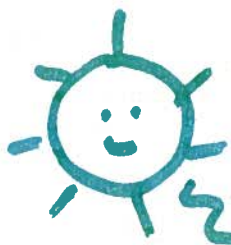
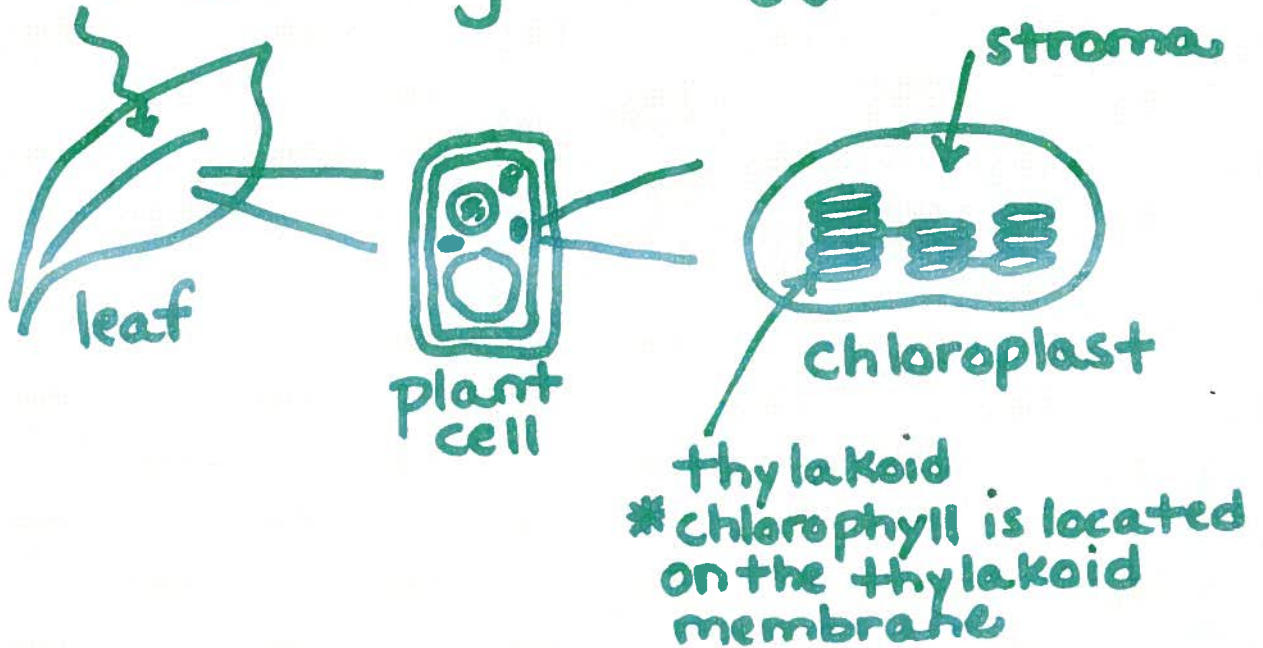


PHOTOSYNTHESIS



Photon = light energy



STAGE 1: LIGHT REACTIONS

- occurs at the thylakoid
- Light energy (photons) strike chlorophyll and reactions occur to make some ATP that will be used to fuel the dark reactions
- Hydrogen (H) is broke off water molecules and oxygen (O₂) is released

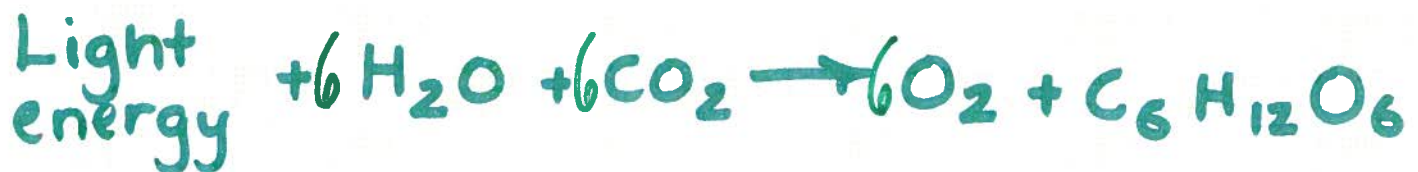
STAGE 2: DARK REACTIONS (CALVIN CYCLE)

- occurs in the stroma of the chloroplast
- uses ATP from the light reactions AND Carbon dioxide (CO_2) to create glucose ($\text{C}_6\text{H}_{12}\text{O}_6$)

SUMMARY:

(energy)

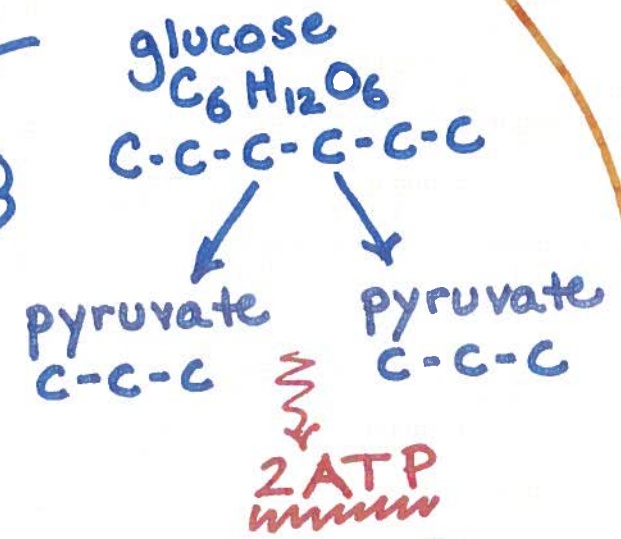
- * USES: Light and water (H_2O) in the LIGHT REACTIONS
- * USES: Carbon dioxide (CO_2) in the DARK REACTIONS
- MAKES: Oxygen (O_2) in the LIGHT REACTIONS
Some ATP
- MAKES: Glucose ($\text{C}_6\text{H}_{12}\text{O}_6$) in the DARK REACTIONS



cytoplasm CELL RESPIRATION

● glucose

① Glycolysis:
1 molecule of glucose is broke into 2 pyruvate molecules. **2 ATP** molecules are made when this bond is broken.



Each pyruvate then enters the mitochondria IF oxygen is present

② Krebs's cycle: uses the pyruvate to generate carbon dioxide CO_2 and **2 ATP**

③ Electron transport Chain uses hydrogen ions and oxygen to make **water H_2O** and **32 ATP**

Mitochondria

1 glucose generates a total **36 ATP!**