

A close-up photograph of a green leaf with serrated edges and prominent veins. In the background, a bright sunburst creates a strong yellow and white light source, with rays of light extending across the scene. The overall color palette is dominated by greens and yellows.

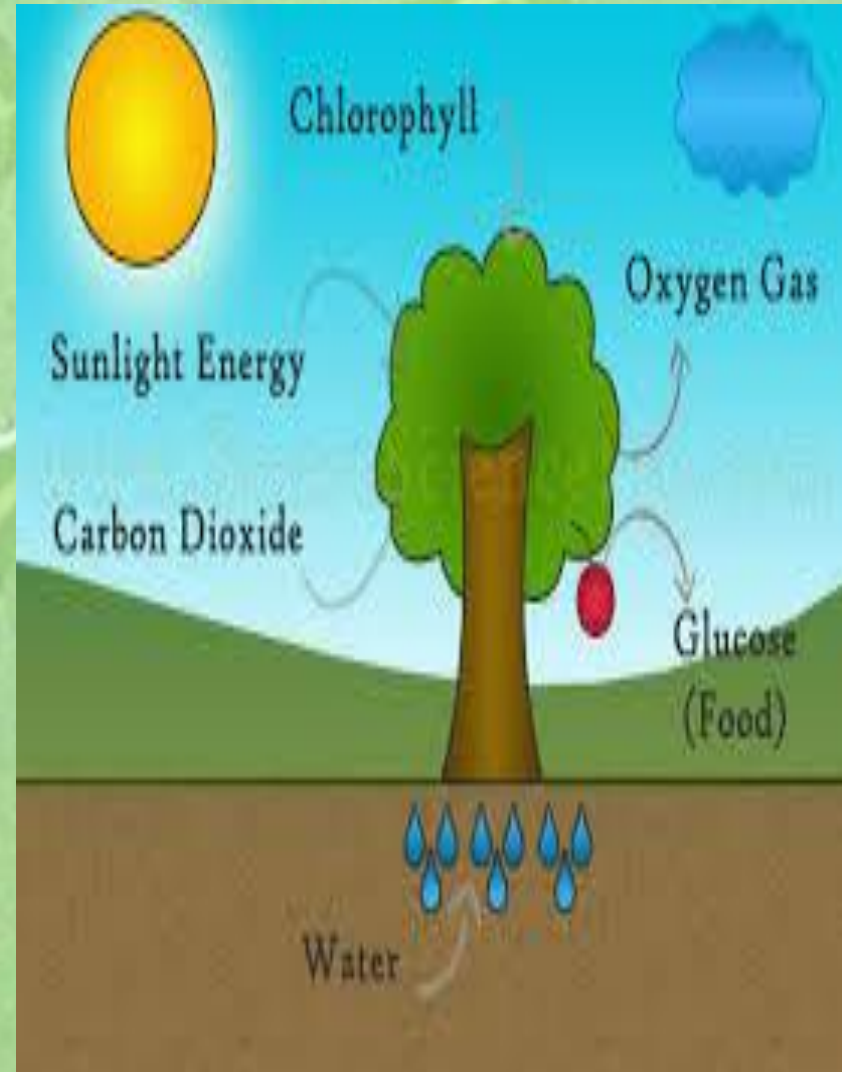
Photosynthesis

Respiration

Transpiration

# What is Photosynthesis?

***Photosynthesis*** is the process by which plants turn water, sunlight and carbon dioxide into oxygen and food, a simple sugar called glucose.

