

**Topic:** Photosynthesis and Cellular Respiration Worksheet

**Summary:** Students will answer questions about the reactants and products of photosynthesis and cellular respiration to understand how they are related.

**Goals & Objectives:** Students will be able to compare and contrast the reactants and products of photosynthesis and cellular respiration.

**NGSS Standards:** HS-LS1-5: Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy. HS-LS1-7. Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.

**Time Length:** 20 minutes

**Prerequisite Knowledge:** Students know the organelle of plant cells, what is a reactant, and a product of a chemical reaction.

**Materials:**

Class notes or textbook or online textbook:

- <https://flexbooks.ck12.org/cbook/ck-12-biology-flexbook-2.0/section/2.17/primary/lesson/autotrophs-and-heterotrophs-bio/>
- <https://flexbooks.ck12.org/cbook/ck-12-biology-flexbook-2.0/section/2.25/primary/lesson/cellular-respiration-bio/>

**Procedures:**

1. Students work on the handout by themselves.

**Accommodations:** Students with an IEP can take the handout home if they need extra time, or they can do the diagram model questions.

**Editable DOCX File and Answer Key:**

Available at [www.ngsslifescience.com](http://www.ngsslifescience.com)

## Photosynthesis and Cellular Respiration Worksheet

(Write definitions or explanations)

1. Autotrophs get energy from \_\_\_\_\_
2. Heterotrophs get energy from \_\_\_\_\_
3. What organelle in a plant cell performs photosynthesis? \_\_\_\_\_
4. What process converts light energy into chemical energy? \_\_\_\_\_
5. Photosynthesis Equation: \_\_\_\_\_ + \_\_\_\_\_ + Light → \_\_\_\_\_ + \_\_\_\_\_
6. In photosynthesis, light energy is converted into chemical energy; what molecule stores this chemical energy? \_\_\_\_\_
7. What does photosynthesis release into the air? \_\_\_\_\_
8. What are the reactants of photosynthesis? \_\_\_\_\_
9. What are the products of cellular respiration? \_\_\_\_\_
10. What organelle in cells performs cellular respiration? \_\_\_\_\_
11. What process converts the chemical energy stored in food into usable energy for the cell?  
\_\_\_\_\_
12. Cellular Respiration Equation: \_\_\_\_\_ + \_\_\_\_\_ → \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_
13. What does cellular respiration release into the air? \_\_\_\_\_
14. What are the reactants of cellular respiration? \_\_\_\_\_
15. What are the products of photosynthesis? \_\_\_\_\_
16. How are photosynthesis and cellular respiration related? \_\_\_\_\_  
\_\_\_\_\_
17. Fill in the boxes to complete the cycle below to relate the reactants and products of cellular respiration and photosynthesis.

