Do Now

- Please get out your devices and log onto my website! Mattsonclass.weebly.com
- Go to Environmental Science -> units -> earth -> assignments
- Click the “carbon footprint” assignment

Do Now 10/30

- Get out your “Before the Flood” Bubble Reflection Sheet!

The sodium-potassium pump regulates the amount of sodium and potassium inside of cells, particularly nerve and muscle cells. In this process, an ATP is burned, causing three sodium ions to be pumped out and exchanged for two potassium ions, which are pumped in by a membrane protein. Both ions go against their concentration gradients.

es The sodium-potassium pump is an example of

A) phagocytosis.

B) passive transport.

C) active transport.

D) facilitated diffusion.

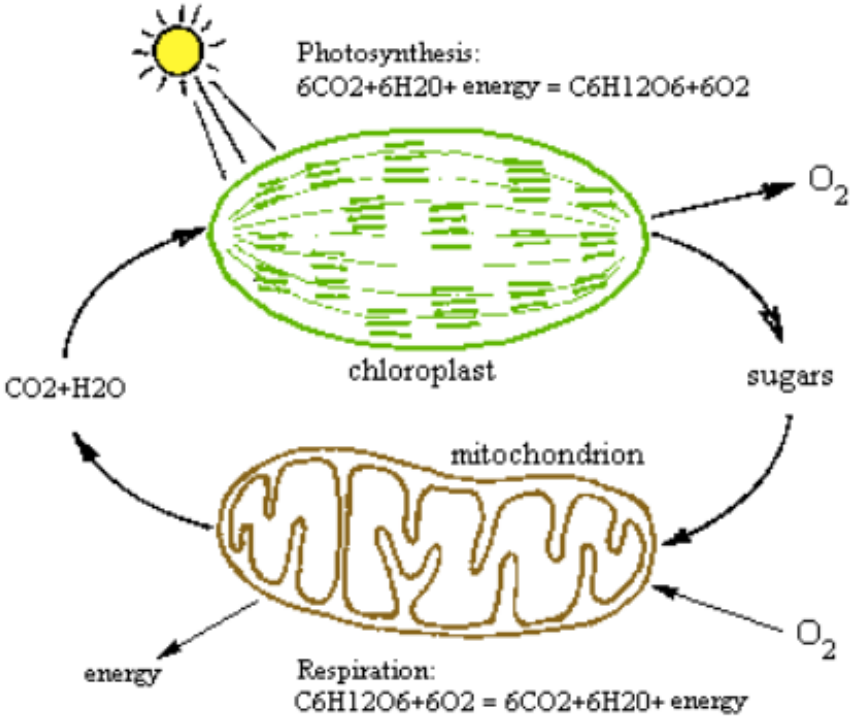
Which of these would increase the rate of photosynthesis and lead to the production of more glucose?

A) increase in available sunlight and available carbon dioxide

B) decrease in available sunlight and available carbon dioxide

C) increase in available sunlight and decrease in available carbon dioxide

D) decrease in available sunlight and increase in available carbon dioxide



es Based on the illustration, what happens to most of the mass gained by the plant cell through photosynthesis?

A) The mass is returned to the soil.

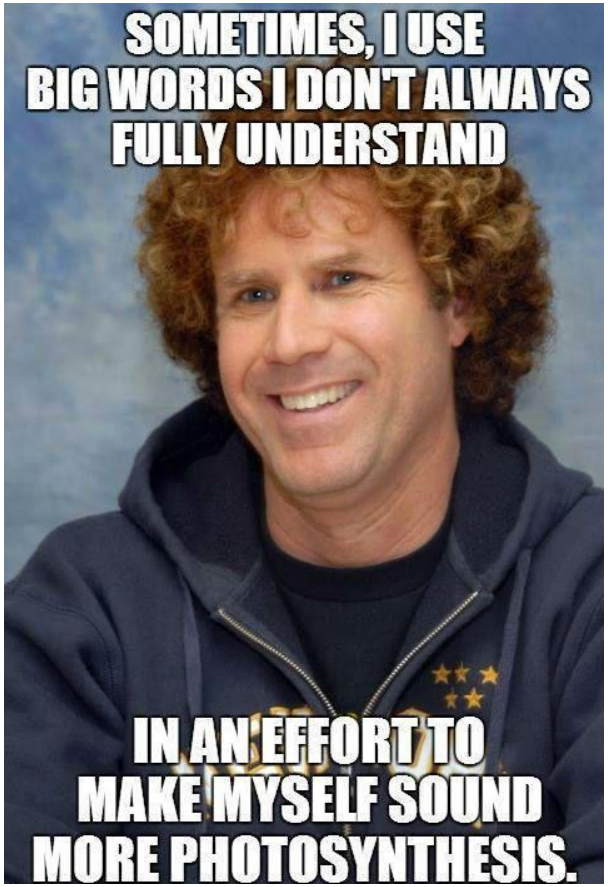
B) The reactants of photosynthesis are used as the reactants of respiration.