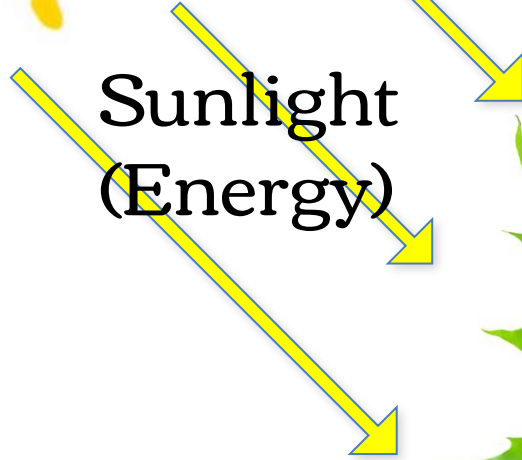


Raw

# Materials needed for Photosynthesis



Sunlight  
(Energy)



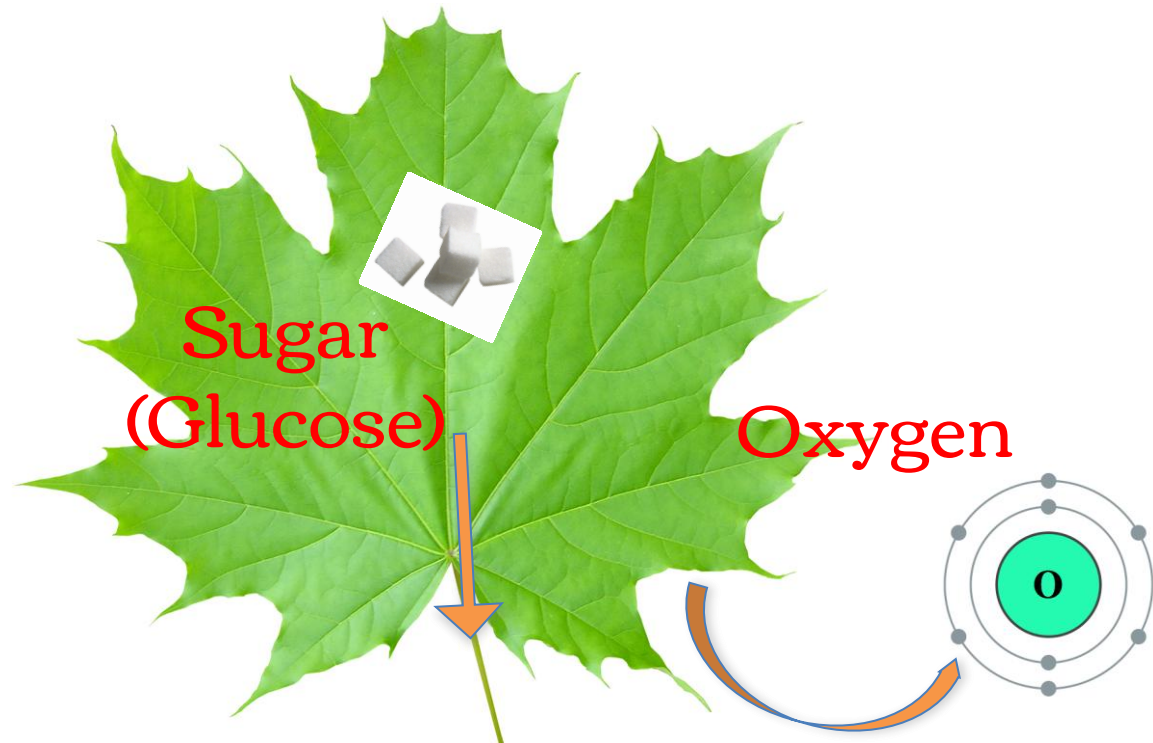
Carbon  
Dioxide



Water

