

Name: _____

Date: _____

Period: _____


Cells and Energy

Week # _____


Direction: Read "An Introduction to Photosynthesis and Cellular Respiration" and take notes below. Use this reading to answer each question and fill in the tables below.

Question	Description, definition, or example
What happens in the process of photosynthesis?	
What are factors that affect photosynthesis?	
What happens in the process of cellular respiration?	
What are factors that affect cellular respiration?	

Photosynthesis:

Where does the energy come from?		Where does the energy go?
What matter enters this process?		What matter is released by this process?

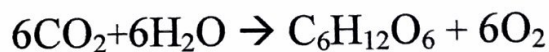
Cell Respiration:

Where does the energy come from?		Where does the energy go?
What matter is enters this process?		What matter is released by this process?

An Introduction to Photosynthesis and Cellular Respiration

All living things are made of cells, and each cell has many functions it needs to do constantly in order to stay alive. All of this work requires energy, which means that all organisms need a way to get and use energy. Plants can absorb energy directly from the sun's rays, and convert that energy into chemical energy for their cells to use. This process of absorbing energy from light and storing it as chemical energy is called photosynthesis. In order to do photosynthesis, plants must take in carbon dioxide from the air, water from the soil, and light from the sun. They then use the carbon from the carbon dioxide to build glucose (sugar) molecules, which store the sun's energy until the plant is ready to use it. They release oxygen gas into the air as a byproduct of this reaction.

Photosynthesis can be represented by the following chemical formula:



However, plants are not always able to do photosynthesis, such as when the sun is not shining, and other types of organisms cannot do photosynthesis at all, such as animals and fungi. Instead of absorbing energy directly from sunlight, these organisms break down molecules to release the energy stored in their bonds. This chemical process is called cellular respiration. When plants cannot do photosynthesis, they use cellular respiration to break down the glucose molecules they produced when the sun was shining. Animals cannot produce their own food molecules, so they eat other organisms to take in molecules that have stored chemical energy, such as glucose. Organisms must also take in oxygen from the air in order to break down glucose. Water is released as a byproduct of this reaction.

Cellular respiration can be represented by the following chemical formula:

