

## Food Chain in Ecosystem

A food chain may be defined as a series of organisms through which food energy flows in an ecosystem is called a food chain. A food chain of an ecosystem is made up of a linear series of organisms in which each organism feeds on another below it in the series. Here each organism occupies a different trophic level. Food webs consist of several interconnected food chains. For the proper functioning of an ecosystem, there is a need of energy flow within it. The organisms comprising the ecosystem take energy in the form of food. The ultimate source of energy in our solar system is our sun. Producers such as green plants trap the solar energy and convert this solar energy into the chemical energy contained in food. When a primary consumer eats the producer, a part of this energy is passed on to it.

The primary consumer is then eaten by a secondary consumer. In addition, the secondary consumer may be eaten by a tertiary consumer, and so on. In this way, energy is transferred from one consumer level to the next higher level of consumer. This transfer of energy between trophic levels is wasteful as it has a typical efficiency of around 10%, which limits the length of food chains.

### Some basic terms

**Primary producers:** They are autotrophs and are most often photosynthetic organisms such as plants, algae, or cyanobacteria.

**Primary consumers:** The organisms feeding on the primary producers are called **primary consumers**. They are usually **herbivores** though they may eat algae or bacteria.

**Secondary consumers:** The organisms that feed on primary consumers are called **secondary consumers**. They are generally meat-eaters or **carnivores**.

**Tertiary consumers:** The organisms that eat the secondary consumers are called **tertiary consumers**. They are carnivore-eating carnivores, like eagles or big fish.

**Quaternary consumers:** Carnivores that eat tertiary consumers. Organisms at the very top of a food chain are called **apex or top consumers**.

In a forest ecosystem, grass is eaten by a deer, which in turn is eaten by a tiger. The grass, deer and tiger form a food chain. Here, energy flows from the grass (producer) to the deer (primary consumer) to the tiger (secondary consumer).

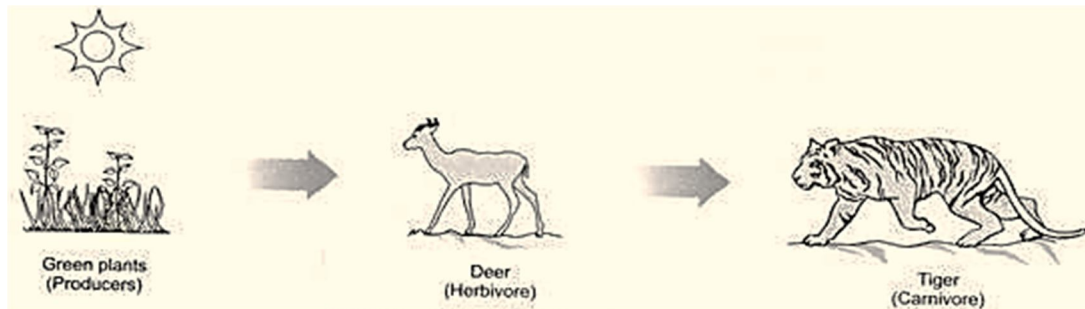


Figure A food chain in an ecosystem

A food chain in a grassland ecosystem may consist of grasses and other plants, grasshoppers, frogs, snakes and hawks.

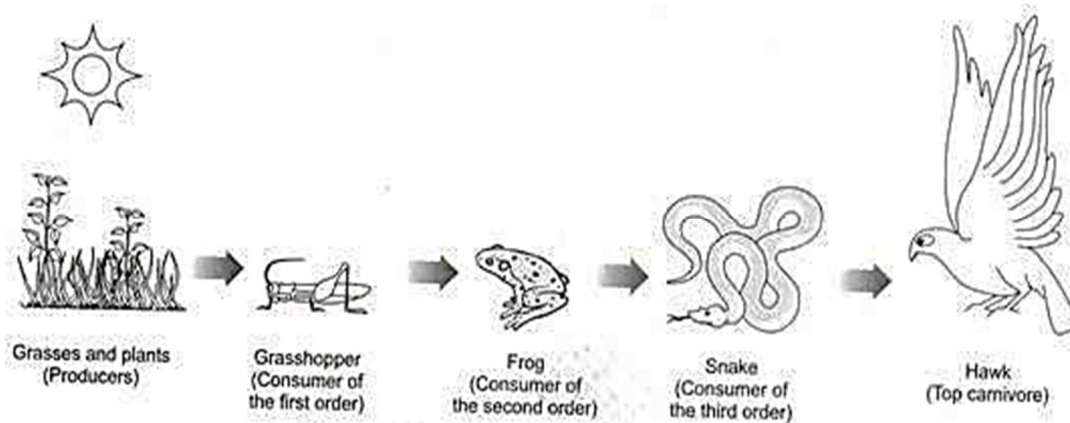


Figure Food chain in a grassland ecosystem

A food chain always begins with producers (plants). Herbivores (plant-eaters) come next in the chain, followed by carnivores (flesh-eaters). A few food chains can be long and may extend to the fourth, fifth or even sixth order of consumers.

**Some common food chains are mentioned below:**

Plants → Deer → Lion

Plants → Grasshopper → Frog → Snake → Hawk