Photosynthesis

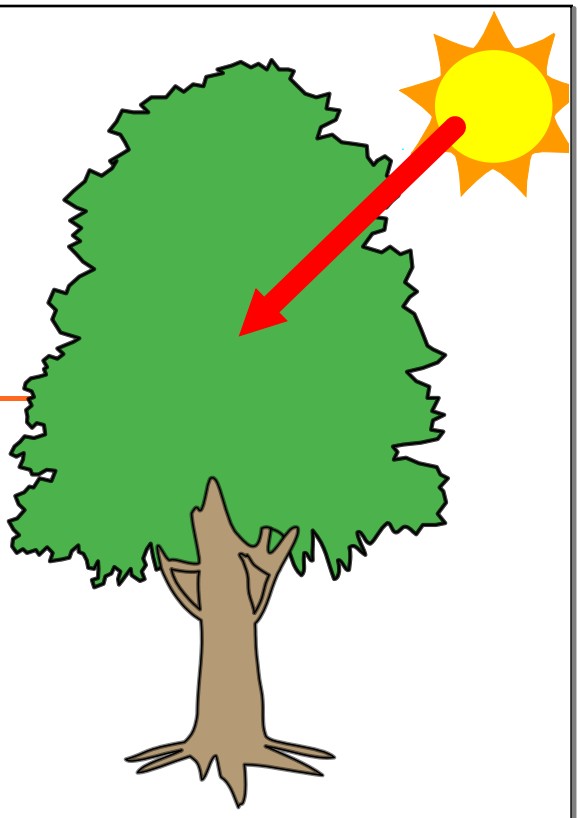
Ch 5-2

3 stages

Oct 25 - 2:51 PM

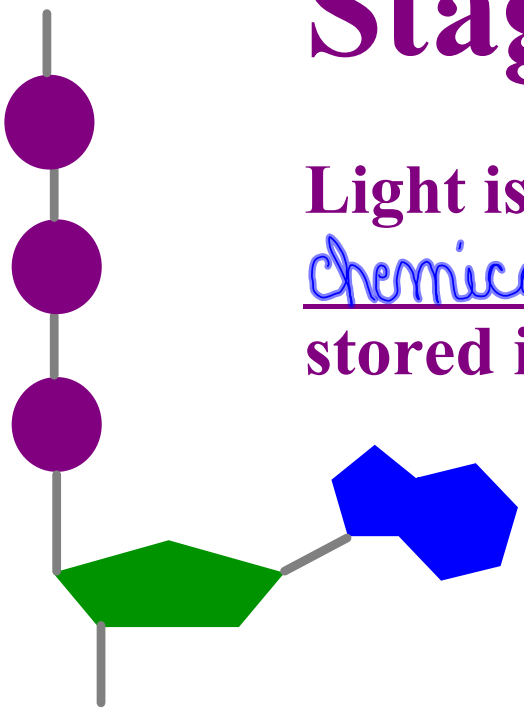
Stage 1

Energy is captured from sunlight.



