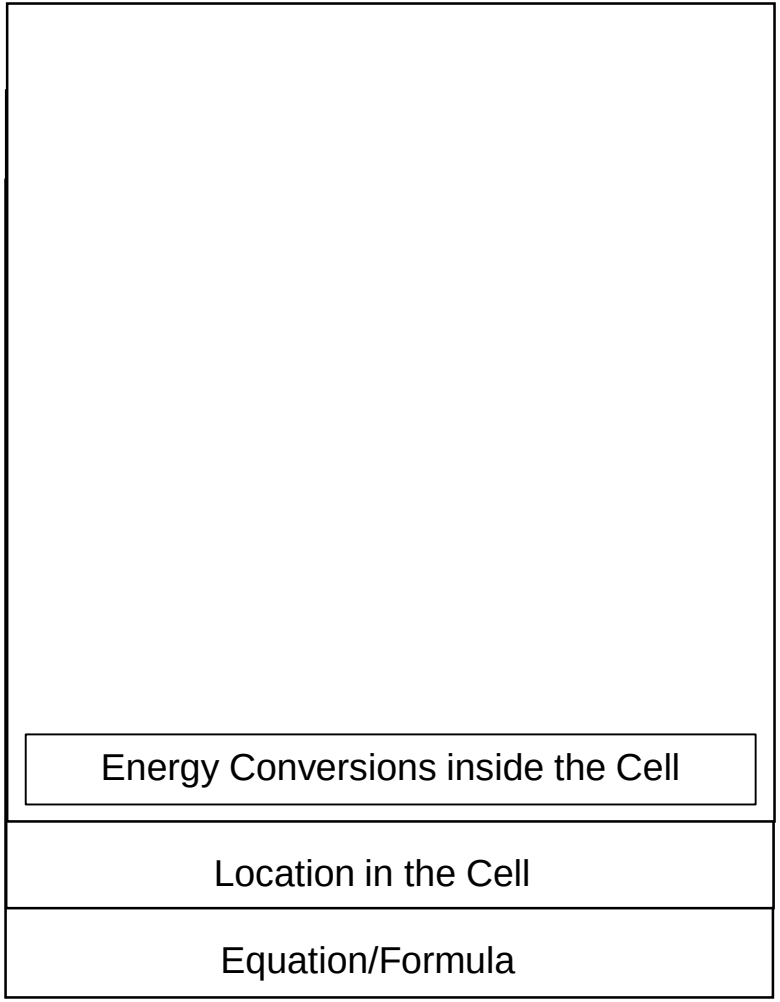
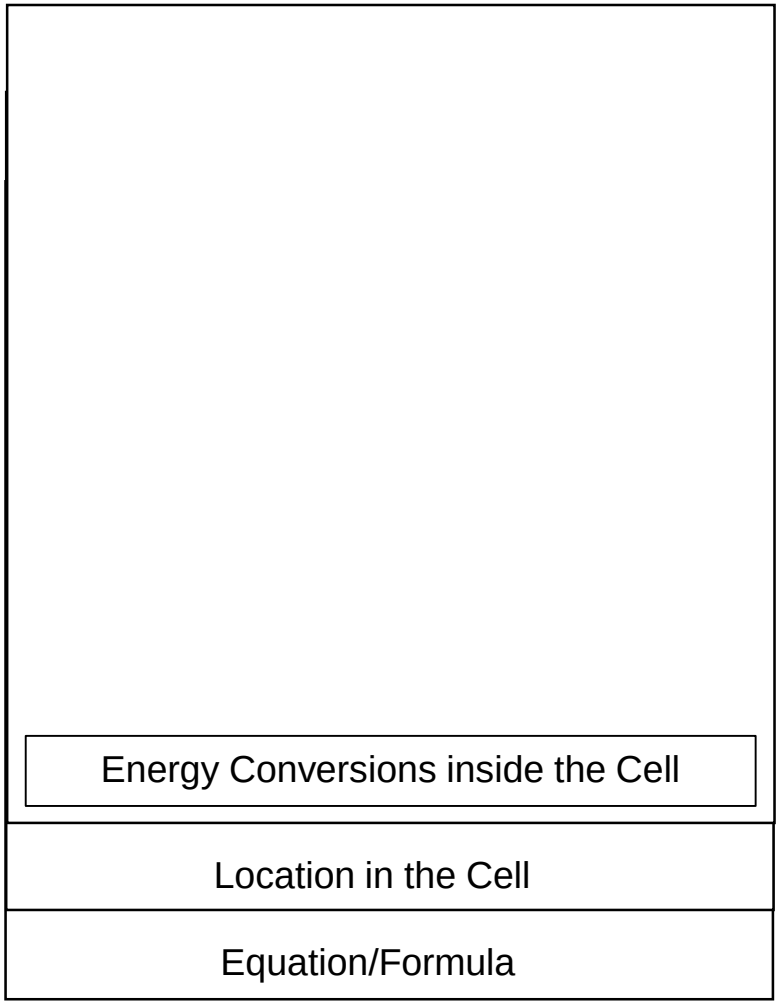
Photosynthesis & Cellular Respiration

