

10

Food Related Interactions

On your way to school have you ever noticed the behaviours of animals in the environment? Animals satisfy their needs one self or in teams. Security, food, habitats are some of their needs. Let's do the following activity to find out about the food that animals consume.



Activity 10.1

- Select a suitable place of your home garden or school garden.
- Observe the animals and their food.
- Tabulate your findings in the following table.

Table 10.1

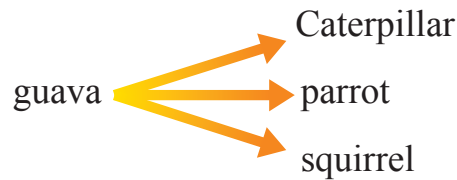
Animal	Food
1.	
2.	
3.	

A grade 6 student observed a guava tree in his home garden for several days. The following table shows his findings.

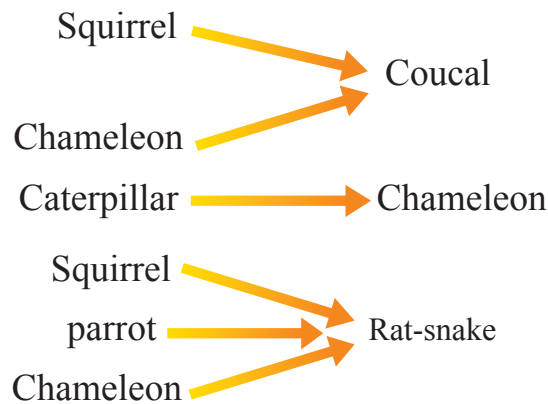
Table 10.2

Animal	Food
Squirrel	Guava
Parrot	Guava
Caterpillar	Guava leaves
Chameleon	Caterpillar
Rat-snake	Chameleon
Rat-snake	Squirrel
Partridge	Chameleon
Partridge	Squirrel

According to the data in the above table there are different connections between animals and plants for food. They can be displayed using arrows.



Connections between animals and animals for food can be displayed in the same method.



10.1 Food Web

The above interactions between plants and animals and animals and animals can be shown as follows.

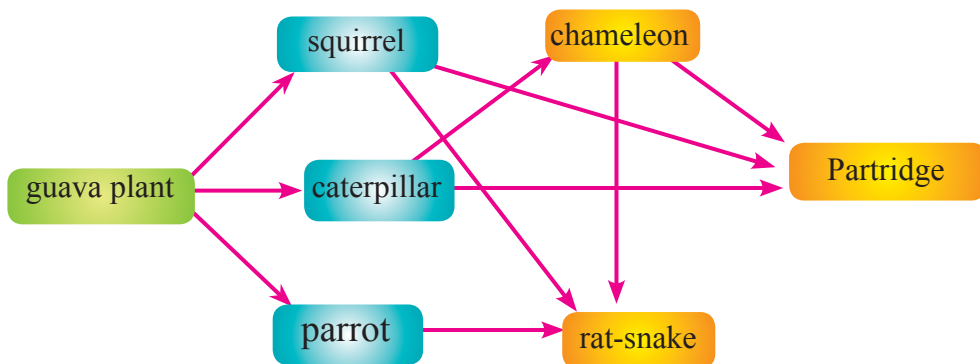


Fig 10.1



Assignment 10.1

Study the table in activity 10.1 and using arrows, show the interactions among plants and animals, animals and animals for food, as in fig.10.1.

The following figure shows the interactions among plants and animals in a piece of grassland.

