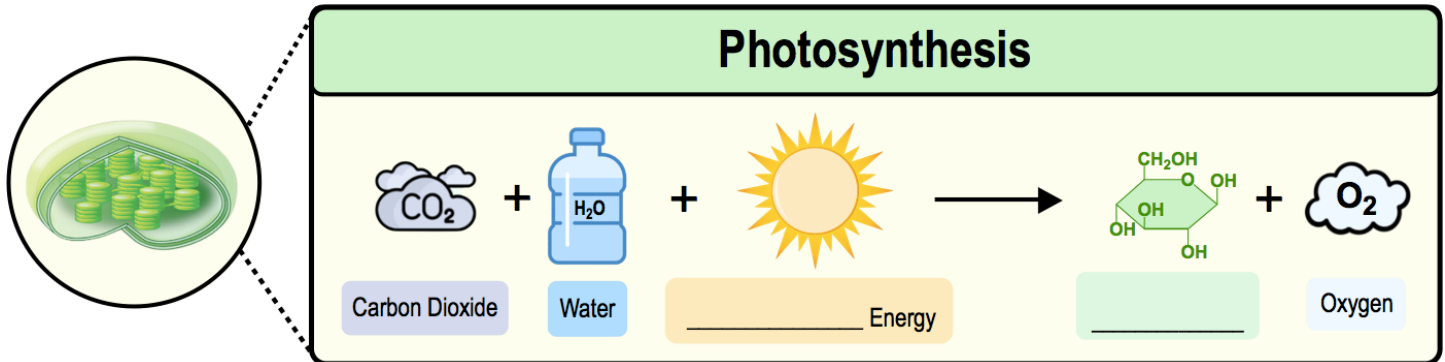


## CONCEPT: INTRODUCTION TO PHOTOSYNTHESIS

- **Photosynthesis:** process that uses energy from \_\_\_\_\_ to synthesize sugars (*glucose*).
  - $\text{CO}_2$ ,  $\text{H}_2\text{O}$  & *light energy (sunlight)* are used to make \_\_\_\_\_ ( $\text{C}_6\text{H}_{12}\text{O}_6$ ) & Oxygen gas ( $\text{O}_2$ ).
  - **Chloroplasts:** *green* organelles that function as the *site of* \_\_\_\_\_.
  - Recall: photosynthetic organisms are called \_\_\_\_\_ (since they make their own food).

**EXAMPLE:** Overall Chemical Equation for Photosynthesis.



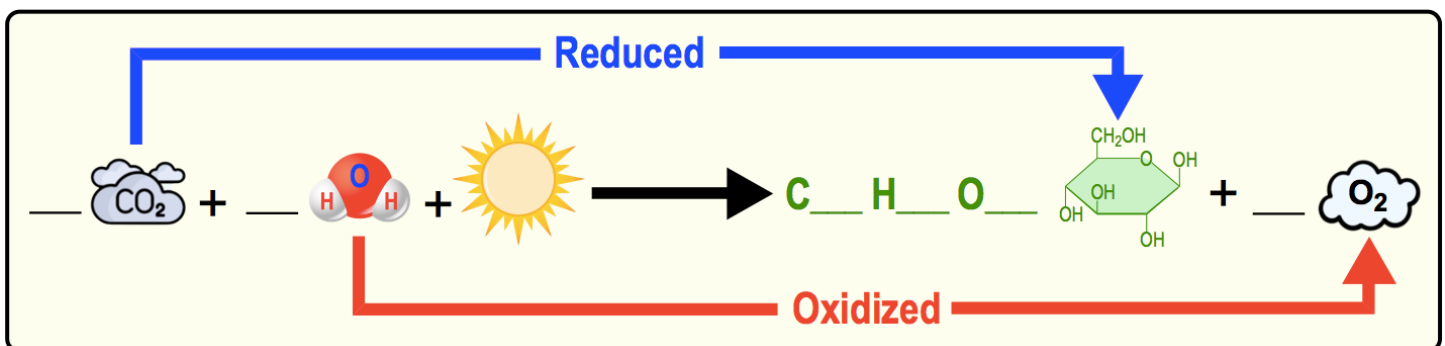
**PRACTICE:** The main product of photosynthesis is:

- a) Glucose.      b) Oxygen.      c) Carbon dioxide.      d) Water.      e) Sunlight.

## Photosynthesis is a Redox Reaction

- The overall chemical equation for *Photosynthesis* is a \_\_\_\_\_ reaction.
  - By the end of the process,  $\text{CO}_2$  is \_\_\_\_\_ while water is \_\_\_\_\_.