Oct 25 - 2:57 PM

Stage 2



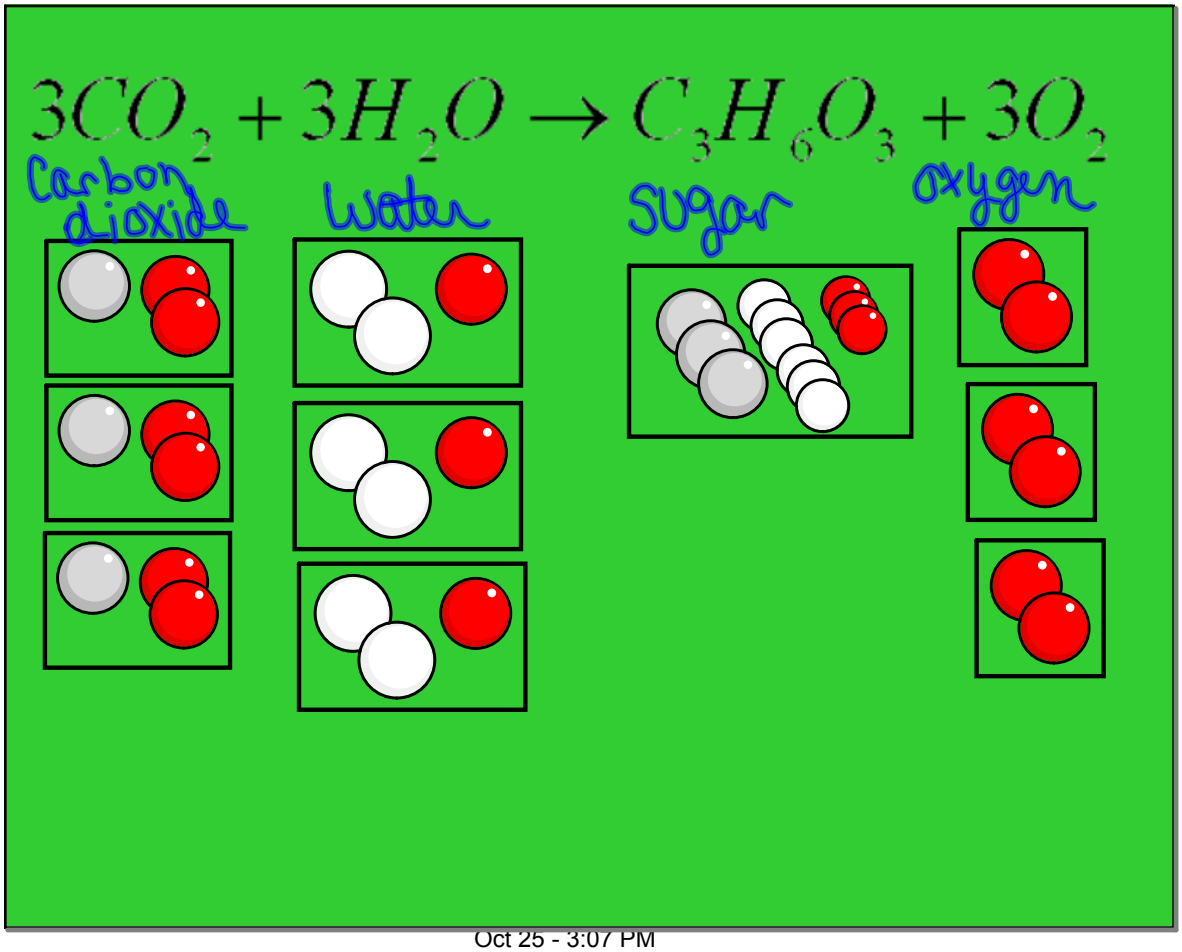
Light is converted to chemical energy and stored in ATP

