Trophic levels

This is known as the position of the organism in a food chain. The levels are namely- producer, consumer, and decomposer.

Producers

The producers in a food chain include all autotrophs such as phytoplankton, cyanobacteria, algae, and green plants. This can be understood as the first stage in a food chain. The producers occupy the first level of a food chain. The producers are also known as autotrophs (organisms that make their food). Producers are any plant or other organisms that produce their nutrients through photosynthesis. These organisms make their food by using light energy provided by the sun and turning it into energy. They are the first level of every food chain as they make their food. Most autotrophs use the process called photosynthesis to create food from sunlight, carbon dioxide, and water.

Although plants are the most familiar type of autotrophs, Algae, seaweed, some types of bacteria, Phytoplankton (a tiny organism that lives in the ocean) is also a kind of autotrophs. Autotrophic organisms that use chemical compounds to produce their food, follow a process called chemosynthesis.

Consumers

Consumers are the organisms that are dependent on plants or other organisms for food. Almost all living organisms fall under this category. This includes herbivores that eat plants, carnivores that eat other animals, as well as parasites. These organisms consume producers and add their energy to their biomass. They cannot make their food from light or chemicals and thus rely on autotrophs.

Division of consumers

Primary consumers

Herbivores are known as primary consumers, while carnivores are secondary consumers. The second trophic level has primary consumers called *heterotrophs*. This level consists of organisms that eat the producers. Animals such as Deer, turtles, rabbits, birds are herbivores.

Secondary consumers

The third trophic level consists of secondary consumers, the heterotrophs that eat other consumers. The secondary consumers eat the herbivores. Animals such as dogs, cats, lizards, snakes, owls, etc are some examples.

Tertiary consumers

The fourth trophic level has tertiary consumers, also known as apex predators. They eat other consumers as well as producers. They are high-level consumers and predators. An

example of a tertiary consumer is human beings who eat both producers as well as consumers.

Decomposers

Decomposers are the organisms that get energy from dead or waste organic material. This stage is the last in a food chain. They are an important part of a food chain, as they break down organic waste materials which enrich the soil or land.

They play a major role in recycling nutrients back into the soil. Once they have decomposed the organic material, the nutrients are used by autotrophs or producers through the soil. In short, they recycle the matter back into the soil or atmosphere. Thus, Decomposers allow producers to begin a new food chain again by moving nutrients and energy through an ecosystem.

The final stage consists of Detritivores and Decomposers. Detritivores are the organisms that eat non-living plant and animal remains. An example of this is scavengers such as vultures. Decomposers like fungi and bacteria also complete the food chain.

It is important to note that the decomposers and detritivores turn organic wastes, such as decaying plants and animals, into inorganic materials, such as nutrient-rich soil. They are an essential part of the ecosystem.

Examples of the food chain

In a forest, a simple example is as follows-
Trees ⟶ Deer ⟶ Tiger

Another example can be
Flower ⟶ Flies ⟶ Frog ⟶ Snake ⟶ Eagles

In a small water body, the food chain may go as follows-
Aquatic Plants ⟶ Small Fishes ⟶ Larger fishes ⟶ Birds

Phytoplankton →Krill →Blue whale

Grass→ Grasshopper →Rat→ Snake→ Hawk

Algae → Mosquito→ Dragonfly →Raccoon

Why is the food chain important for the environment?

Food chains are important as they show the interrelated relationships present in ecosystems. They reveal how each organism depends on other organisms for survival. Food chains also

display what happens when a problem arises. The food chain also shows the problems that arise when a producer or consumer is lost