

## Biology Chapter 5: Photosynthesis and Cellular Respiration

### Objectives:

#### Energy and Living Things

- Energy in Living Systems
- ATP

#### Photosynthesis

- Using the Energy in Sunlight
- Stage One: Absorption of Light Energy
- Stage Two: Conversion of Light Energy
- Stage Three: Storage of Energy

#### Cellular Respiration

- Cellular Energy
- Stage One: Breakdown of Glucose
- Stage Two: Production of ATP
- Fermentation in the Absence of Oxygen

#### **Vocabulary**

#### ***At the end of this unit, you should be able to:***

1. Photosynthesis
2. Autotroph
3. Heterotroph
4. Cellular Respiration
5. Pigment
6. Chlorophyll
7. Carotenoid
8. Thylakoid
9. Electron Transport Chain
10. NADHP
11. Carbon Dioxide Fixation
12. Calvin Cycle
13. Aerobic
14. Anaerobic
15. Glycolysis
16. NADH
17. Krebs Cycle
18. FADH<sub>2</sub>
19. Fermentation

- Analyze the flow of energy through living systems.
- Compare the metabolism of autotrophs with that of heterotrophs.
- Describe the role of ATP in metabolism.
- Describe how energy is released from ATP.
- Summarize how energy is captured from sunlight in the first stage of photosynthesis.
- Analyze the function of electron transport chains in the second stage of photosynthesis.
- Relate the Calvin cycle to carbon dioxide fixation in the third stage of photosynthesis.
- Identify three environmental factors that affect the rate of photosynthesis.
- Summarize how glucose is broken down in the first stage of cellular respiration.
- Describe how ATP is made in the second stage of cellular respiration.
- Identify the role of fermentation in the second stage of cellular respiration.
- Evaluate the importance of oxygen in aerobic respiration.

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