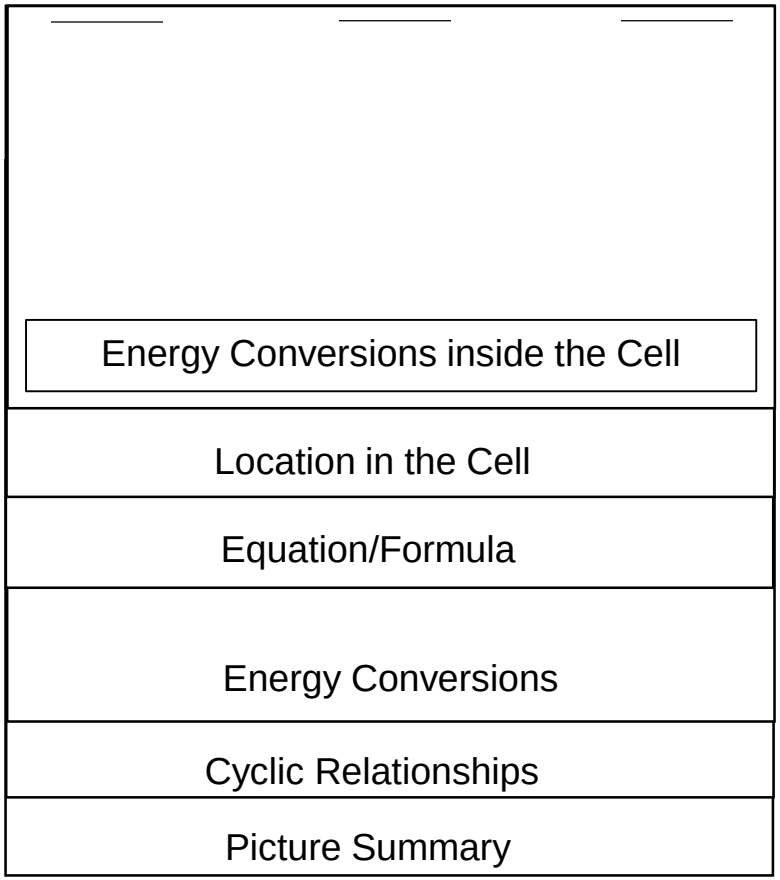
Pay close attention to instructions to make your foldable!
Share the staplers!


Energy Conversions inside the Cell
Location in the Cell
Equation/Formula

- Fold this in half . . . .
- The bottom will be folded back . . .



Staple →


Energy Conversions inside the Cell
Location in the Cell
Equation/Formula
Energy Conversions
Cyclic Relationships
Picture Summary

