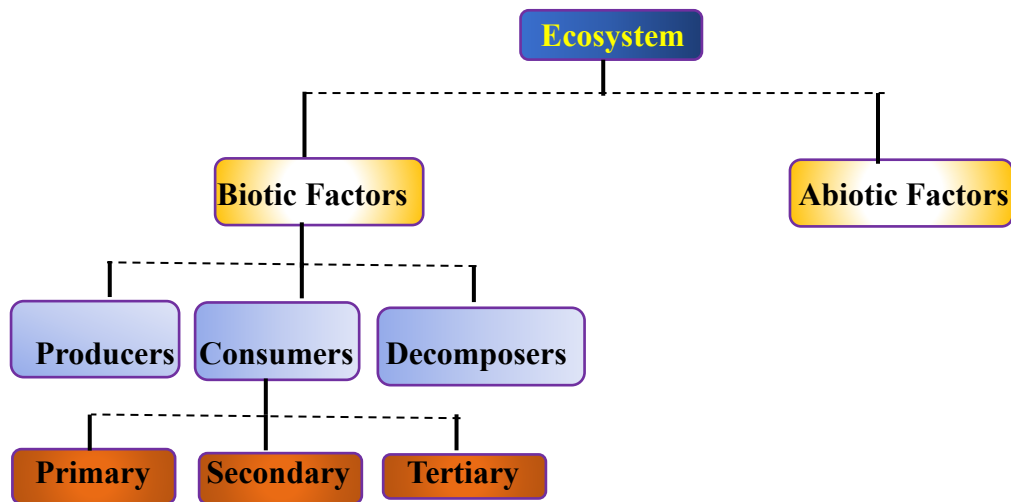


# OUR ENVIRONMENT

- All the biological (plants, animals, microorganisms, etc..) and physical (soil, water, air, sunlight, etc..) surroundings around us create our environment.
- **The environment** is the world around us, including all the natural and man-made things that affect our daily lives.
- **Ecosystem:** An ecosystem is a system consisting of biotic and abiotic components that function together as a unit.
- **Biotic components-** all the living things
- **Abiotic components** - non-living things like water, light, wind, soil etc.
- **Types of Ecosystems:**
  - + **Natural ecosystem** – forest, pond, lake
  - + **Man-made (artificial ecosystem)-** crop fields, garden



- **Producer:**
  - + Autotrophic
  - + Perform photosynthesis.
  - + e.g., green plants, blue green algae
- **Consumer:**
  - + Consume the food produced either directly from producer or indirectly by feeding on other consumers.
  - + **Types of consumers:**
    1. Herbivores – deer
    2. Carnivores – lion
    3. Omnivores – cat
    4. Parasites – bacteria
- **Decomposers:**
  - + Feed on dead and decomposed products.
  - + E.g. fungi, bacteria
- **Importance of Decomposers:**
  - + Break down dead remains and waste products of organisms.
  - + Break down the complex organic substance into simple inorganic substances.
  - + Release minerals into the soil. Thus, helps in maintaining the fertility of soil.

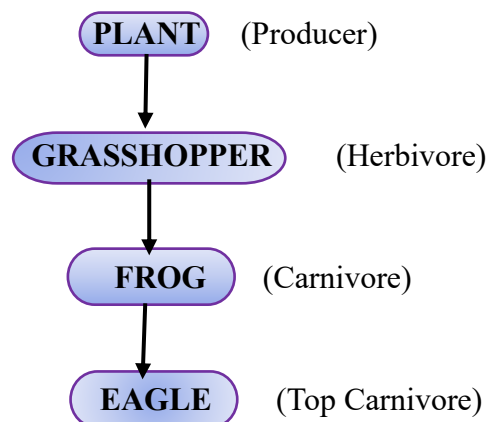
- ✚ Clean the environment.
- ✚ Help in recycling the materials in the biosphere.

- **Food Chain**

The sequence of living organisms in an ecosystem in which one organism consumes another organism to transfer food energy, is called a food chain.

