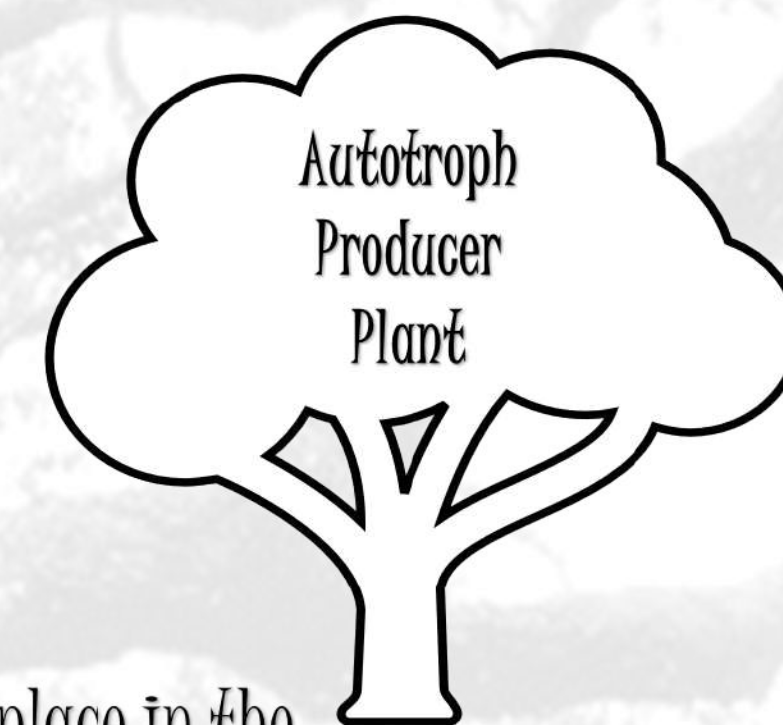
