

PHOTOSYNTHESIS CYCLE PHASES

Light-Dependent & Light-Independent Reactions

1. Light-Dependent Reactions

LOCATION	Thylakoid Membrane
INPUTS	Light, H ₂ O, NADP ⁺ , ADP
OUTPUTS	O ₂ , ATP, NADPH
KEY PROCESS	Photolysis of water & Electron Transport Chain

2. Light-Independent (Calvin Cycle)

LOCATION	Stroma
INPUTS	CO ₂ , ATP, NADPH
OUTPUTS	G3P (Sugar), NADP ⁺ , ADP
KEY PROCESS	Carbon Fixation, Reduction, Regeneration

Overall Equation: $6CO_2 + 6H_2O + \text{Light Energy} \rightarrow C_6H_{12}O_6 + 6O_2$