Energy Conversions inside the cell

Location in the Cell

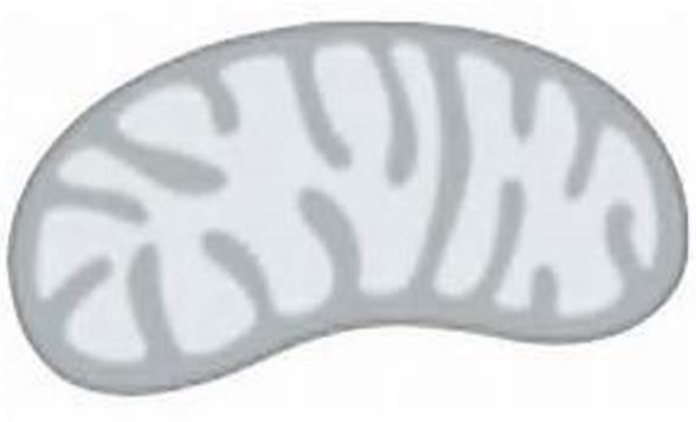
Photosynthesis

Organelle Name chloroplast

Contains the pigment chlorophyll

that absorbs radiant energy

Cellular Respiration

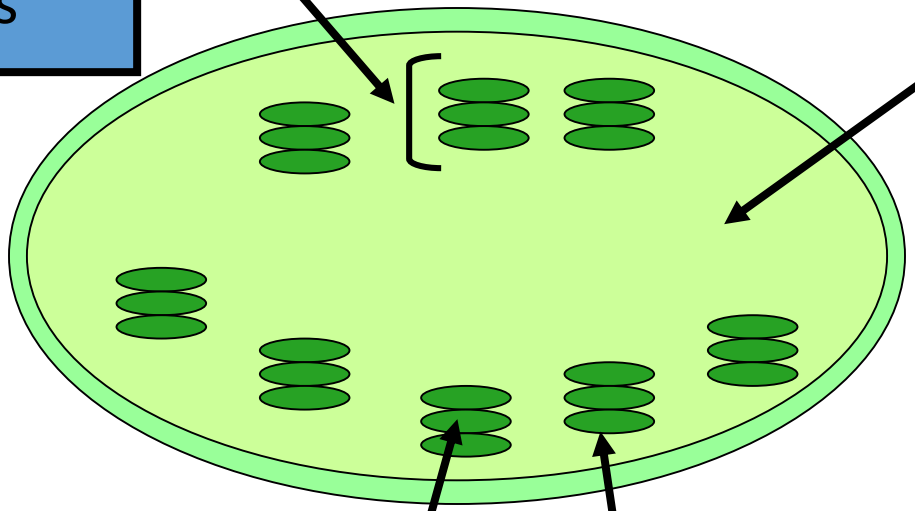


Organelle Name mitochondria