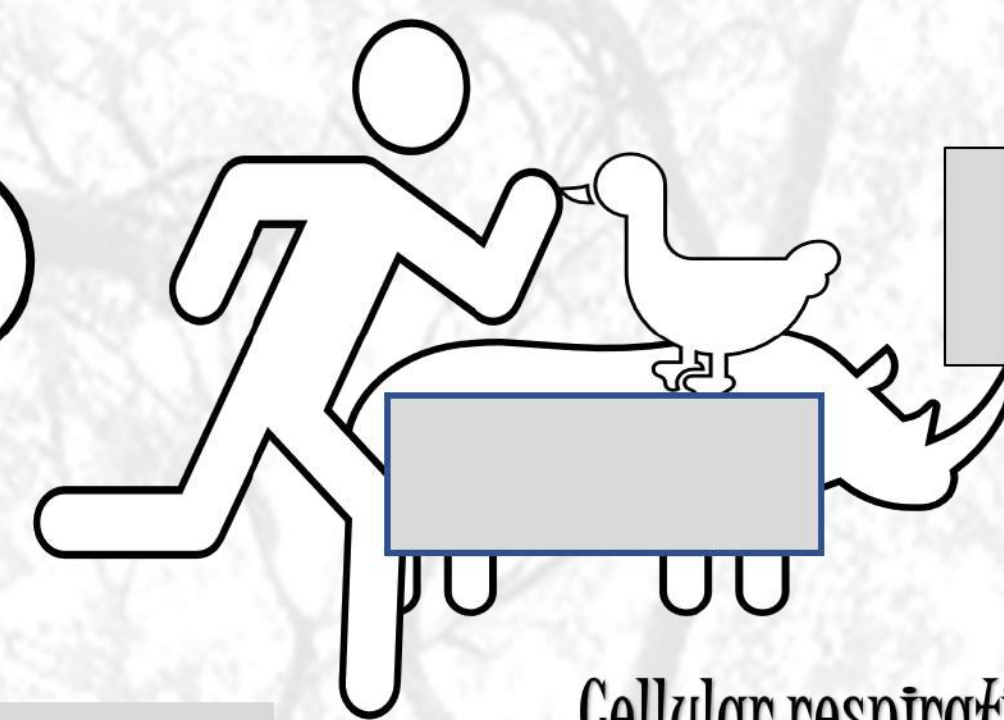
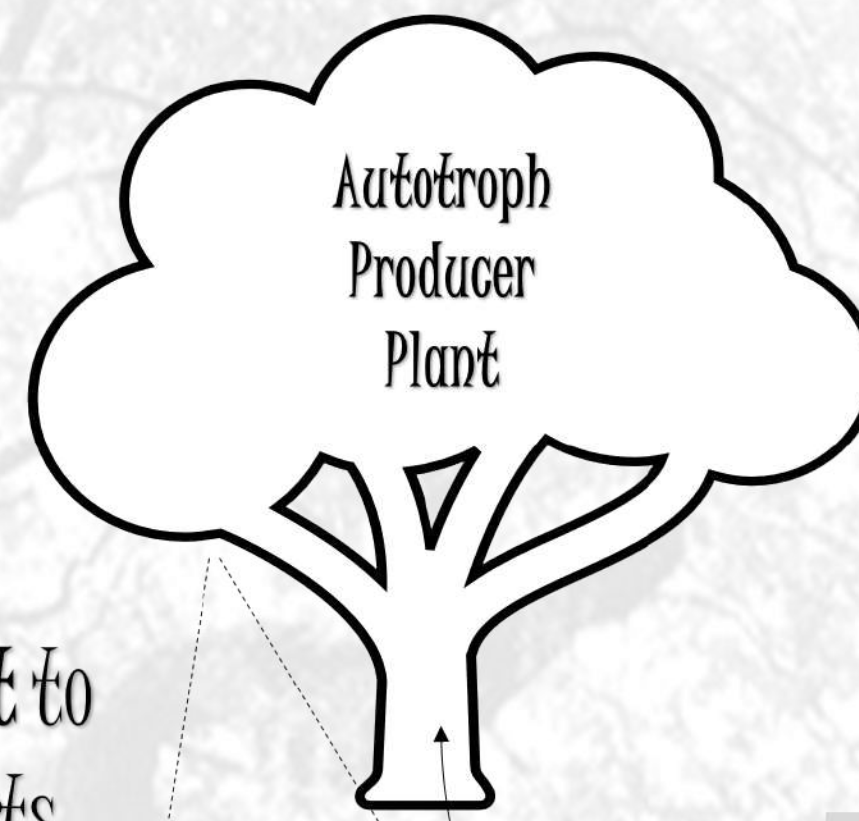
