



The Amazing World of Plants

Photosynthesis

Agrupamento de Escolas de Marco de Canaveses

2018

Photosynthesis

How do plants
make their
food?



EXPERIMENTAL ACTIVITY

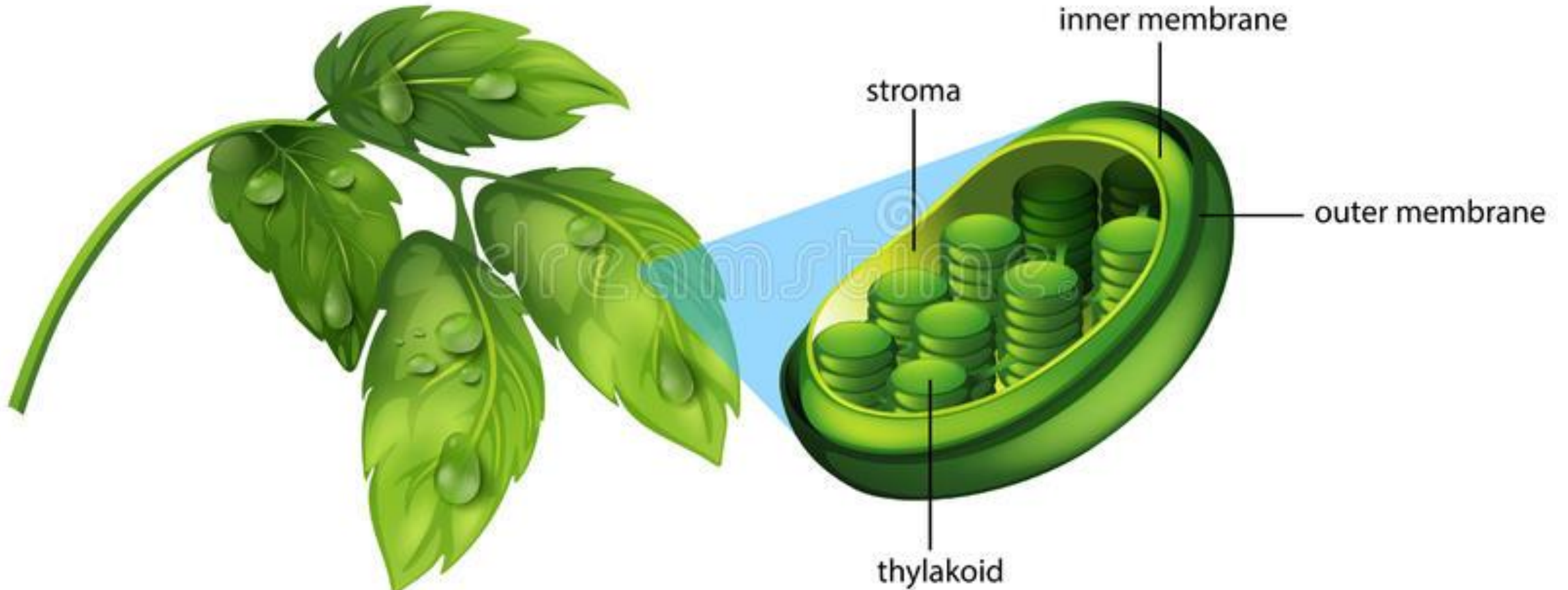
Plants take water and dissolved salts through the roots.
It's the raw sap.





Carbon dioxide from the air goes into the leaves through the stomas.

Chloroplast in Plant Leaf



Plants capture light through chlorophyll at the chloroplasts to break down the water into oxygen.

- In the leaves, raw sap mixes with carbon dioxide and becomes glucose - elaborate sap.
- This is the plant's food.
- Through the stomas goes out oxygen.

