

Cell Energy Unit 5 - OL



I CAN -

- 1. Explain how the transport of the reactants and products involved in photosynthesis and cell respiration leads to homeostasis. (4B)
- 2. Discuss the importance of carbohydrates to a cell during cell respiration. (9A)
- 3. List the reactants of cellular respiration and identify the energy transformation that occurs. (9B)
- 4. Identify where cellular respiration occurs in the cell. (9B)
- 5. Distinguish between aerobic and anaerobic respiration. (9B)
- 6. Explain the importance of ATP in an organism. (9B)
- 7. List the reactants and products of photosynthesis and explain the energy transformation that occurs. (9B)
- 8. Identify where photosynthesis occurs in the cell. (9B)
- 9. Compare photosynthesis and cellular respiration in terms of energy and matter. (9B)
- 10. Compare the difference between radiant energy and chemical energy in the process of photosynthesis. (9B)
- 11. Explain the relationship between the reactants and products of photosynthesis and cell respiration. (9B)
- 12. Describe how cellular respiration and photosynthesis in organisms fits in to the carbon cycle. (12D)

Quiz

Date:

Monday,

Nov 11

WORDS TO KNOW

Photosynthesis,
Cellular respiration,
Reactants, Products,
ATP, Chlorophyll,
Chloroplast,
Mitochondria,
Chemical energy,
Glucose, Aerobic,
Anaerobic,
Homeostasis, Radiant
energy, Chemical
energy

Calendar

Monday 11/4	Tuesday 11/5	Wednesday 11/6	Thursday 11/7	Friday 11/8
Topic: Cell Energy Activities: Foldable and Diagrams By the end of the period I can: 4, 7, 8, 9, 10, 11, 12 Student Holiday!	Topic: Cell Energy Activities: Amoeba Sisters & Diagrams By the end of the period I can: 5, 6	Topic: Cell Energy Activities: Photo and Cell Game By the end of the period I can: 4, 7-12	Topic: Cell Energy Activities: Cell Energy Comparison Carbon Cycle By the end of the period I can: 1, 2, 3, 12
Monday 11/11	Tuesday 11/12	Wednesday 11/13	Thursday 11/14	Friday 11/15
..... Cell Energy Quiz	Protein Synthesis Unit 6 Begins	Protein Synthesis Unit 6 Begins	Protein Synthesis Unit 6	Protein Synthesis Unit 6

**** This is a tentative calendar and subject to change.



Cell Energy Unit 5 Expectation Sheet

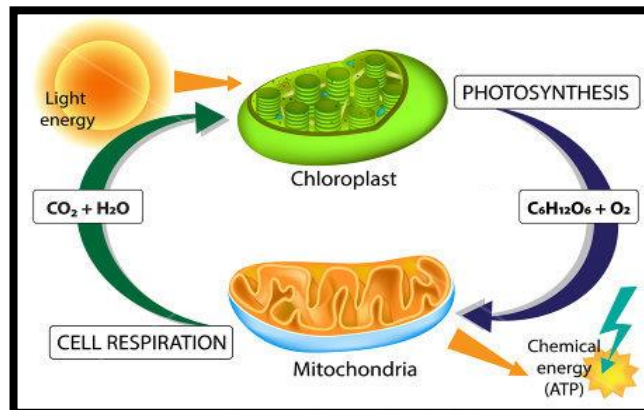
NAME _____
Monday 11/11/18
Quiz Date _____

VOCABULARY

- Photosynthesis
- Cellular Respiration
- Mitochondria
- Chloroplast
- Chlorophyll
- Aerobic Respiration
- Anaerobic Respiration
- Carbon Dioxide
- Oxygen
- Glucose
- ATP
- Reactants
- Products
- Chemical Reaction
- Chemical energy
- Radiant energy

Cellular Energy Processes

- **Reactants** are the ingredients for the chemical reaction. **Products** are the substances being produced from a chemical reaction.
- **Reactants always make products.**
- **The products of one process become the reactants of the other process.**



Photosynthesis: CO_2 (Carbon Dioxide) + H_2O (Water) + **Radiant energy** \rightarrow $\text{C}_6\text{H}_{12}\text{O}_6$ (Glucose) + O_2 (Oxygen)

Respirations: $\text{C}_6\text{H}_{12}\text{O}_6$ (Glucose) + O_2 (Oxygen) \rightarrow CO_2 (Carbon Dioxide) + H_2O (Water) + **ATP**

Review Questions for Test:

1. Explain why glucose is needed by the cell.
2. What is the waste product of cell respiration?
3. What is the carbohydrate involved in cell respiration?
4. Explain what happens to glucose during cell respiration.
5. List reactants and products of cell respiration.
6. List reactants and products of photosynthesis.
7. Describe how carbon cycles through the cell respiration and photosynthesis equations.
8. Explain what a reactant and product are.
9. Identify in a chemical equation which ones are the reactant and which ones are the products.
10. What are the energy reactant and the energy product of cell respiration?

	O_2 Anaerobic	O_2 Aerobic
Combustion	Incomplete	Complete
Energy Yield	Low (2 ATP)	High (36 – 38 ATP)
Products	Animals: Lactic acid Yeast: Ethanol + CO_2	CO_2 and H_2O
Location	Cytoplasm	Cytoplasm and mitochondrion

11. What is the organelle for cell respiration? Be able to identify an image of it.
12. Explain the difference between anaerobic and aerobic respiration
13. Define ATP
14. Explain why cells need ATP.
15. What are the energy reactant and the energy product of photosynthesis?
16. What is the organelle for photosynthesis? Be able to identify an image of it.
17. Define radiant energy and chemical energy.
18. Be able to label a diagram of the cycle of photosynthesis and cell respiration with words and arrows
19. Which cellular process produces ATP?
20. In what organelle is the energy from the bonds in glucose transferred to the phosphate bonds?
21. Trace energy conversions in photosynthesis and cellular respiration.
22. What molecule is a major source of energy production in both plants and animals?
23. How does the rate of respiration in plants affect the amount of glucose in the plant?