

Name: _____ Period: _____ Date: _____

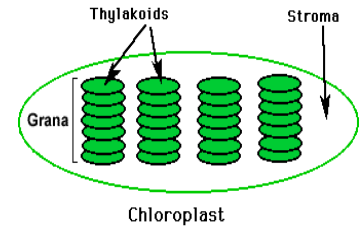
Unit 4: PHOTOSYNTHESIS AND CELLULAR RESPIRATION STUDY GUIDE

4.1: ATP

1. How does ATP provide energy for cells?

4.2-4.3: Photosynthesis

2. What is **photosynthesis**?



3. Write out the equation for Photosynthesis.

4. What organisms can perform **photosynthesis** (there's a scientific term for them)? What **organelle** do these organisms have that photosynthesis occur in?

5. What is the role of chlorophylls in the chloroplast?

6. Compare Light dependent and Light Independent in terms of where they occur, the reactants and products.

7. What does the Calvin Cycle need from the Light Dependent Reaction?

8. What are the energy carrying molecules in photosynthesis? (there are 2)

9. Draw a sugar molecule. Which stage of Photosynthesis produces sugar (Glucose)?

10. Where does Hydrogen ions come from to "power" the ATP synthase?

11. What is the relationship between the Light dependent and Light independent reactions?

12. What is chemosynthesis? What organisms can perform chemosynthesis?

4.4 & 4.5: Cellular Respiration

13. What happens to the **sugar** that is produced in photosynthesis? And what is **cellular respiration**?



14. Write the equation for **cellular respiration**.

15. What does **aerobic** and **anaerobic** mean?

16. What are the 3 processes of **cellular respiration**?

17. Fill in the table about the 3 processes of **Cellular Respiration**.

Process	Location	Aerobic or anaerobic	Reactants and Products
Glycolysis			
	Mitochondrial matrix		
Electron Transport Chain (ETC)			34 ATP and H ₂ O (water)

18. What does the Krebs Cycle need from Glycolysis?

19. What is the total of ATP produced from ONE glucose molecule?

20. How is water produced?

21. List the energy molecules in Cellular respiration (there are 3).

22. In the ETC, when is Active transport occurring and when is Passive occurring?

23. Why is Oxygen necessary to make ATP?

4.6: Fermentation/Lactic Acid

24. What does fermentation allow?

25. Does fermentation produce ATP?

26. What happens to the glucose in fermentation?

27. What are some uses of fermentation?