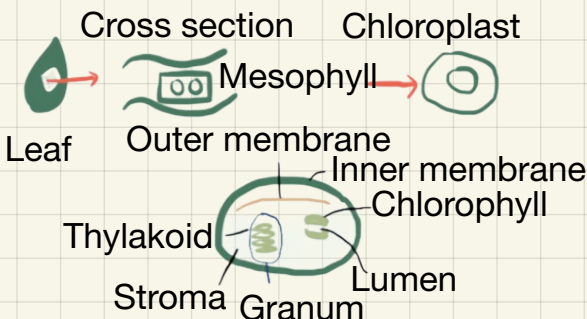


Photosynthesis

@dee_tutor

convert light energy from the sun into chemical energy

Structure

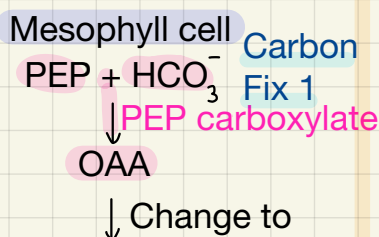
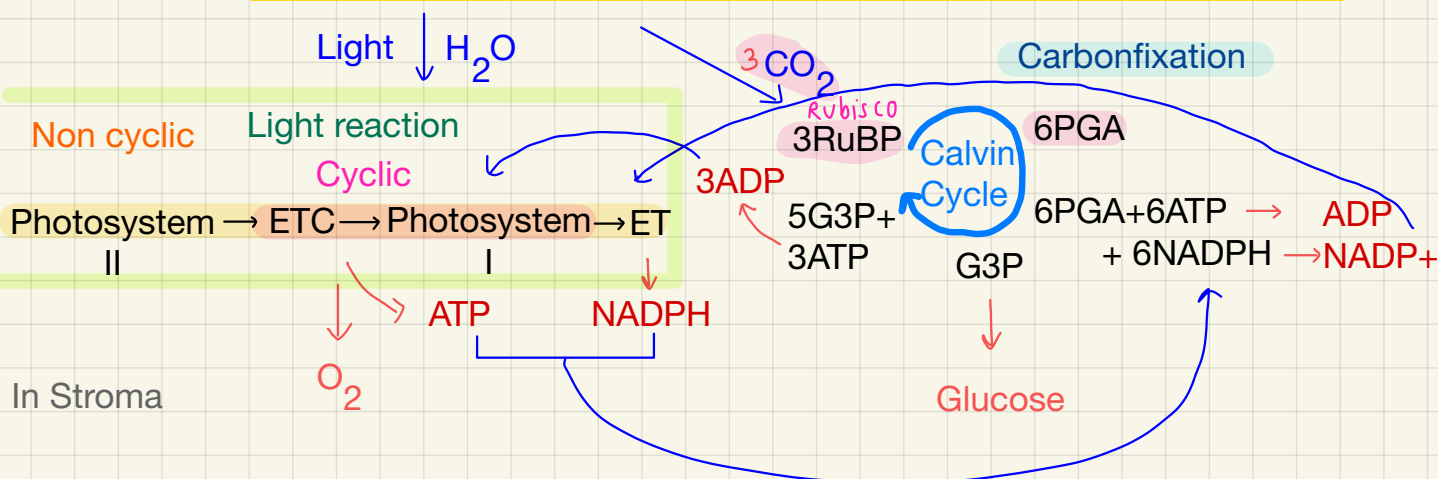
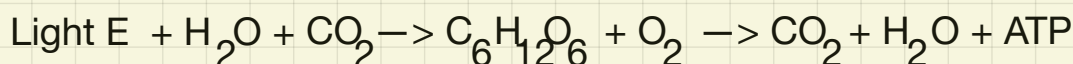


Pigment

Chlorophyll	Carotenoid	Phycobillin
-a; dark green	-Carotene; red	-Phycocyanin
-b; light green	(Carrot)	(green-blue seaweed)
-c; brown seaweed	-Xanthophyll; orange (corn pumpkin)	-Phycoerythrin (Red seaweed)
-d; Red seaweed		
-Bacteriochlorophyll		

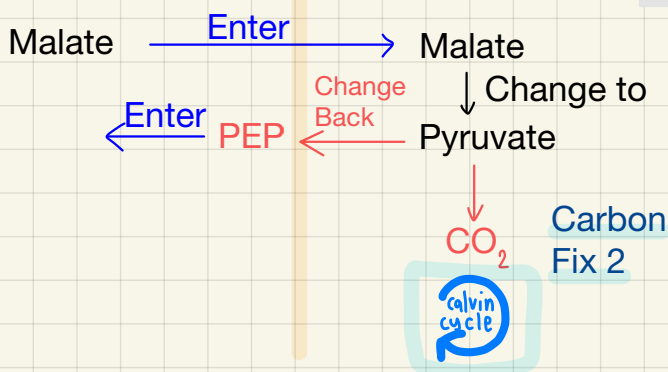
Relation

Photosynthesis (+H₂O) Respiration

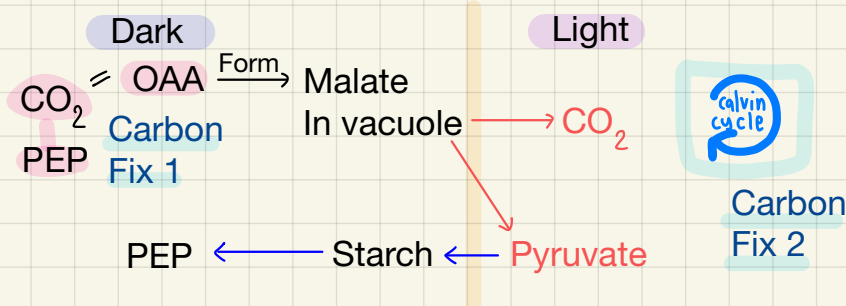


Bundle sheet

C3 plants carbon dioxide is initially fixed into a three-carbon compound (3-phosphoglycerate or 3-PGA) using the enzyme ribulose-1,5-bisphosphate carboxylase/oxygenase (RuBisCO) in the Calvin cycle.
Ex. Wheat, rice, oats



C4 plants have an additional step in carbon fixation. They initially fix CO₂ into a four-carbon compound (oxaloacetate) in mesophyll cells. This four-carbon compound is then transported to bundle sheath cells, where it releases CO₂ for the Calvin cycle. C4 plants can thrive in conditions with higher temp. and lower [CO₂]
Ex. Corn, sugarcane



CAM plants open their stomata at night to take in CO₂, which is then fixed into organic acids and stored in vacuoles. During the day, the stored CO₂ is released and used in the Calvin cycle. For plants in arid, water-limited conditions, or desert environment
Ex. Pineapple, agave