C) The products of photosynthesis are shuttled back into the photosynthesis reaction as reactants.

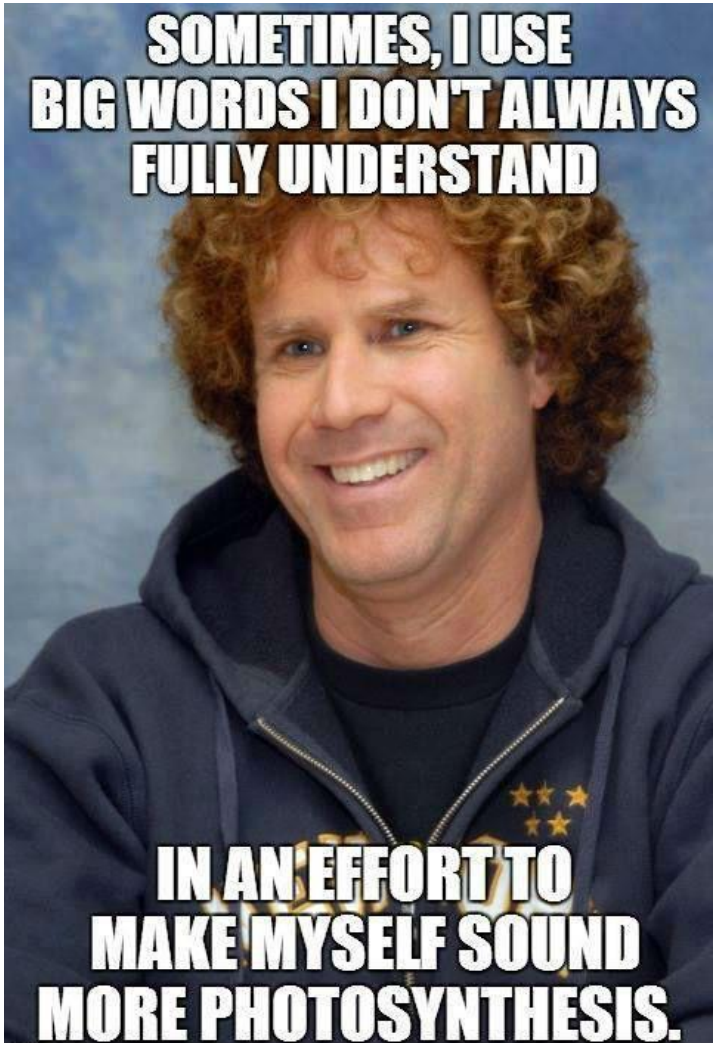
D) The mass produced by the photosynthesis reaction is used by the plant to fuel respiration and is turned into carbon dioxide, water, and energy.

Do Now 10/26

- Turn in your practice questions to the bin!
- You have 5 minutes to study (organelles & cell transport) before we take our **quiz**!



Photosynthesis



Intro song: https://vimeo.com/5395026

What is Photosynthesis?

- Let’s explore!