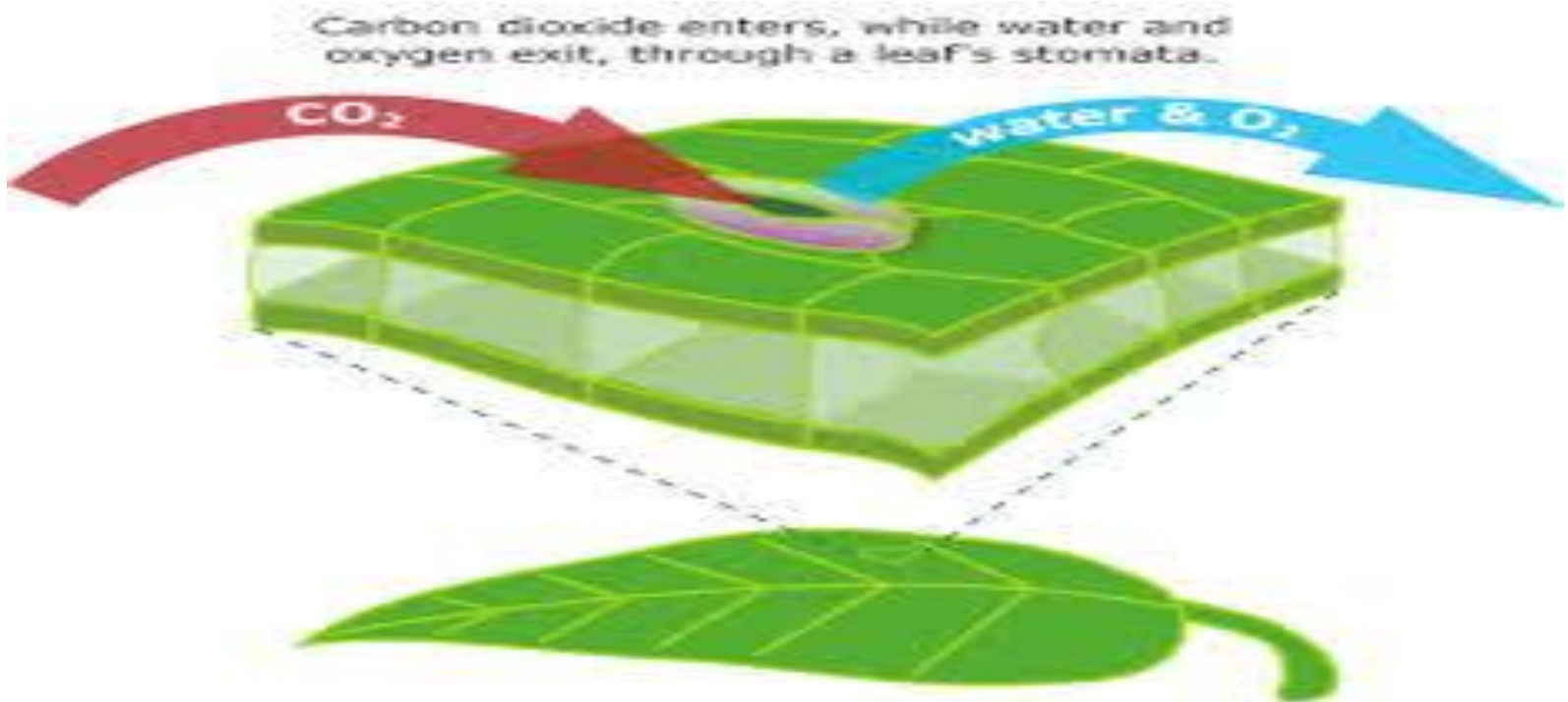


# Products of Photosynthesis





Carbon dioxide is taken in through ***pores*** in the leaf, called ***stomata*** and oxygen exits into the air through the stomata.



