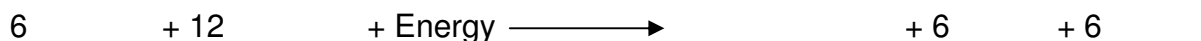


**General Biology**  
**Photosynthesis Worksheet**  
**South Sevier High School**

**Name** \_\_\_\_\_  
**Date** \_\_\_\_\_  
**Per** \_\_\_\_\_

1. What is the equation for photosynthesis?



2. What are the two colors of the rainbow that are used in photosynthesis?

3. Of the two colors used in photosynthesis, which is the shortest?

4. True False Visible light is just a small part of the entire electromagnetic spectrum.

5. The behavior of light is such that it acts like a \_\_\_\_\_ and a wave at the same time.

6. A packet of light is called a \_\_\_\_\_.

7. Some atoms become energized when they get hit by light, causing electrons in their outer shells to jump to a \_\_\_\_\_ energy level.

8. A photon of \_\_\_\_\_ or \_\_\_\_\_ is given off when the excited electrons move back to their natural state.

9. What are the names of the three types of photosynthetic pigments?

10. Explain why a green plant looks green to our eyes.

11. There are two kinds of reactions that take place in photosynthesis. The \_\_\_\_\_ reaction takes place in the light, while the \_\_\_\_\_ reaction can take place in the light or the dark.

12. The light-dependent reaction makes \_\_\_\_\_ and \_\_\_\_\_ which powers the light-independent reaction which makes \_\_\_\_\_.

13. The entire process of photosynthesis takes place in the \_\_\_\_\_ of plants.

14. The coin-shaped structures inside a chloroplast are called \_\_\_\_\_, and the open space inside the chloroplast is called the \_\_\_\_\_.

15. Electrons in the chlorophyll pigments become excited as they get hit with photons of energy from the \_\_\_\_\_. This causes a chain reaction of electrons that move to special molecules called electron \_\_\_\_\_.

16. Photosystem \_\_\_ provides the energy needed to drive Photosystem \_\_\_.

17. When electrons move through the chain reaction of Photosystem I, H<sup>+</sup> (hydrogen ions from water) are pumped from the \_\_\_\_\_ into the \_\_\_\_\_.

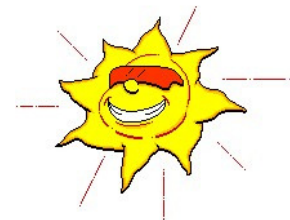
18. When the charge builds up inside the thylakoid, this drives the formation of \_\_\_\_\_ from \_\_\_\_\_ and \_\_\_\_\_. This process is called \_\_\_\_\_.

19. The electrons have now used up most of their energy, and they are passed on to Photosystem I where photons re-energize the electrons which are then used to make \_\_\_\_\_, which stands for nicotinamide adenosine dinucleotide phosphate.
20. The electrons used during Photosystem II must be replaced. \_\_\_\_\_ is split and the \_\_\_\_\_ from hydrogen replace the lost electrons.
21. So from Photosystem II we get \_\_\_\_\_ to power the light-independent reactions and \_\_\_\_\_ to power Photosystem I. From Photosystem I we get \_\_\_\_\_, but we still have not made any sugar.
22. The sugars made in photosynthesis occur during the \_\_\_\_\_ cycle.
23. A 5-Carbon molecule called \_\_\_\_\_ combines with the carbon from CO<sub>2</sub> to make an unstable 6-Carbon molecule. This 6-Carbon molecule is immediately broken down into two 3-carbon molecules called \_\_\_\_\_.
24. Energy from ATP and NADPH reduce phosphoglycerate to form a molecule called \_\_\_\_\_.
25. \_\_\_\_\_ PGAL are used to make \_\_\_\_\_, while the remaining 10 PGAL are rearranged to form more \_\_\_\_\_, then the Calvin cycle starts all over.
26. Fill in the chart below with all the materials needed for photosynthesis to work.

	Light Reactions	Light-Independent Reactions
<b>Inputs</b>		
<b>Produced</b>		

27. What are the main byproducts of the three stages of photosynthesis?

- a. Photosystem II \_\_\_\_\_
- b. Photosystem I \_\_\_\_\_
- c. Calvin Cycle \_\_\_\_\_



**LIFE EXISTS ON PLANET EARTH AS WE KNOW IT  
BECAUSE OF PHOTOSYNTHESIS!**