**EXAMPLE:** Chemical Equation for Photosynthesis.



**PRACTICE:** Which of the following reactants is reduced during the process of photosynthesis?

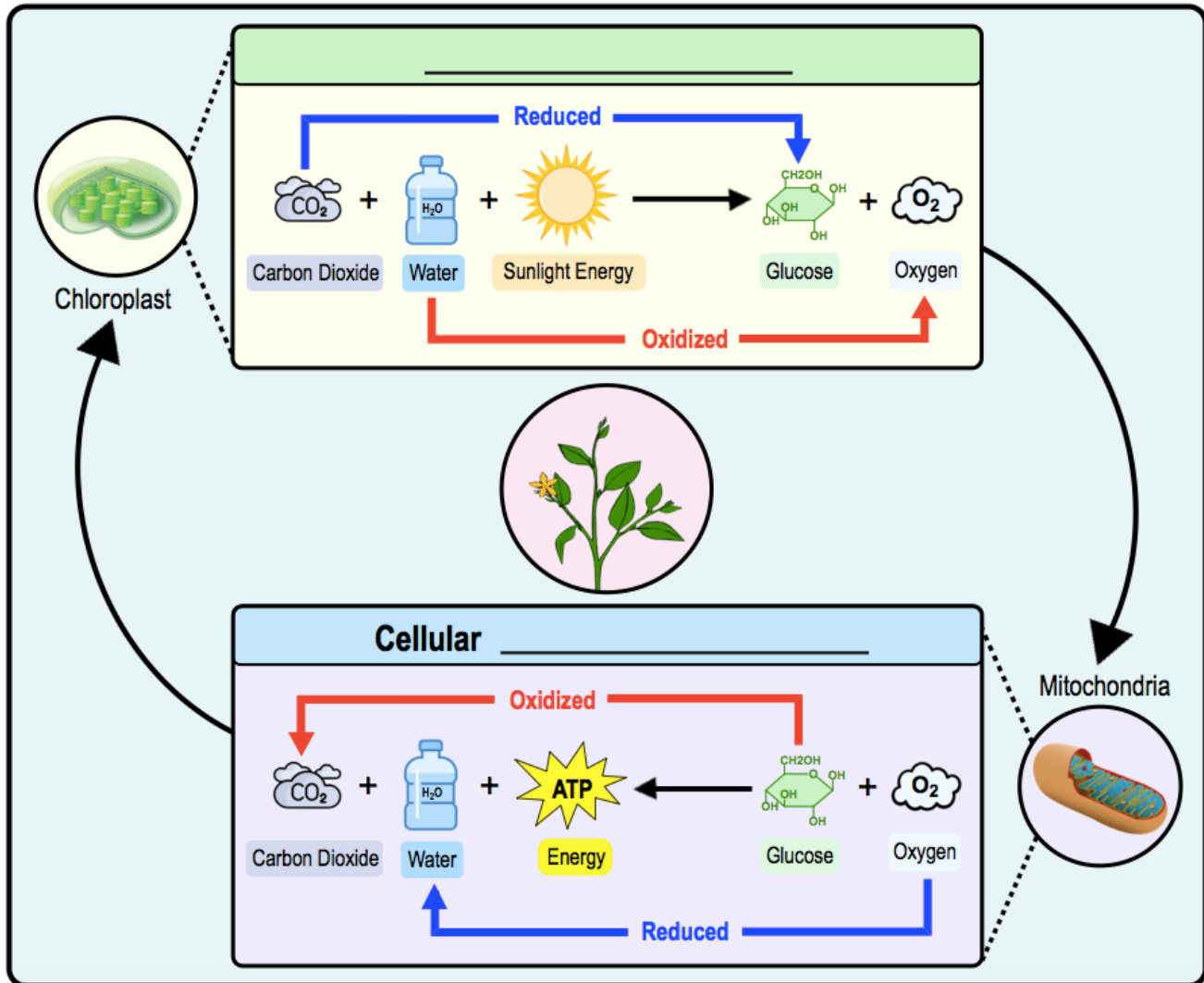
- a) Oxygen gas.      b) Photons of light.      c) Carbon Dioxide.      d) Water.

## CONCEPT: INTRODUCTION TO PHOTOSYNTHESIS

### Photosynthesis vs. Cellular Respiration

- Photosynthesis & Cellular Respiration are *ancient* pathways that are highly *connected*.
  - Each process produces the \_\_\_\_\_ needed for the other.
  - Photosynthesis & Cellular Respiration are almost exactly the \_\_\_\_\_ of each other.

**EXAMPLE:** Connecting Cellular Respiration & Photosynthesis.



**PRACTICE:** Energy used to power photosynthesis & ultimately cellular respiration originates from which energy source?

- Glucose.
- ATP.
- Carbon dioxide.
- The sun.