

Primary Producers and Consumers

THINK ABOUT IT

At the core of every organism's interaction with the environment is its need for energy to power life's processes.

Where does energy in living systems come from?

How is it transferred from one organism to another?

Energy

- Organisms need **energy for growth, reproduction, and metabolic processes.**
- No organism can create energy—**organisms can only use energy from other sources.**

Energy

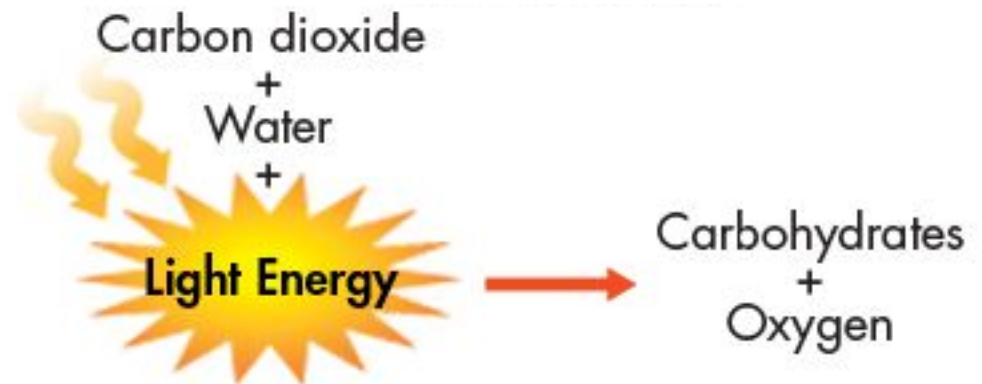
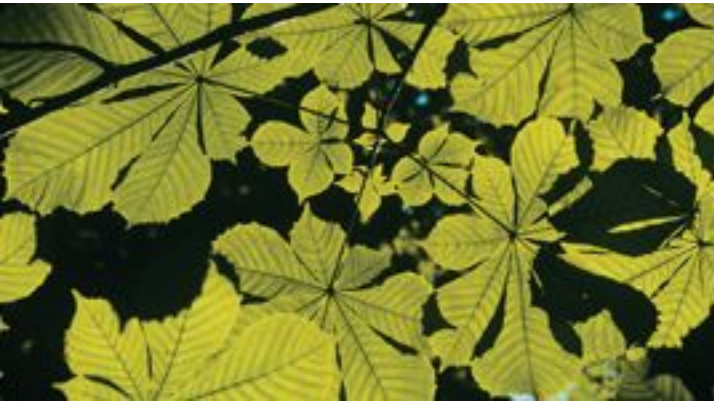
- For most life on Earth, **sunlight is the ultimate energy source.**
- For some organisms, however, **chemical energy stored in inorganic chemical compounds serves as the ultimate energy source for life processes.**

Primary Producers

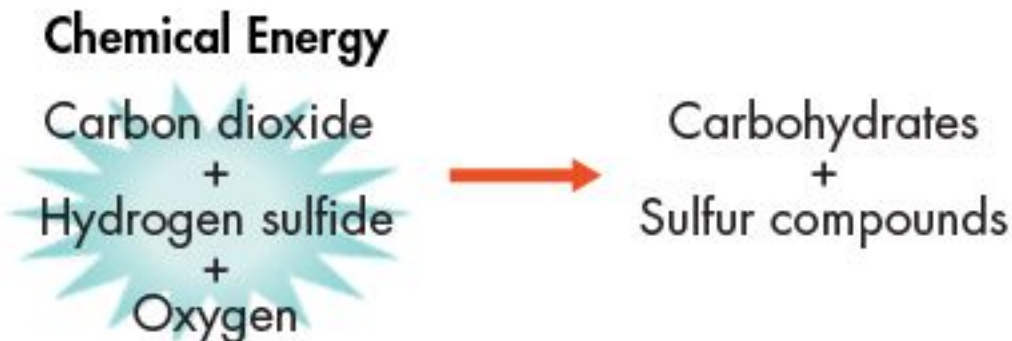
- Organisms that can capture energy from sunlight or chemicals and use that energy to produce food are called **autotrophs**.
- Autotrophs are also called **primary producers**.

Primary Producers

- The process in which autotrophs capture light energy and use it to convert carbon dioxide and water into oxygen and sugars is called **photosynthesis**.



- The process in which autotrophs use chemical energy to produce carbohydrates is called **chemosynthesis**.



Consumers

- Organisms that rely on other organisms for their energy and food are called **heterotrophs**.
- Heterotrophs are also called **consumers**.
- Consumers are classified by the ways in which they acquire energy and nutrients:

Herbivore

Carnivore

Omnivore

Detritivore

Decomposer

Scavenger