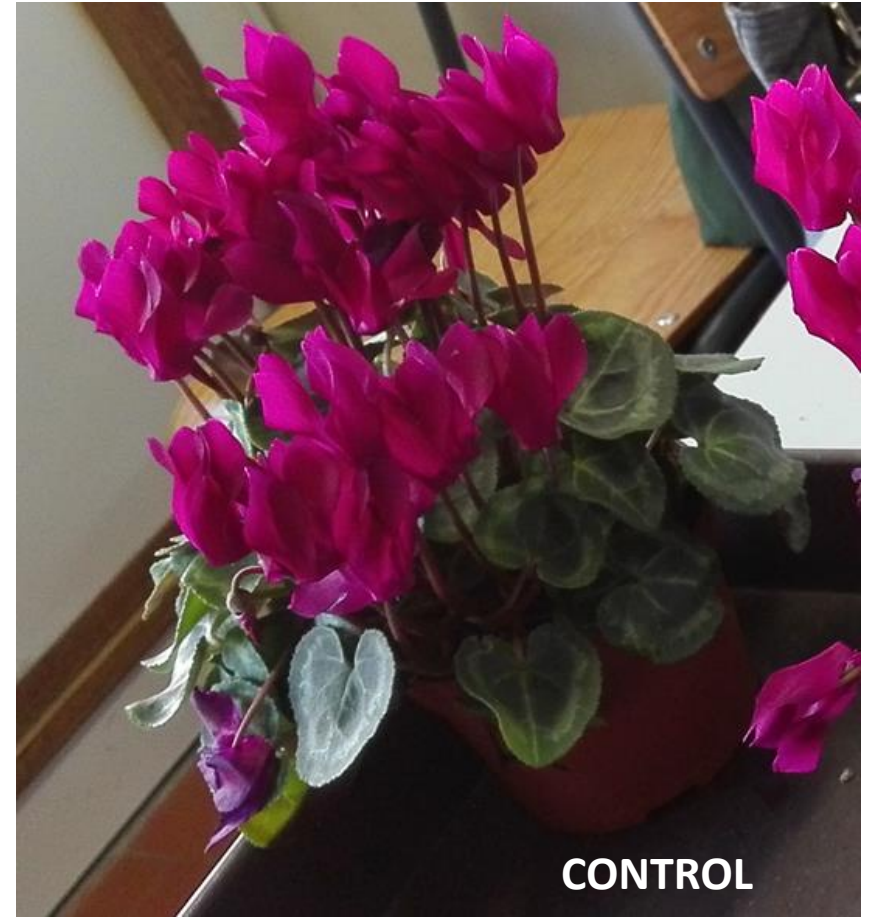


EXPERIMENTAL ACTIVITY

Potassium hydroxide



Liquid



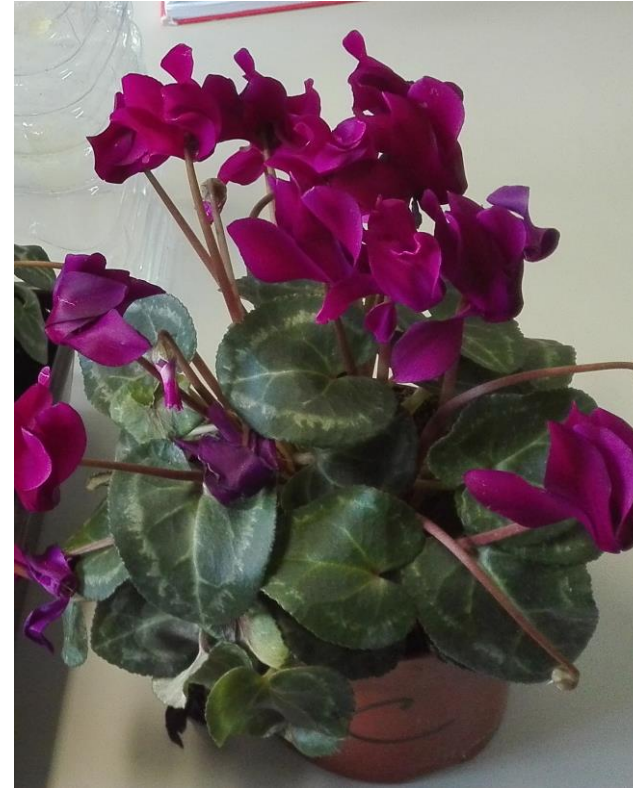
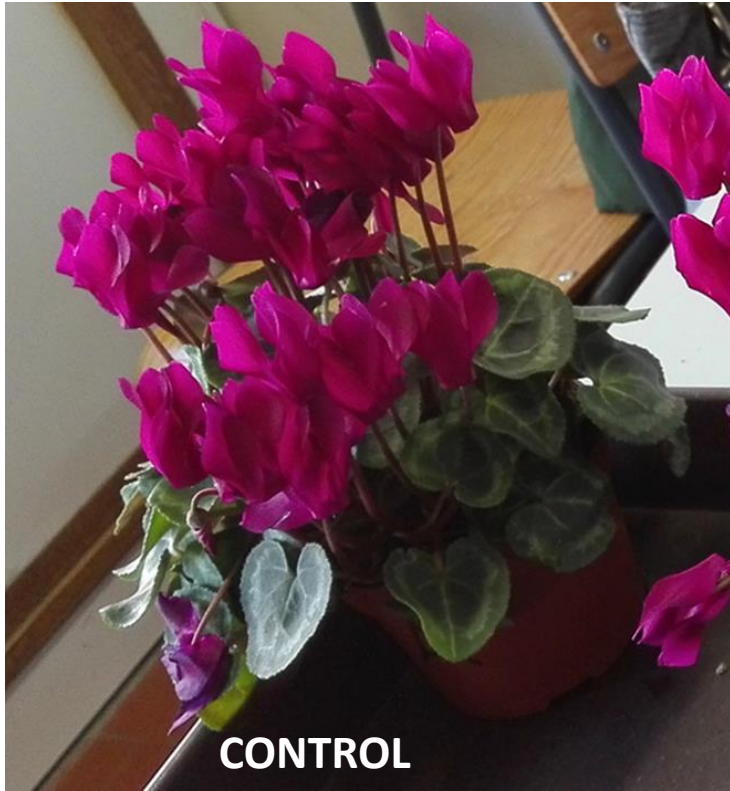
This plant had no carbon dioxide

Why is the cyclamen dying?

What was missing that was necessary for the photosynthesis?

What is the variable we are studying?