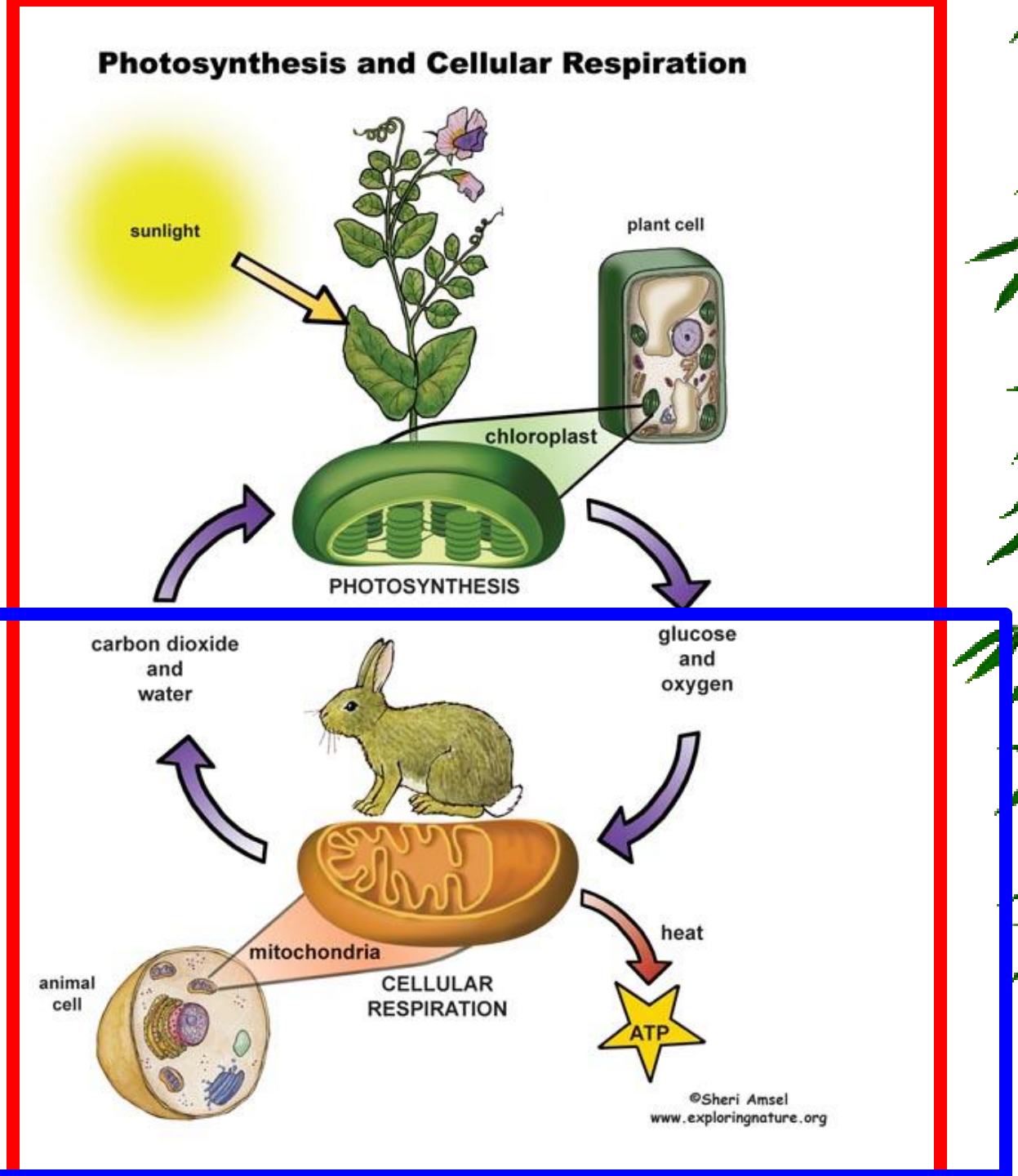
We all need food one way or another…

Autotroph vs. Heterotroph

- **Autotroph**
  - able to make their own food
  - EX: plants use sun energy
  - Producers
  - Photoautotroph – use energy of light to make organic molecules from inorganic
- **Heterotroph**
  - Obtain energy from food consumed
  - EX: Humans, leopards, mushrooms
  - Consumers