Oct 25 - 2:58 PM

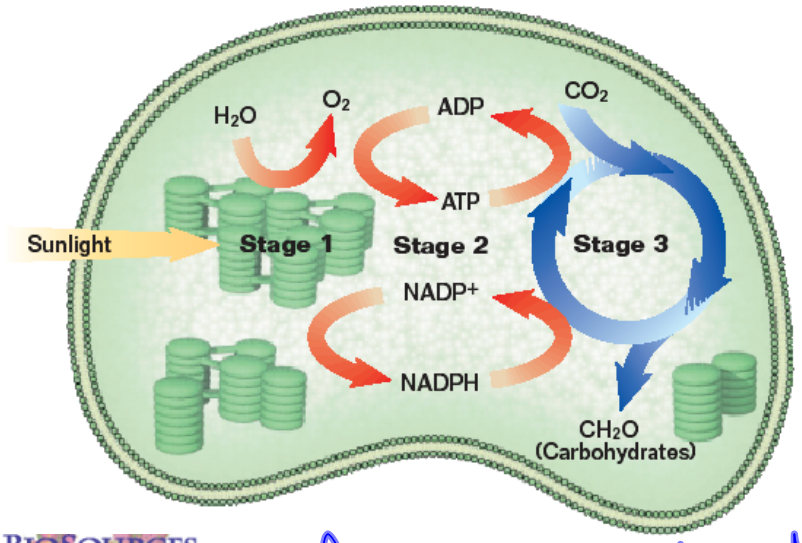
Stage 3

The ATP powers formation of organic compounds using CO_2

Oct 25 - 3:00 PM



Oct 25 - 3:07 PM



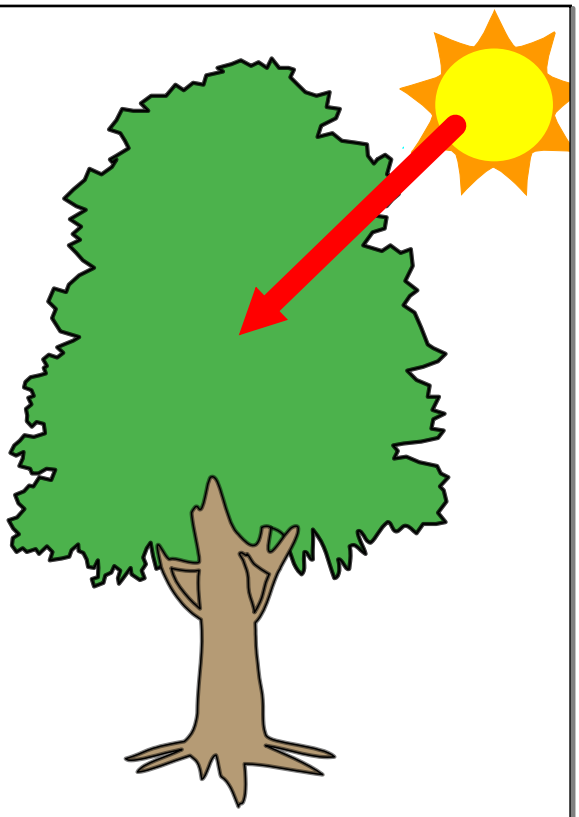
BIOSOURCES
TEACHING TRANSPARENCIES

Chloro plast

Oct 25 - 3:10 PM

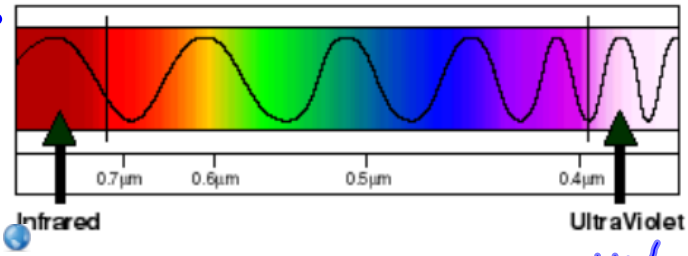
Stage 1

Energy is captured from sunlight.