EXPERIMENTAL ACTIVITY



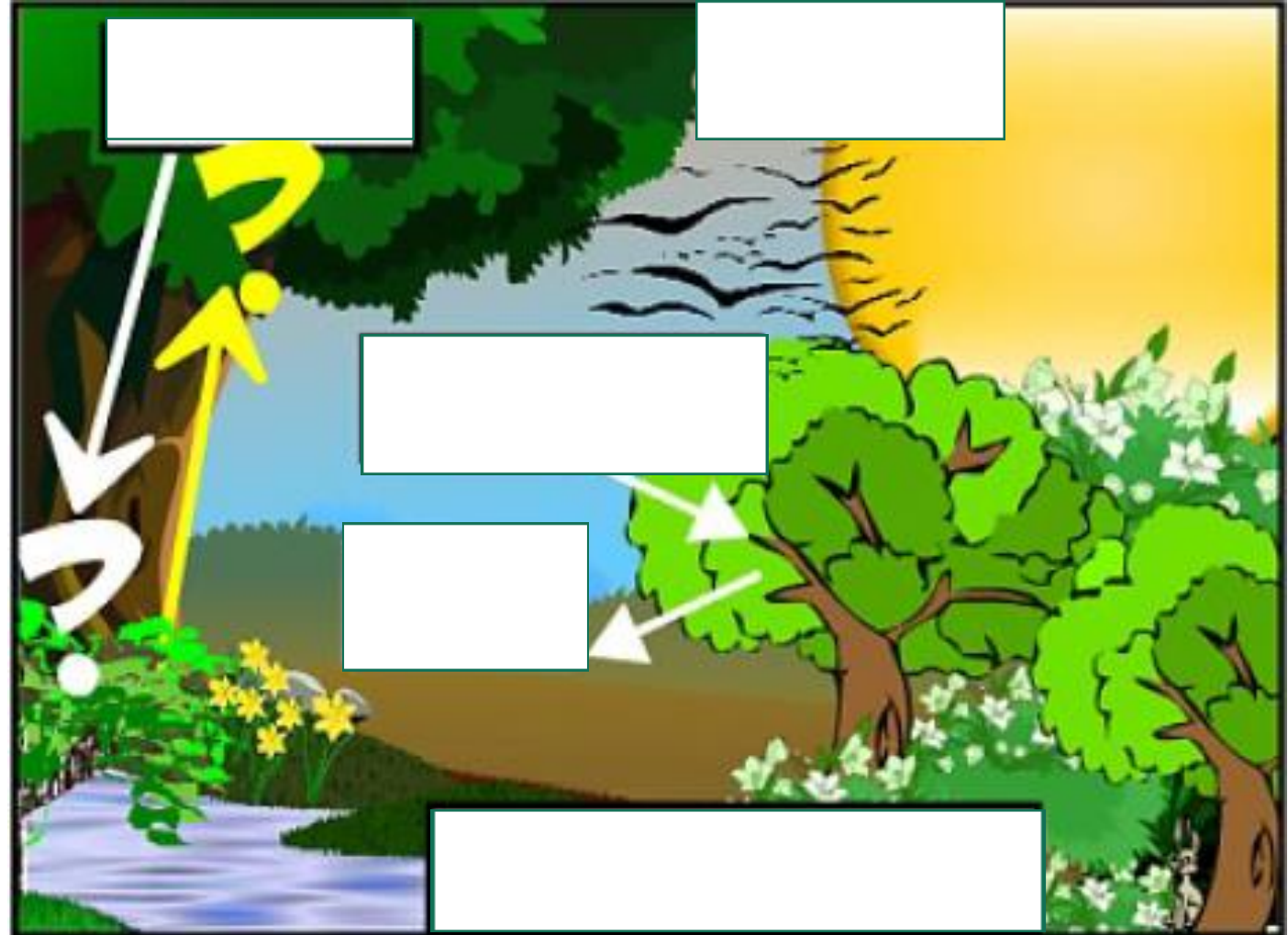
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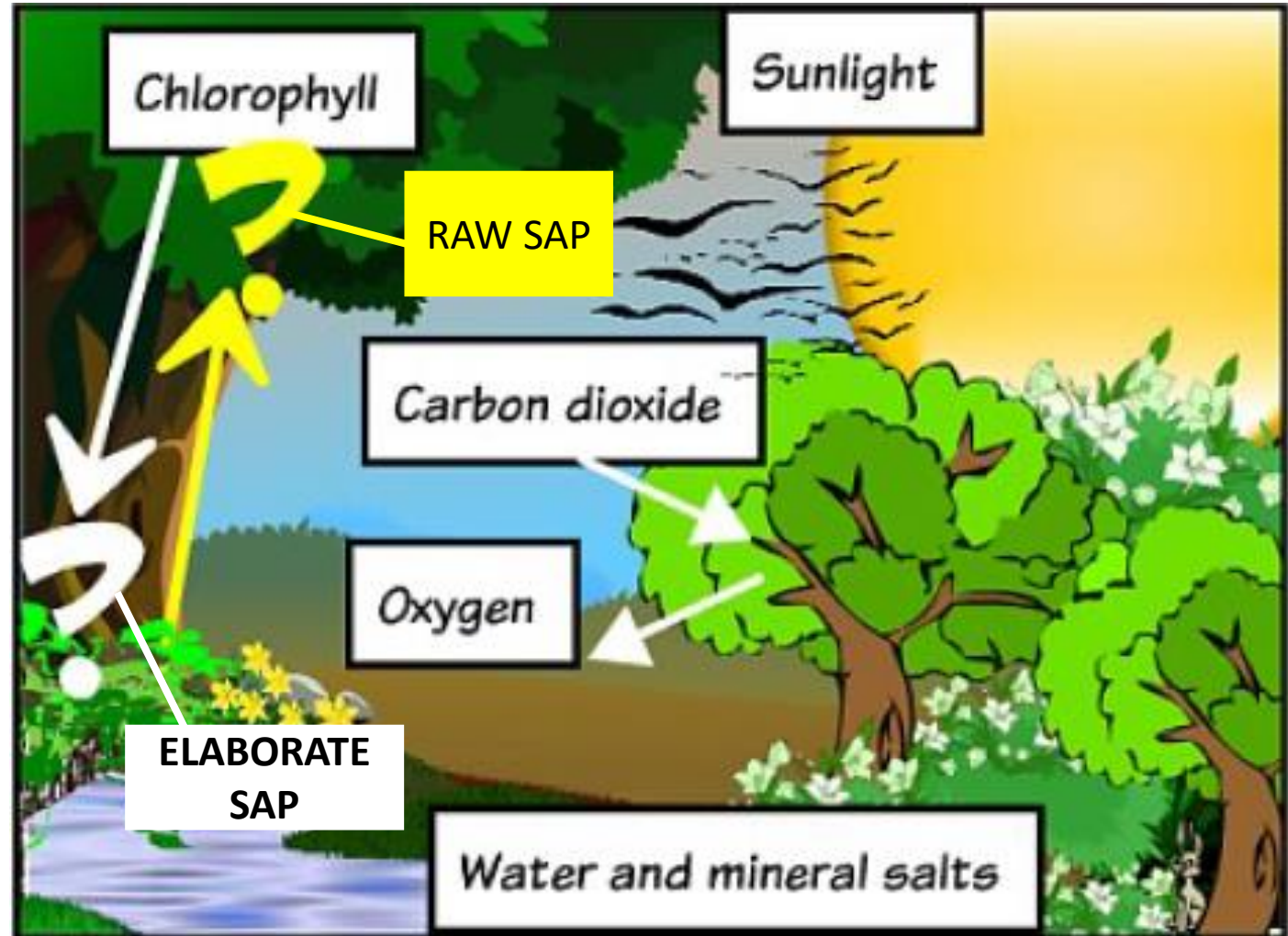
Photosynthesis

- Plants take water and dissolved salts through the roots: raw sap.
- Plants capture light from the sun through chlorophyll at the chloroplasts and also carbon dioxide from the air.
- Plants make their own food: elaborate sap.
- Plants release oxygen into the air.

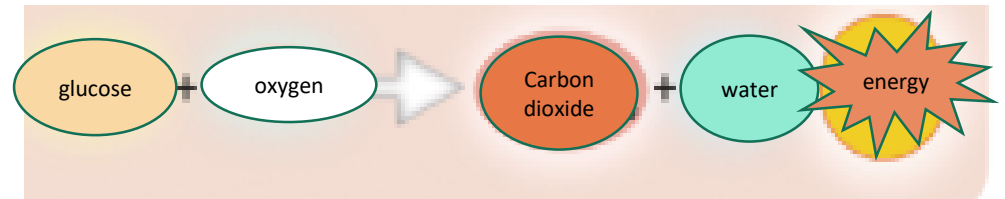
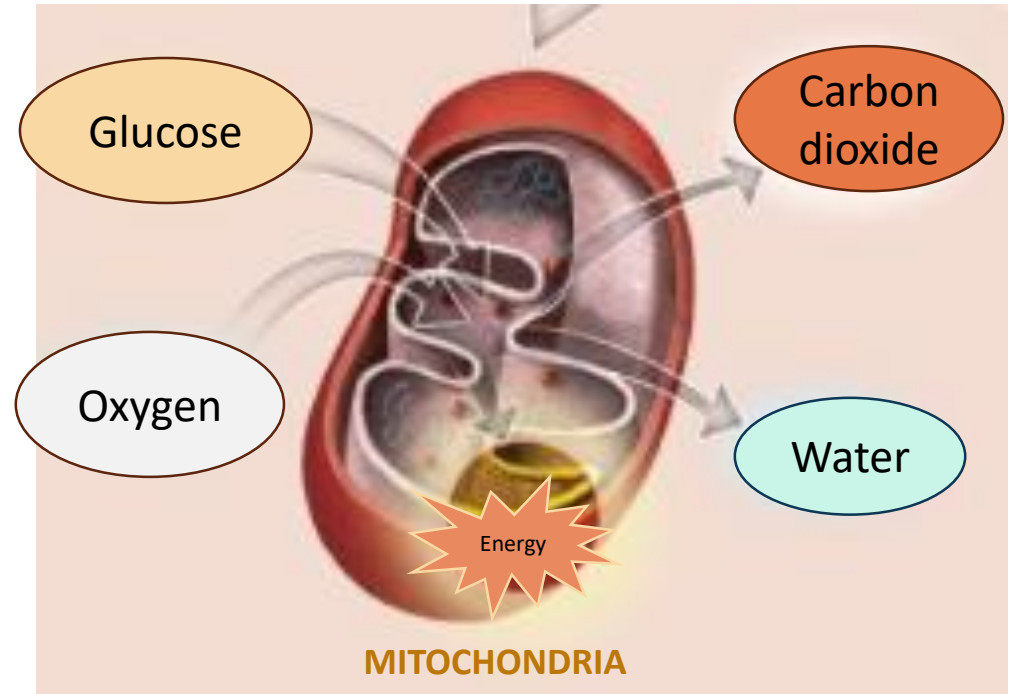
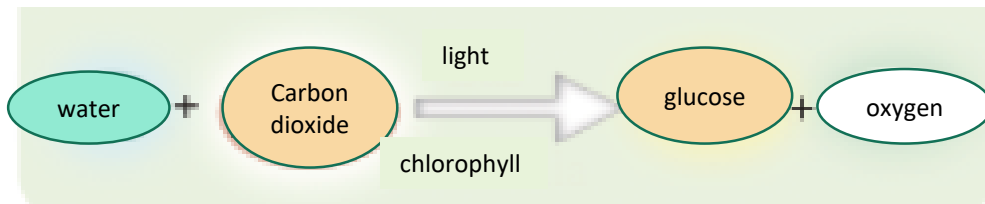
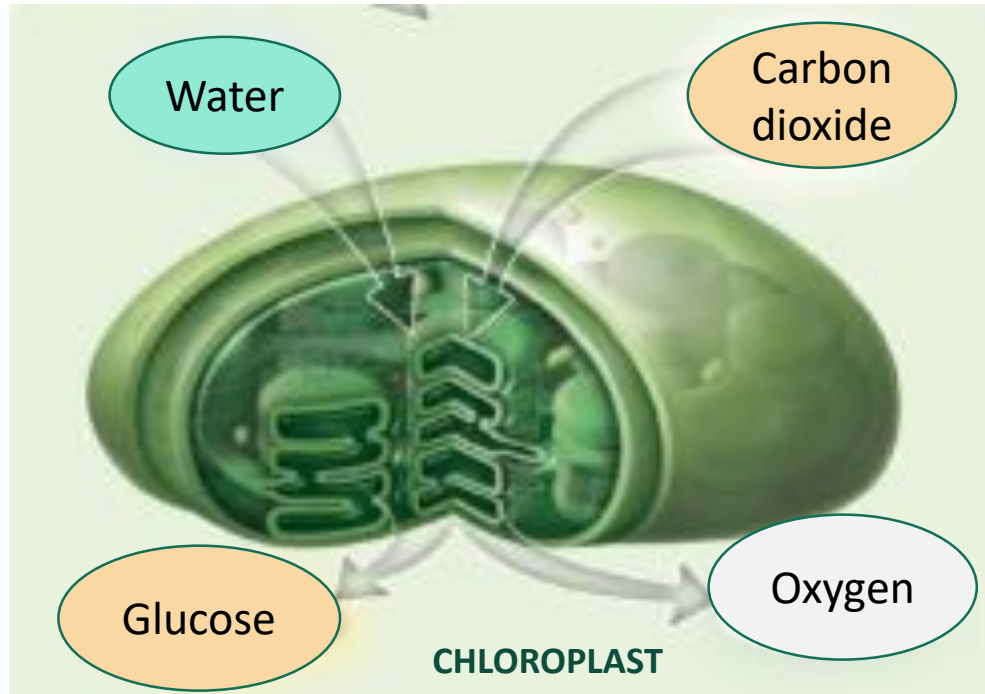


