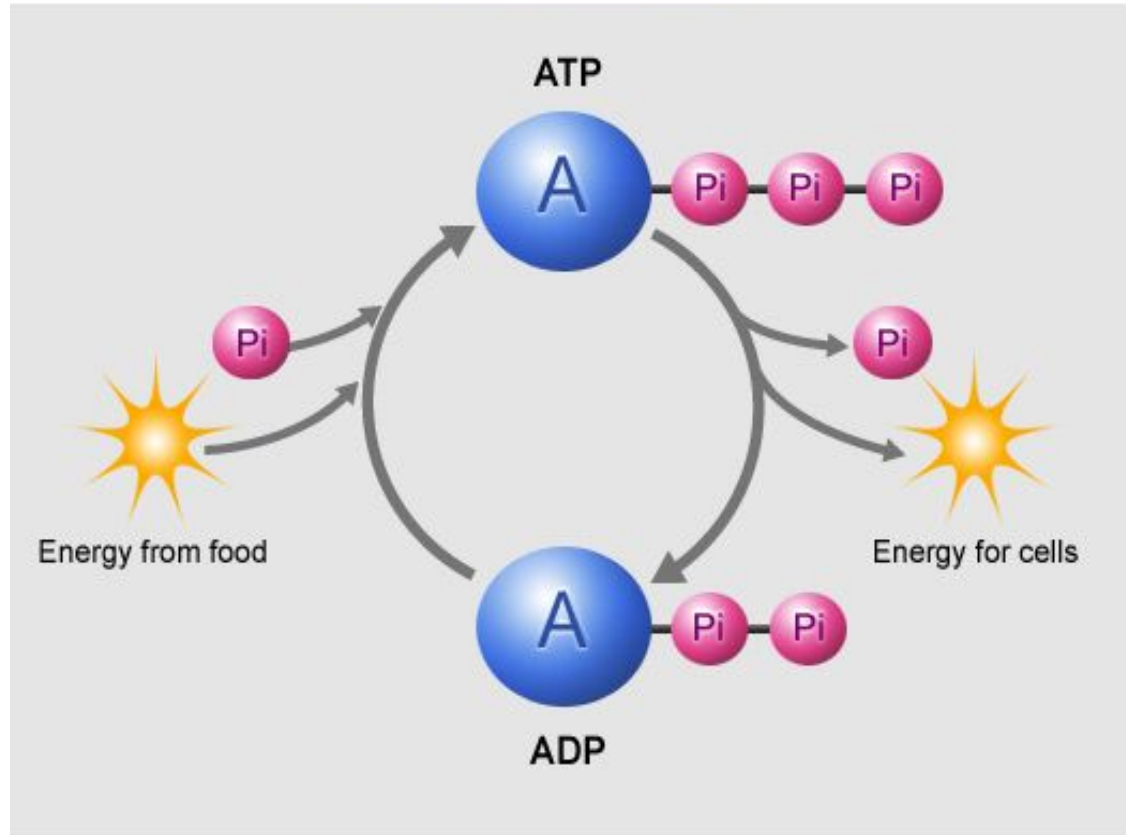


Energy is released when the chemical bond between the 2nd and 3rd phosphate group break.

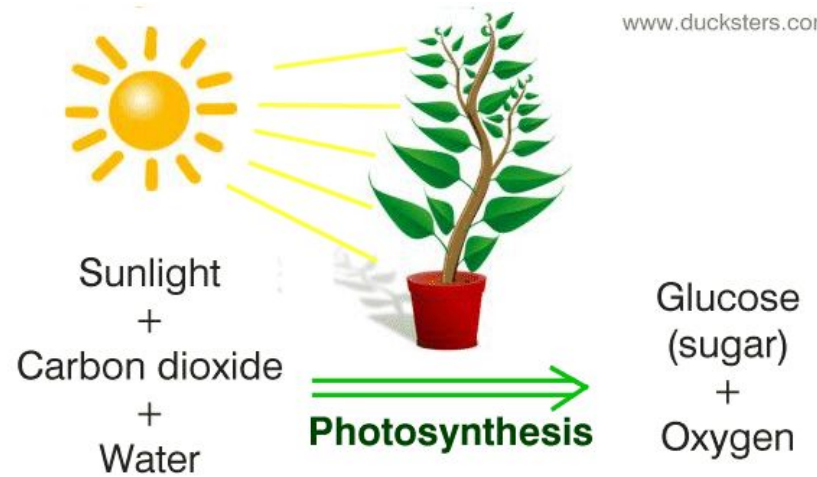
ATP can power a variety of cellular activities:

- active transport
- protein synthesis
- muscle contraction

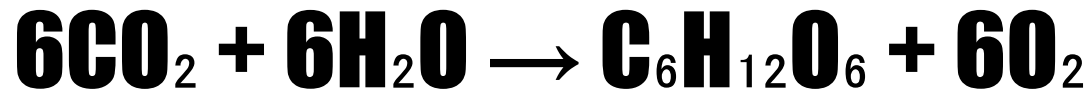
[What is ATP?](#)



Photosynthesis: a process which uses the energy of sunlight (photons) to convert water and carbon dioxide into high-energy sugars and oxygen (a waste product).



THE PHOTOSYNTHESIS EQUATION:



Carbon dioxide + water → (light) → Sugars + oxygen