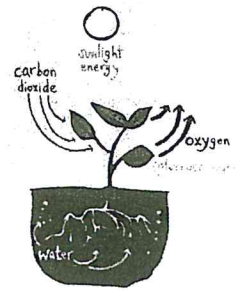


Name(s) _____
Section _____



Photosynthesis and Cellular Respiration: **50 points**

For this project, you will explain Photosynthesis and Cellular respiration in terms that your classmates can understand. To do this you will put together a creative project which has a series of illustrations and captions which will help explain the processes. The illustrations and captions must include the information listed on the back of this page. If you wish to include more than one illustration, to answer each question you may. **You may not use pictures or illustrations downloaded from the internet - they must be your own drawings.**

The most important point is that you answer the questions in the listed criteria through the content of the captions of your illustrations. You must answer the questions in the process of telling the story of photosynthesis and cell respiration. Do not simply write, "The answer to number 1 is...."

There will be bonus points awarded for creativity. Your project must have a descriptive and creative title.

Some Project Options:

- 1) Children's Book
- 2) Comic strip / poster
- 3) Travel Brochure
- 4) Write the story from the perspective of the cell, an ATP molecule, a glucose molecule, etc
- 5) Write a song. If you are not musically inclined, you could always write a poem explaining the processes.
- 6) Draw a map of a cell, and show the major "cities" (organelles), and how the process of photosynthesis and cellular respiration occurs.
- 7) Make a coloring book explaining photosynthesis and cellular respiration (don't forget to leave it uncolored).

YOU MAY WORK ALONE or IN PAIRS.

- ✓ If you choose to work alone or in pairs. It is required that each person participates Equally.
- ✓ You **must** put your initials next to every part of this project you worked on.
- ✓ You must write the number of the question near the place in your project where you answered it.

**THIS PROJECT IS DUE WEDNESDAY, October 31st AT THE
END OF THE HOUR!
PRESENTATIONS ON THURSDAY NOVEMBER 1st**

Photosynthesis Helpful Links:

<http://woodchurchscience.edublogs.org/files/2008/03/photosynthesis-flash.swf>

http://www.pbs.org/wgbh/nova/methuselah/phot_flash.html

<http://www.wiley.com/legacy/college/boyer/0470003790/animations/photosynthesis/photosynthesis.htm>

http://www.phschool.com/science/biology_place/biocoach/photosynth/intro.html

DETAILED LIST OF REQUIREMENTS AND POINT DISTRIBUTION (50 PTS TOTAL):

Using an illustrations and or captions explain exactly where and how photosynthesis and cellular respiration occurs. This may involve several illustrations and captions.

Photosynthesis content

Explanations of the following: (1pt each)

1. How does water enter a plant and get to the leaves?
2. How does CO₂ enter the leaf?
3. Where does photosynthesis occur in the plant?
4. Why is sunlight important to the process of photosynthesis?
5. What is a waste product for the plant and how is it removed from the plant?
6. What does the plant do with the sugar it makes?
7. What are the final products of photosynthesis and how are they important to life on this planet?

Cellular Respiration content

Explanations of the following: (1pt each)

8. What is the main site of cellular respiration in the cell?
9. How does glucose enter the body?
10. How does oxygen enter the cell? (Through what method of transport pg 56)
11. What is ATP?
12. Why is ATP important?
13. What is a waste product of cellular respiration and how is it removed from the body?
14. What living things carry on the process of cellular respiration?

The Big Picture – or “Pulling it all together”: (1pts each)

15. Show the equations for both photosynthesis and cellular respiration
16. Label the reactants and products for both equations
17. How are these equations similar?
18. How are they different?
19. How are they dependent on each other?

Label each illustration to include the following when present: (1 pt each)

- | | |
|--------------------------------------|---|
| A. Leaf | G. Oxygen (O ₂) |
| B. Stomata | H. Water (H ₂ O) |
| C. Chloroplast | I. Glucose (C ₆ H ₁₂ O ₆) |
| D. Chlorophyll | J. Mitochondria |
| E. ATP | K. Roots / Stem |
| F. Carbon Dioxide (CO ₂) | |

Rubric

Content 30 Points (See Above)

Following Directions: 5 points - (Cover has a descriptive title with names on it. Pages are initialed, and the number of the question being answered or letter of vocab word is on the page)

Creativity 5 points (Student showed a creative touch when creating their project)

Neatness 5 points (Word are easy to read, typed or printed neatly. Pictures are crisp and clear)

Effort 5 points (Answers show a thorough understanding of each concept. Used class time well)

TOTAL 50 points