Oct 25 - 2:57 PM

There are different wavelengths **of light.**



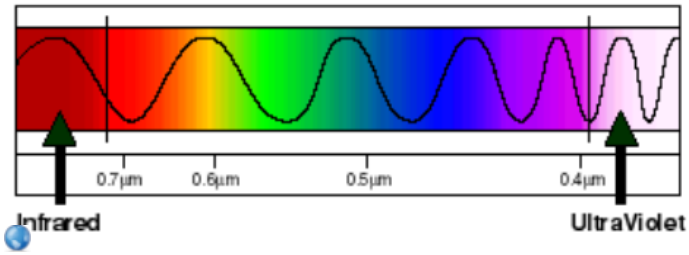
IR

UV

http://imagers.gsfc.nasa.gov/ems/visible.html

Oct 25 - 3:11 PM

Pigments absorb only certain **wavelengths and** reflect **others.**



http://imagers.gsfc.nasa.gov/ems/visible.html

Oct 25 - 3:14 PM

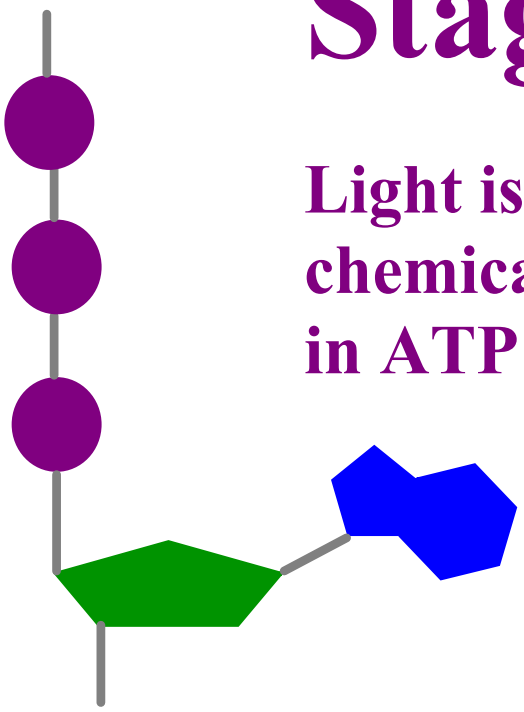
Chlorophyll- the primary pigment in photosynthesis **absorbs mostly** blue **and** red **light and reflect** green **and** yellow **.**

Oct 25 - 3:13 PM

Thylakoids-disk shaped structures **with clusters of** pigments **embedded in the membranes**

Excited electrons jump around in the thylakod membranes.

Oct 26 - 7:23 PM



Stage 2

Light is converted to chemical energy and stored in ATP

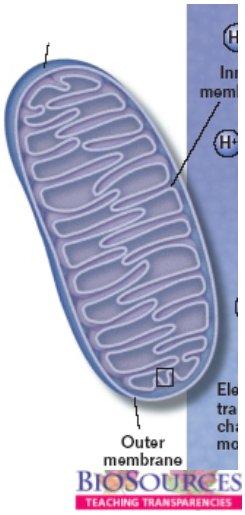
Oct 25 - 2:58 PM

Electron Transport Chain- series of molecules through which the excited electrons pass along the thylakoid membrane.

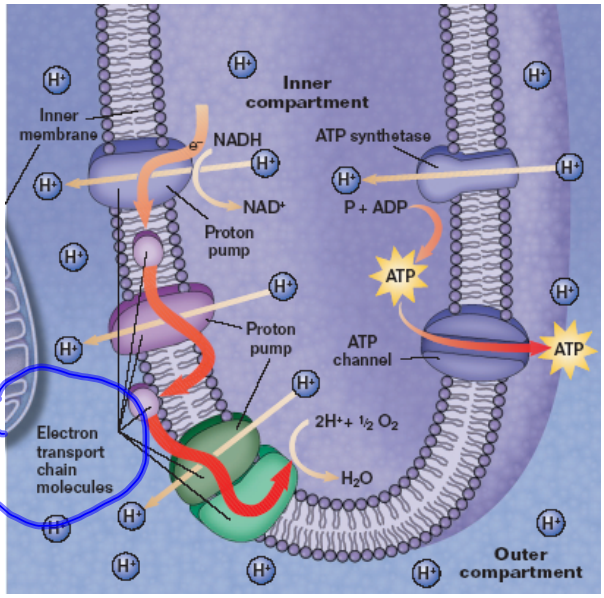
Oct 26 - 7:32 PM

What is this?

