



Name: \_\_\_\_\_

Per: \_\_\_\_\_

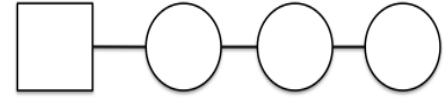
## ATP, Photosynthesis, & Cell Respiration WebQuest

### TASK ONE – INTRODUCTION TO ATP

Use the link to watch the “What is ATP & How It Works” video. As you watch, fill in the blanks below.

<http://tinyurl.com/nm7yybr>

1. The full name of ATP is \_\_\_\_\_



2. Label the ATP Diagram to the right with what each shape represents.

3. ATP is a molecule in the cell that allows for quick and easy \_\_\_\_\_ when needed by the cells organelles.

4. ATP is a type of \_\_\_\_\_ that \_\_\_\_\_ energy when the chemical bonds are \_\_\_\_\_ between two \_\_\_\_\_ groups.

5. The abbreviation for Adenosine Diphosphate is \_\_\_\_\_



6. The ADP enters the cell's \_\_\_\_\_ and is recharged when the mitochondria adds another \_\_\_\_\_ to the molecule. The molecule becomes \_\_\_\_\_ again.

### TASK TWO – CELL RESPIRATION & PHOTOSYNTHESIS

Use the link to access the “Photosynthesis and Cell Respiration” article. As you watch, fill in the blanks below.

<http://tinyurl.com/cpqovbw>

7. Photosynthesis is the process used by plant cells to convert \_\_\_\_\_ from the sun into \_\_\_\_\_, so as to create energy-rich \_\_\_\_\_ molecules like glucose.

8. Cellular respiration is the process of \_\_\_\_\_ food molecules to obtain energy and \_\_\_\_\_ it in the form of \_\_\_\_\_ ATP molecules.

9. Photosynthesis takes place in the cells of plant leaves in structures called \_\_\_\_\_, which contain \_\_\_\_\_. The plant cells absorb light from the sun through the chlorophyll \_\_\_\_\_ and using \_\_\_\_\_ and \_\_\_\_\_ obtained from the environment, undergo a series of chemical reactions to produce \_\_\_\_\_ molecules.

10. Look at the picture. Copy the chemical reaction for photosynthesis below in symbols and words.

11. Cellular respiration takes place in the \_\_\_\_\_ way in both \_\_\_\_\_ and \_\_\_\_\_

12. Living cells obtain the \_\_\_\_\_ of photosynthesis (sugar molecules) and undergo cellular respiration to produce \_\_\_\_\_ molecules.

13. Some cells respire \_\_\_\_\_, using \_\_\_\_\_, while others undergo \_\_\_\_\_ respiration, \_\_\_\_\_ using oxygen.

14. Look at the picture. Copy the chemical reaction for cellular respiration below in symbols and words.

15. Read the last section “Differences Between Cell Respiration & Photosynthesis. Use the details in this section to fill in the table below to compare and contrast these processes.

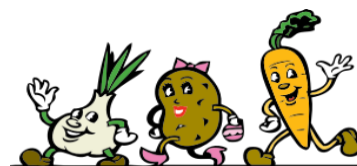
| 3 Details About Photosynthesis | 2 Ways They Are Alike | 3 Details About Cellular Respiration |
|--------------------------------|-----------------------|--------------------------------------|
|                                |                       |                                      |

**TASK THREE – PHOTOSYNTHESIS & FOOD**

Use the link to watch the “Simple Story of Photosynthesis & Food” video. As you watch, fill in the blanks below.

<http://tinyurl.com/llmtp2m>

- 16. What percentage of the food we eat comes from carbohydrates? \_\_\_\_\_
- 17. What are carbohydrates made of: \_\_\_\_\_
- 18. What are the pores in a plant’s skin called? \_\_\_\_\_
- 19. What light absorbing pigment is found in chloroplasts? \_\_\_\_\_
- 20. The sun helps covert carbon dioxide into a simple carbohydrate called: \_\_\_\_\_
- 21. What is another name for cellulose? \_\_\_\_\_
- 22. What does starch do for a plant? \_\_\_\_\_
- 23. When we break down glucose, what energy molecule is produced? \_\_\_\_\_
- 24. What are three ways we use ATP? \_\_\_\_\_
- 25. How is ATP like dollars? \_\_\_\_\_
- 26. Which organelle is responsible for breaking down carbohydrates into useable energy? \_\_\_\_\_
- 27. Do plants have mitochondria? \_\_\_\_\_



**TASK FOUR – GAME PLAY PRACTICE**

Use the link to access the Photosynthesis & Respiration Game. As you move through the game, answer the following questions.

<http://tinyurl.com/h47ql88>

- 28. What molecule does the fruit represent? \_\_\_\_\_
- 29. The molecules you use in a chemical reaction are called the: \_\_\_\_\_
- 30. The molecules you produce in a chemical reaction are called the: \_\_\_\_\_
- 31. How many ATP molecules are produced in one reaction during cell respiration? \_\_\_\_\_
- 32. What are the reactants in respiration? \_\_\_\_\_
- 33. What are the reactants in photosynthesis? \_\_\_\_\_



34. What are the products in cellular respiration? \_\_\_\_\_

35. What are the products in photosynthesis? \_\_\_\_\_

**TASK FIVE – ANAEROBIC & AEROBIC RESPIRATION**

Use the link to watch the “Respiration” video. As you watch, fill in the blanks below. <http://tinyurl.com/jp52vct>

36. What is the difference between respiration and breathing? \_\_\_\_\_

37. What is more efficient? - Anaerobic or Aerobic Respiration? \_\_\_\_\_

38. What compound is responsible for the cramps that we feel when we run out of oxygen? \_\_\_\_\_

39. The build up of lactic acid causes: \_\_\_\_\_

40. What is the name of the length of time needed for us to pay back our oxygen debt? \_\_\_\_\_

**TASK SIX – FERMENTATION**

Use the link to watch the “Fermentation Of Yeast & Sugar” video. As you watch, fill in the blanks below.

<http://tinyurl.com/joxuxuk>

41. Fermentation is a metabolic process that converts \_\_\_\_\_ into \_\_\_\_\_

42. Fermentation occurs in \_\_\_\_\_, bacteria, and other microorganisms, as well as \_\_\_\_\_

43. The bottle with the MOST sugar grew to a \_\_\_\_\_ size.



44. Yeast is a type of \_\_\_\_\_.

45. When the yeast digests sugar and starches, it produces the waste products of \_\_\_\_\_ and \_\_\_\_\_.

46. Write the fermentation equation shown in the video in the space below. Write the symbols and words.

47. Is yeast fermentation an anaerobic or aerobic form of cellular respiration? Why? Anaerobic because it does not need oxygen to complete cellular respiration.

**TASK SEVEN – GAME BOARD CHALLENGE**

Use the link to access the Challenge Board Game. Choose 1-PLAYER game. As you move through the game, write three questions/answers you encountered below. <http://tinyurl.com/zkhzql3>

(48) Q.

A.

(49) Q.

A.

(50) Q.

A.

