Name:_____ **Class:**_____ **Date:**_____

Photosynthesis & Cellular Respiration Worksheet

Vocabulary: Match the phrases on the left with the term that best fits. Use answers only one time.

_____1. Organisms that make their own food	**A.** Chloroplasts
_____2. Site of photosynthesis	**B.** Autotrophs
_____3. $C_6H_{12}O_6$	**C.** Glucose
_____4. The ability to do work	**D.** ATP
_____5. Adenosine diphosphate	**E.** ADP
_____6. Energy storing molecule	**F.** Energy

Answer each of the following questions in a clear and concise manner.

7. Compare and discuss how cells store energy and release energy using ATP. Be specific! You may use pictures, diagrams, or whatever else you think best describes how cells store and release energy.

_____

_____

_____

_____

8. Name the two stages of photosynthesis and list the starting molecule(s) and ending molecule(s) of each.

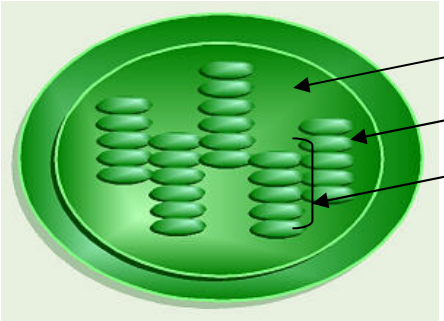
Stages	Starting Molecule(s)	Product(s)

9. Rearrange the following pieces to create the equation for photosynthesis. Do NOT use the chemical formula for the following pieces, please use the words provided below:

Oxygen, Carbon Dioxide, Water, Glucose, Sunlight

_____

10. Label the various parts of the chloroplast on the diagram shown below.



_____

_____

_____

11. Name the two major parts of photosynthesis.

    A. _____

    B. _____

12. Using the chloroplast image in question 10, identify which portion of the chloroplast each part of photosynthesis you named in question 11 occurs in.

_____13. The stroma is located in the mitochondrion and is the place where the light reactions of photosynthesis take place.
   A. True
   B. False

_____14. The processes of photosynthesis and respiration can be thought of as a cycle because:
   A. the products of one are used as the reactants of the other
   B. both give off oxygen to be used by animals
   C. they both have the same purpose
   D. one is used only by plants and the other is used only by animals

_____15. Light that is visible to humans occupies what part of the electromagnetic spectrum?
   A. the entire upper half
   B. the entire lower half
   C. a small portion in the middle
   D. the entire spectrum

_____16. The pigment molecules responsible for photosynthesis are located in the
   A. mitochondria
   B. cytoplasm of the cell
   C. stroma of the chloroplast
   D. thylakoid membrane of the chloroplast

_____17. Which of the following are logically associated with chloroplasts?
   A. plant cells
   B. chlorophyll
   C. thylakoid membranes
   D. all of the above

_____18. The products of photosynthesis are the
   A. products of cellular respiration
   B. products of glycolysis
   C. reactants of cellular respiration
   D. reactants of fermentation

_____19. Photosynthesis uses sunlight to convert water and carbon dioxide into
   A. oxygen
   B. high energy sugars and starches
   C. ATP and oxygen
   D. oxygen and high energy sugars

Fill in the blanks:

20. An organism that obtains its energy from food it eats is a(an) _____.

21. During the _____ of photosynthesis, energy from sunlight is used to form ATP, NADPH, and oxygen.

22. _____ is one of the main chemical compounds that cells use to store and release chemical energy.

23. A light-collecting unit in a chloroplast is a _____

24. The light-dependent reactions of photosynthesis take place in the _____ membranes of the chloroplasts.

25. The stage of photosynthesis that uses ATP and NADPH to form high-energy sugars is the _____.

26. A plant or other organism that is able to make its own food is a(an) _____.

27. _____ is the overall process in which sunlight is used to convert carbon dioxide and water into oxygen and high energy sugars.

28. The region of the chloroplast in which the Calvin cycle occurs is the _____.

29. The principle pigment in plants is called _____.

Answer the following questions in complete sentences:

30. What is the relationship between pigments and chlorophyll?

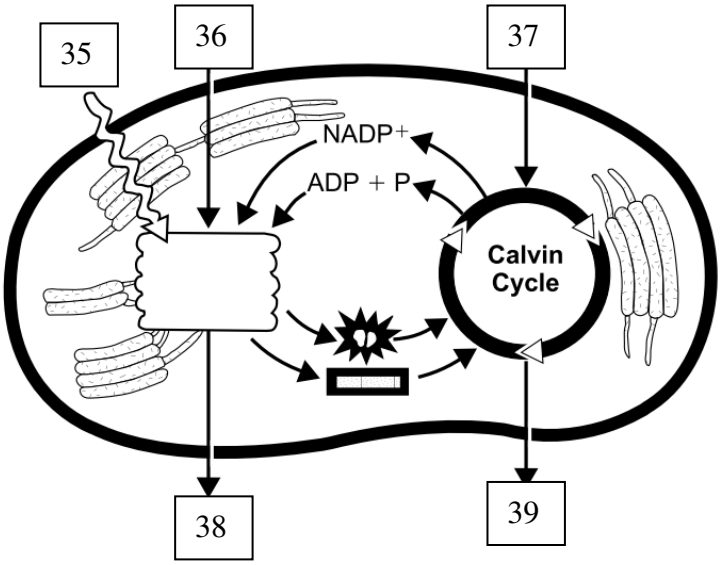
31. How do the light-dependent reactions differ from the Calvin cycle?

32. What compounds are formed from carbon dioxide in the Calvin cycle?

33. What is the difference between an autotroph and a heterotroph?

34. In which part of photosynthesis is oxygen produced?

Write the names of the reactants and products for photosynthesis that correspond to the numbers in the diagram.



35. _____

36. _____

37. _____

38. _____

39. _____