Mitochondria

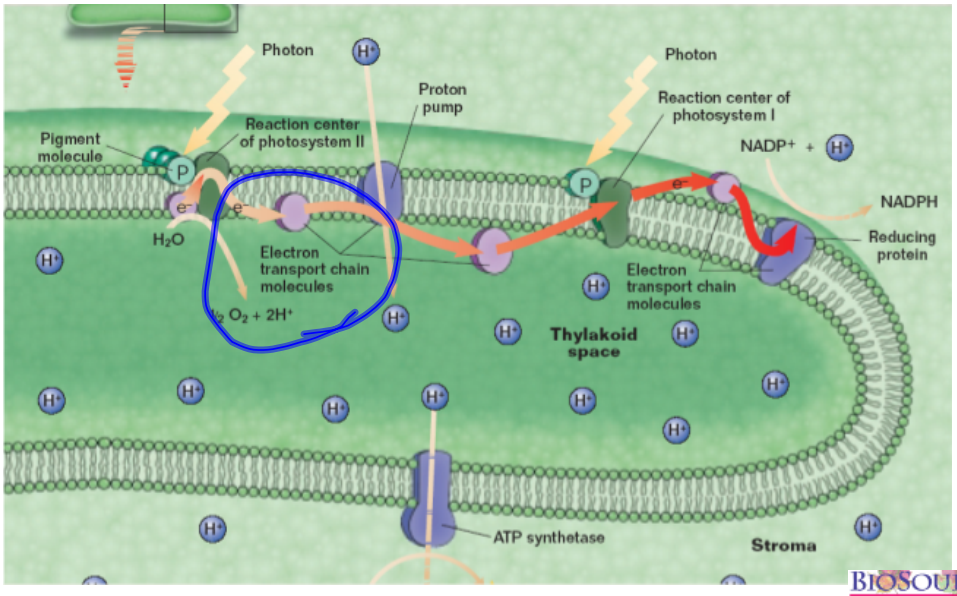


Oct 26 - 7:34 PM



BIOSOURCES TEACHING TRANSPARENCIES

Oct 26 - 7:34 PM



BIOSOURCES TEACHING TRANSPARENCIES

Oct 26 - 7:38 PM

Movement of electrons provide the energy to make ATP.

Oct 26 - 7:37 PM

Stage 3

The ATP powers formation of organic compounds using CO_2

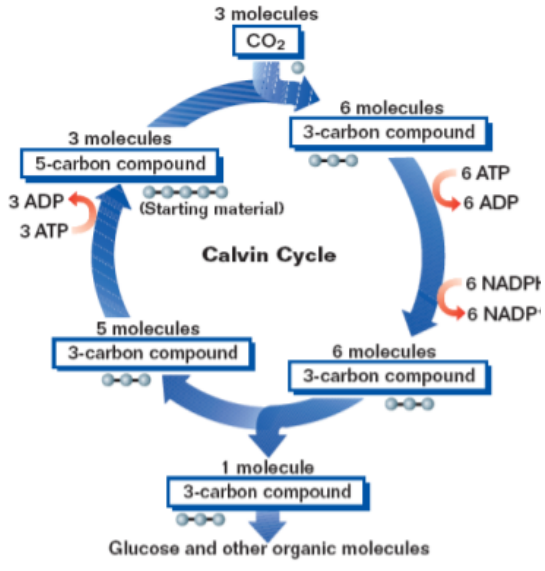
AKA sugar

Oct 25 - 3:00 PM

$$3CO_2 + 3H_2O \rightarrow C_3H_6O_3 + 3O_2$$

Transfer of carbon dioxide to organic compounds in called carbon dioxide fixation.

