CHAPTER 04

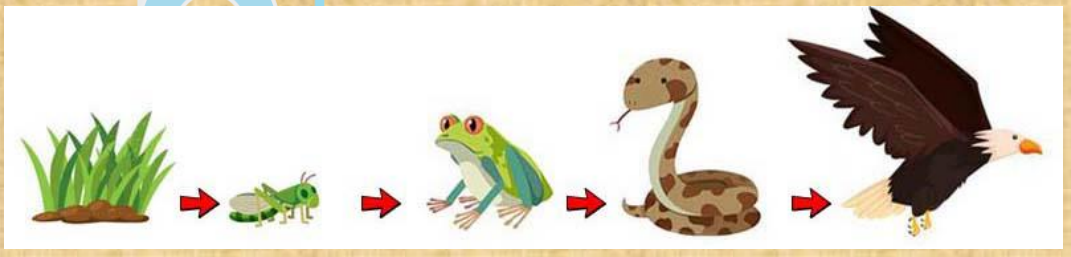
What Do Animals Eat

FOOD CHAIN:

Pragna eats a breakfast of dosa, egg and milk before going to school. The food she takes in will give her energy for learning, playing and other morning activities.

Where did the energy in her food come from?

Here we will learn how one living thing depends on another and that all living things depend on the Sun's energy.



Food chains show how one living thing depends on another living thing for food, as each link in a chain depends on the one before and after it. Food chains also show how energy flows from producers to consumers. Since producers make food, they are the first link in a food chain.

Food chains show where living things get their energy. All food chains start with the sun. Green plants make their own food using sunlight. Animals must eat plants or other animals to live and grow.

There is a great balance in nature established among different plants and animals regarding their food habits. What will happen if all animals eat plants? To maintain a balance in nature animals follow different food habits.

The sun gives energy to the plant. The insect gets energy by eating the plant. The fish eats the insect to get energy. Last, the bird eats the fish to get its energy.

The transfer of food energy through a sequence of eating and being eaten by the organisms in an ecosystem is termed as the food chain. For example, in a grassland ecosystem, grass fixes the light energy from the sun into chemical energy via synthesis of food and eaten up by a grasshopper, which in turn is eaten by a frog and the frog itself is eaten up by a snake. So, grass is food for grasshopper, grasshopper is food for frog and the frog is food for snake. Thus, grass, grasshopper, frog and snake make a food chain, through which energy contained in food is transferred from one organism to another.

In a pond, we can see that eggs and larvae are eaten by fish and frogs. Fish and frogs are food for a crane.

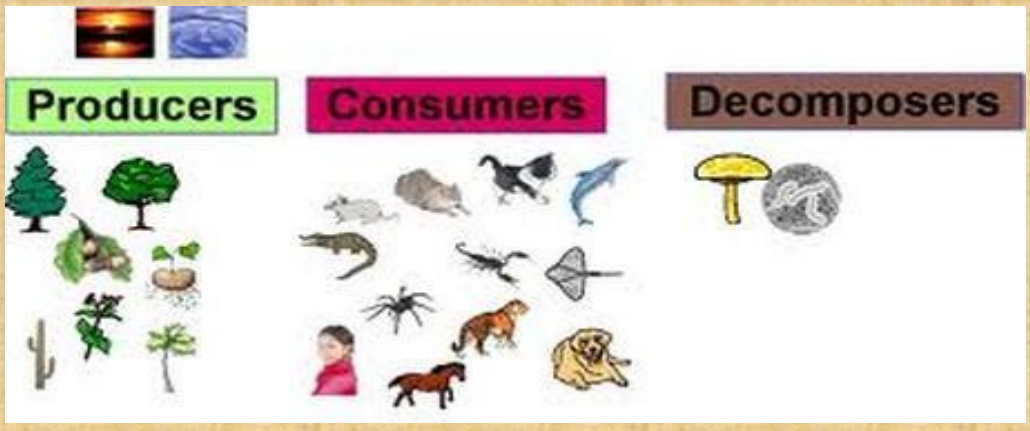
Some examples of food chain are as follows:

Grass → Grasshopper → Frog → Snake → Eagle

Tree → Fruit eating Birds → Eagle

Plant → Deer → Lion

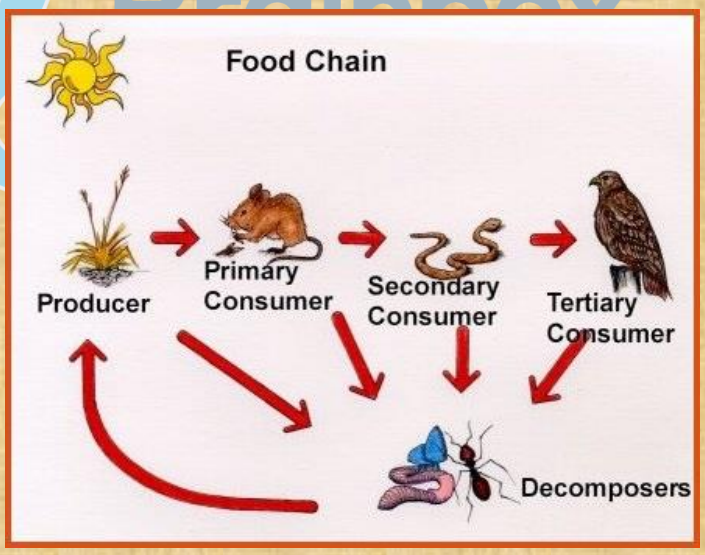
Living things are either producers or consumers. Producers produce or make their own food. Green plants are the main producers. They produce food by using the Sun's energy to combine water, soil nutrients and a gas in the air. This process is photosynthesis. Without the Sun's energy and the producers that use it for photosynthesis, most living things on Earth would not survive.



Consumers cannot make their own food. Instead, they depend on producers for food. Consumers eat or consume producers or other consumers. Producers and consumers depend on each other in many ways.

A food chain has only one link for producers but many links for consumers. Primary consumers are living things that eat plants. They are the next link in a food chain. Grasshoppers and elephants are both primary consumers or herbivores.

Herbivores often have special body parts that help them get and use the energy stored in certain plant parts.



To review, the first link in a food chain is the producers or plants. The second link is primary consumers or herbivores. The third link is secondary consumers—animals that eat the herbivores. These animals are carnivores or meat eaters. When

people think of carnivores, they often think of animals such as tigers and wolves. But other animals such as insect-eating spiders and some bats are also carnivores. So are penguins, bald eagles and other fish eaters.

What comes after primary consumers (which eat plants) and secondary consumers (which eat herbivores)?

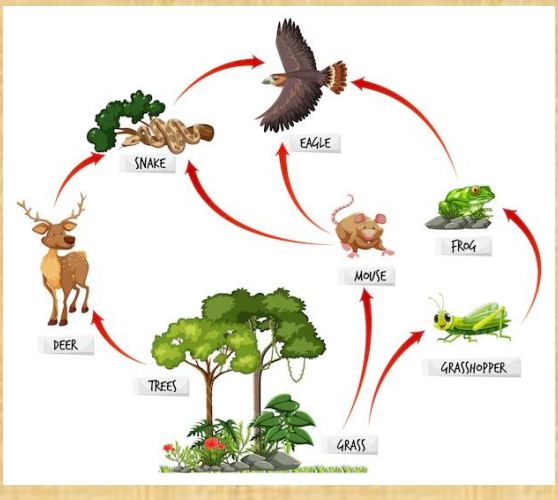
Many food chains also have tertiary consumers—carnivores that eat other carnivores. For example, let us say a mouse eats grass. Then a snake eats the mouse. A hawk that eats the snake is a tertiary consumer.

Decomposers are the last link in a food chain. They make sure that none of the energy in an ecosystem is wasted. They break down or decompose any leftover living material. Then other living things can use the energy. Decomposers break down dead plant matter such as autumn leaves and return the nutrients to the soil. Decomposers also break down the waste and dead bodies of animals. When decomposers recycle nutrients, the energy is again available to nourish producers (plants). Without decomposers, Earth would be covered with trash and waste.

A food chain is a simple way to learn how energy passes through levels in an ecosystem. But in nature, the patterns of eating are almost never as simple as those shown in a food chain. Most animals eat many different things to meet their food and energy needs. Most prey animals are hunted and eaten by many different predators. We can show all these eating patterns in a diagram. This complex web of relationships between living things is called a food web.

Food chains cannot be always represented by a straight line. They can be branched with several food chains connected to each other in the form of a web.

Food chains form a web where one animal depends upon more than one source and type of food.



We use pesticides and insecticides to protect crops but every year a large number of frogs die by eating poisoned insects.

What will happen to the food chain if all frogs die?

If all the frogs die, the population of insects and beetles increases as there are no frogs to eat them. At the same time, the number of animals that eat the frogs will go hungry and their population will be devastated as well. This disturbs the food chain and food web.

In an ecosystem, each of these living things has an important role in passing on energy to other living things. A change in one link in a food chain can affect a whole ecosystem.

Do you remember Pragna from first point?

She was a primary consumer when she ate dosa. When she drank milk, a product of an herbivore, she became a secondary consumer. And if you're wondering if she's ever a tertiary consumer, the answer is yes. Her mom is making crab wraps for dinner. The energy taken in by Pragna, as well as by all living things, will someday be passed along to nourish other life forms. Nature makes sure that energy is never wasted.