Plants

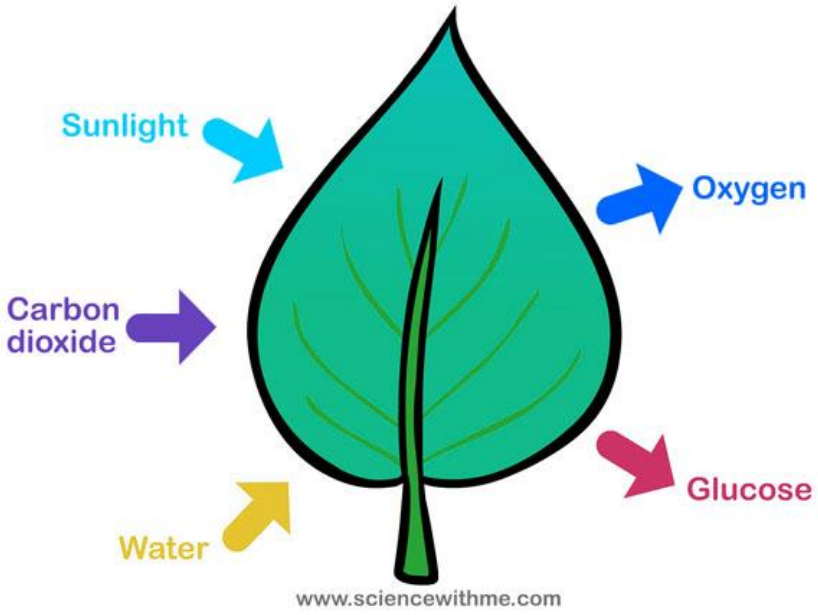
Animals



All for the ultimate goal……

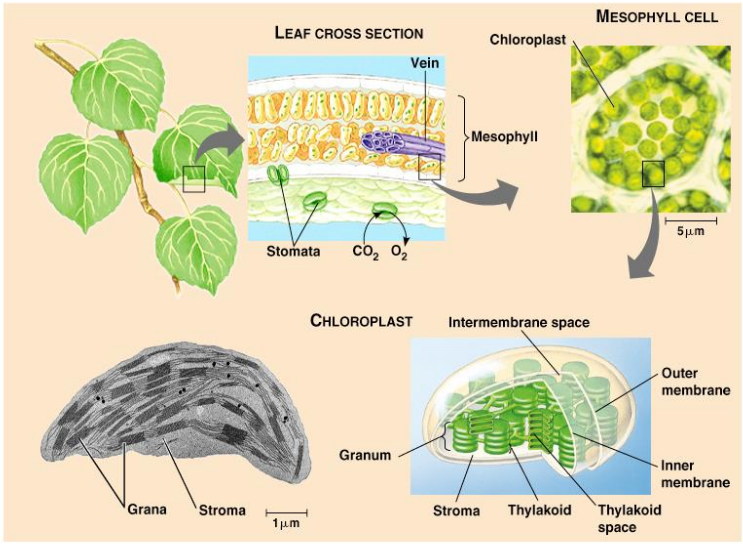
What is photosynthesis?

- Function: To transform light energy (sun) into chemical energy (food)