*Where does photosynthesis occur?*

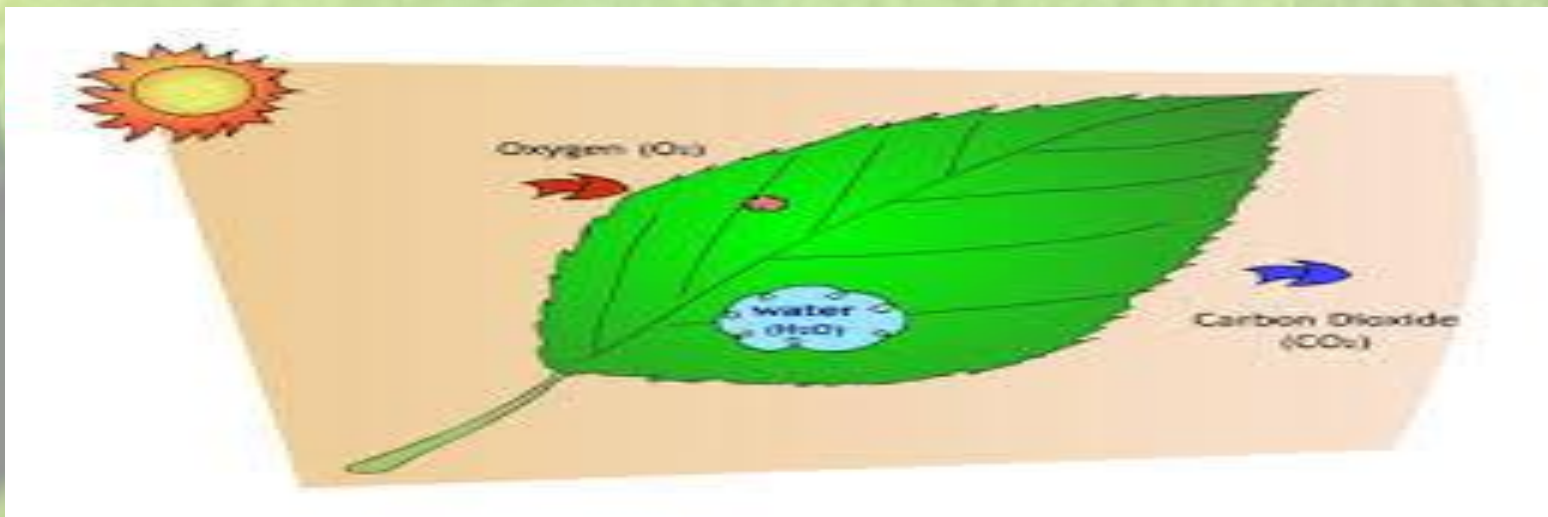
The chloroplasts, in the cells of the leaf, contain