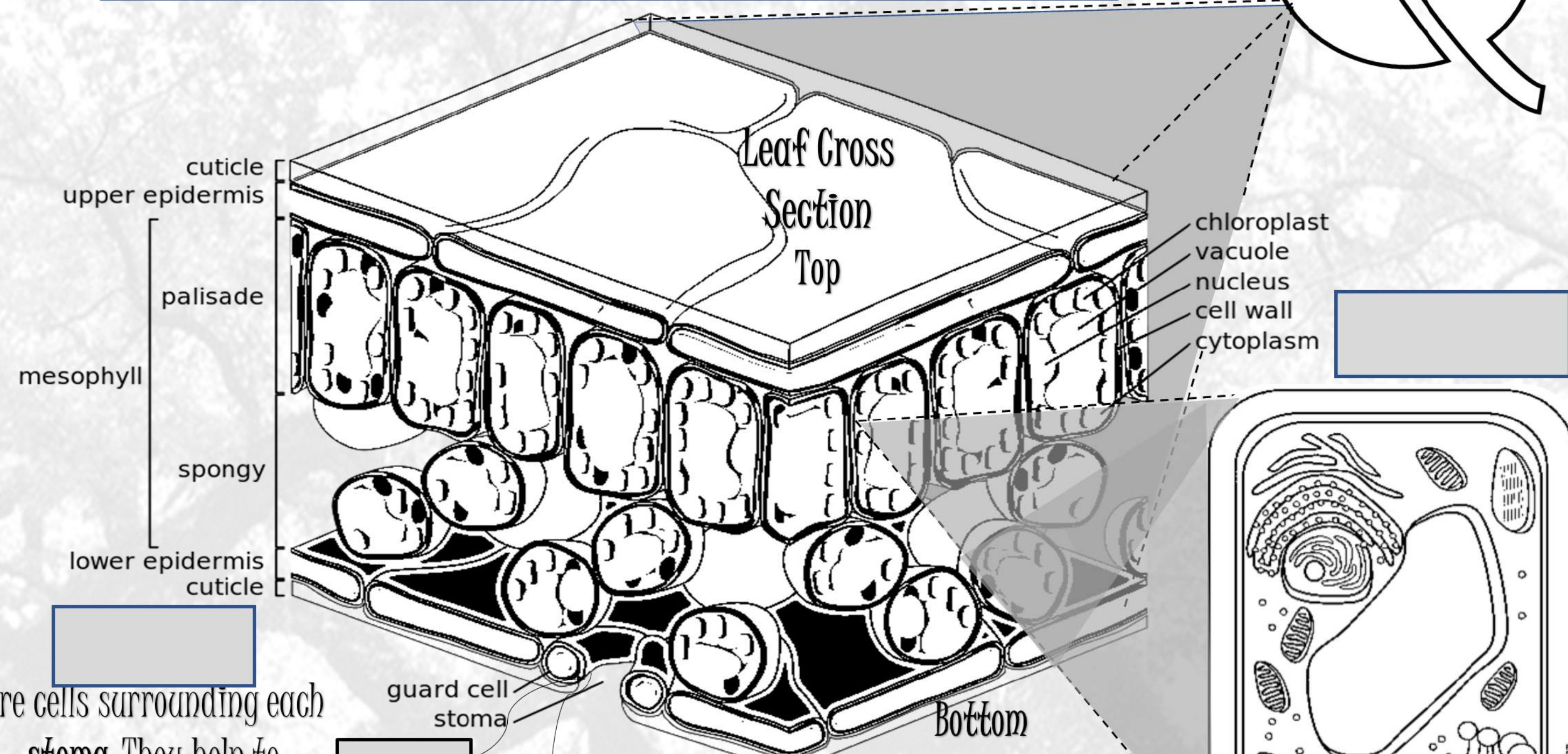


the process by which green plants and some other organisms use sunlight to synthesize foods from carbon dioxide and water. Photosynthesis in plants generally involves the green pigment and generates oxygen as a byproduct.

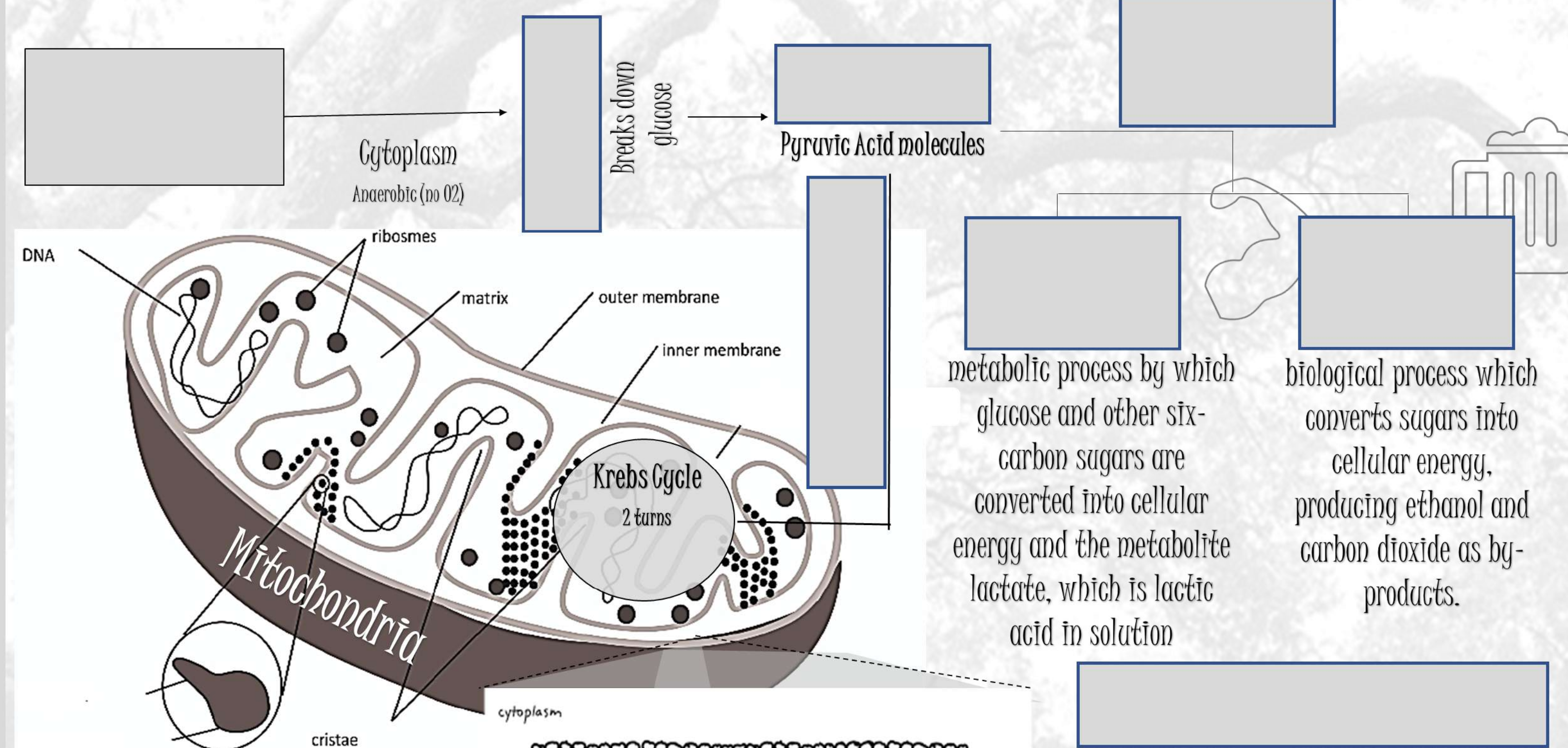


Cellular respiration is a set of metabolic reactions and processes that take place in the mitochondria of cells of organisms to convert biochemical energy from nutrients into adenosine triphosphate (ATP), and then release waste products.