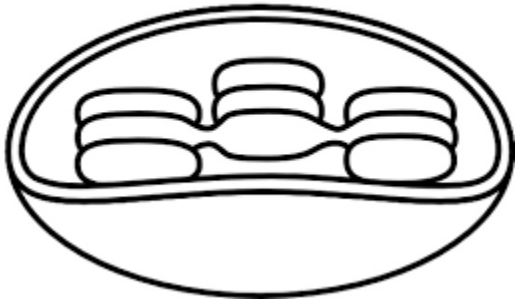


Location

- Chloroplast in plant cells

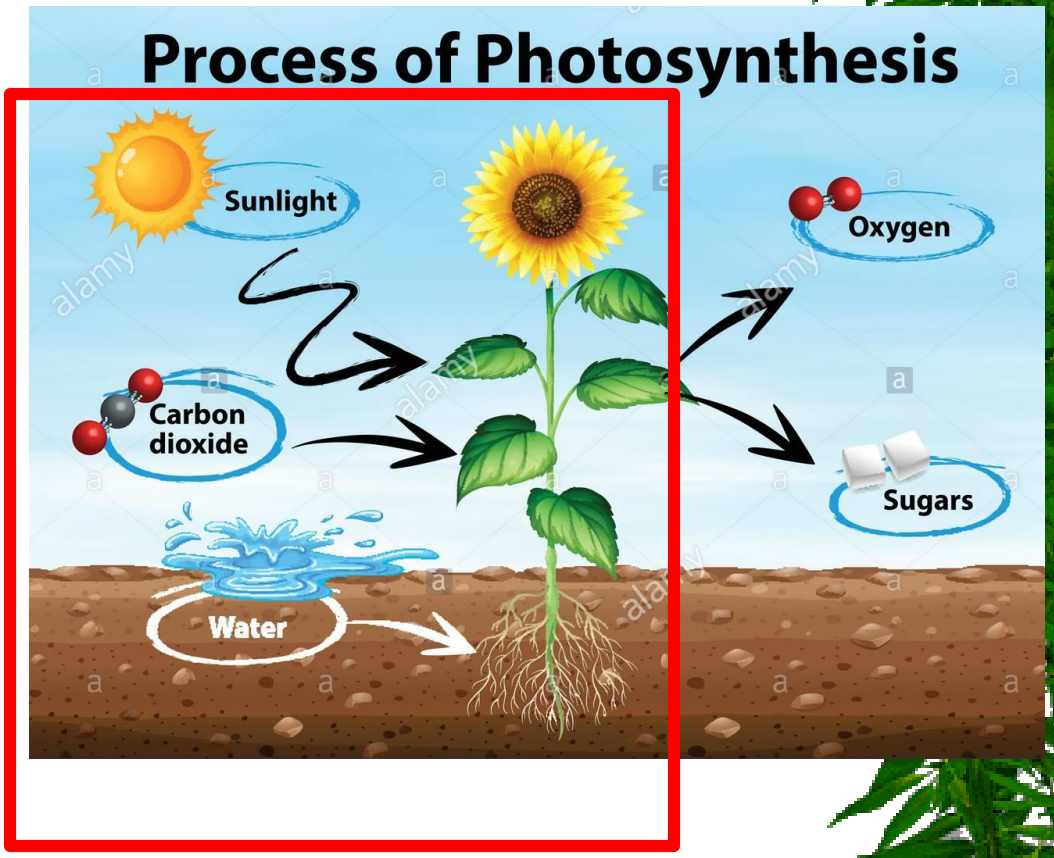


Chloroplast



Reactants

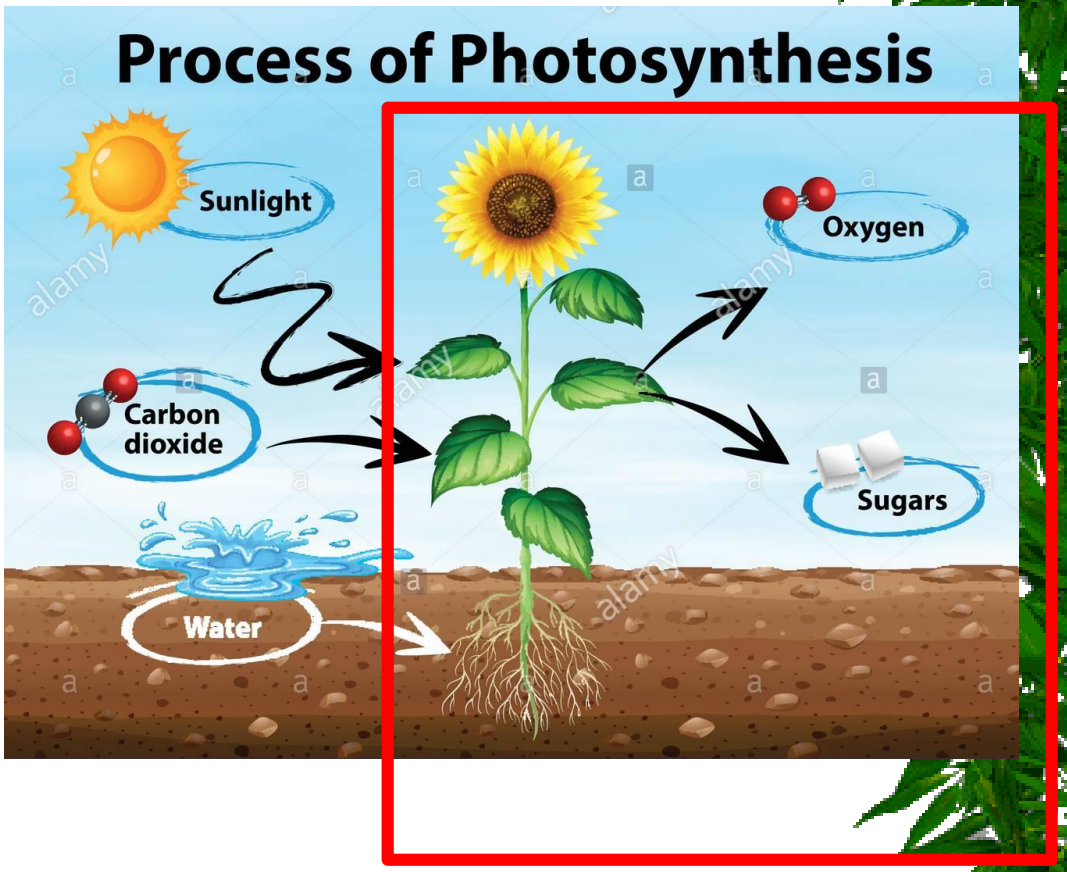
- What goes into the plants?
  - Carbon Dioxide (CO_2)
  - Water (H_2O)
  - Energy (sunlight)



Products

What comes out of plants?

- Glucose ($C_6H_{12}O_6$)
- Oxygen (O_2)

