

Photosynthesis & Cellular Respiration
"The OPPOSITES"

Describe the process (what does this process do?)	<p>Light Energy ↓ Chemical Energy (Glucose)</p>	<p>Chemical Energy (Food) ↓ Chemical Energy (ATP)</p>
Does the process store or release energy?	Stores Energy	Releases Energy
Where in the cell does the process occur (what organelles?)	<p>Chloroplast Step 1 - Thylakoid Step 2 - Stroma</p>	<p>Starts - Cytoplasm Ends - mitochondria</p>
What are the REACTANTS (what is needed for the process to begin)?	<p>Light Energy Carbon Dioxide Water</p>	<p>Glucose Oxygen</p>
What are the PRODUCTS (what is produced at the end of the process)?	<p>Glucose Oxygen</p>	<p>Carbon Dioxide Water Energy (ATP)</p>
Write the chemical reaction for the process.	$6\text{CO}_2 + 6\text{H}_2\text{O} \xrightarrow{\text{light}} \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$	$\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O} + \text{energy (ATP)}$
What organisms use the process?	Autotrophs (Plant)	ALL

Photo

Occurs in
Chloroplast

Uses: Water
 CO_2 , light

Produces: Glucose
& Oxygen

Stores energy

Both

- Convert Energy
- Produce Chemical energy
- Involves the same elements/molecules
- Used by Autotrophs
- Make ATP
- Use an Electron Transport chain

CR

Occurs in
Cytoplasm
&
Mitochondria

USES: Glucose
&
Oxygen

Produces: CO_2
&
Water
&
ATP

Releases energy