Chapter 15 Our Environment

Biodegradable and non-biodegradable

Substances that are broken down by biological processes are said to be biodegradable.

Substances that are not broken down in this manner are said to be non-biodegradable.

Eco system

All the interacting organism in an area together with the non-living constituents of the environment forms an ecosystem.

An ecosystem consists of biotic components comprising living organisms and abiotic components comprising physical factors like temperature, rainfall, wind, soil and minerals.

Example- natural ecosystems are forests, ponds and lakes. Artificial ecosystems gardens and crop-field.

Organisms can be grouped as

Producers, consumers, decomposers

Producers

All green plant and certain blue-green algae which can produce food by photosynthesis come under this category and are called the producers.

Consumers

Organism which consumes the food produced, either directly from producers or indirectly by feeding on other consumers are the consumers.

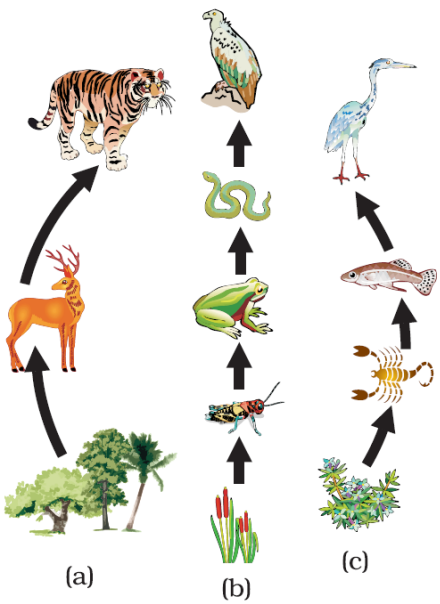
Consumers can be classed variously as herbivores, carnivores, omnivores and parasites.

Decomposers

These microorganisms are the decomposers as they break-down the complex organic substances into simple inorganic substance that go into the soil and are used up once more by the plants.

Food chain

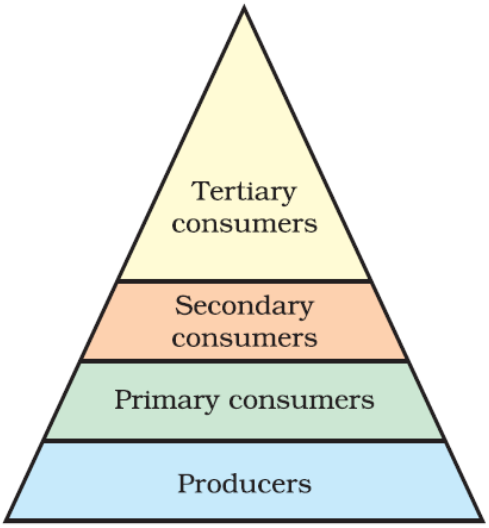
It is a linear network of living organism in community through which energy is transferred



in the form of food. It describes relationship of organisms about who eats whom.

Trophic levels

The transfer of food or energy takes place through various steps or levels in the food known as trophic levels.



The producers (autotrophs) are present at the **first trophic level**. They fix solar energy, making it available for consumers (heterotrophs). The herbivores or the primary consumers are found at the e **second trophic level**. Small carnivores or secondary consumers are present at the **third trophic level**. The large or the tertiary consumers form the fourth trophic level.

Energy flow

- The green plants in a terrestrial ecosystem capture about 1% of the energy of sunlight (light energy).
- When green plant is eaten by primary consumes, a great deal of energy is lost as heat and an average of 10% of the energy of food eaten by an organism is turned back into its own body and made available for the next level of consumers. This is known as the 10% law (Lindemann in 1942). Therefore, 10% can be taken as the average value for the amount of organic matter that is present at each step and reaches to the next trophic level.
- The loss of energy at each step is very large. Only a little energy is available for the next level of consumers, food chains generally consist of three or four steps.