

## Photosynthesis and Respiration

### Objective

TLW understand the process of how plants make and use food using the word equations for photosynthesis and respiration.

### Directions

Cut out the equation pieces and glue to a separate piece of paper in the correct sequence. Then, label by placing a "P" or an "R" in the upper right hand corner indicating products or reactants.

### Photosynthesis Equation

+                      Chloroplasts  
in plant cells                      +

6                      Water (H<sub>2</sub>O)                      Carbon Dioxide (CO<sub>2</sub>)                      6

Glucose (C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>)                      Oxygen (O<sub>2</sub>)                      6                      Chlorophyll  
Sunlight

### Respiration Equation

+                      +                      Water (H<sub>2</sub>O)                      Carbon Dioxide (CO<sub>2</sub>)

6                      Energy                      Oxygen (O<sub>2</sub>)

Glucose (C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>)                      →                      6                      6                      +

- Photosynthesis and respiration are complementary processes in living organisms. Photosynthesis uses the energy provided by sunlight to produce sugars and other complex organic molecules. These molecules in turn serve as food for other living organisms (consumers). Many of these organisms carry out respiration, a process that uses oxygen to form carbon dioxide from the same carbon atoms that had been converted into sugars during photosynthesis. In this process, the organisms that carry on respiration obtain the energy needed to survive from the energy stored in the chemical bonds of the sugar molecules.
- Food is stored as sugars and starches in plants in various organelles. Food is stored in various organelles of animal cells as carbohydrates and lipids.