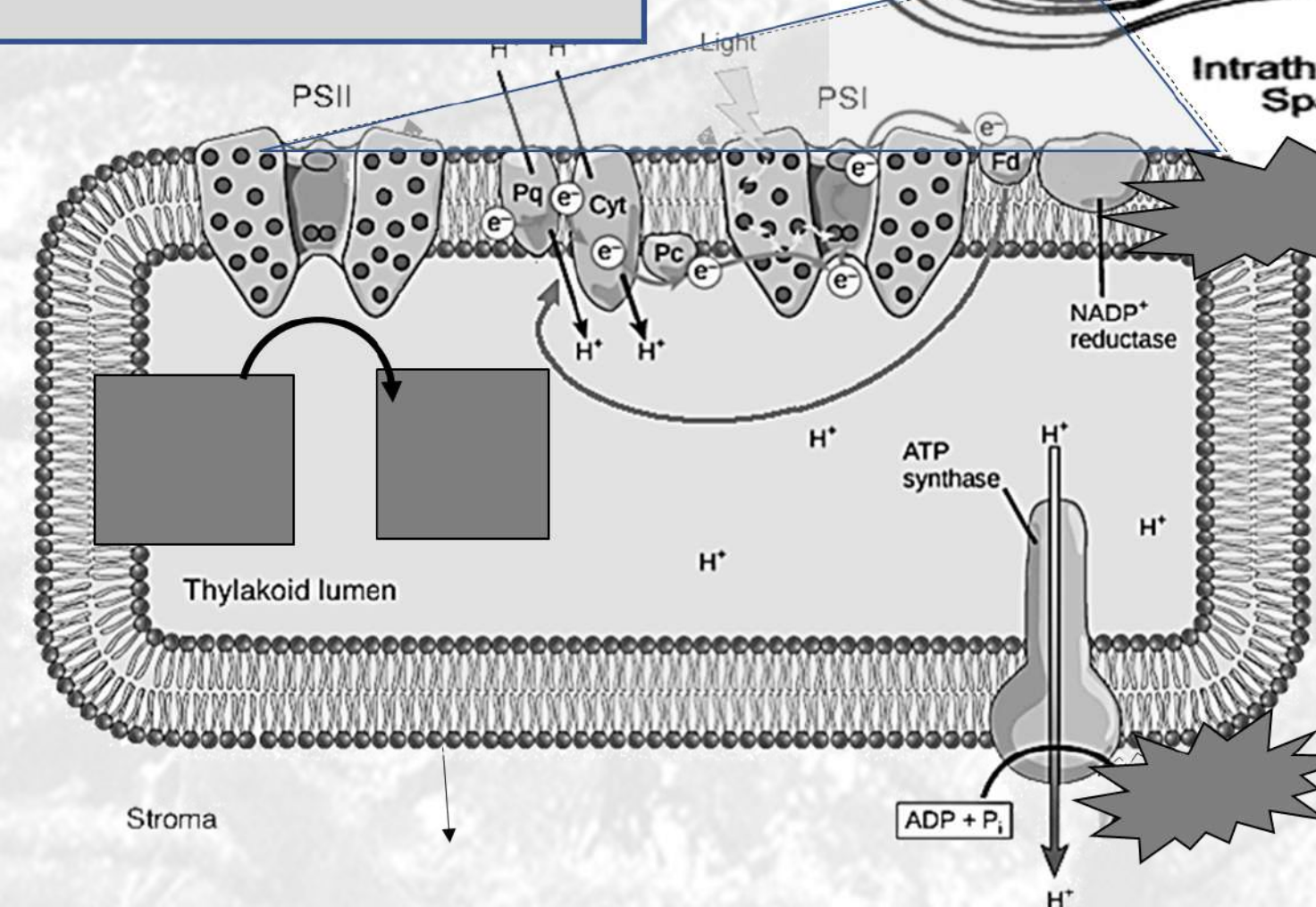


are cells surrounding each stoma. They help to regulate the rate of transpiration (gas exchange) by opening and closing the stomata.