Involved only in Aerobic respiration

which requires oxygen

Structure of chloroplast



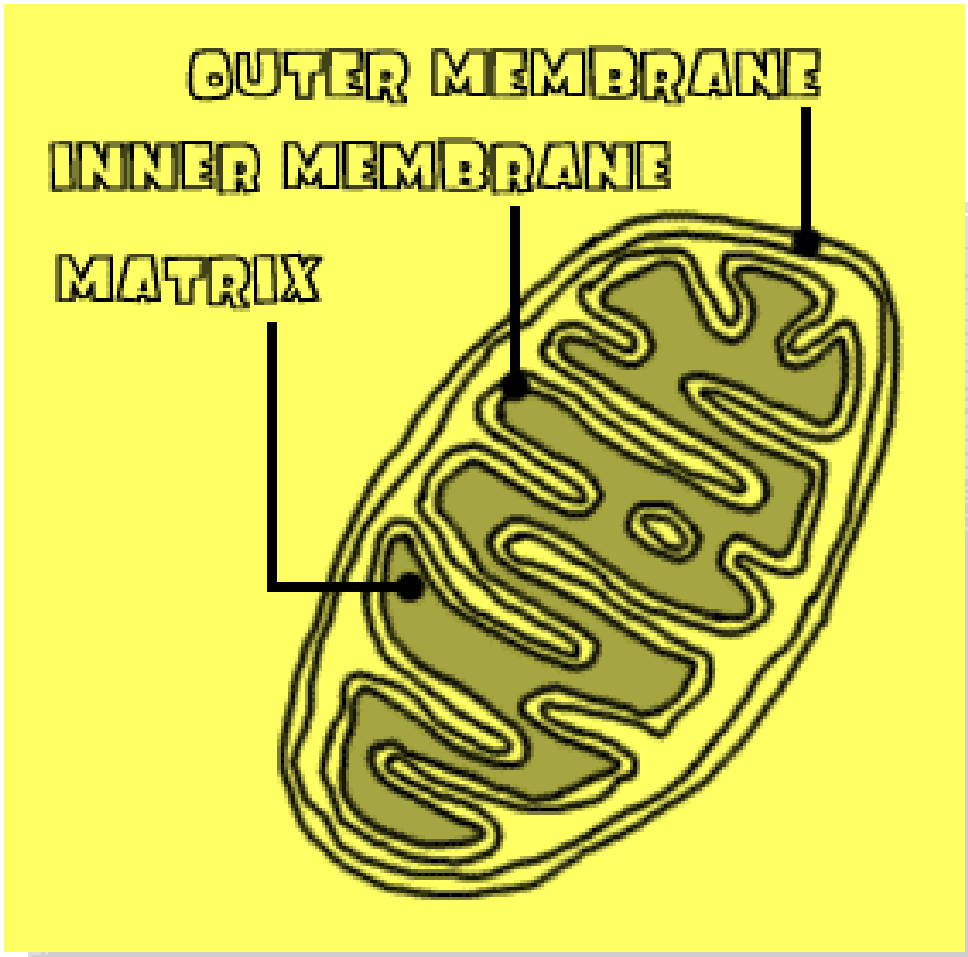
Grana
stacks of thylakoids

Stroma
enzyme rich solution

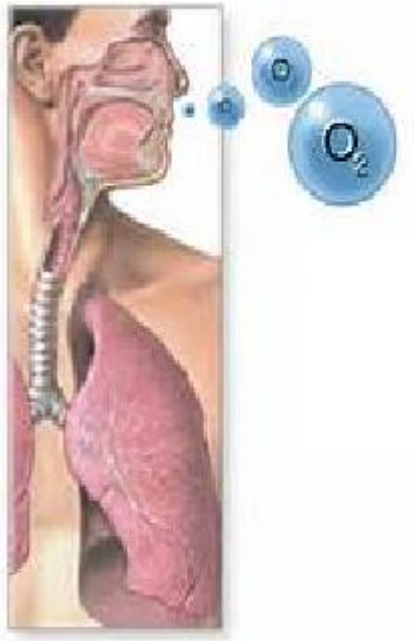
Chlorophyll
green pigment that absorbs solar energy

