**Section 2.1 Food Chains, Food Webs, and Energy Flow**

**Food Chain**

* A model that shows how food energy passes (flows) from organism to organism.
* Food chain begins with a source of energy (usually the sun).
* Plants trap energy from the sun and convert it into a form that can be stored in food.
* Animals eat the plants to obtain this energy.

In a food chain the arrows show the direction in which the energy flows from organism to organism.

**Producers in Food Chains**

* Plants and phytoplankton in food chains are producers.
* Producers can make their own food because they contain chlorophyll.
* **Chlorophyll** is a green chemical that traps the energy of the sun.
* **Photosynthesis**: process where producers use the trapped energy to make food.
* During photosynthesis the trapped energy is used to convert carbon dioxide gas and water into foods such as sugar and starch. As a result of photosynthesis, oxygen gas is released back into the air.



**Consumers in Food Chains**

* Consumers follow (come after) producers in a food chain.
* The carnivore at the end is known as the top consumer.
* A consumer’s only source of energy is producers or other consumers.
* A consumer gets the energy it needs by breaking down high energy foods, such as sugars and starch, in process known as **cellular respiration.**



* Cellular respiration occurs inside all living cells.
* During cellular respiration, oxygen is used to help break down the high energy foods.
* Carbon dioxide water and energy are released.
* This energy is used to carry out all functions of life, such as growing repairing tissue, breathing, and digestion.

**Food Webs**

* A food web shows the network of interconnected food chains in an ecosystem.
* A food web is more realistic than a food chain because it shows the feeding relationships in ecosystems.
* Producers are usually eaten by many different consumers.
* Most consumers are usually eaten by more than one kind of predator.



**Pyramid of Numbers**

* Pyramid of numbers shows how many organisms are at each level in an ecosystem.
* Pyramid of numbers includes the same organisms that are in the food chain, but the size of each level shows the number of organisms involved.
* There are always a large number of producers at the bottom and fewer organisms at the top.

**Energy Flow**

* The transfer of energy that begins with the sun and passes from one organism to the next in a food chain.
* Only a small amount of energy is stored in the body tissues because most of it is used for life processes.