chlorophyll, a green pigment that absorbs light energy from the sun.



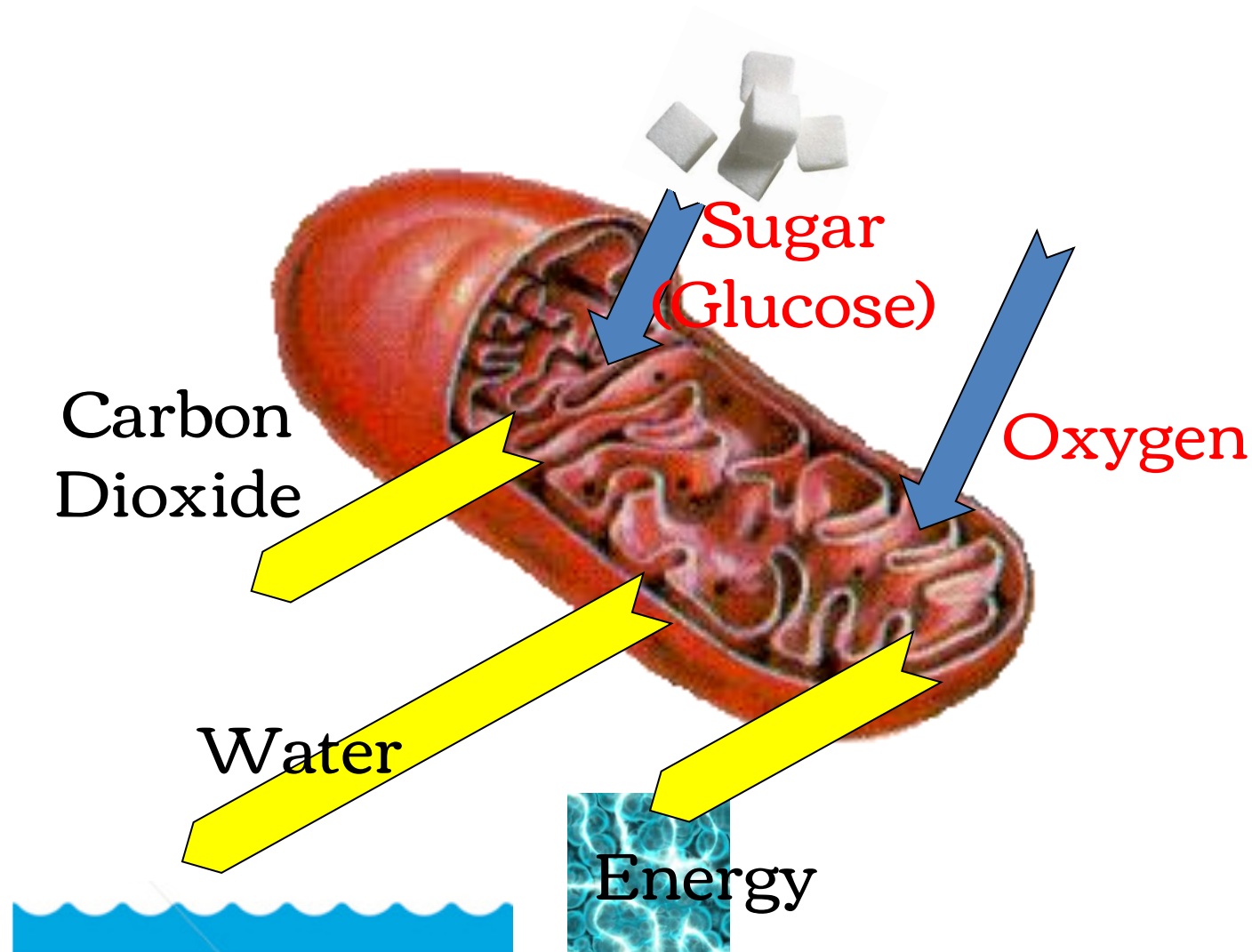
# What is Respiration?