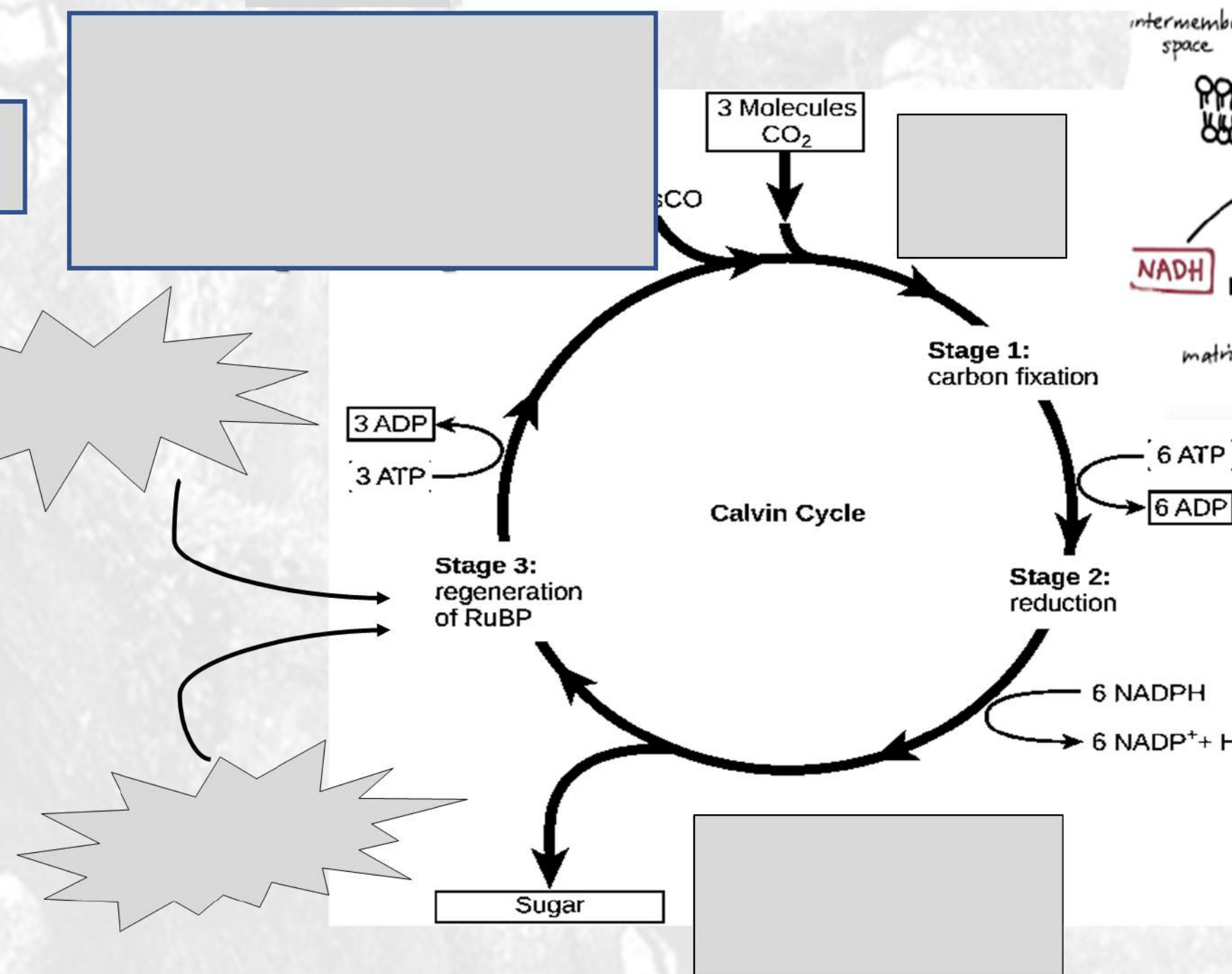
The relationship between Photosynthesis and Cellular Respiration - The reactants of one are the products of the other



As electrons move down the chain, energy is released and used to pump protons out of the matrix, forming a gradient. Protons flow back into the matrix through an enzyme called ATP synthase, making ATP. At the end of the electron transport chain, oxygen accepts electrons and takes up protons to form water.



The use light energy to make two molecules needed for the next stage of photosynthesis: the energy storage molecule ATP and the reduced electron carrier NADPH. In plants, the light reactions take place in the thylakoid membranes of organelles called chloroplasts.



take place in plant chloroplasts. In this process, sugars are made from carbon dioxide. The process, known as the Calvin cycle, uses products of the light-dependent reactions (ATP and NADPH) and various enzymes.

Photosynthesis

Chlorophyll



Guard Cell

Plant Cell

Chloroplast



Light Dependent
Reaction
(Thylakoid)



NADPH

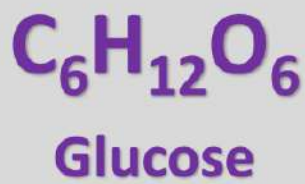
ATP

NADPH

ATP

Cellular Respiration

Heterotroph



2 - Pyruvate

Light Independent
Reaction
"Dark" / Calvin Cycle
(Stroma)

Glycolysis

Anaerobic
Respiration
(no O_2)

Lactic Acid
Fermentation

Alcohol
Fermentation

Aerobic
Respiration

Electron Transport Chain



Light Dependent Reaction

Light Independent Reaction