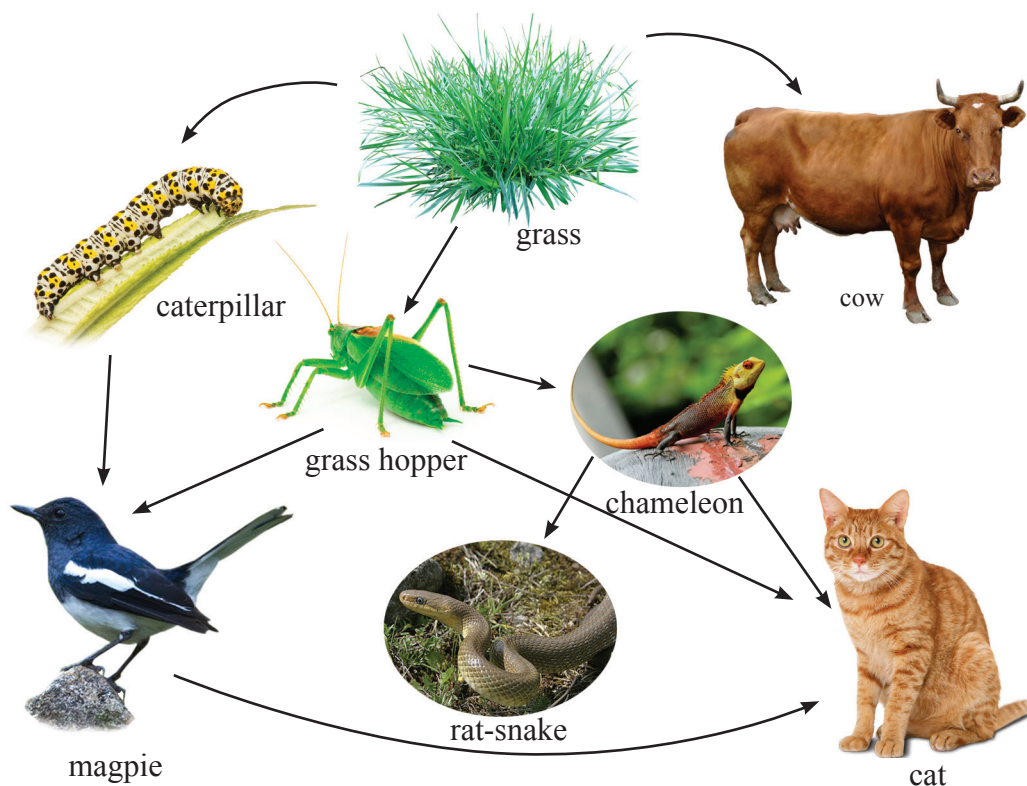


Fig 10.2

Figure 10.2 shows that there are a lot of interactions among plants and animals for food. Also, it shows that they are inter-connected. They are connected as a web.

A diagram that shows the inter relationships among animals and plants for food is known as a **food web**.

10.2 Mode of Nutrition of Animals

According to the figure 10.2 there are many animals that feed on grass. Cow, grass hopper, caterpillar are some of them. Grass is the staple food of cows. Leaves and tender leaves of grass are eaten by caterpillar and grass hopper. The animals that consume only plant materials are known as **herbivorous**. Cow, rabbit, deer, giraffe, grass hopper, caterpillar, elephant are some of the herbivorous.

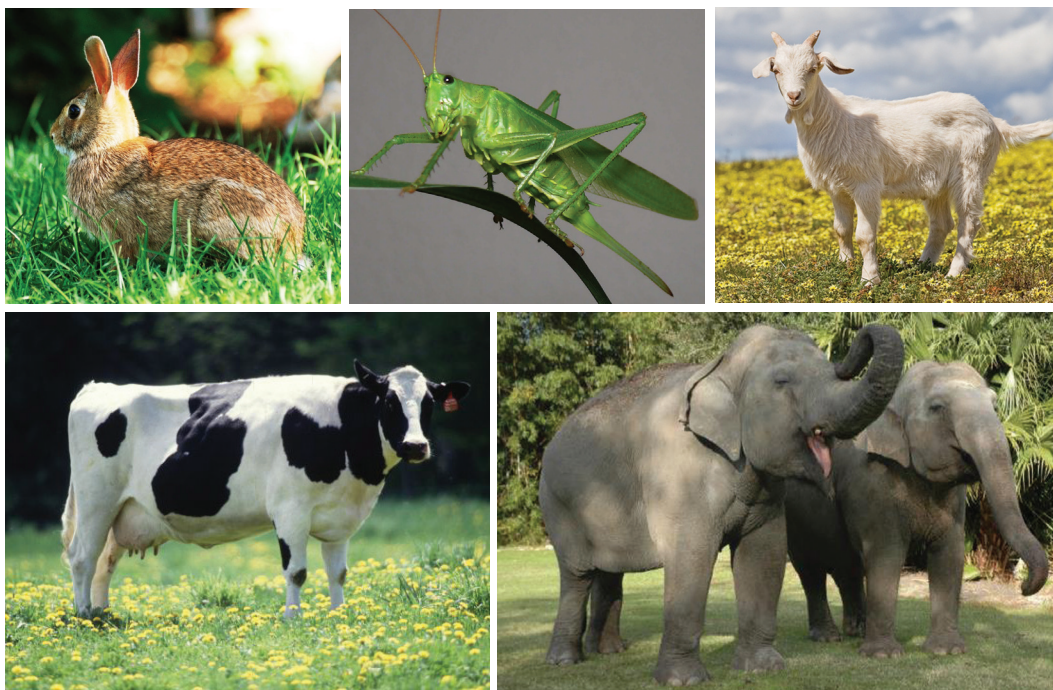


Fig 10.3 ▲ Some herbivorous

Identify the food consumed by magpie, chameleon, and rat-snake in figure 10.2. They feed on herbivorous. Animals that consume flesh of other animals are known as **carnivorous**. Wolf, leopard, lion, tiger, rat-snake are some examples for carnivorous.