**Respiration** is the process by which plants break down the sugar, in the cells, to get energy to grow and repair.

Glucose + Oxygen  $\rightarrow$  Carbon dioxide, Water,

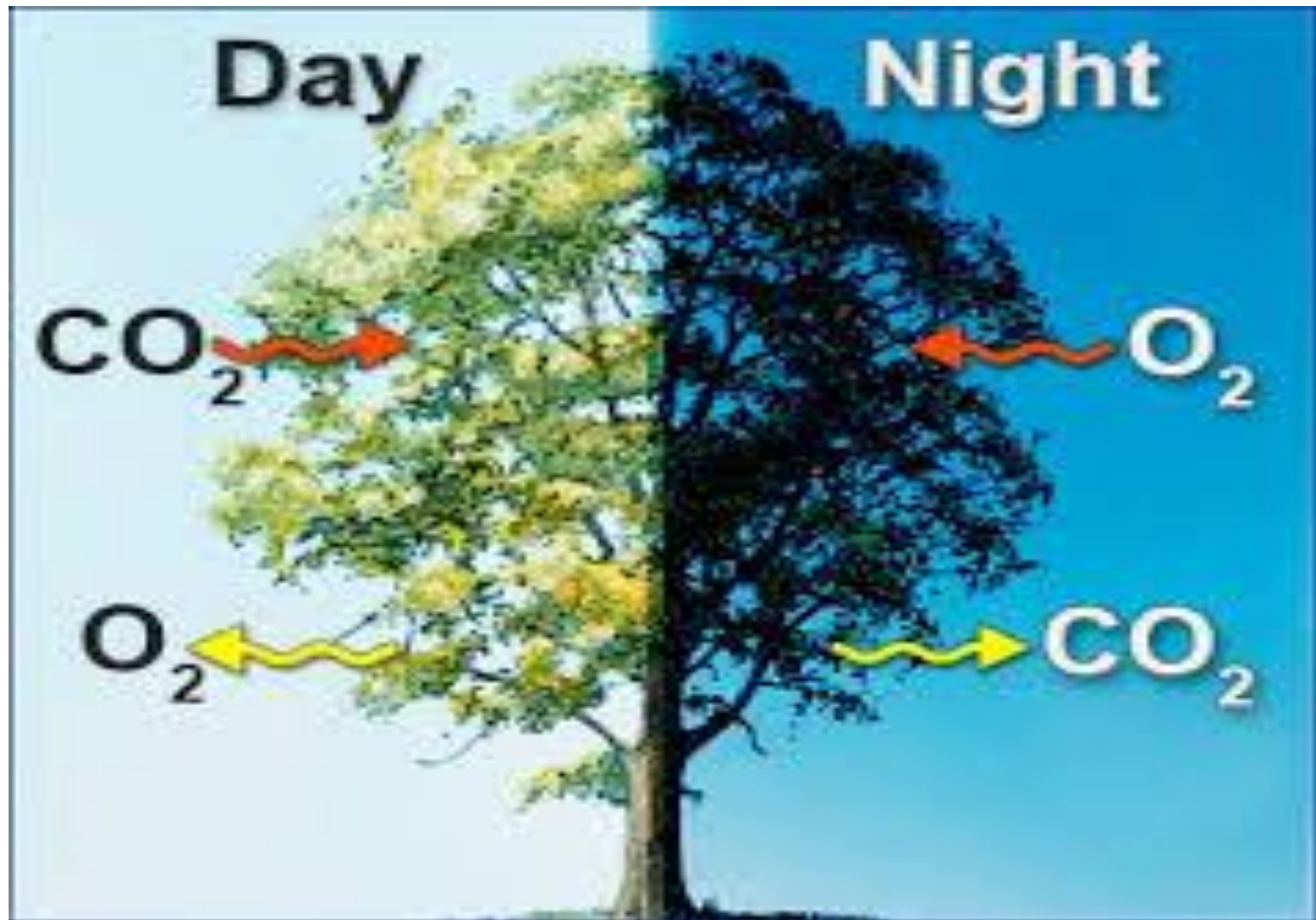


# Plant Respiration



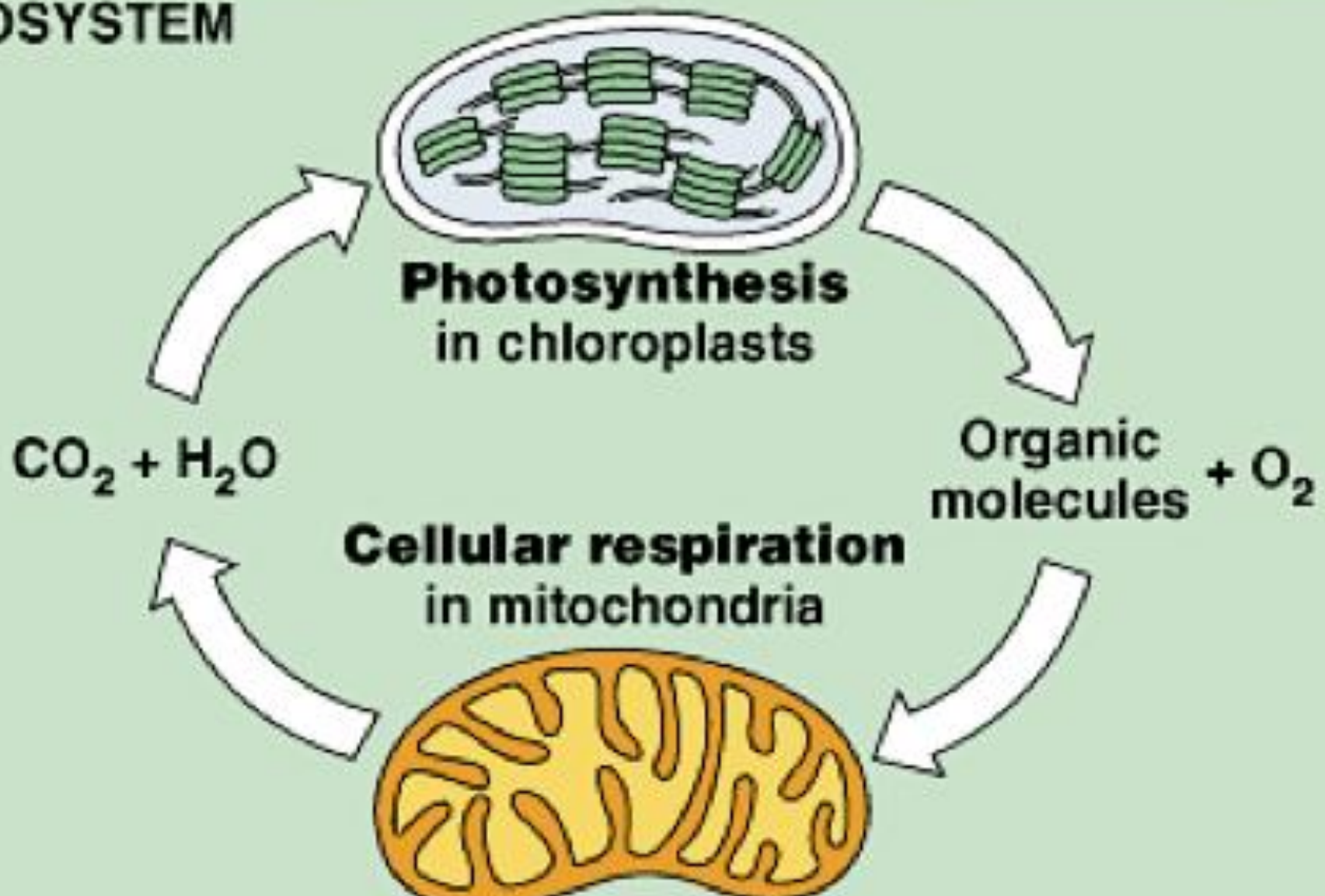


# Photosynthesis & Respiration



It's a cycle ~ at the cellular level!

ECOSYSTEM