Photosynthesis

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Relationship between photosynthesis and cellular respiration



Complete the text

In the leaves, in [redacted], chlorophyll captures the [redacted] to transform water and carbon dioxide into [redacted] and oxygen. This is [redacted].

Some of this glucose is stored in the form of [redacted] and part of that oxygen is released.

Still in the leaves, in the [redacted], glucose and oxygen react by producing [redacted] and [redacted], with the release of [redacted]. This is [redacted].

energy, chloroplasts, photosynthesis, carbon dioxide, water vapor, glucose, cellular respiration, light, mitochondria, starch

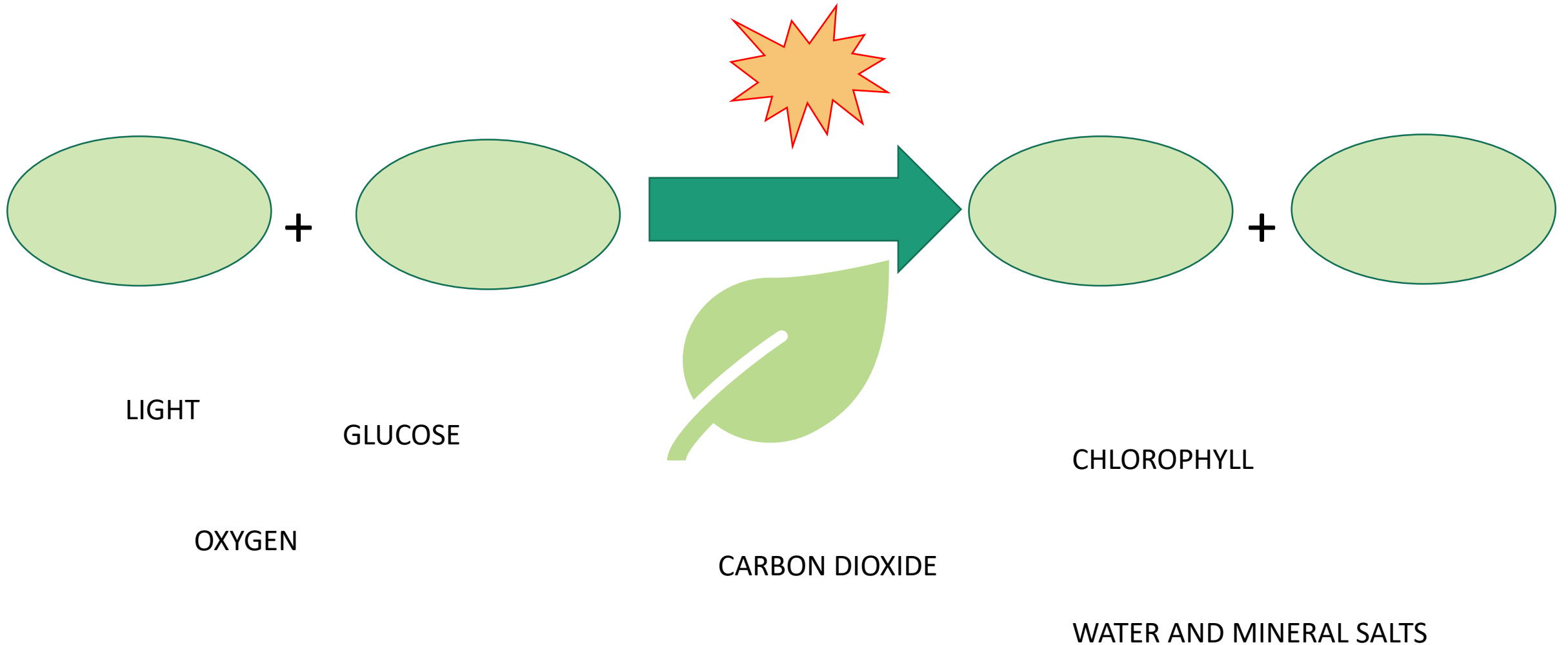
Complete the text

In the leaves, in **chloroplasts**, chlorophyll captures the **light** to transform water and carbon dioxide into **glucose** and oxygen. This is **photosynthesis**.

