**Photosynthesis and Cellular Respiration Webquest Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Step 1: Define these terms** (use Google to find the definitions)

1. Autotroph: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Heterotroph: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Reactants: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Products: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Step 2: Go to** [**http://www.buzzle.com/articles/photosynthesis-and-cellular-respiration.html**](http://www.buzzle.com/articles/photosynthesis-and-cellular-respiration.html) **and answer these questions.**

1. Photosynthesis and Cellular Respiration are two processes used by organisms to obtain what? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Photosynthesis is the process used by plant cells to convert \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the sun into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, so as to create energy-rich carbohydrate molecules like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Cellular respiration is the process of breaking down food molecules to obtain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and store it in the form of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (ATP) molecules.

3. When do plant cells undergo cellular respiration? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. When do animal cells undergo cellular respiration? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. True or False: All organisms use cellular respiration. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. Photosynthesis takes place in the cells of plant \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in structures called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which contain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The plant cells absorb light from through the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pigment.

7. What is the equation for photosynthesis? **Write both the chemical equation AND the molecules in words.**

8. Explain the stages of photosynthesis:

 1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. Cellular \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ takes place in the same way in both plants and animals. Living cells obtain the products of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (sugar molecules) and undergo cellular respiration to produce \_\_\_\_\_\_\_\_\_\_\_\_\_ molecules. Some cells respire \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, using oxygen, while others undergo \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ respiration, without using oxygen. The process involves a set of chemical reactions to convert chemical energy from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ molecules into ATP molecules.

10. What is the equation for cellular respiration? **Write both the chemical equation AND the molecules in words.**

11. Explain the steps of cellular respiration:

 1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12. What are five (5) differences between photosynthesis and cellular respiration?

 1.

 2.

 3.

 4.

 5.

**Step 3: Go to** [**https://quizlet.com/7735260/photosynthesis-cellular-respiration-flash-cards/**](https://quizlet.com/7735260/photosynthesis-cellular-respiration-flash-cards/) **Study the cards/ vocabulary terms. Take the test (get a 100%) and then have your teacher sign: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Step 4: Go to** [**http://www.brainrush.com/lesson/photosynthesis-beginning**](http://www.brainrush.com/lesson/photosynthesis-beginning)**, study the cards, then press “Play.” When you reach 100% mastery, have your teacher sign: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Step 5: Photosynthesis Virtual Labs**

**Tutorial:** [**http://www.harcourtschool.com/activity/science\_up\_close/512/deploy/interface.html**](http://www.harcourtschool.com/activity/science_up_close/512/deploy/interface.html)

**Watch and listen to the tutorial found in the link above. Fill in the following answers as you watch. Stop and replay anything you don’t understand – this is a complicated topic!**

1. Plants use photosynthesis to make **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** for the plant.

2. What do plants ***need*** in order to perform photosynthesis?

3. How is the plant able to **obtain** each “ingredient?”

4. Identify the plant cell **organelle** in which photosynthesis takes place.

5. **Summarize** the process of photosynthesis.

6. Why is photosynthesis also important for **people and animals**?

**Step 6: Go to** [**http://www.pbs.org/wgbh/nova/methuselah/photosynthesis.html#**](http://www.pbs.org/wgbh/nova/methuselah/photosynthesis.html) **and click on “Launch Interactive.” Click on Three Puzzles at the top of the box and answer these questions.**

**a.** Can a tree produce enough oxygen to keep a person alive? Explain. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**b.** Can a plant stay alive without light? Explain. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**c.** Can a plant survive without oxygen? Explain. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Step 7: You have to watch two (2) videos and then answer the questions below. The two videos are 1) Amoeba Sisters Photosynthesis and the Teeny Tiny Pigment Pancakes,” and 2) “Amoeba Sisters Cellular Respiration and the Mighty Mitochondria.”** [**https://www.youtube.com/results?search\_query=amoeba+sisters+photosynthesis+and+cellular+respiration**](https://www.youtube.com/results?search_query=amoeba+sisters+photosynthesis+and+cellular+respiration)

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