# Transpiration

When plants lose water through the stomata in the leaves.

Plants need to store water in their cells, so they control water loss to stay alive.





# TRANSPIRATION

Evaporation

Stomata

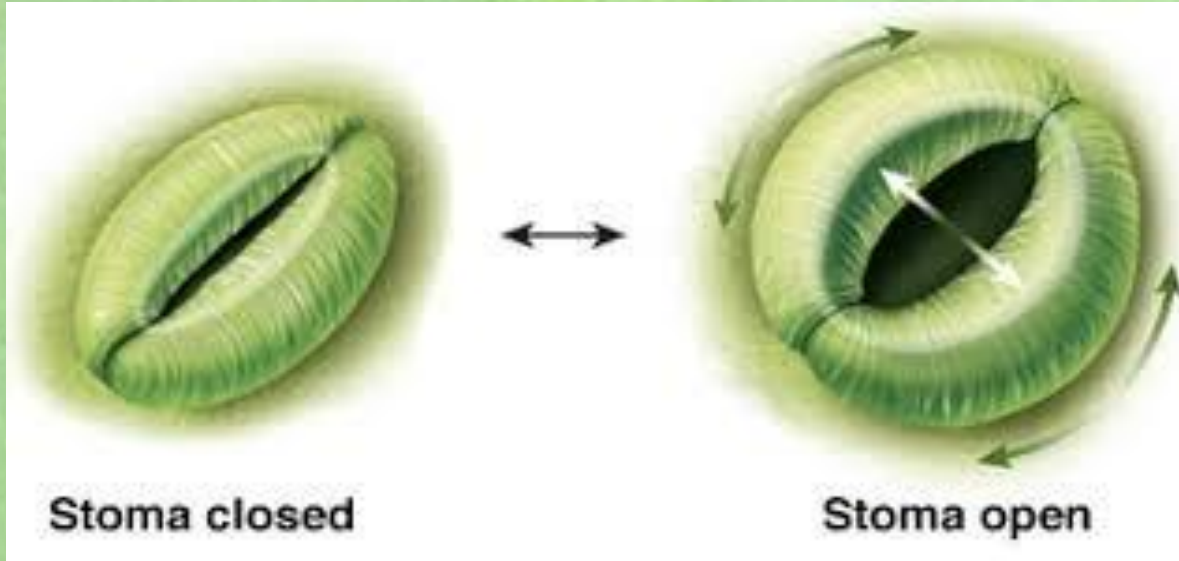
Stem

Root





# How do plants control transpiration?



Guard cells, open and close the stomata to control water loss. When closed, water cannot escape the leaf.