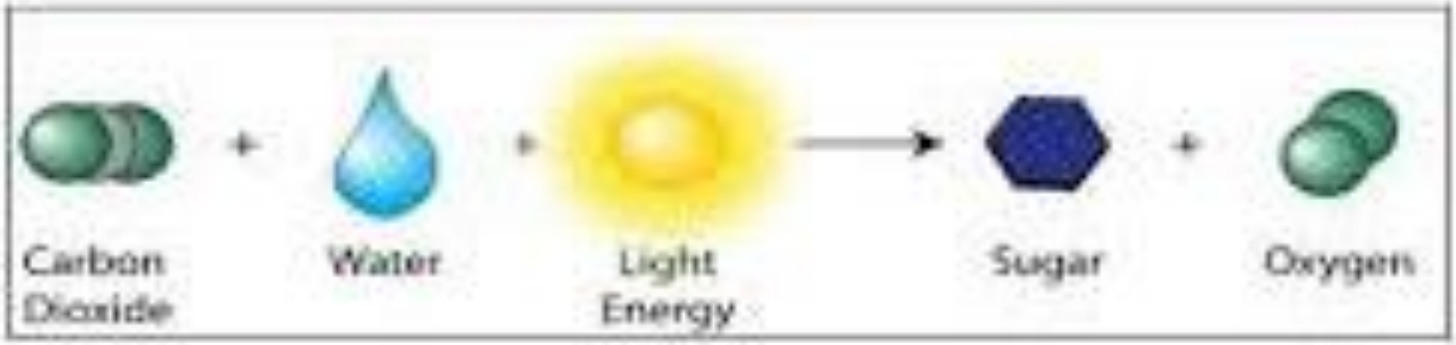


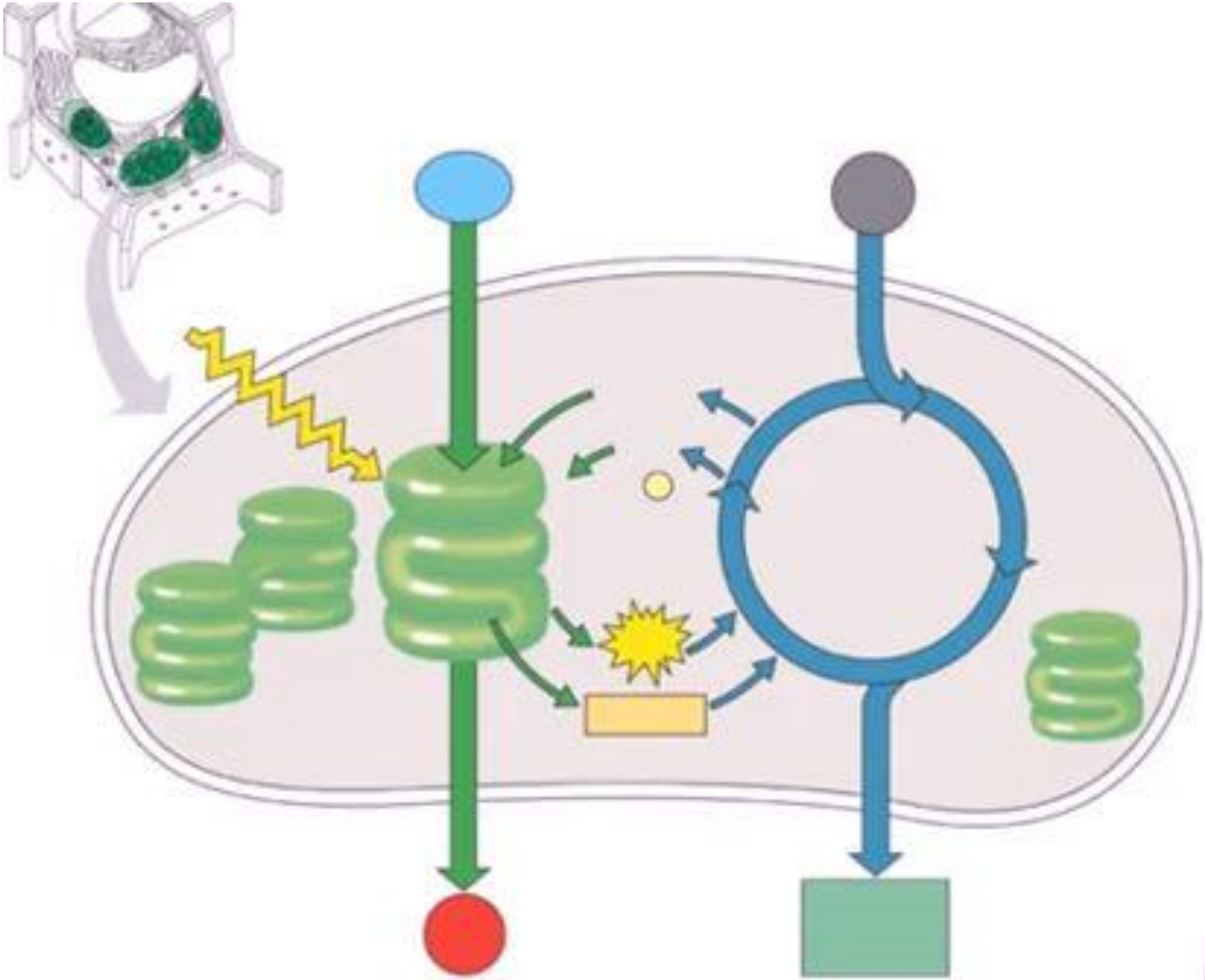
Formula

YOU MUST KNOW THIS CHEMICAL REACTION!!!!!

