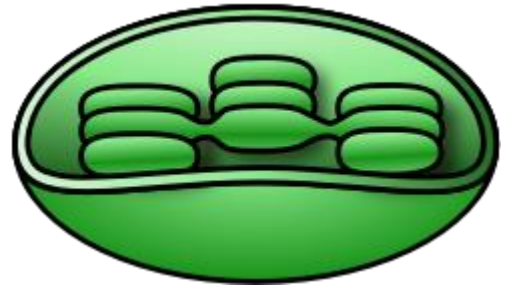


Module 5: Photosynthesis Notes Guide

Complete this notes guide to review the content related to Photosynthesis. You may use your completed notes guide while taking the Photosynthesis quiz, as some questions will be the same or similar in nature. You may not use this during the test.

Chloroplasts, Light and Pigments

1. Label the chloroplast with the following parts: **outer membrane, inner membrane, thylakoid, grana, intermembrane space, stroma.**



2. Chloroplasts contain saclike photosynthetic membranes called _____ where chlorophyll molecules are embedded. When stacked, these sac-like membranes make up _____.

3. White light is made up of which colors?

4. List the primary pigment in plants?

5. What is an accessory pigment? Give at least two examples of accessory pigments.

6. Both chlorophyll a and b absorb _____ and _____ light, but both reflect _____ light.

Photosynthesis

7. Write the overall equation for photosynthesis using words.

10. Write the overall equation for photosynthesis using chemical formulas.

11. Photosynthesis uses the energy of sunlight to convert water and carbon dioxide into oxygen and high-energy _____.

17 What are the two stages of photosynthesis called?

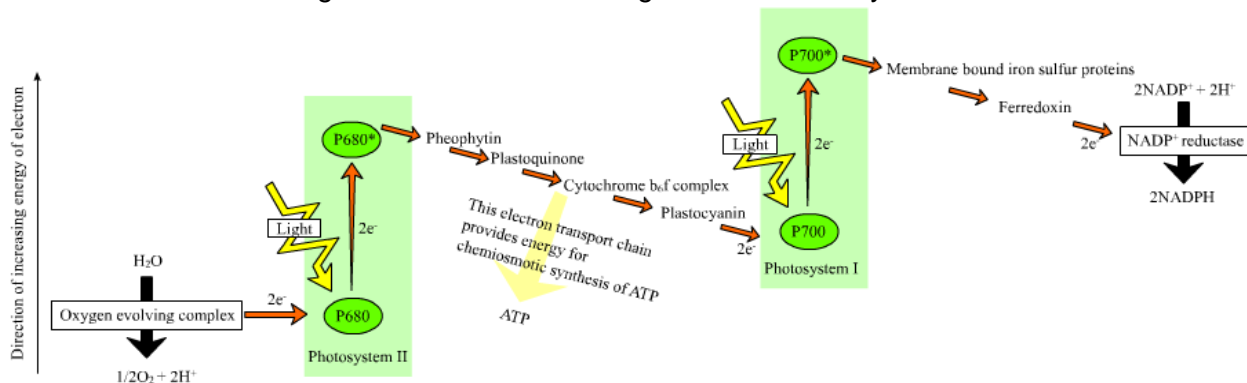
- a.
- b.

Complete the following table:

Stage	Where It Occurs	What Goes In	What Comes Out
Light dependent reactions			
Light Independent Reactions (Calvin Cycle)			

Light Dependent Reactions

Make notes about the Light Reactions on this diagram as necessary.



"Z-scheme" by w>User:Bensaccount - <http://en.wikipedia.org/wiki/Image:Z-scheme.png>. Licensed under Creative Commons Attribution-Share Alike 3.0 via Wikimedia Commons - <http://commons.wikimedia.org/wiki/File:Z-scheme.png#mediaviewer/File:Z-scheme.png>

Complete the following summary of the Light Reactions using the word bank:

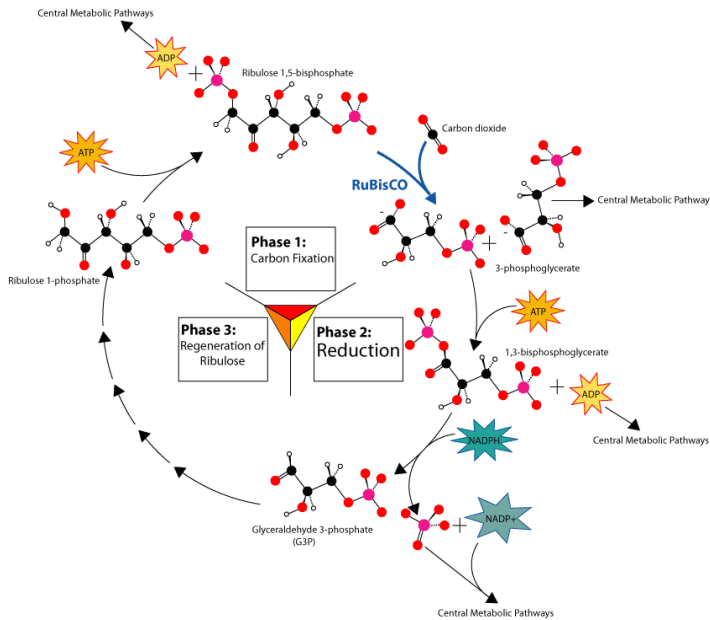
When light hits the photosystems, it jars loose an _____, which becomes energized and then enters an Electron transport chain. The Electron Transport Chains are used to generate _____ and _____, energy carrier molecules. Photosystem II's missing electron is replaced by the splitting of water, also called _____, which gives off _____ gas as a by-product.

ATP
electron
NADPH
oxygen
photolysis

The oxygen we breathe originates from the _____ that plants use in photosynthesis.

Light Independent Reactions (Calvin Cycle)

Make notes about the Calvin cycle on this diagram as necessary.



"Calvin-cycle2" by User: adenosine - <http://en.wikipedia.org/wiki/File:Calvin-cycle2.png#mediaviewer/File:Calvin-cycle2.png>
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True or False: The light independent reactions happen during the dark only.

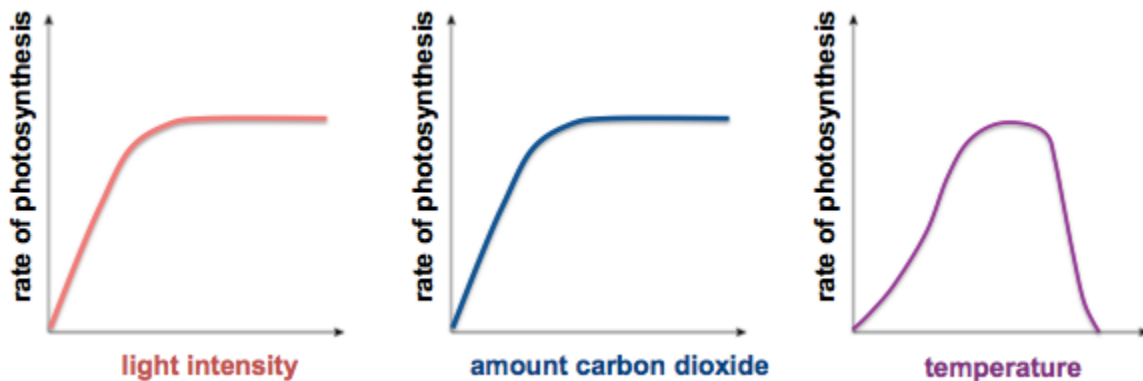
What does it mean to "fix" carbon in the Calvin Cycle?

How many turns of the Calvin Cycle make a single molecule of glucose? _____

The Calvin Cycle uses ATP and NADPH energy to build the sugar glucose. Where did it get the ATP and NADPH?

18. What are three factors that affect the rate at which photosynthesis occurs?
- a.
 - b.
 - c.

For each graph below, describe the reasons that the rate of photosynthesis changes:



19. Is the following sentence true or false? Increasing the intensity of light decreases the rate of photosynthesis.

What are stomata, and how do they help a plant with photosynthesis?

From GVL

http://cms.gavirtualschool.org/Shared/Science/Biology17/CellEnergetics/Biology_CellEnergetics_Shared5.html