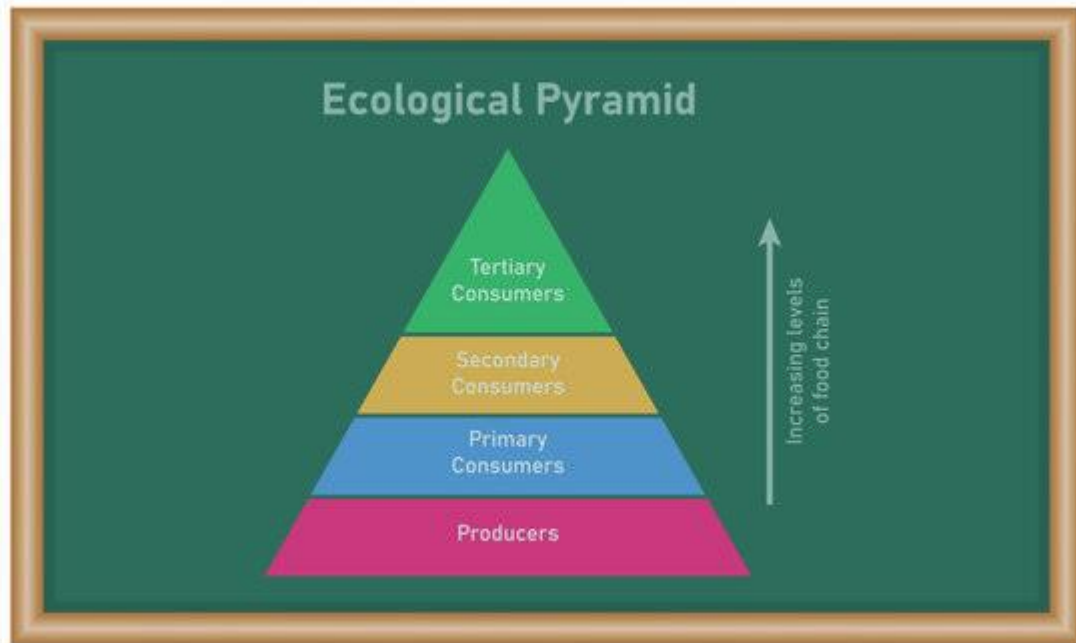


- The food chain represents a single unidirectional transfer of energy.
- It starts with the producer.



- **Trophic Levels**

The various steps in the food chain at which the transfer of food (or energy) takes place is called trophic levels.



- **Significance of Food Chains**

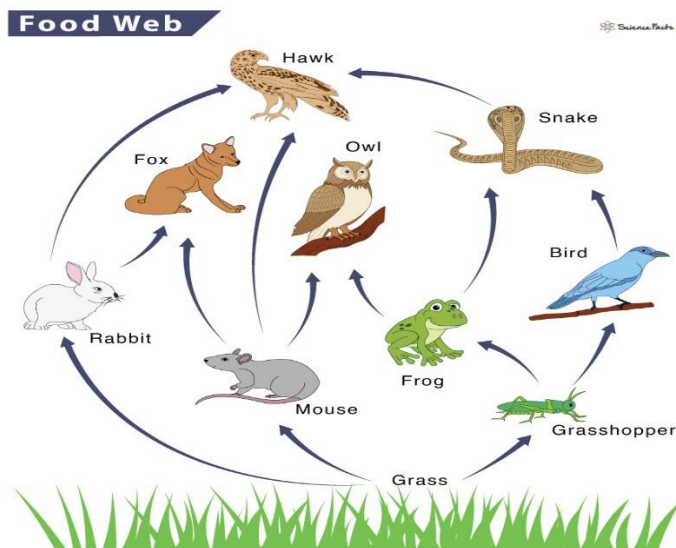
- ✚ The food chain transfer energy from one trophic level to another.

**Only 10 % of energy is transferred from one trophic level to another. The rest of energy is lost as heat, into doing work, in digestion, growth, reproduction. It is called 10 % law.**

- ✚ Help in study of food relationships and interactions among the various organisms in an ecosystem.

- **Food Web**

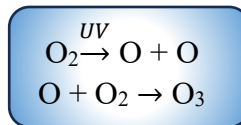
- ✚ Several interconnected food chains form a food web.
- ✚ Single food chain doesn't occur naturally in an ecosystem.
- ✚ A more stable food chain / food web means more stable ecosystem.



- **Food Pyramid:** It is a graphic representation of a food chain. It may be formed as, depicted as a pyramid having a broad base formed by producers and tapering to a point formed by end consumers.
- **Biomagnification:** Accumulation of toxic pollutants at successive higher trophic levels is called bio magnification.
- **Ozone Layer**
  - + Ozone (O<sub>3</sub>) is a molecule formed by three atoms of oxygen.
  - + Ozone shields the surface of the earth from ultraviolet (UV) radiation from the Sun.

### How is the Ozone formed?

- + Ozone is formed high up in the atmosphere by the action of ultraviolet radiation on oxygen gas.



- **Reason for Ozone Depletion**
  - + Ozone layer depletion takes place at a higher rate. The major cause is **chlorofluorocarbons (CFCs)** which are used as refrigerants and in fire extinguishers.
- **Biodegradable and Non-biodegradable waste:**
  - + **Biodegradable Wastes:** These can be broken down by biological processes. E.g. Food waste, plant parts, animal wastes, agricultural residue, paper etc. Decomposers can decompose these without harming the ecosystem. Food waste, trees leave, urine and fecal matter, sewage agricultural residue, paper, wood, cloth, cow dung etc.
  - + **Non-biodegradable wastes:** These can 't be broken down by biological processes. E.g. - Chemical pesticides, DDT, mercury, lead, plastics, polythene bags etc. These wastes are major pollutants of the environment.
- **Managing the garbage, we produce:**
  - + **Disposal Methods:** they are landfills, sewage treatment, recycling, etc.
  - + **Efforts on individual level:**
    1. Reduce, Reuse, and Recycle
    2. Proper waste disposal methods should be followed.
    3. Use clay made cups or paper cups over plastic cups.
    4. Cloth, jute or paper cups should be used.

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