Thylakoid
place where chemical reactions takes place

Mitochondria

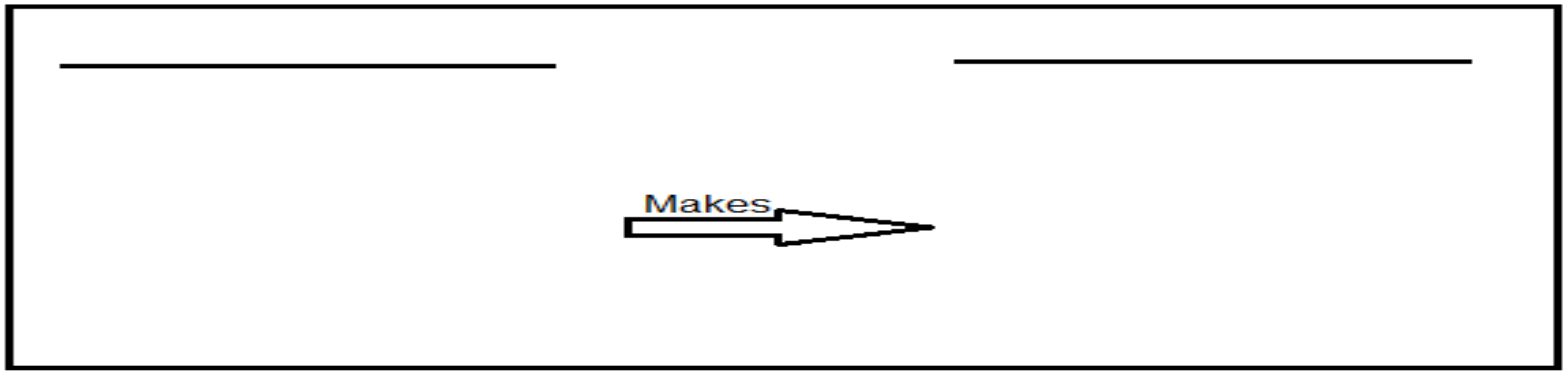


Involved only in Aerobic respiration which requires Oxygen

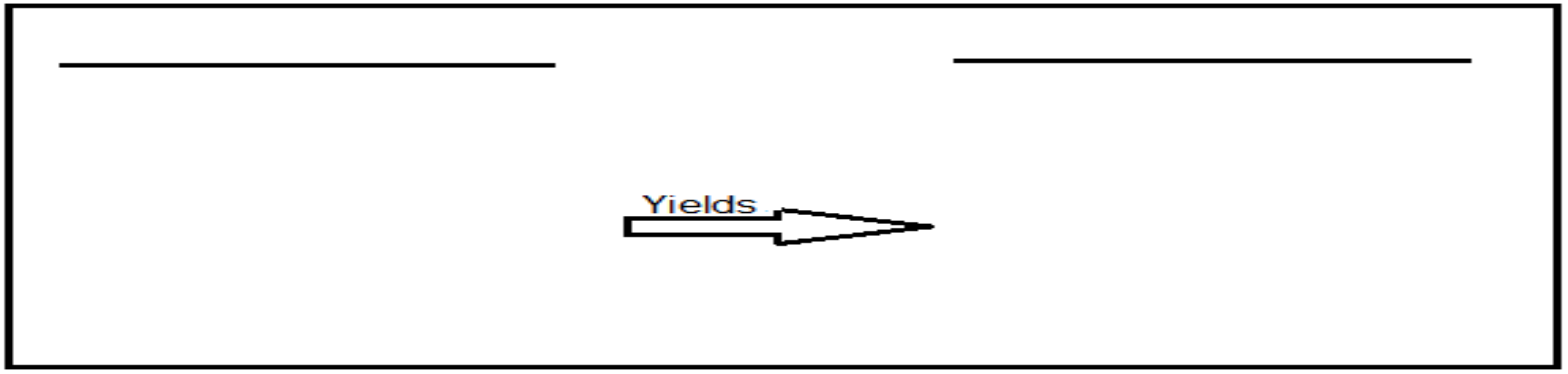


Chemical Equation - Photosynthesis

In words

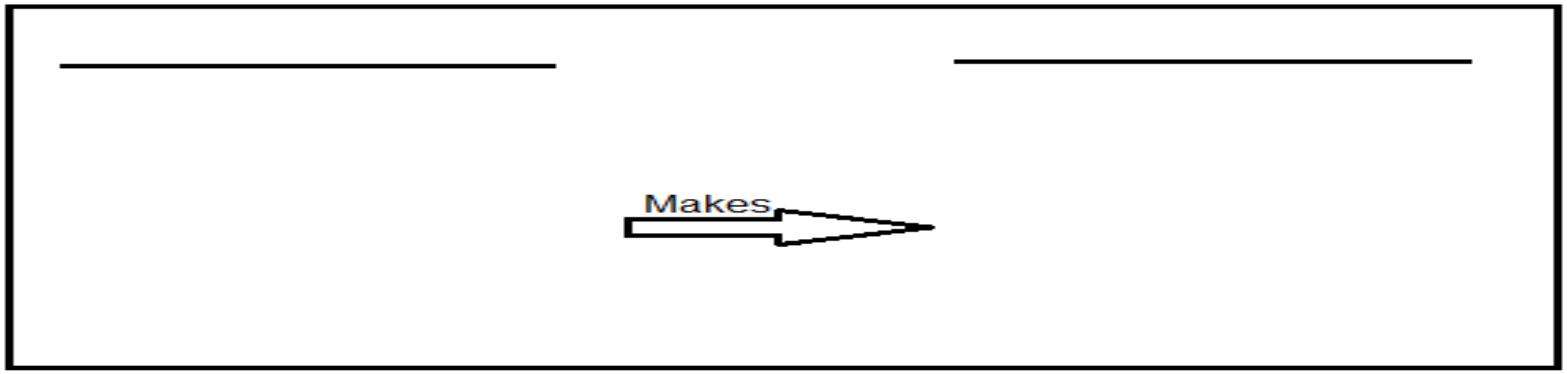


Chemical Formula