Oct 26 - 7:34 PM



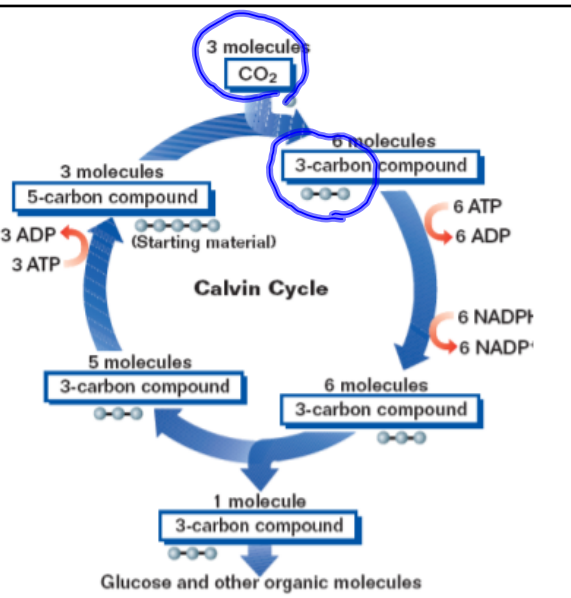
BIOSOURCES TEACHING TRANSPARENCIES

Go to this website for an Interactive Calvin Cycle

http://www.science.smith.edu/departments/Biology/Bio231/calvin.html

Oct 26 - 7:43 PM

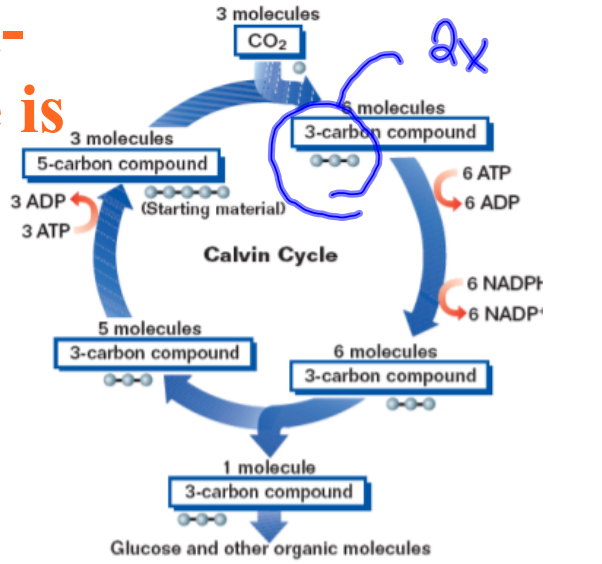
The Calvin Cycle begins when a carbon atom from a CO_2 molecule is added to a 5-carbon molecule.



BIOSOURCES TEACHING TRANSPARENCIES

Oct 26 - 7:43 PM

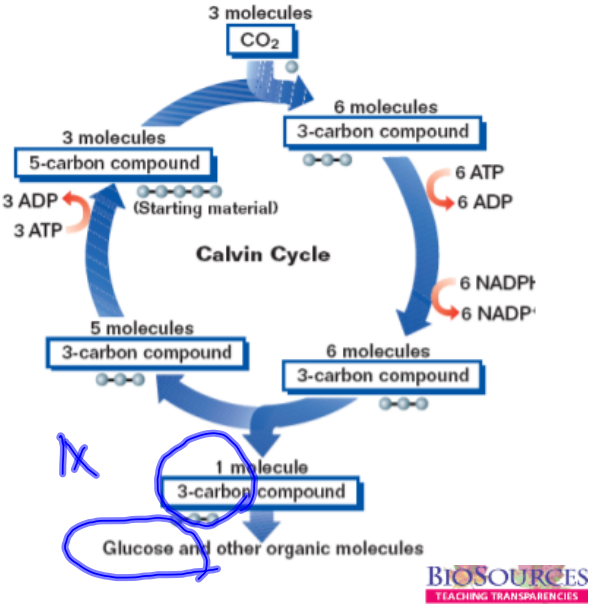
The resulting six-carbon molecule is unstable and splits into two.



BIOSOURCES TEACHING TRANSPARENCIES

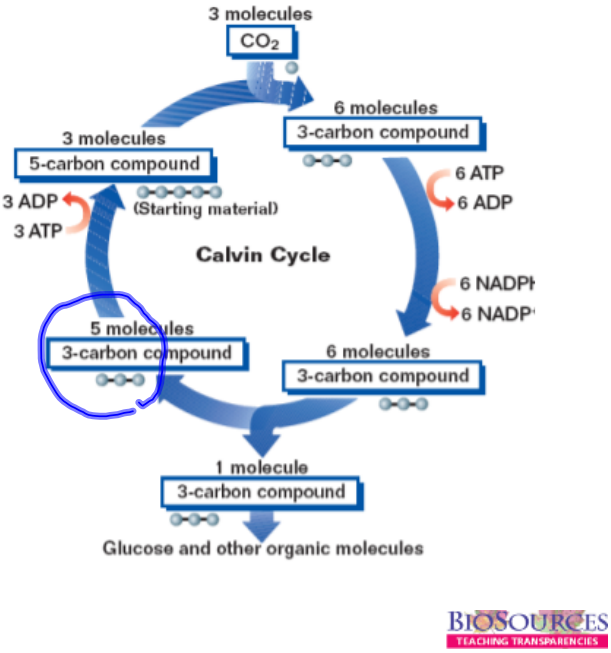
Oct 26 - 7:43 PM

One of the 3 carbon molecules is used to make organic compounds like Sugar.



Oct 26 - 7:43 PM

The other 3 carbon molecules is used to regenerate five-carbon molecules.



Oct 26 - 7:43 PM