

Photosynthesis Objectives

Define these key terms:

autotrophs heterotrophs photosynthesis pigment chlorophyll guard cells
stomata transpiration osmosis diffusion chloroplast ATP thylakoid granum
stroma reactants for photosynthesis products for photosynthesis ADP
thylakoid membrane Light-dependent reaction(Light Reaction) light-independent reaction
(Dark Reaction/Calvin Cycle)

- Compare & contrast autotroph & heterotroph.
- Write the chemical & written equation for photosynthesis.
- State which color plants grow best in and which color plants do not absorb.
- Identify 4 factors that affect photosynthesis.
- Determine inorganic and organic compounds in the equation for photosynthesis.
- Draw a chloroplast.
- Conduct daily assessments on an elodea plant under white light over a week to determine key concepts regarding photosynthesis.
- Define the term limiting factor.
- Read & analyze graphs to examine relationships between the affects of light, temperature, & CO₂ on the rate of photosynthesis.
- State some factors that would increase the rate of photosynthesis.
- State some factors that would decrease the rate of photosynthesis.
- Determine on a graph where the process of denaturation takes place.
- Identify the specific gases that diffuse into & out the stomates.
- Draw diagrams of open & closed stomata with arrows illustrating gas exchange & diffusion of H₂O.
- Identify specific roles that the guard cell performs to maintain homeostasis in plants.
- Discuss the process of osmosis in maintaining homeostasis in plants.
- Explain what happens to the guard cells and stomata when water concentration is high and when water concentration is low.
- Explain what happens to guards cells & stomates during the daytime (light present) & nighttime (no light).
- Apply reading & diagram of plant structure from textbook to label the cross section of a leaf with has exchange.
- Identify the basic energy source for all cells.
- State where cells get the energy to regenerate ATP.
- Draw an ATP molecule
- Explain what it means when energy is stored and released.
- State 2 ways cells use the energy stored in ATP.