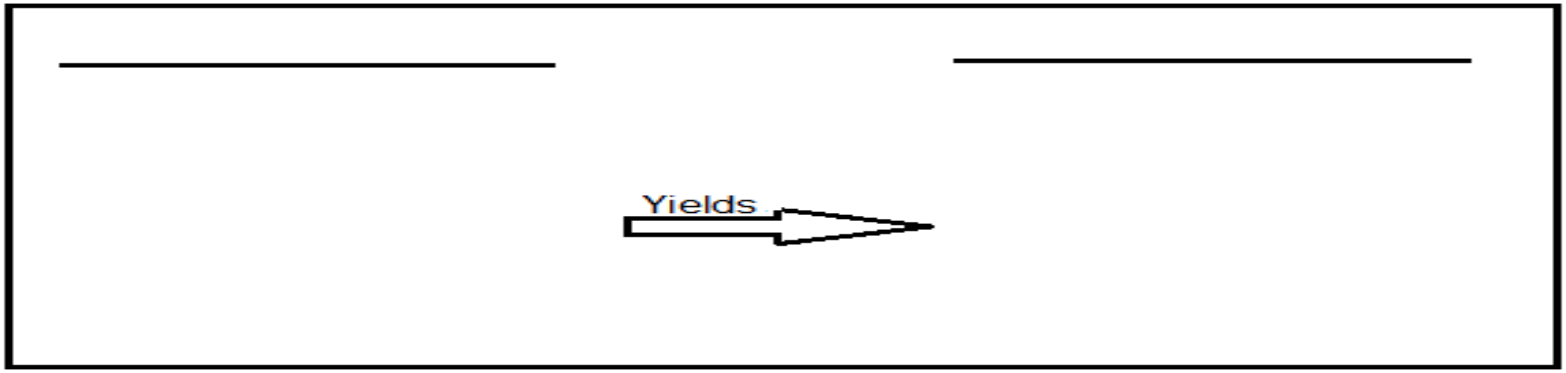


Chemical Equation - Respiration

In words

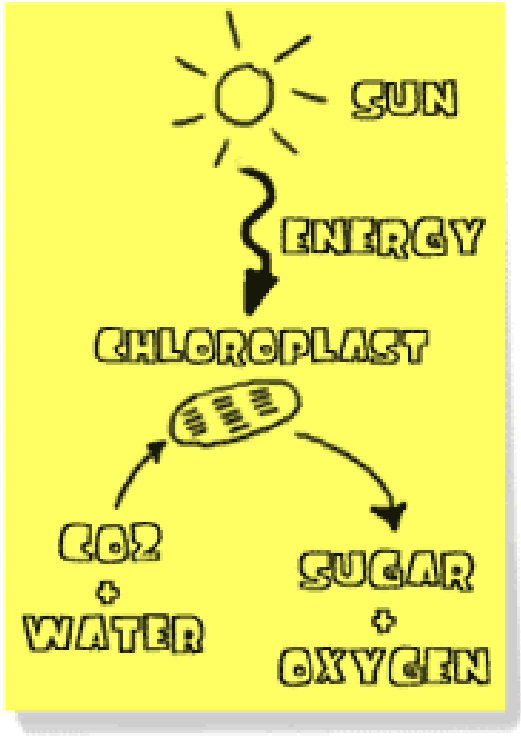


Chemical Formula



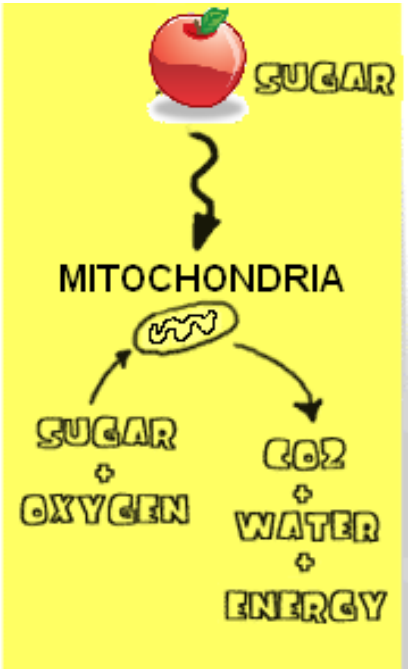
Photosynthesis

- A process that converts light (solar or radiant)energy into stored (chemical) energy in the form of food molecules, glucose
- Process used by autotrophs