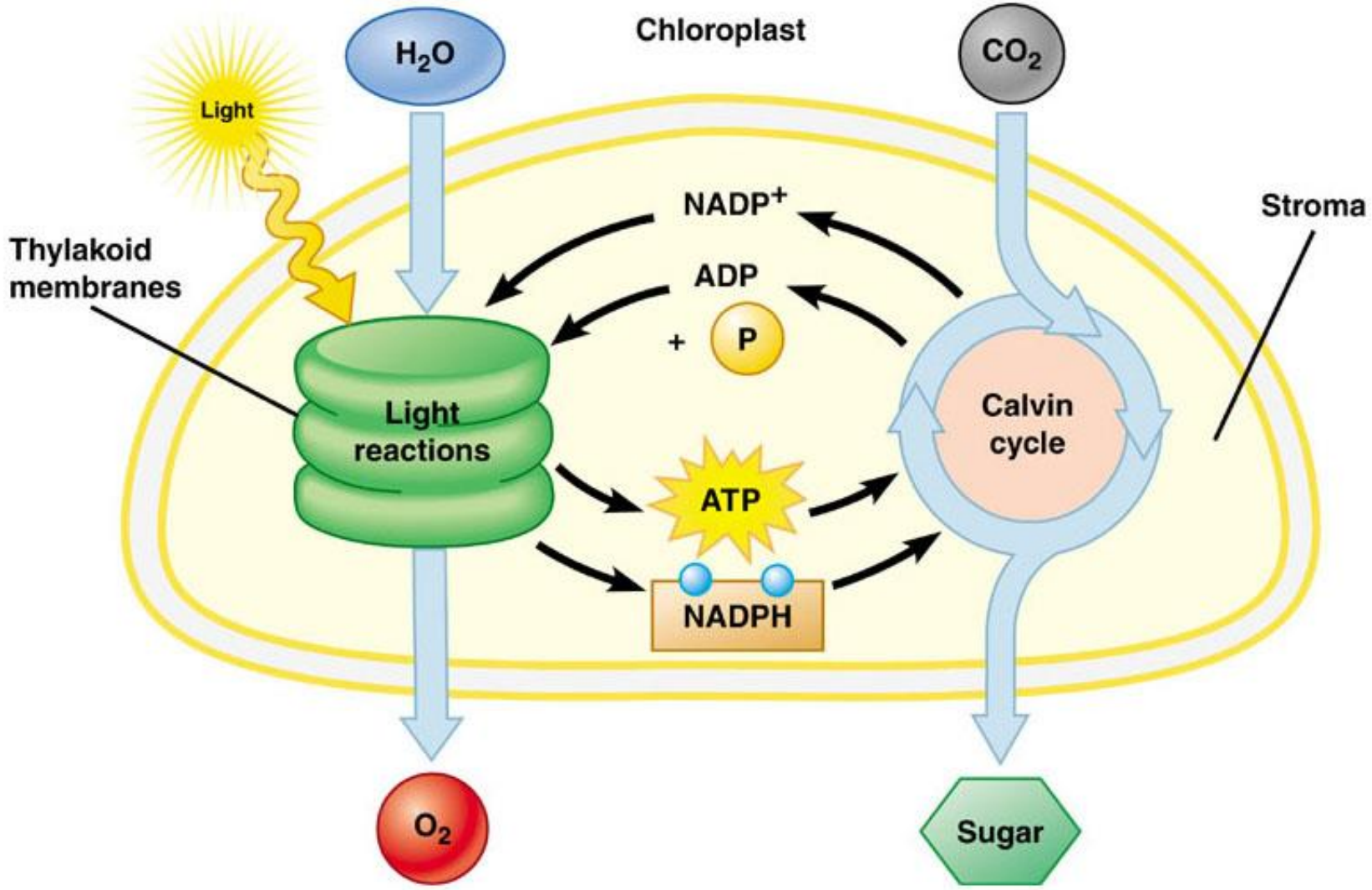
$$6CO_2 + 6H_2O \xrightarrow{Light} C_6H_{12}O_6 + 6O_2$$

REACTANTS → PRODUCTS





An overview of photosynthesis (both light reaction and calvin cycle together)…



Overview video

https://www.youtube.com/watch?v=uixA8ZXx0KU

Exit Ticket:

1. The molecule that has stored energy is
   a. ADP
   b. ATP
   c. Ru-bP
2. The reactants involved in photosynthesis are
   a. Carbon dioxide & glucose
   b. Oxygen & glucose
   c. Carbon dioxide & water
3. The products created by photosynthesis are
   a. Carbon dioxide & glucose
   b. Oxygen & glucose
   c. Carbon dioxide & water
4. Photosynthesis occurs in which organelle?
   a. Mitochondria
   b. Ribosomes
   c. Chloroplasts
5. Which organisms can do photosynthesis?
   a. Plants & animals
   b. Animals only
   c. Plants only