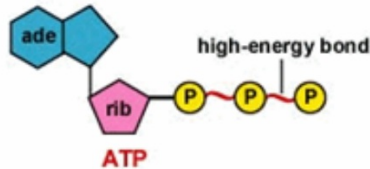
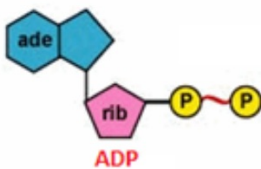


Bioenergetics

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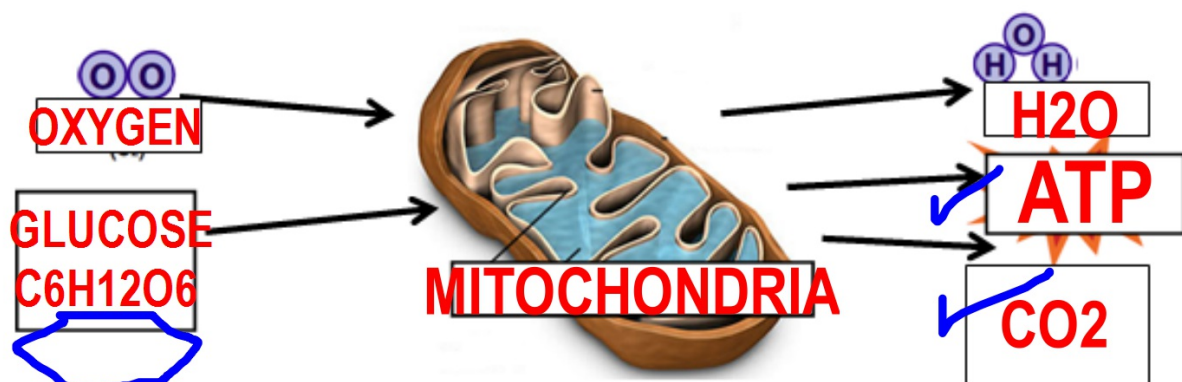
What is ATP?!

- It is the energy currency of all living things!
- It is produced by respiration in the mitochondria.
- It is a nucleotide, so it has 3 main parts: sugar, phosphate, and base.

ATP	ADP
ATP: <u>adenosine triphosphate</u>	ADP: <u>adenosine diphosphate</u>
 <p>ATP</p>	 <p>ADP</p>

Cellular Respiration: Occurs in the Mitochondria

What?	CELLULAR RESPIRATION
Where?	<u>mitochondria</u>
Why?	The purpose is to <u>make ATP</u> !!!
How?	Uses <u>glucose</u> and <u>oxygen</u> (sugars!) to make <u>CO₂</u> , <u>H₂O</u> and <u>ATP</u> .
Who?	<u>ALL LIVING THINGS!</u>



STOP & THINK:

1. What is the connection between ATP and respiration?

ATP is produced in respiration by the mitochondria

2. What two things do mitochondria need in order to perform respiration? Where do these two items come from (how does the organism or cell get them)?

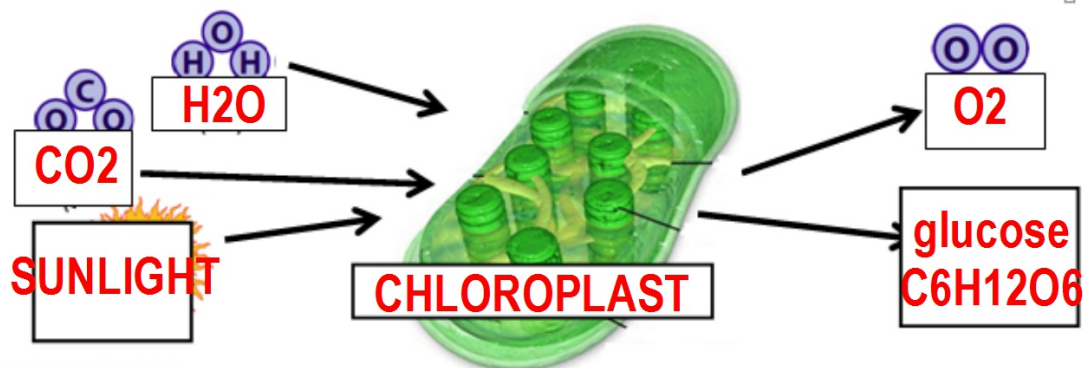
oxygen and glucose

3. Plants cannot **eat** food (sugars) but all living things **MUST** perform respiration so that they can make ATP!! Where do plants get their sugars?!

from themselves in photosynthesis

Photosynthesis: Occurs in the Chloroplast

What?	PHOTOSYNTHESIS
Where?	in the chloroplast, in plants cells, in leaves
Why?	The purpose is to make glucose !!!
How?	Uses H₂O , CO₂ and sunlight to make O₂ and glucose (sugars!)
Who?	Organisms that can produce their own food autotroph / producer



STOP & THINK:

- Why don't humans need to perform photosynthesis?
we don't have chloroplasts
- What does the root word "-synthesis" mean? Why do you think this process is called "photosynthesis"?
to make --> with light
- In plants, what must happen first, photosynthesis or respiration? WHY??
respiration - it makes water and CO₂