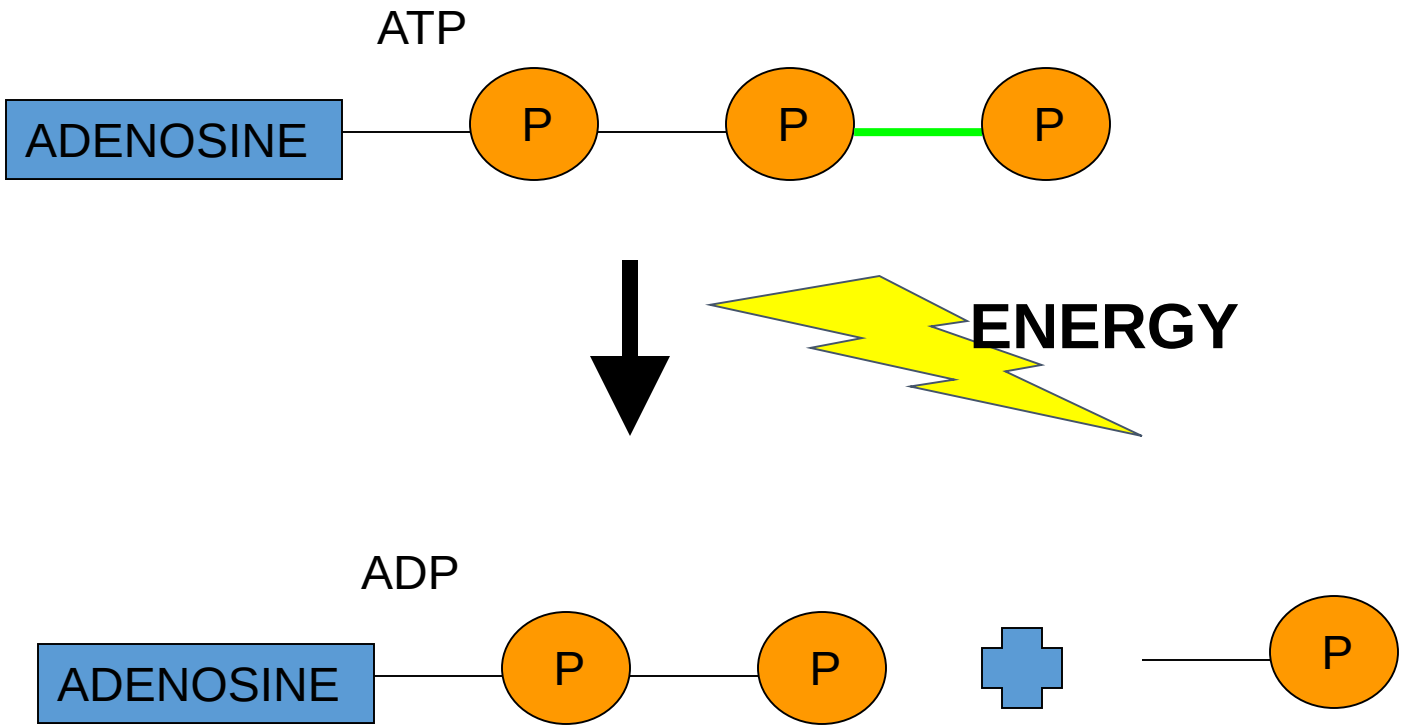
Cellular Respiration

- A process that converts stored (**Chemical**) energy in the food molecule, glucose, into mechanical energy (**ATP**)
- Process used by BOTH autotrophs & heterotrophs



What is ATP?

- ATP (adenosine triphosphate) is **energy**
- Whenever a bond holding a phosphate is broken, a large amount of usable cellular energy is released.

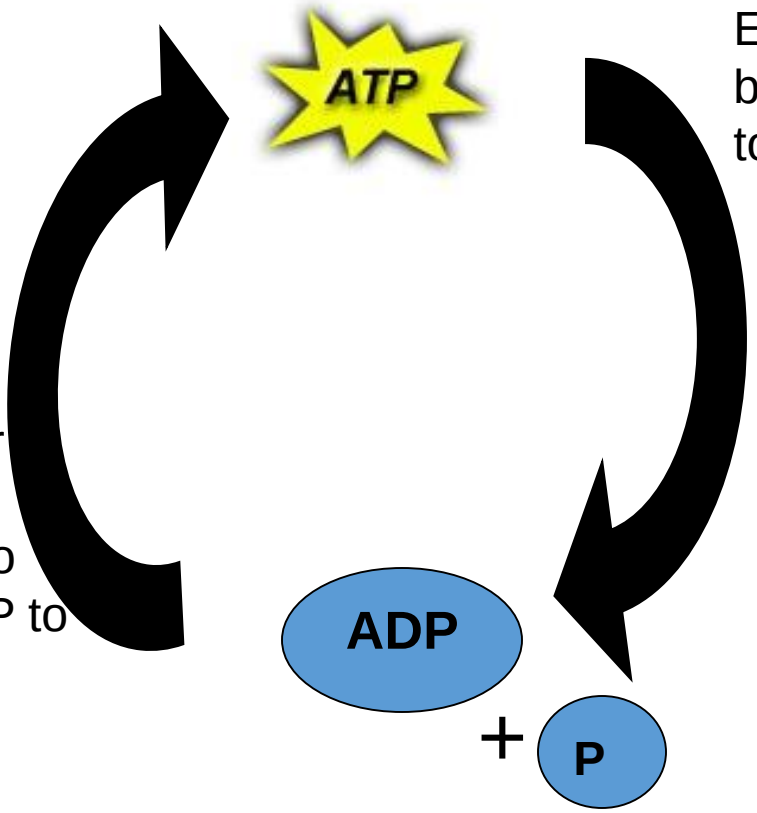


ATP CYCLE

- Occurs continuously in cells
- About 10 million new ATP molecules are made in every cell every second!!!

1. **Stored Energy**
   Energy stored in chemical bonds.

