



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.

https://www.youtube.com/watch?v=bbtqF9q_pFw

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.

<https://biologywise.com/photosynthesis-cellular-respiration>

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.

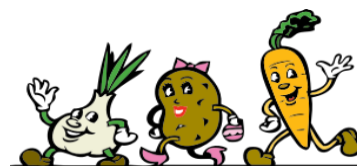
3 Details About Photosynthesis	2 Ways They Are Alike	3 Details About Cellular Respiration

TASK THREE – PHOTOSYNTHESIS & FOOD

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

<https://www.youtube.com/watch?v=eo5XndJaz-Y>

- 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.

<https://biomanbio.com/HTML5GamesandLabs/PhotoRespgames/photoresphtml5page.html>

- 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.

<https://www.youtube.com/watch?v=Xp0o19gWX7E>

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.

<https://www.youtube.com/watch?v=FYClCHVT00M>

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.

<https://www.quia.com/cb/916146.html>

(48) Q.

A.

(49) Q.

A.

(50) Q.

A.