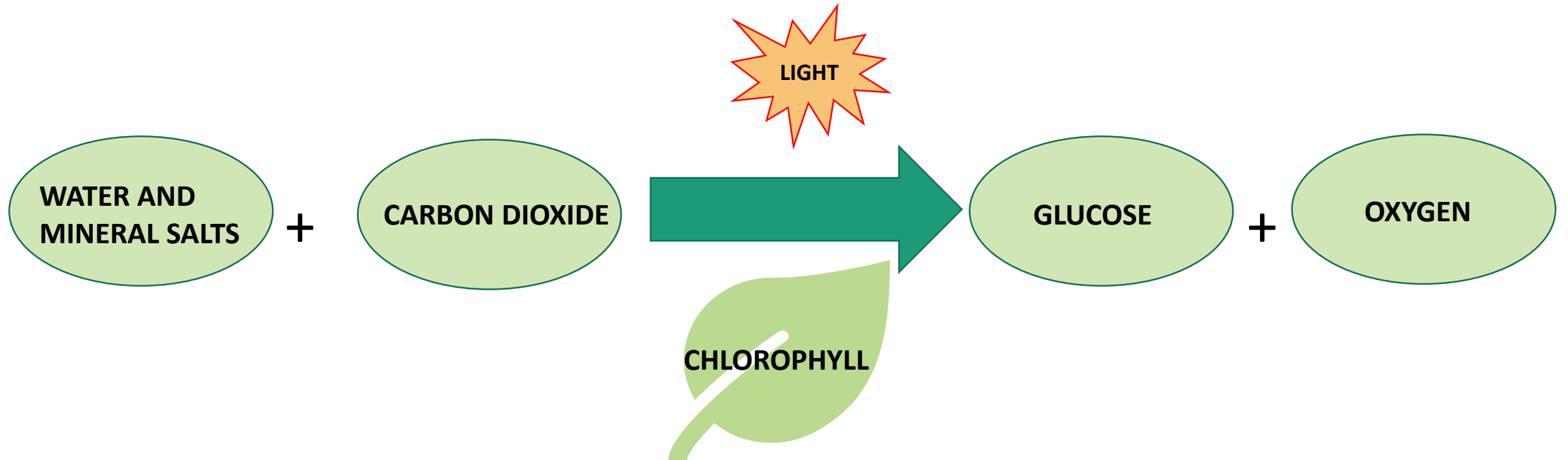
Some of this glucose is stored in the form of **starch** and part of that oxygen is released.

Still in the leaves, in the **mitochondria**, glucose and oxygen react by producing **carbon dioxide** and **water vapor**, with the release of **energy**. This is **cellular respiration**.

Complete the diagram with the correct words.



Complete the diagram with the correct words.



Order the photosynthesis process:

- A. Carbon dioxide is used to create food. In the chloroplasts' leaves, raw sap becomes elaborate sap.
- B. Sunlight is used to break down the water into oxygen which plants give off.
- C. Carbon dioxide from the air goes into leaves through the stomas and spreads to the cells that contain chlorophyll in the leaf.
- D. Water and mineral salts are taken through the roots of the plant and transported to the leaves by stems.

