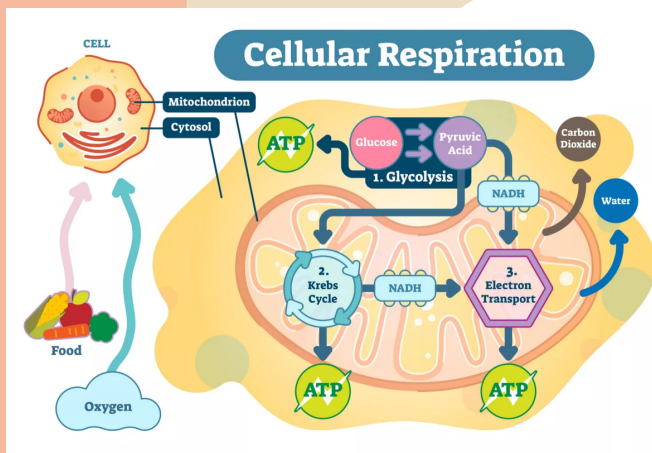
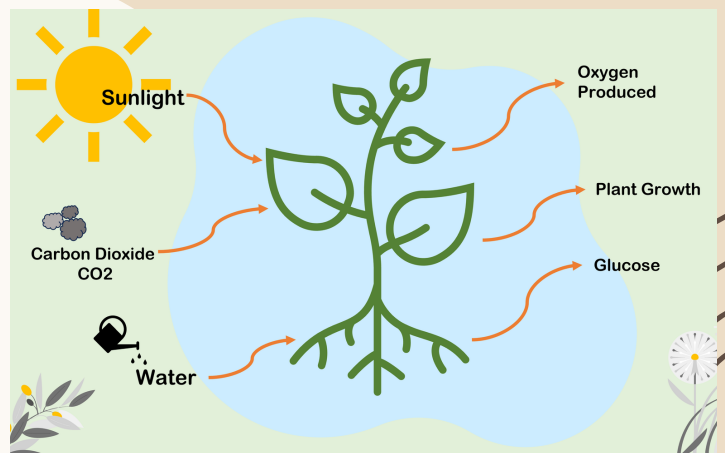


# Photosynthesis Vs. Cellular Respiration

## What is Photosynthesis?

The process by which plants use sunlight, water, and carbon dioxide to create glucose and oxygen



## What is Cellular Respiration?

The process by which cells convert glucose and oxygen into energy, carbon dioxide, and water.

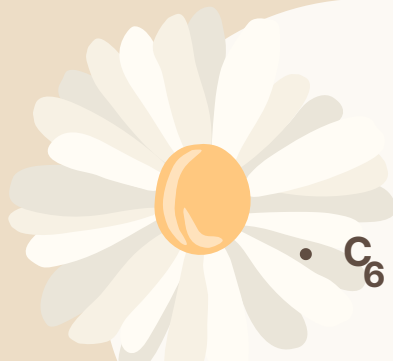
## Cellular Respiration Equations

- $6\text{CO}_2 + 6\text{H}_2\text{O} + \text{energy} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$
- Carbon dioxide + water + (light energy) glucose + oxygen gas



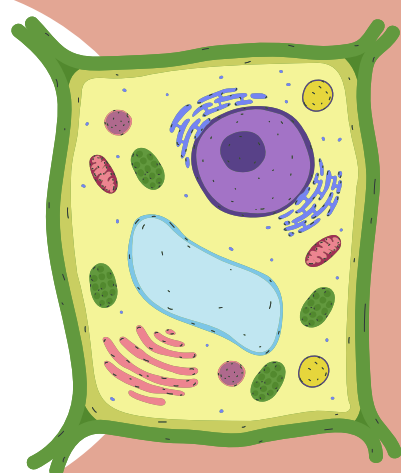
## Photosynthesis Equation

- $\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \xrightarrow{\text{sunlight energy}} 6\text{CO}_2 + 6\text{H}_2\text{O}$
- glucose + oxygen --> water + carbon dioxide + 36 ATP



## Stages of Cellular Respiration

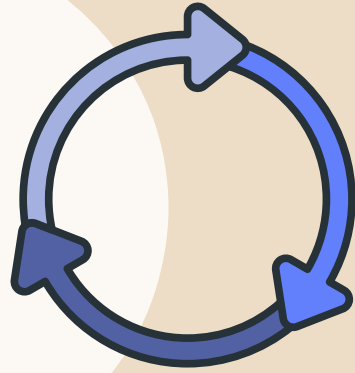
- STAGE 1.) Glycolysis- glucose is broken down into pyruvate, producing ATP and NADH



# Photosynthesis Vs. Cellular Respiration

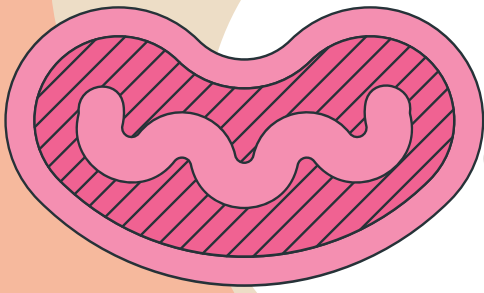
## Stages of Cellular Respiration

Stage 2.) Krebs Cycle- breaks down molecules, produces ATP and generates energy



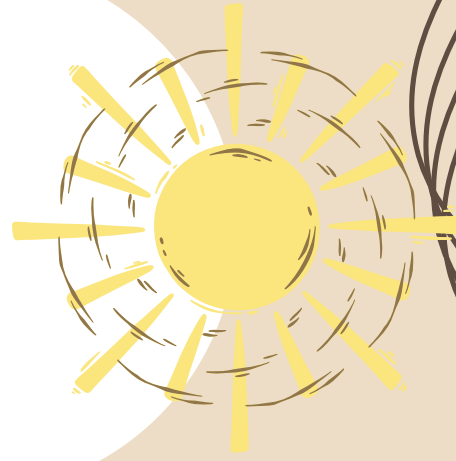
## Stages of Cellular Respiration

Stage 3.) - Electron Transport Cycle- generates ATP using high-energy electrons



## Stages of Photosynthesis

Light Dependent Reactions- captures light energy from the sun and converts it to chemical energy



## Stages of Photosynthesis

Light Independent Reactions- CO<sub>2</sub> is converted to glucose. (doesn't need sunlight)



## How Photosynthesis and Cellular Respiration are Related

They are connected because they are opposite reactions. Photosynthesis produces glucose and oxygen, while cellular respiration uses glucose and oxygen to produce energy. They both work together in a cycle.