2. Releasing Energy
Energy released by breaking bonds – used to power cells



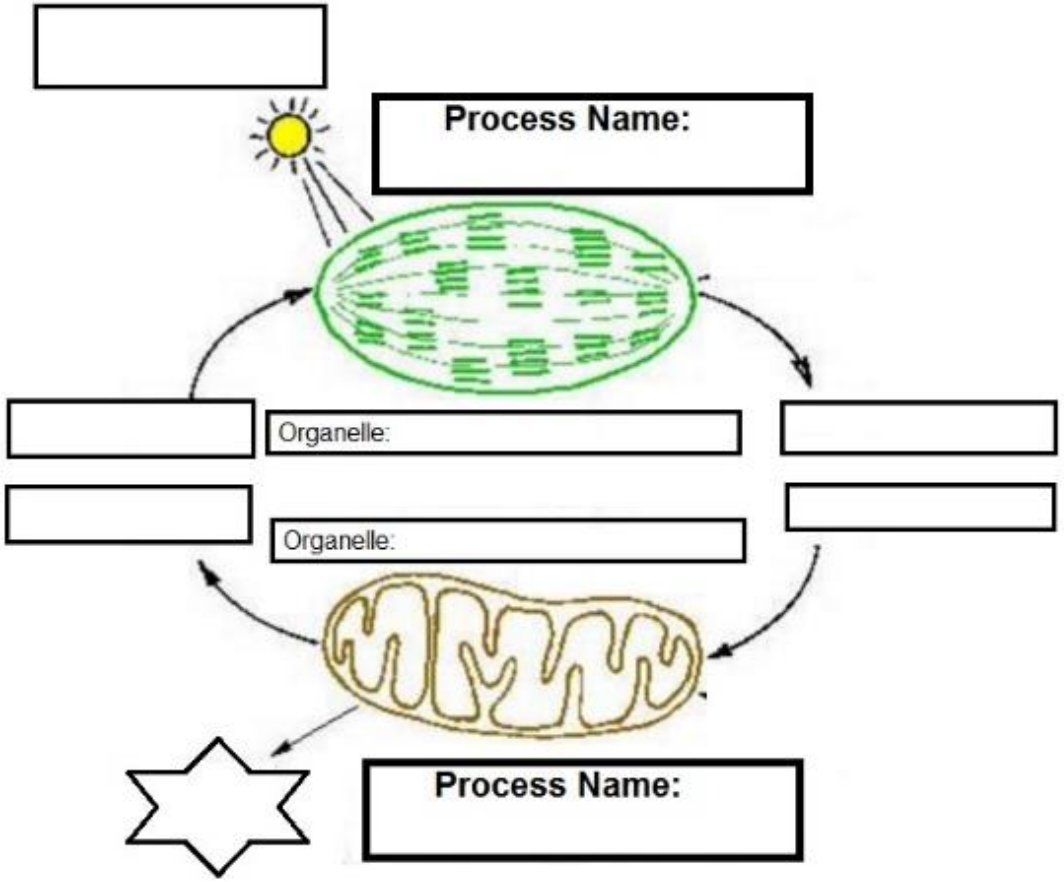
4. Making ATP

Energy released by other chemical reactions and processes can be used to bond a phosphate to ADP to make ATP

3. Energy Depleted
ADP has less chemical energy than ATP

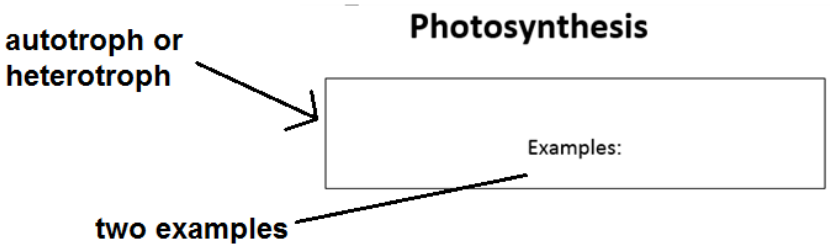
https://www.youtube.com/watch?v=8B_64G2SI_8

The products of one are the reactants of the other!

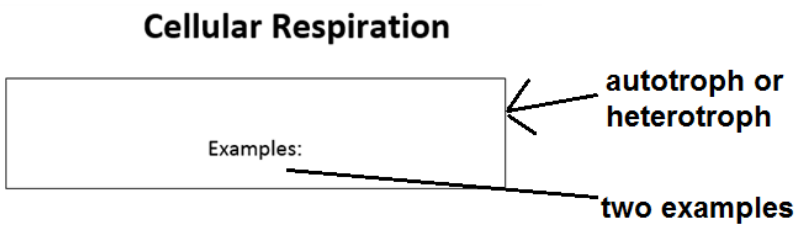


Cyclic Relationship - it’s a cycle!

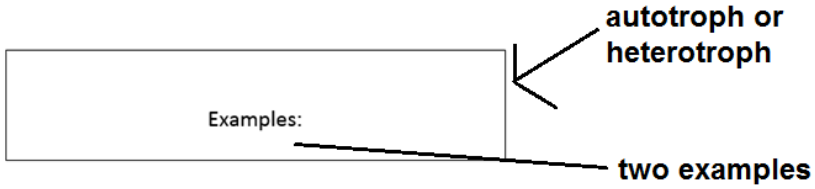
Picture Summary



draw picture here that shows an organism that does photosynthesis with arrows pointing to and away for reactants and products



draw picture here that shows an organism labeled above that does respiration with arrows pointing to and away for reactants and products



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Photosynthesis: Cellular Respiration: