ADVANCED BIOLOGY: PHOTOSYNTHESIS

(USE CHAPTER 10 AS A RESOURCE)

Photosynthesis

Autotrophs

Heterotrophs

PHOTOSYNTHESIS CONVERTS LIGHT ENERGY TO THE CHEMICAL ENERGY OF FOOD

1. Chloroplasts: The Sites of Photosynthesis in Plants



1. Mesophyll
2. Stomata
3. Chloroplast



1. Tracking Atoms Through Photosynthesis: Scientific Inquiry
2. Reaction
3. The Splitting of water
4. Photosynthesis as a Redox Process
5. The Two Stages of Photosynthesis: A Preview



1. Light Reactions
2. Calvin Cycle

THE LIGHT REACTIONS CONVERT SOLAR ENERGY TO THE CHEMICAL ENERGY OF ATP AND NADPH

1. The Nature of Sunlight (Read this information and take notes)
2. Photosynthetic Pigments: The Light Receptors



1. Excitation of Chlorophyll by Light



1. A Photosystem: A Reactions-Center Complex Associated with Light-Harvesting Complexes



1. A Comparison of Chemiosmosis in Chloroplasts and Mitochondria



1. Generation of ATP
2. Electron Transport Chain
3. ATP Synthase
4. Source of electrons
5. Proton gradient

THE CALVIN CYCLE USES THE CHEMICAL ENERGY OF ATP AND NADPH TO REDUCE CO2 TO SUGAR



1. Carbon fixation
2. Reduction
3. Regeneration of RuBP
4. The Evolution of Alternative mechanisms of Carbon Fixation in Hot, Arid Climates
5. Photorespiration



1. C3 Plants
2. C4 Plants
3. CAM Plants
4. The Importance of Photosynthesis: A Review