

Biology I - Unit 3b Study Guide

bio1u3bsg (Cell Metabolism)

Study Objectives

1. Describe the process of **photosynthesis**. (pages 113-124)
 - a. Define the terms autotrophs and heterotrophs and give examples.
 - b. Complete the "Cell Metabolism Worksheet"
 - c. Describe what chloroplasts are and their role in photosynthesis.
 - d. What are the factors that affect photosynthesis? Describe them.
2. Compare and contrast lactic acid **fermentation** and alcoholic fermentation. (pages 131-136)
 - a. Define cellular respiration. Who does it?
 - b. Summarize the steps in glycolysis and fermentation on your "Cell Metabolism Worksheet"
 - c. Write a word equation for both types of fermentation on your worksheet.
 - d. What is the efficiency of glycolysis?
 - e. Describe historical significance of fermentation in the last century. (fermentation article)
3. Describe the process of aerobic **respiration**. (pages 137-144)
 - a. List and describe the three stages of aerobic respiration required for the breakdown of glucose.
 - b. Summarize the steps in glycolysis and aerobic respiration on your "Cell Metabolism Worksheet".
 - c. Read the article on "Mitochondria - many roles in disease" (page 141) and answer questions 1-3

Vocabulary:

ATP autotroph heterotroph glycolysis oxidation reduction chlorophyll light reaction
Calvin cycle Krebs cycle electron transport chain photosynthesis fermentation
aerobic respiration kilocalorie anaerobic

Assignments:

- Reading from chapter 6 and chapter 7
- Notebook: **10pts**
 - Reading Notes
 - Crossword
 - Photosynthesis/Respiration Graphic Organizer
 - Fermentation Article
 - Create a Digital Cmap (use the above vocabulary and any other terms you think you need)
- Vocabulary Quiz (3b) **15pts**
- 3b Unit Test **20pts**
- Lab: "Fermentation of Rootbeer"

Misconceptions

- Plants are green because they use green light in photosynthesis.
- The "dark reaction" (Calvin Cycle) only takes place at night.
- The "calories" on a food label represents one calorie of energy.