Fig ▲ 10.4 Some Carnivorous

Find out the food materials consumed by the animals such as crow, hen, cat, dog, cockroach, pig etc. They consume both plant materials and flesh. Animals that consume both flesh and plant materials are known as **omnivorous**. Black bear too is an omnivore.

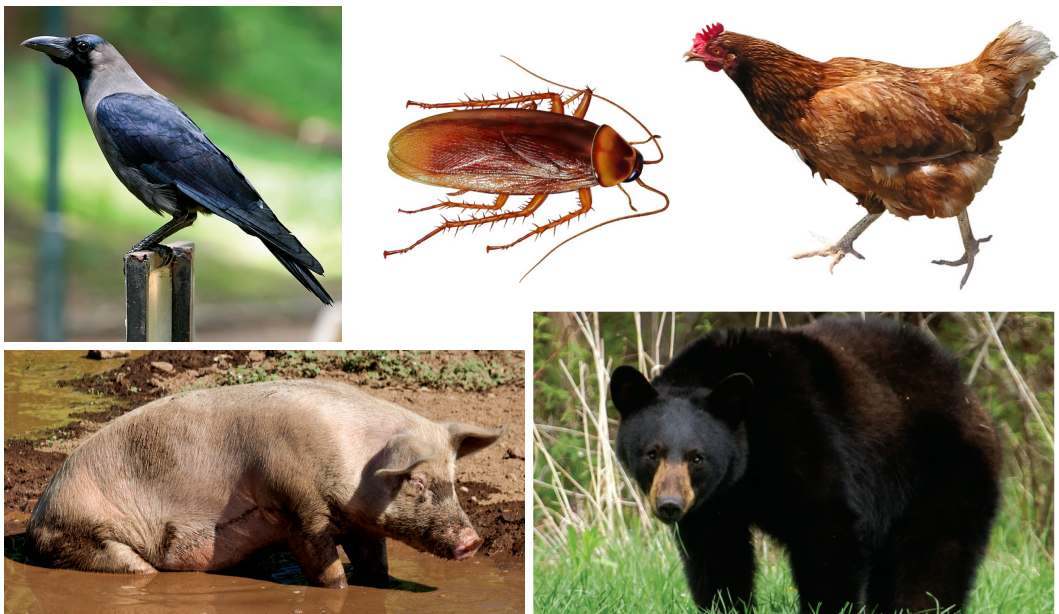


Fig 10.5 ▲ Some omnivorous

Animals can be categorized based on the modes of nutrition.

They are

- **Herbivorous** :- Animals that consume only plant materials.
- **Carnivorous** :- Animals that consume only flesh of other animals.
- **Omnivorous** :- Animals that consume both flesh and plant materials.



Assignment 10.2

Have a visit to a zoological garden or observe the animals in your environment and find out the food material they consume. Categorize them as herbivorous, carnivorous and omnivorous. Note the special features adapted for their food habits. Insert the details and prepare a booklet.

Sometimes problems occur when the animals are categorized distinctly as herbivorous, carnivorous and omnivorous. So, the feeding mechanisms of such animals have to be observed for a long time period.

Some carnivorous animals have become omnivorous because they live with human beings.

E.g. : dog, cat

10.3 Food Chains

Figure 10.6 shows a food web in a forest.

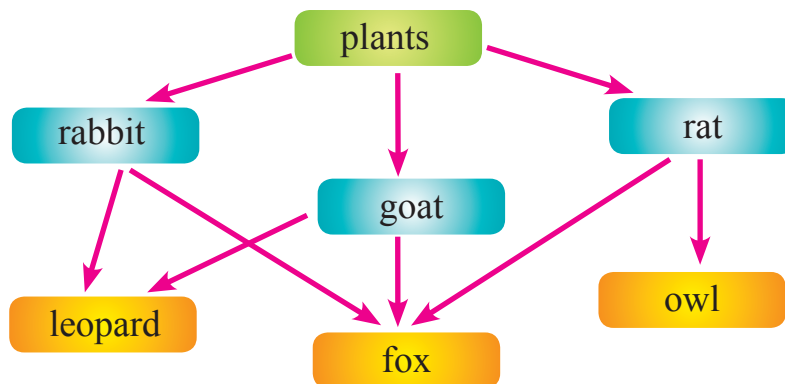


Fig 10.6 ▲ A food web in a forest

A connection that can be seen within animals for food in the above food web is shown below.



According to the above connection the plant supplies food for the rabbit. Then, the rabbit becomes a food for the leopard.

So, the interactions for food start with a plant or part of a plant and connect with each other as in a chain.

A linear sequence that starts from a green plant and shows the flow of energy from one living organism to other is known as a **food chain**.

The followings are some food chains taken from the food web in figure 10.6.



