

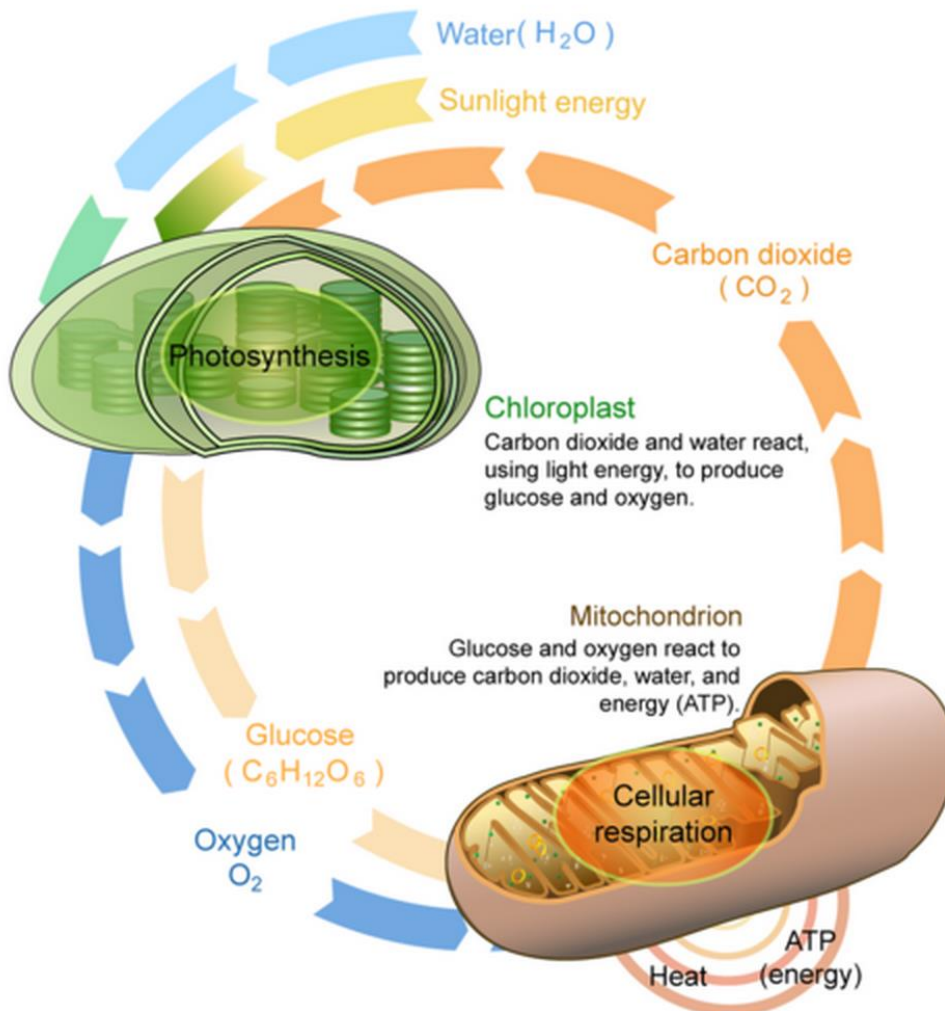
## Photosynthesis and Respiration Pre-Read

**Paragraph 1:** Photosynthesis and cellular respiration are connected through an important relationship. This relationship enables life to survive as we know it. The **products (ending materials)** of one process are the **reactants (beginning materials)** of the other. Notice that the equation for **cellular respiration** is the direct opposite of **photosynthesis**:

- Cellular Respiration:  $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$
- Photosynthesis:  $6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$

**Paragraph 2:** Photosynthesis makes the glucose that is used in cellular respiration to make ATP. The glucose is then turned back into carbon dioxide, which is used in photosynthesis. While water is broken down to form oxygen during photosynthesis, in cellular respiration oxygen is combined with hydrogen to form water. While photosynthesis requires carbon dioxide and releases oxygen, cellular respiration requires oxygen and releases carbon dioxide. It is the released oxygen that is used by us and most other organisms for cellular respiration. We breathe in that oxygen, which is carried through our blood to all our cells. In our cells, oxygen allows cellular respiration to proceed. Cellular respiration works best in the presence of oxygen. Without oxygen, much less ATP would be produced.

**Paragraph 3:** Cellular respiration and photosynthesis are important parts of the carbon cycle. The carbon cycle is the pathways through which carbon is recycled in the atmosphere. While cellular respiration releases carbon dioxide into the environment, photosynthesis pulls carbon dioxide out of the atmosphere. The exchange of carbon dioxide and oxygen during photosynthesis and cellular respiration worldwide helps to keep atmospheric oxygen and carbon dioxide at stable levels.



Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

## Photosynthesis and Respiration Pre-Read

*Instructions: Read the paragraphs and look at the image on the reverse of this sheet. Answer the questions below. Write the number of the paragraph in which you find each answer.*

1. What is needed for photosynthesis to occur? Be specific! Answer found in Paragraph # \_\_\_\_\_

---

---

---

2. What is needed for cellular respiration to occur? Be specific! Answer found in Paragraph # \_\_\_\_\_

---

---

---

3. What is ATP? Answer found in Paragraph # \_\_\_\_\_

---

---

---

4. What is glucose? Answer found in Paragraph # \_\_\_\_\_

---

---

---

5. How are photosynthesis and respiration related? Answer found in Paragraph # \_\_\_\_\_

---

---

---