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|  | **Topic/ Objective: Photosynthesis**I can explain how \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is made.  |
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| **Essential Question**: What is the difference between the Light Reaction and Calvin Cycle during photosynthesis?  |
| **2 Cycles:**There are two cycles that work together to create glucose (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (require light)
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (doesn't require light or dark)

Definition: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- when a chemical (like water) is broken down by photons\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**But First! What the heck is ATP?** * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_= Adenosine Triphosphate
* ATP is an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ molecule. We have energy because we have ATP.

 ATP= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_!\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Light Reaction- Needs light*** Occurs in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of chloroplasts
	+ Adds a phosphate to \_\_\_\_\_\_\_\_\_\_ (adenosine diphosphate) to become \_\_\_\_\_\_\_\_\_\_\_\_ (adenosine triphosphate).
		- LOTS OF ENERGY IN ATP
	+ Splits \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (H2O) to release O2 (oxygen) and H+(hydrogen)
		- Sends H+ over to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Remember Diffusion?** * + - After the Light Reaction, oxygen (O2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ out of the cell that we then breathe!

**Calvin Cycle- Doesn't need light!*** Occurs in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of chloroplasts
	+ Takes in\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Carbon Dioxide)
	+ Uses the ATP (energy) and H+ from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Synthesizes (makes) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* This can happen day or night
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