

A detailed illustration of a plant cell showing several chloroplasts. The chloroplasts are oval-shaped organelles with a reddish-brown outer membrane and a network of green, stacked membranes called thylakoids. Some thylakoids are arranged in stacks called grana. The background shows the cell's cytoplasm and other organelles in a soft, blue-green hue. The title text is centered over the largest chloroplast in the middle of the image.

BioFlix Animations Photosynthesis Slide Show

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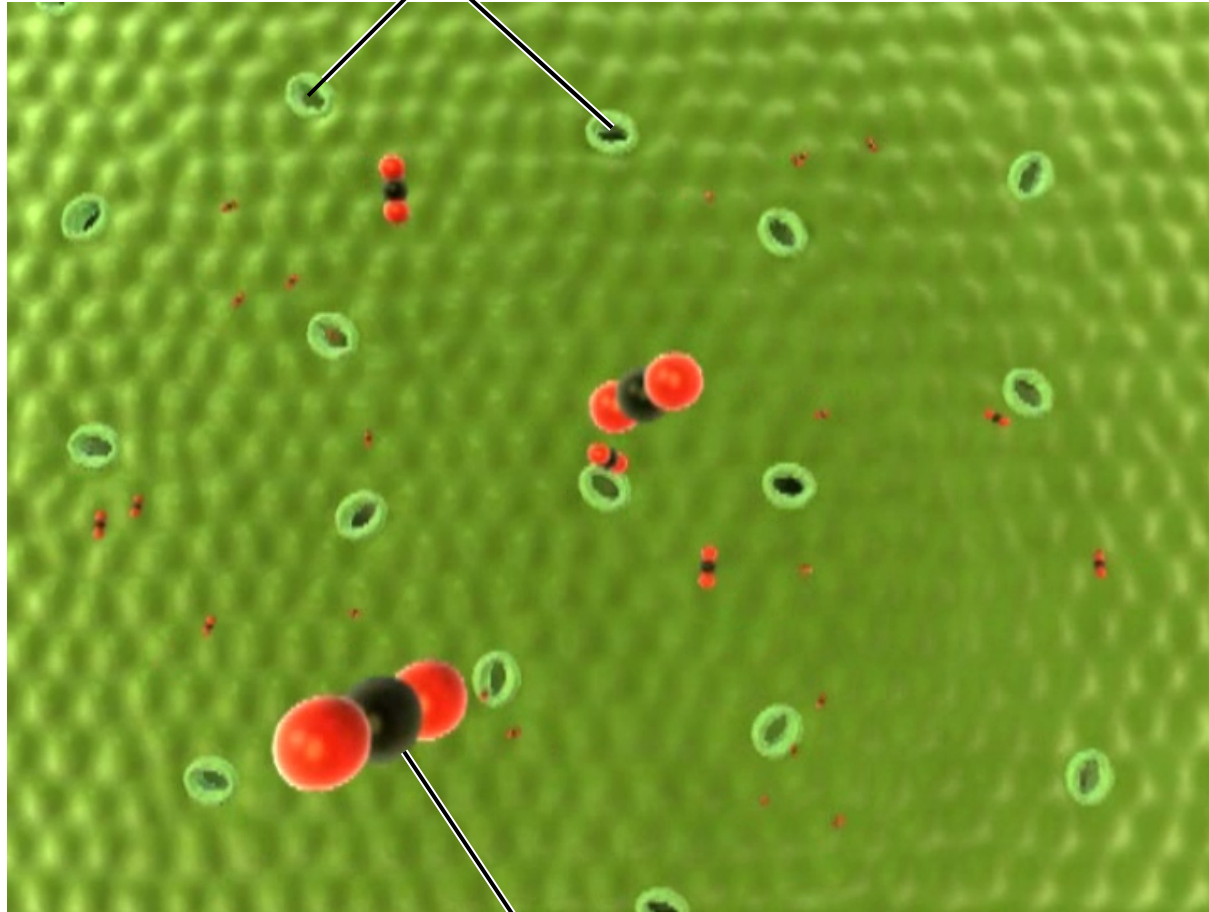




Underside of leaf



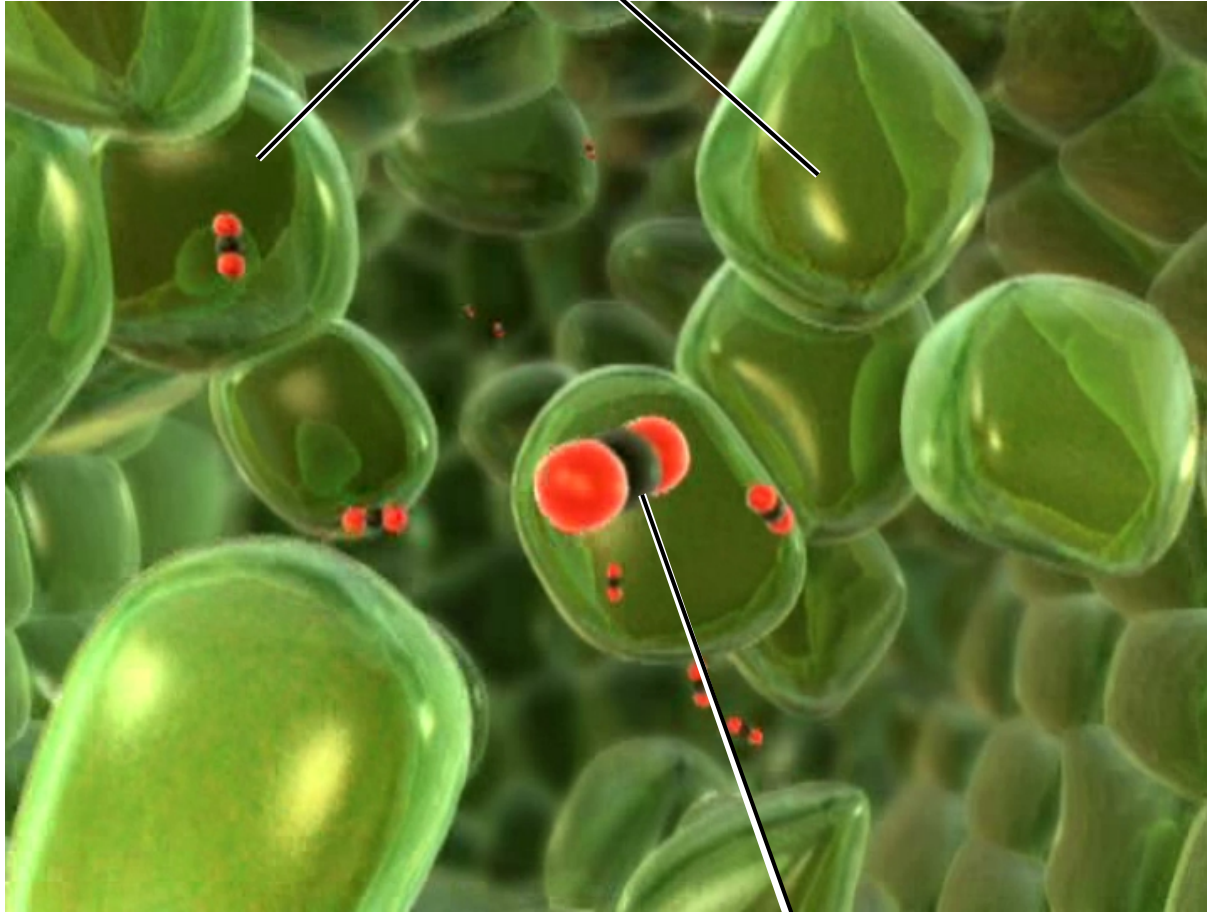
Pores on surface of leaf



Carbon dioxide (CO₂)



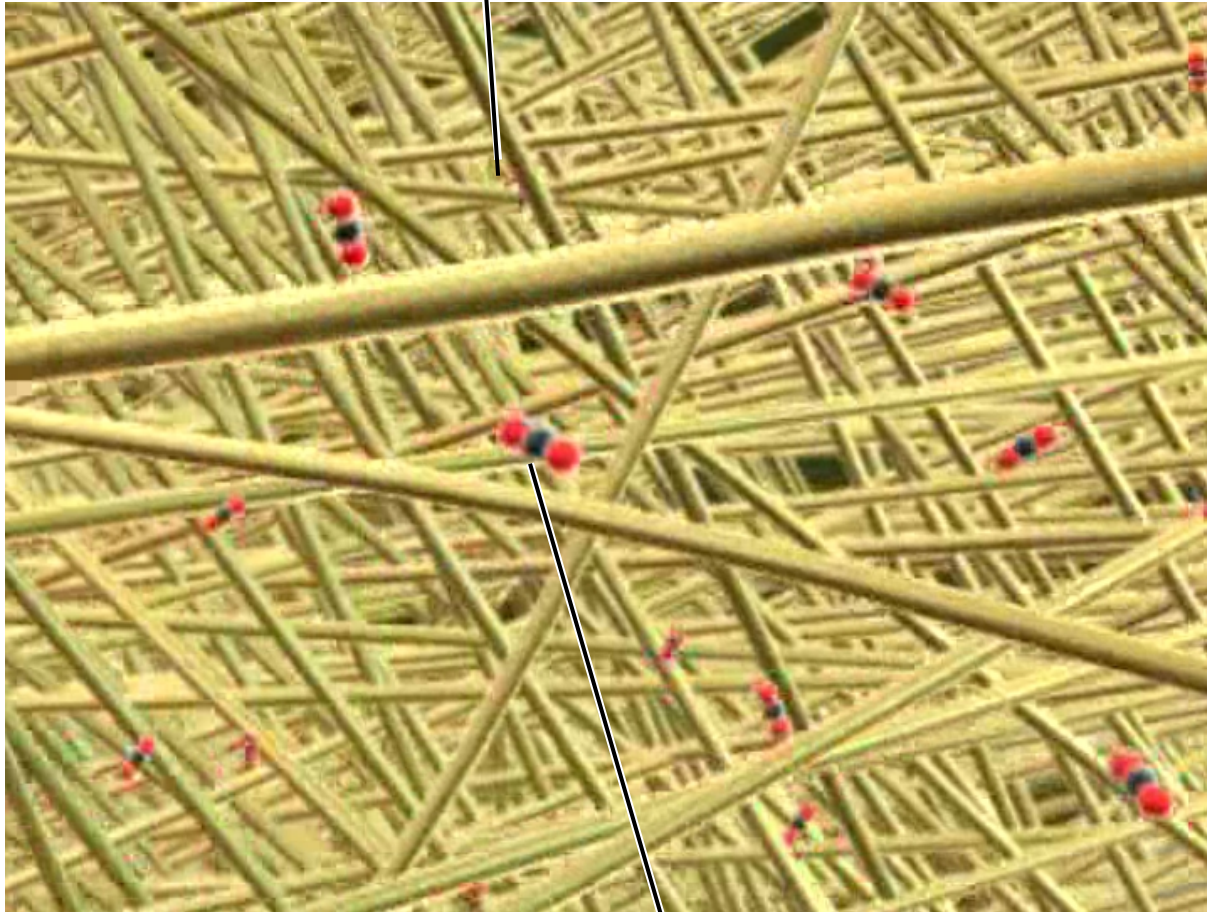
Photosynthetic cells inside leaf



Carbon dioxide (CO₂)



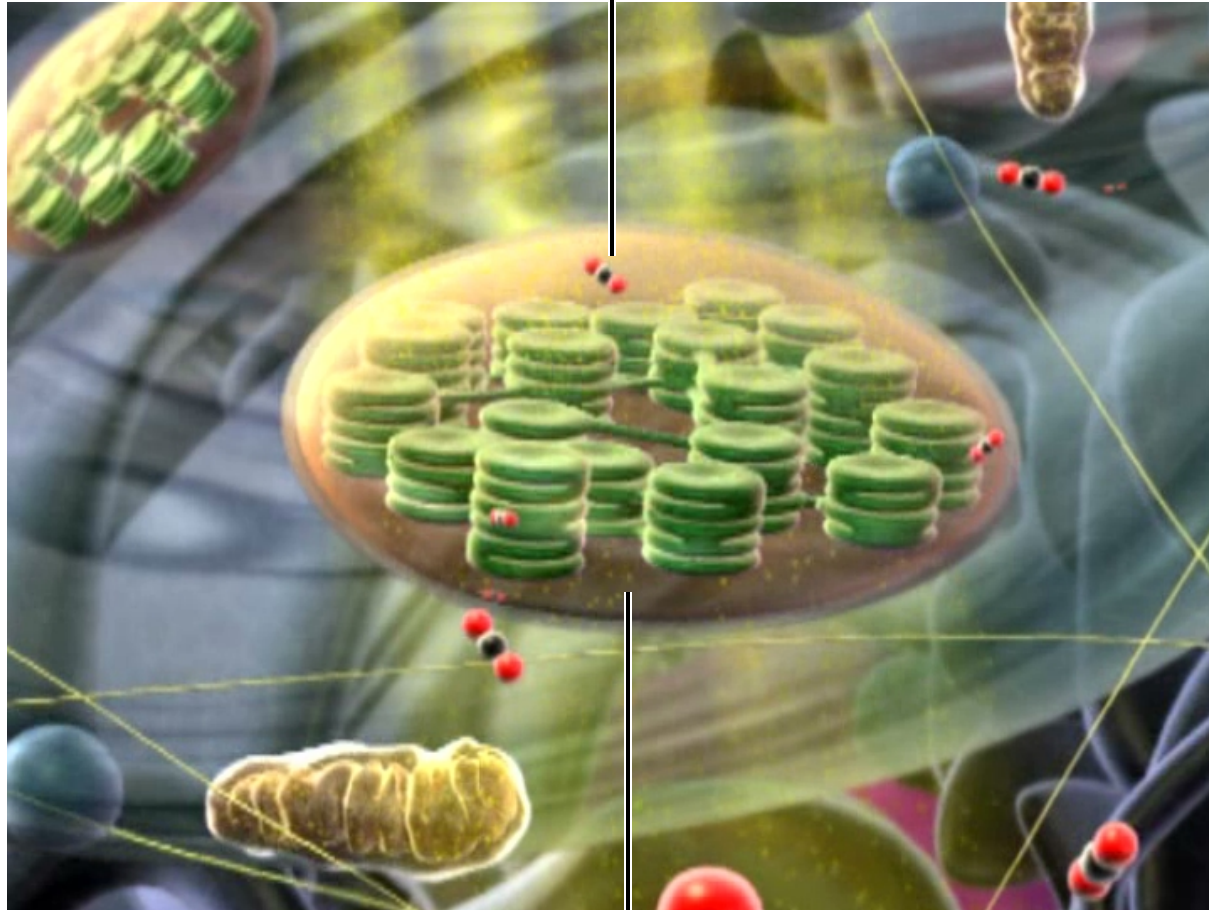
Plant cell wall



Carbon dioxide (CO₂)



Carbon dioxide (CO₂)



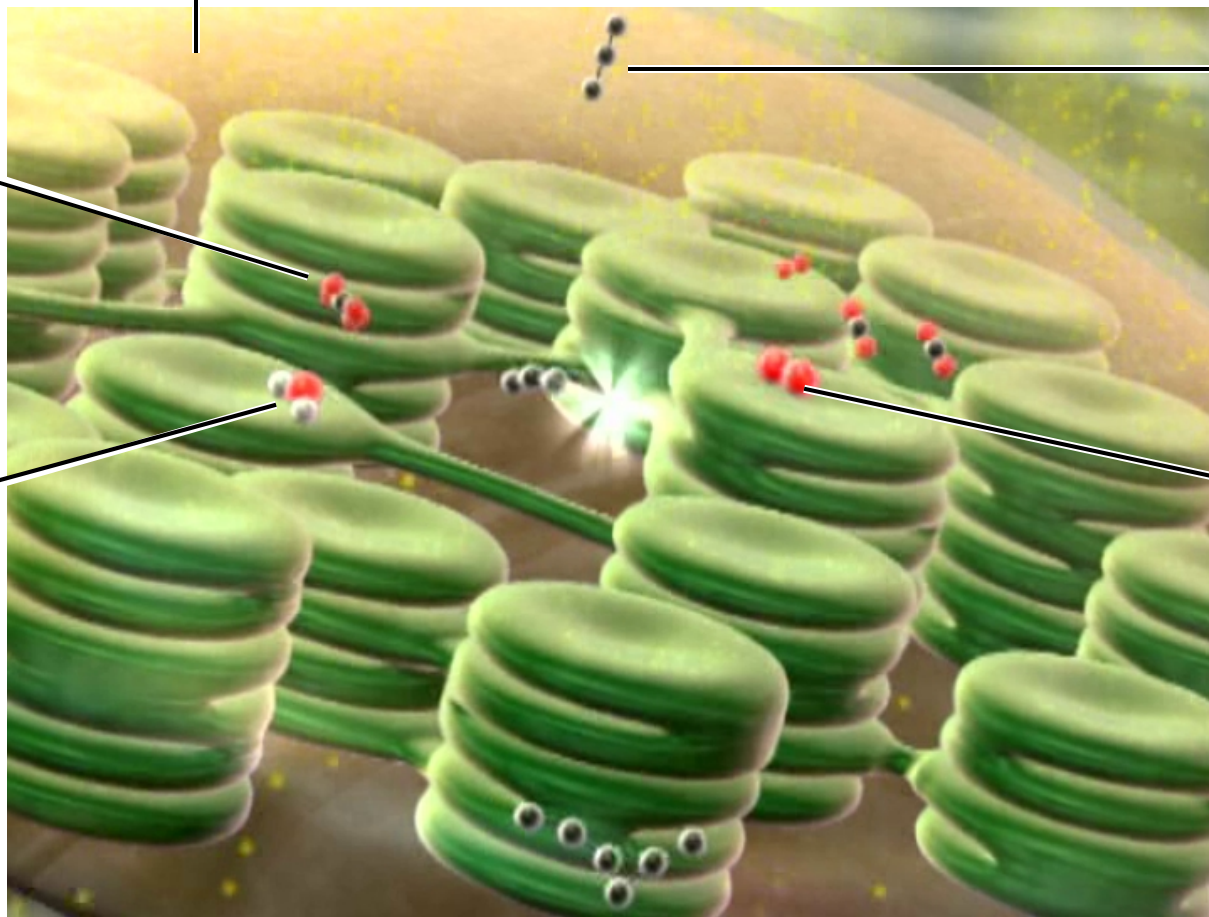
Chloroplast



Light energy

Carbon dioxide (CO₂)

Water (H₂O)



Sugar

Oxygen (O₂)

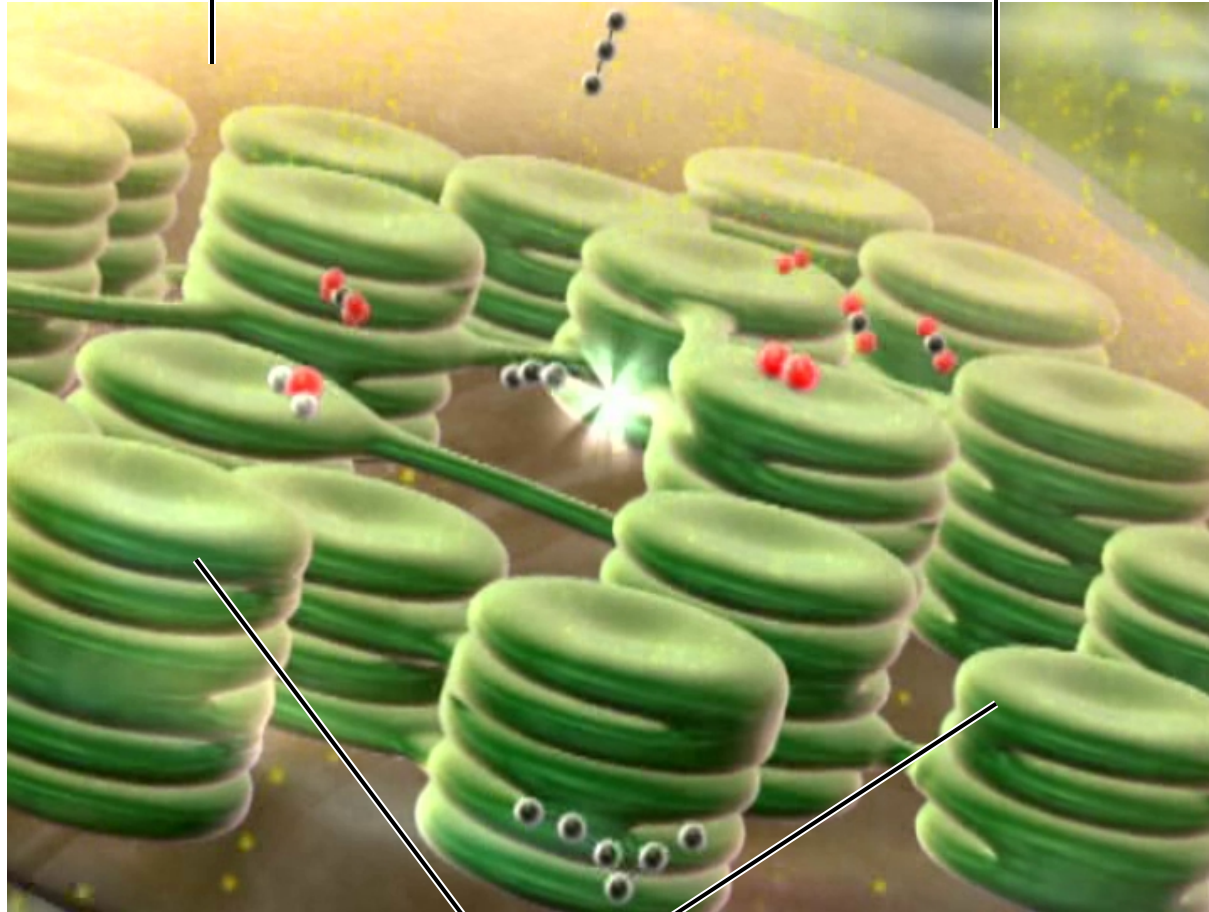


The Light Reactions



Stroma

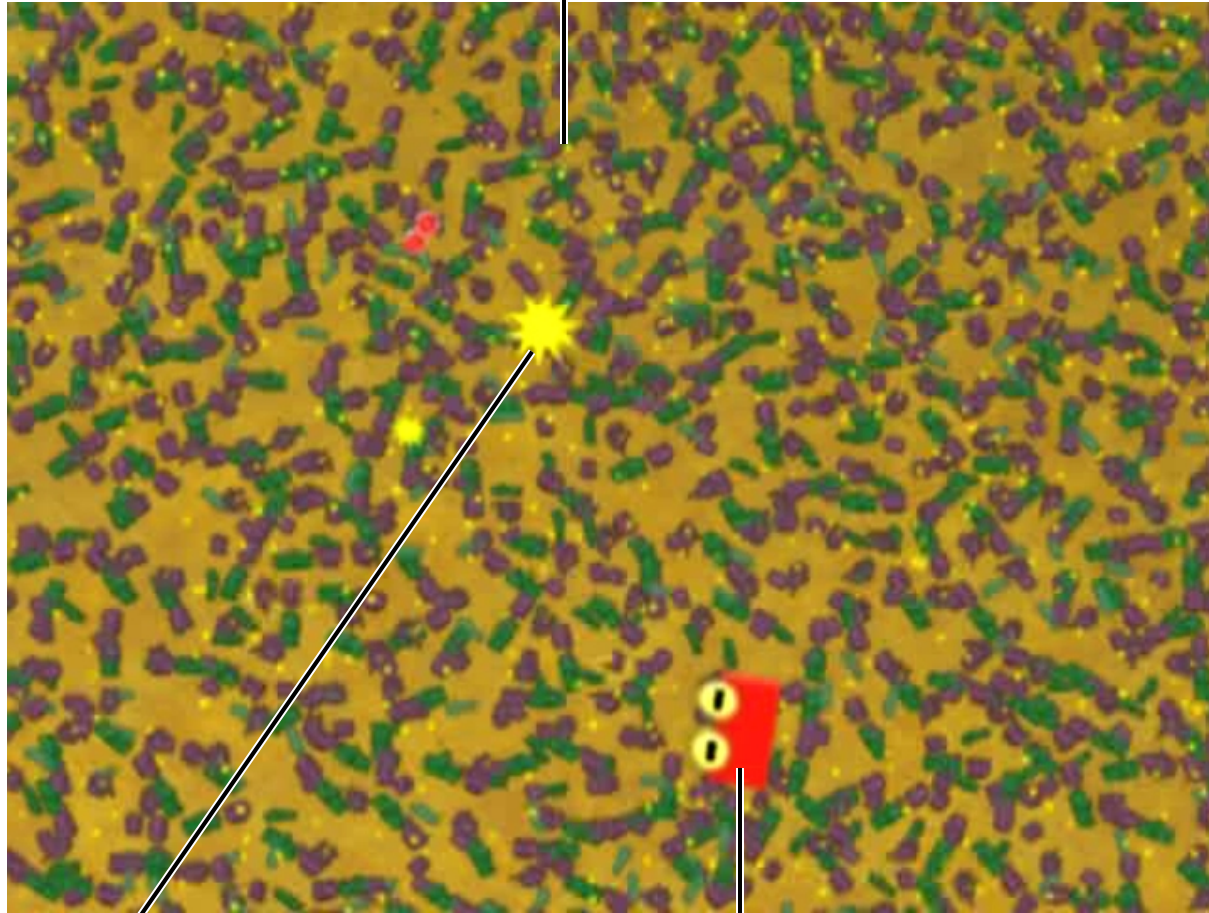
Chloroplast membrane



Thylakoids



Surface of thylakoid with photosynthetic complexes



ATP

Electron carrier (NADPH)

Chemical energy from the light reactions



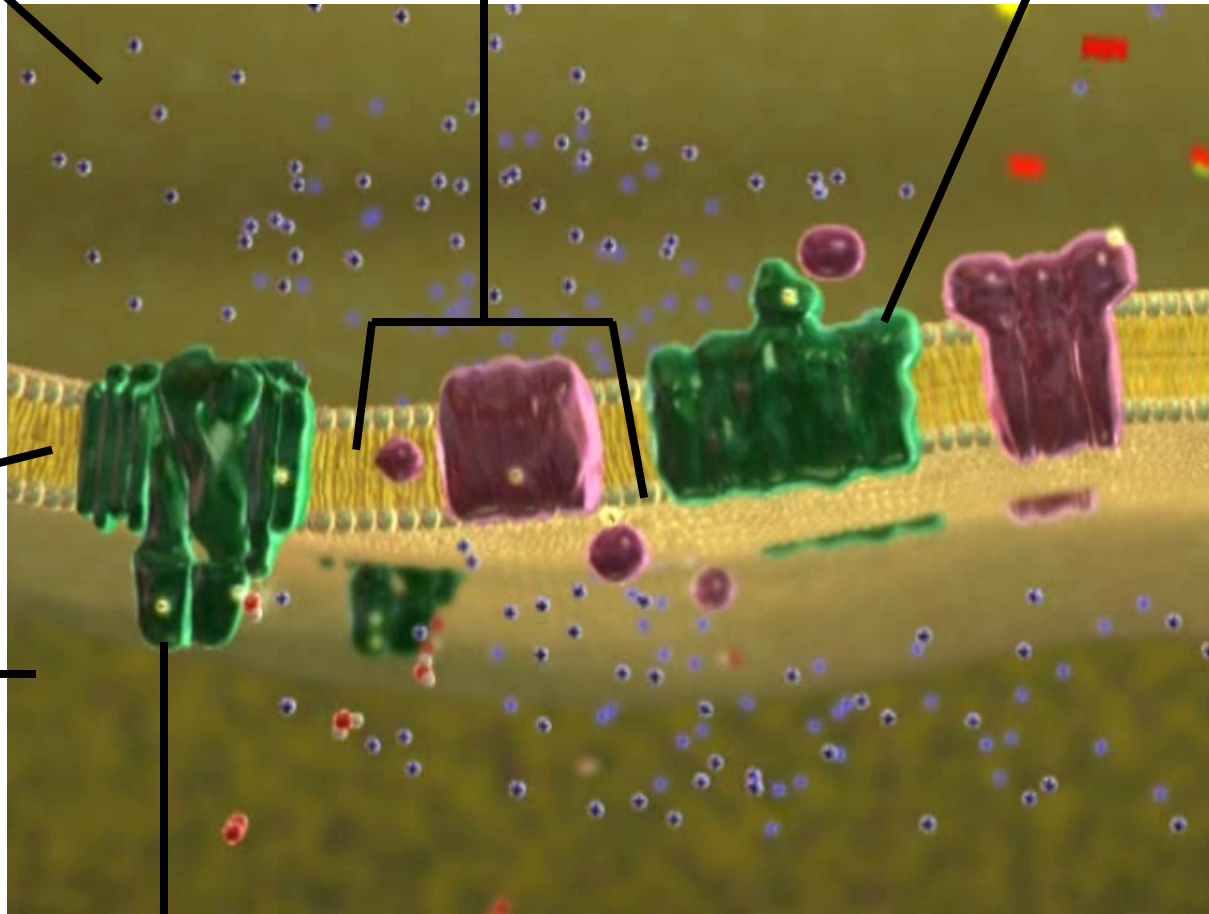
Stroma

Electron Transport Chain

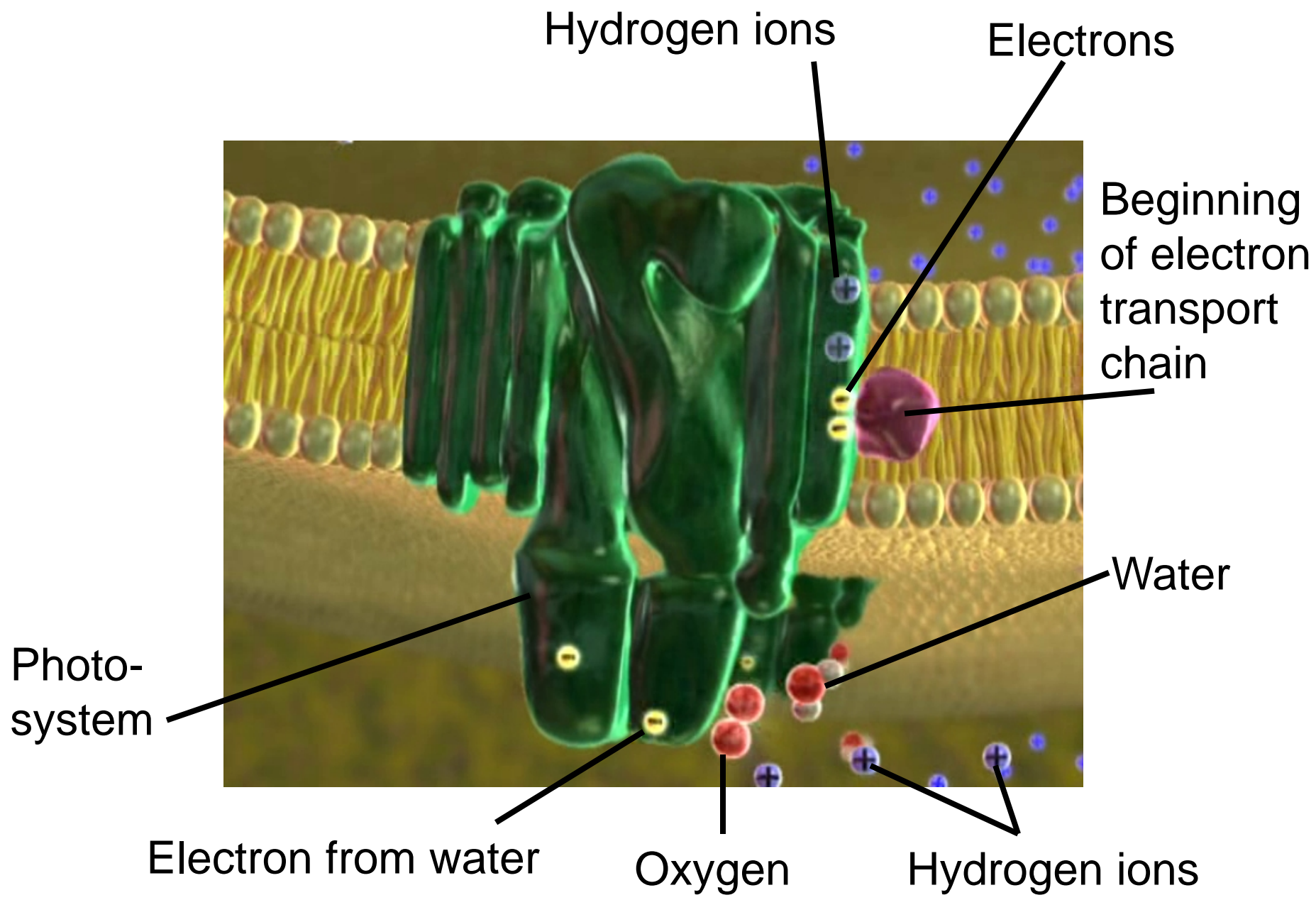
Photosystem

Thylakoid membrane

Interior of thylakoid



Photosystem



Hydrogen ions

Electrons

Beginning of electron transport chain

Water

Photo-system

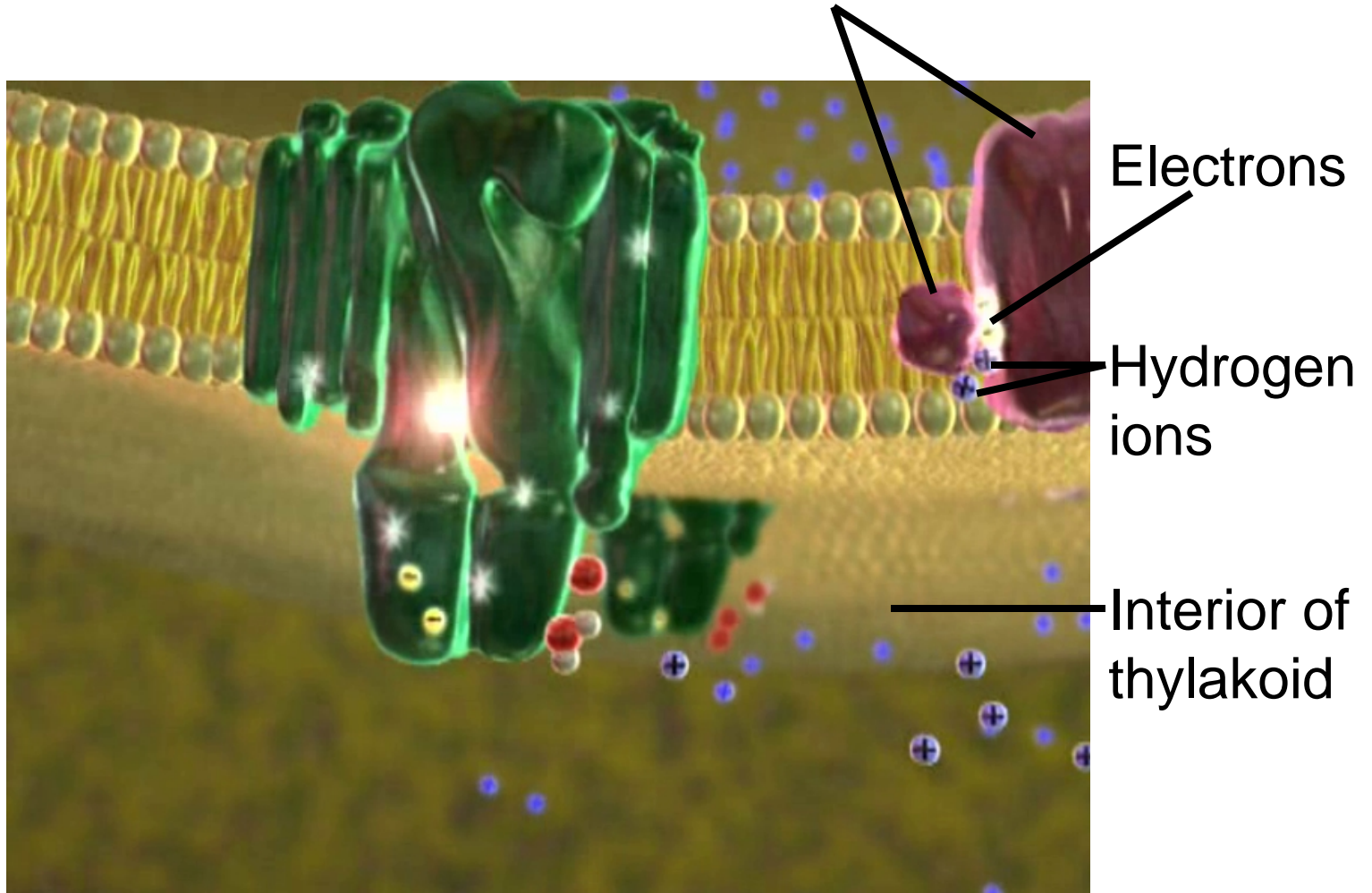
Electron from water

Oxygen

Hydrogen ions

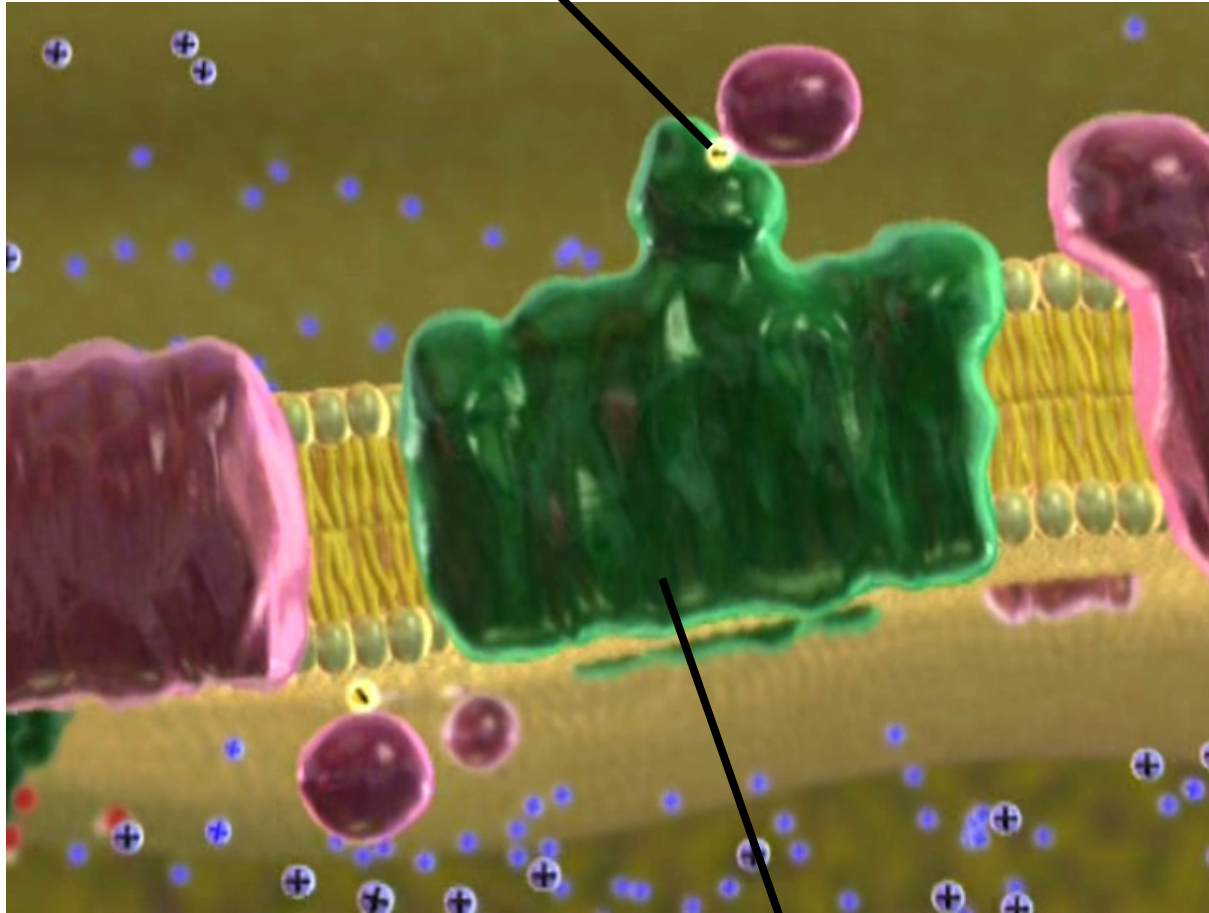


Electron transport chain





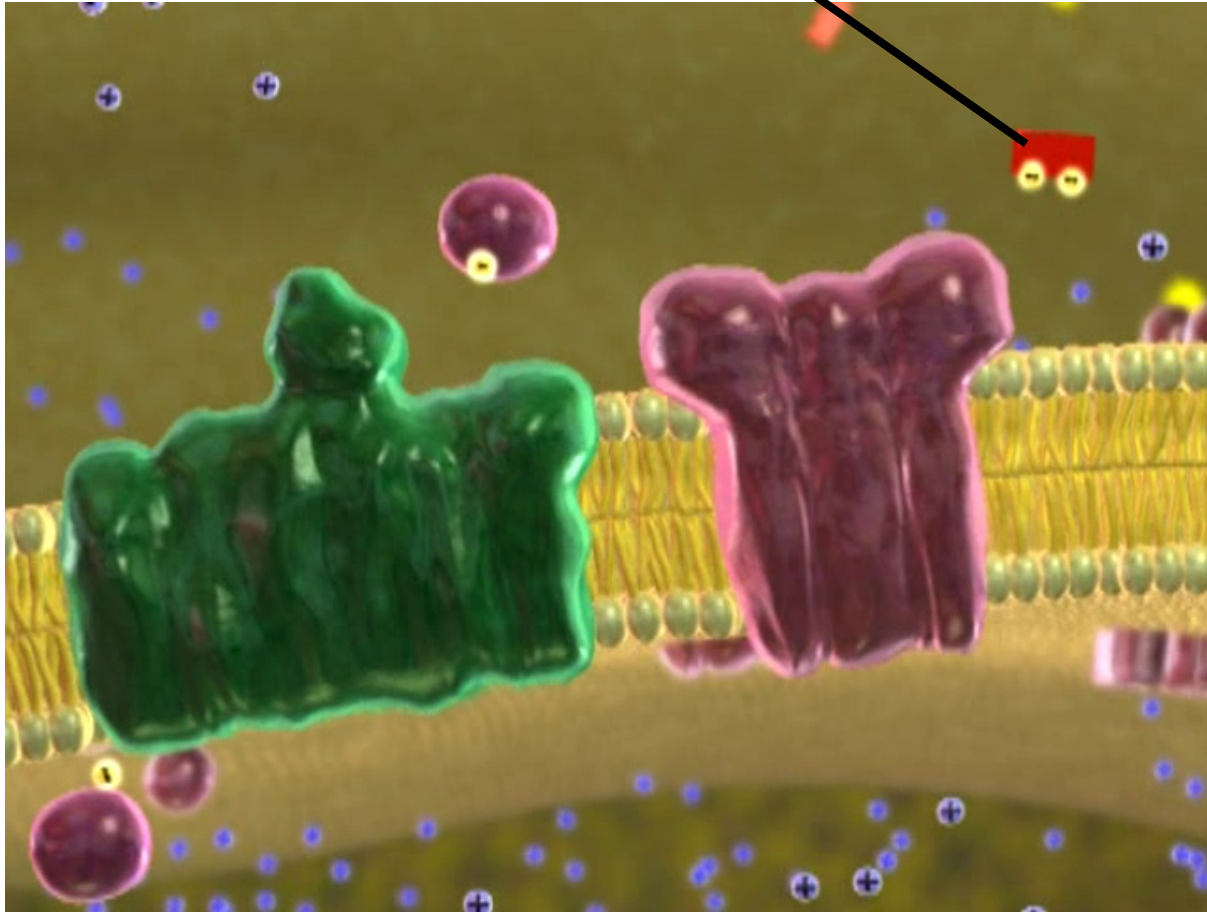
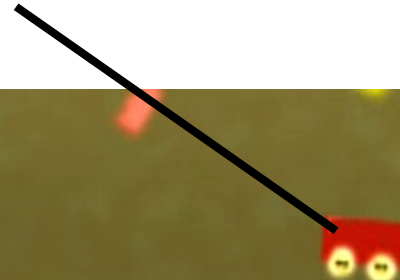
Electron



Photosystem



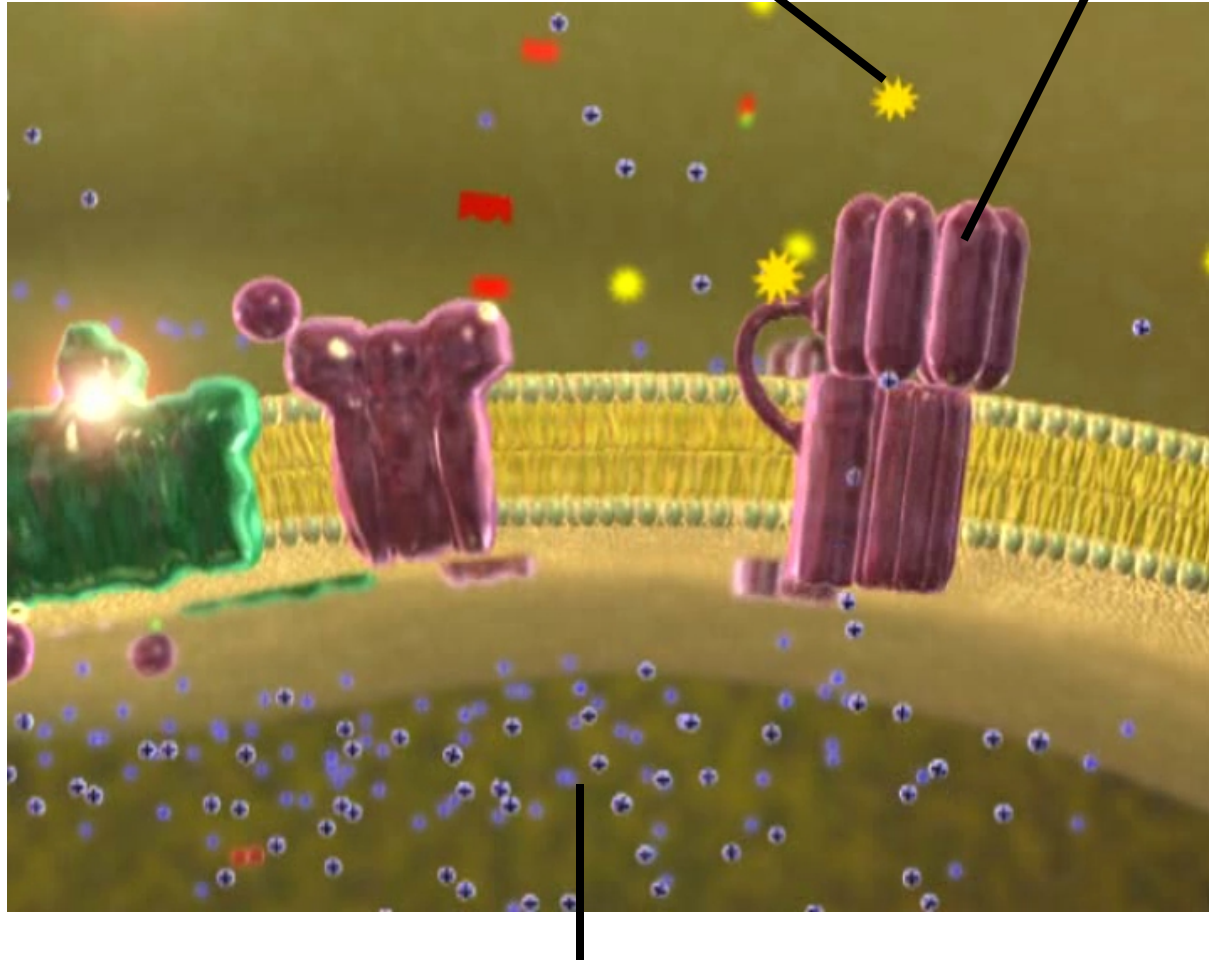
NADPH (electron carrier)





ATP

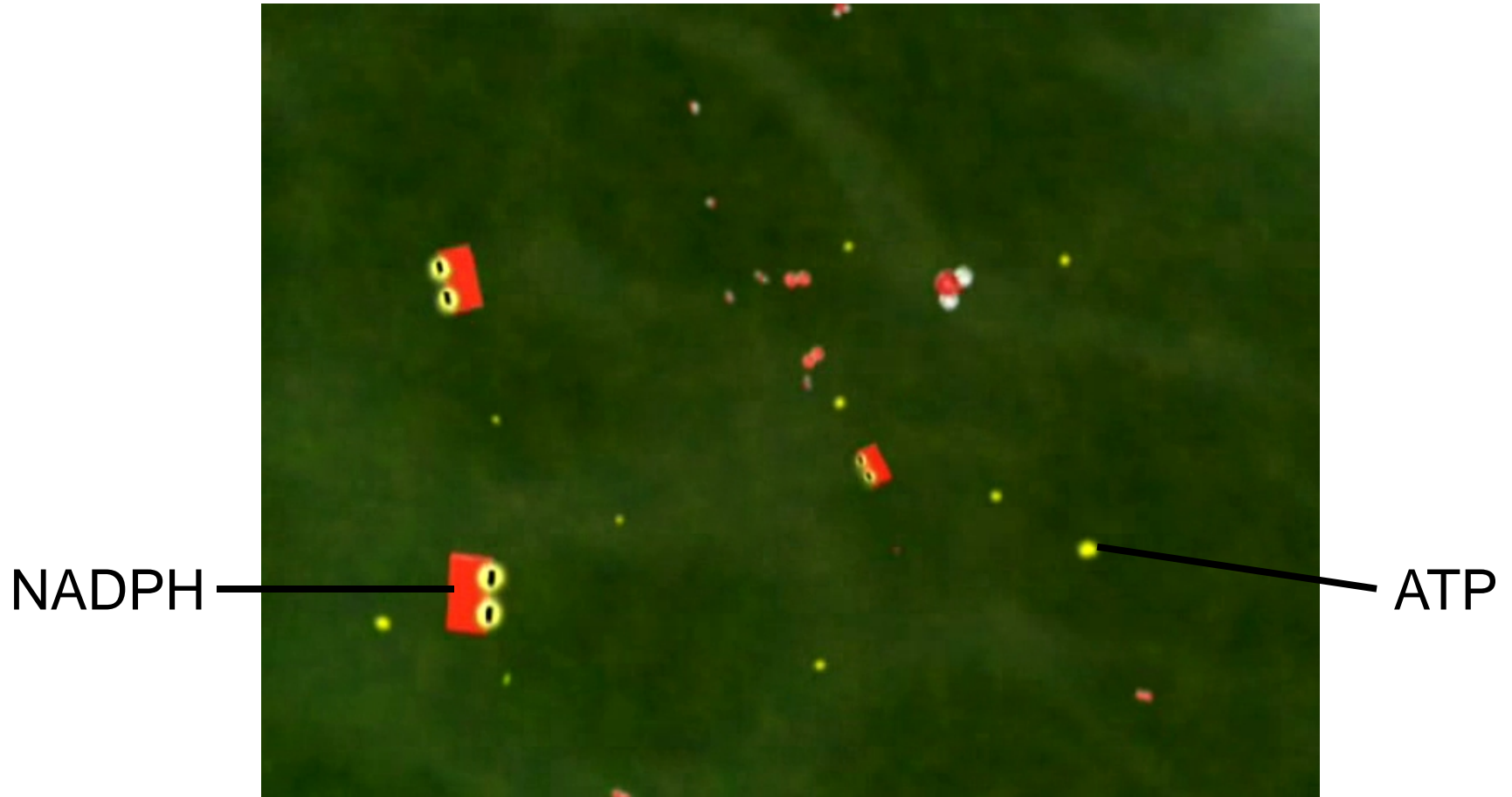
ATP synthase



High concentration of hydrogen ions inside thylakoid



Energy products of the light reactions



The Calvin Cycle

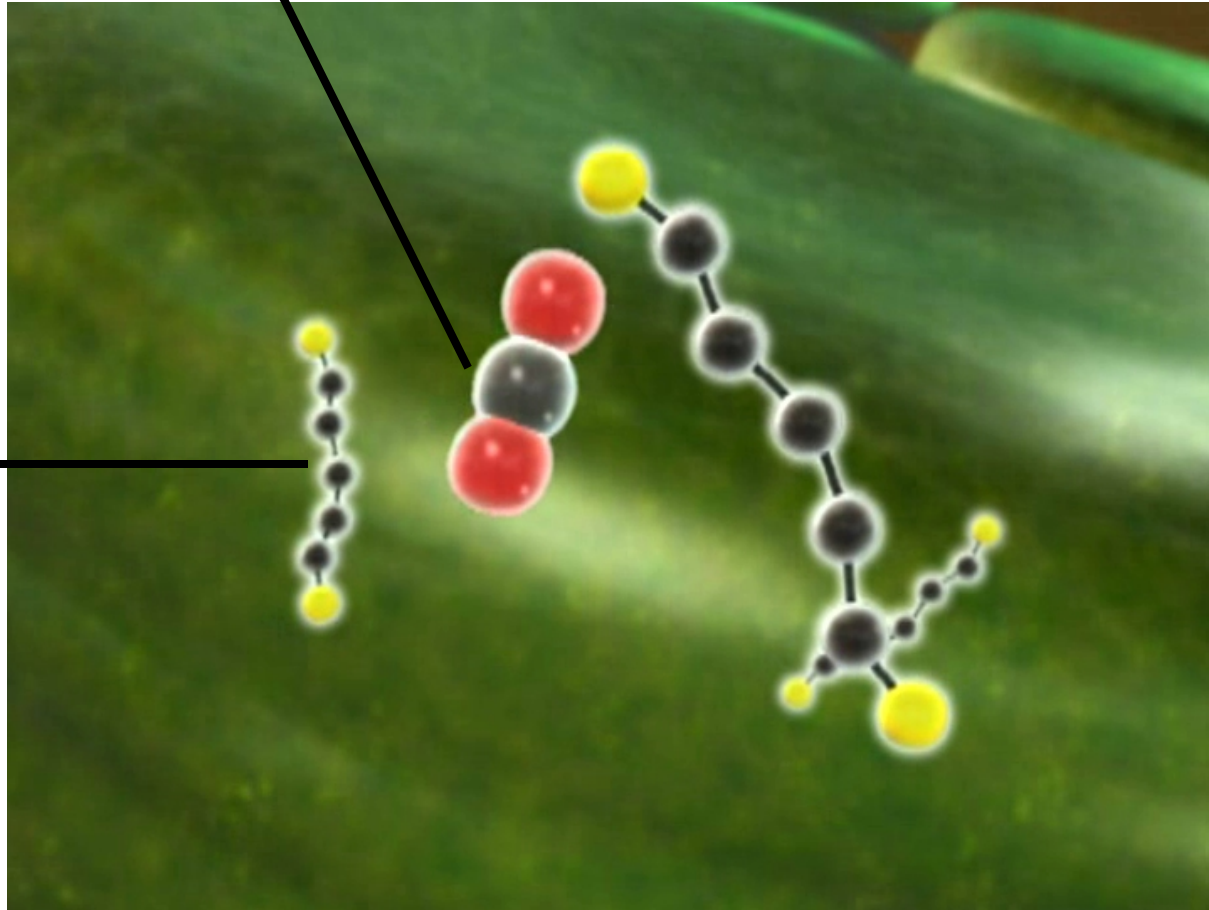
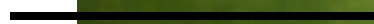
(C₃ Cycle)



Carbon dioxide

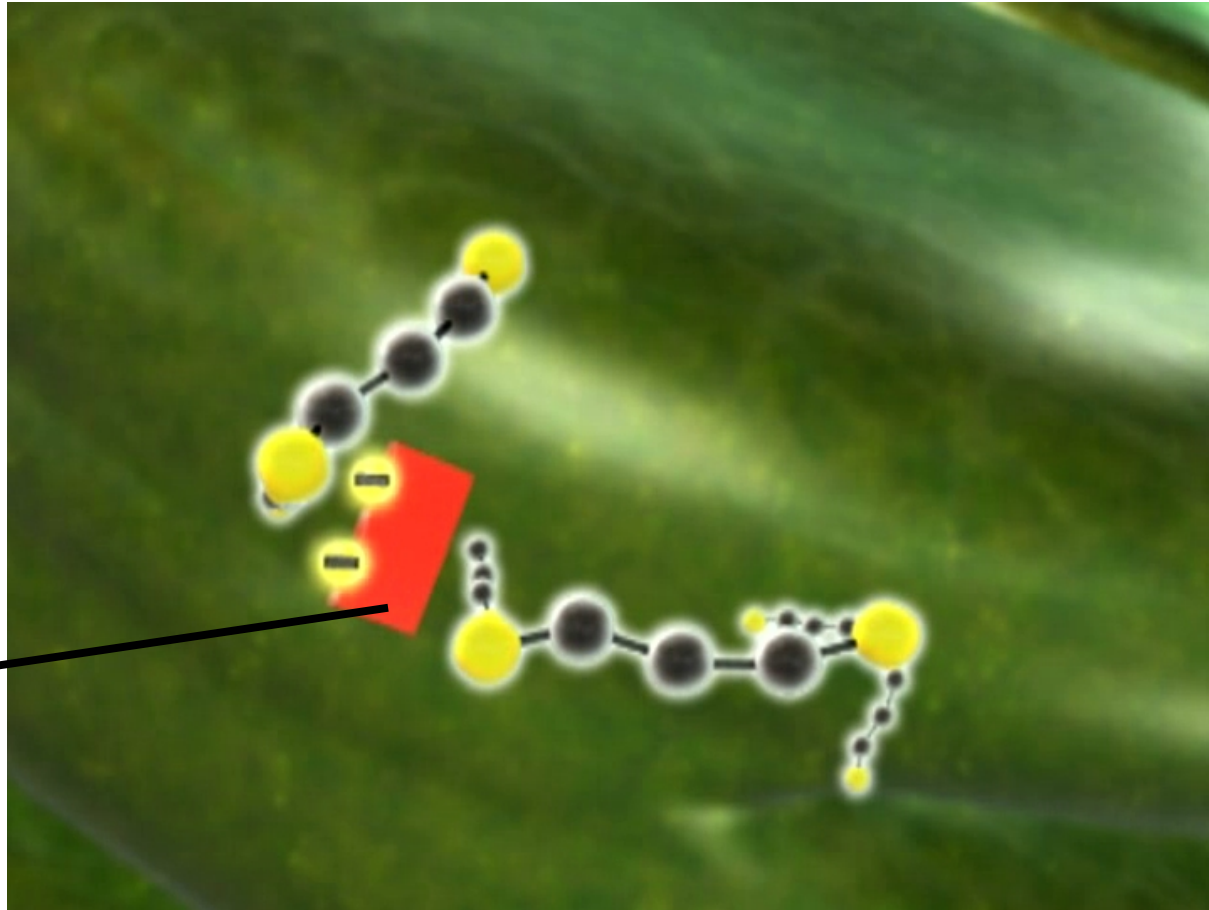


RuBP





NADPH





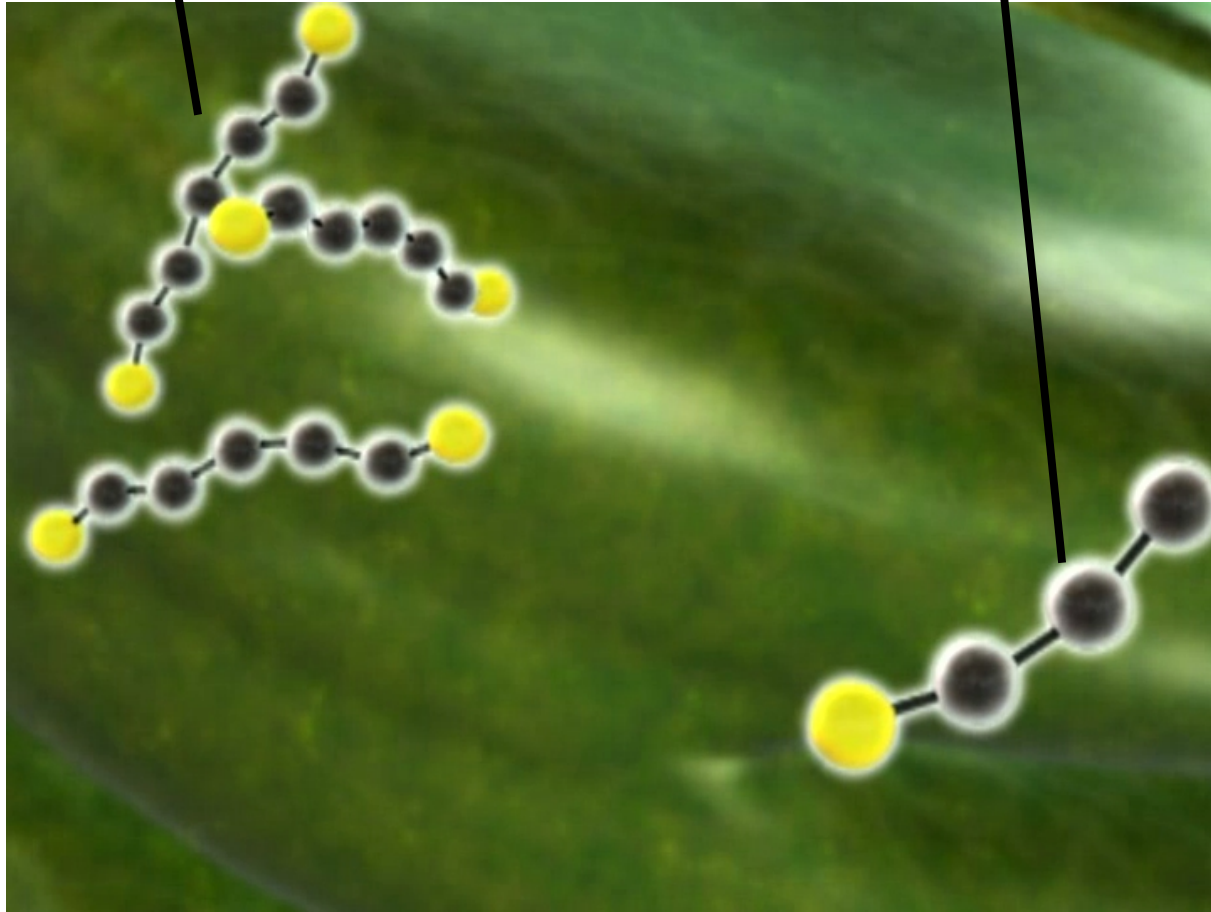
G3P





RuBPs

G3P

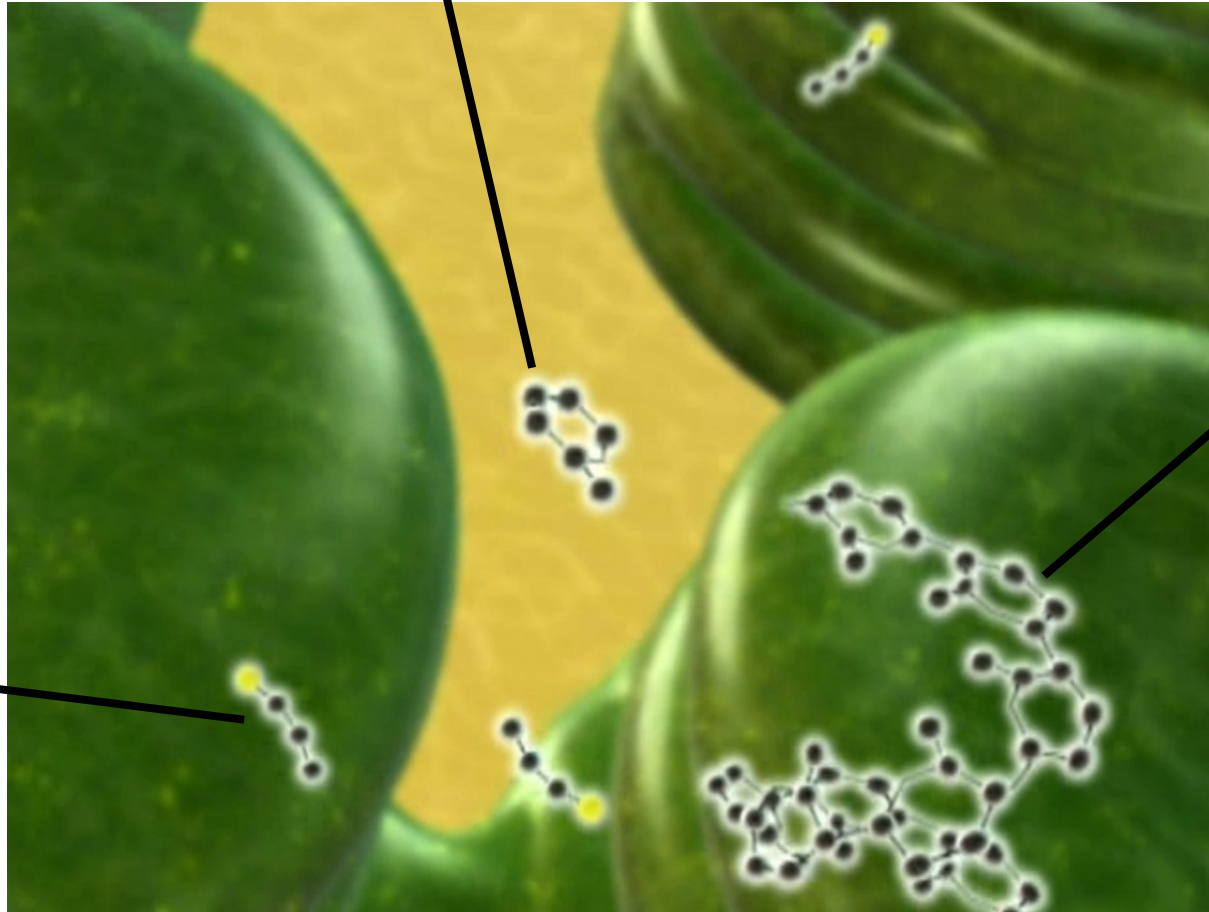




Glucose

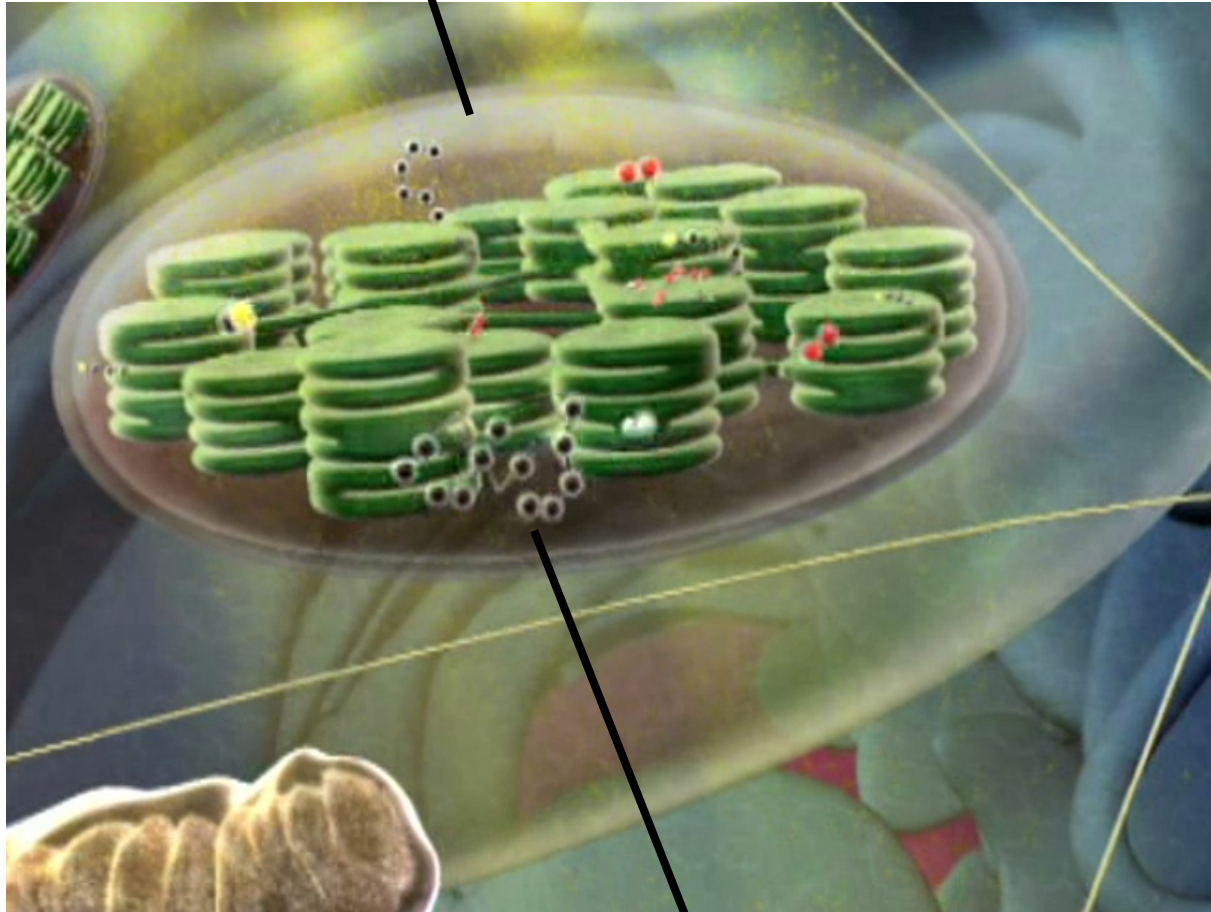
Starch

G3P

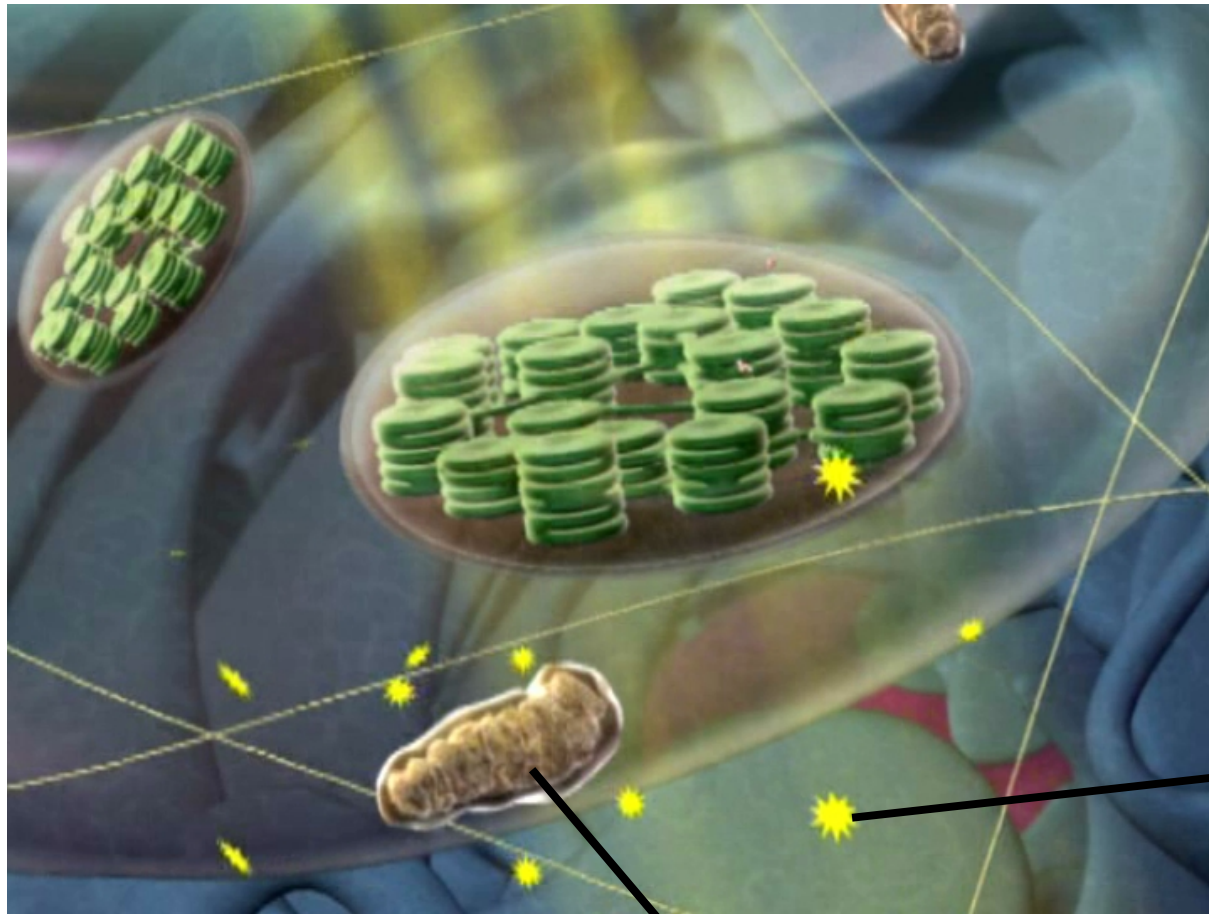




Chloroplast



Sucrose



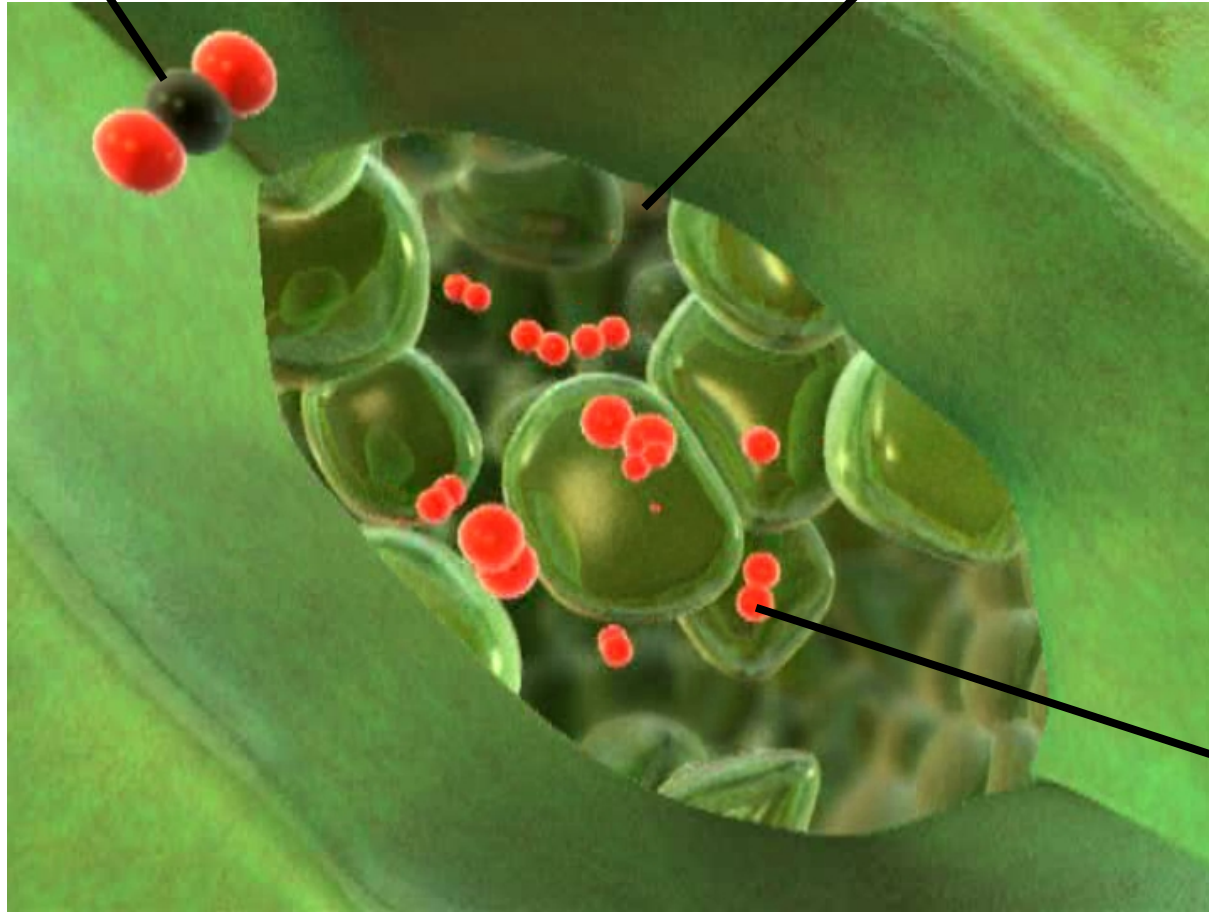
Cellular respiration in mitochondrion

ATP



Carbon dioxide

Pore in leaf



Oxygen



