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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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