Now it is clear that a food web is created by inter connections of several food chains.

▶▶ Links of a Food Chain

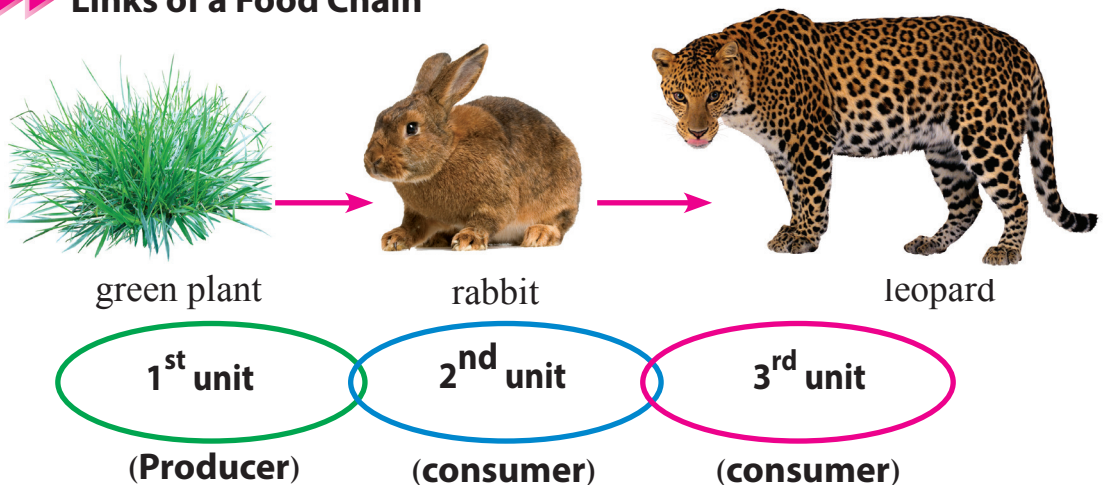


Fig ▶ 10.7

The first link of a food chain is a green plant. It supplies food to the other links of the food chain directly or indirectly.

Green plants use water, carbon dioxide and sun light to produce food within themselves. This process is known as **photosynthesis**. As the green plant produces food on its own, it is known as the producer.

The herbivorous consume the leaves, tender leaves, flowers, fruits, yams and other parts of green plants. Then, the energy stored in green plants is transferred to herbivorous. When the canivorous consume the herbivorous the energy stored in herbivorous is transferred to carnivorous

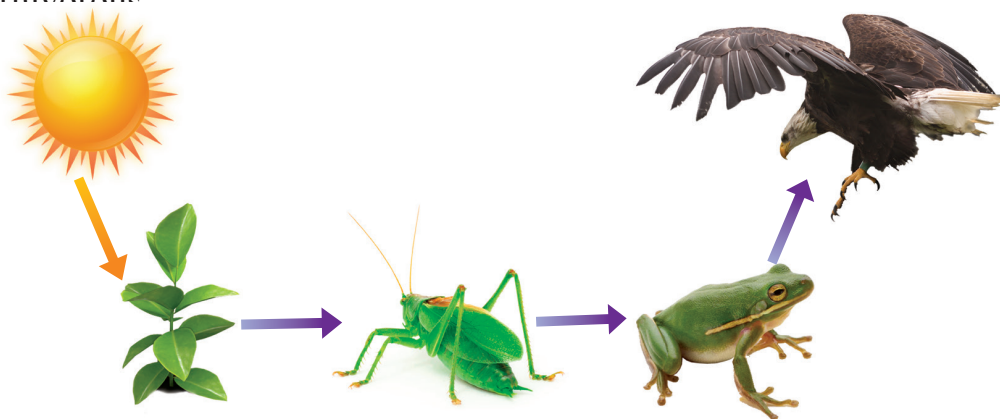


Fig ▲ 10.8

Accordingly, the energy stored in the food produced using solar power by the green plants, is transferred to other consumers of the food chain. Fig. 10.8 shows this process.



Assignment 10.3

Build up food chains that can be seen in a pond, a tank (wewa), a forest, a grassland and a decaying log. Prepare them in a creative way and exhibit them in your class room.

Green plants use solar power and provide energy to all the living beings on earth to live. So, the service rendered by green plants to the world is immense.

The number of leopards in a jungle decreased due to some reason. So, the number of deer increased. Due to the increase of deer, their food was not sufficient. Therefore they had to compete with each other for food. Due to lack of food the number of deer decreased again.

The number of plants and animals in the environment is controlled and remained balanced due to this mutual relationship that exists between the links of food chains.

All the links of a food chain render a great service to maintain the balance of the environment. Therefore, if an animal which belongs to a particular link in a food chain is destroyed or removed, it affects the existence of other links of the food chain. This may lead to a decrease or an increase of the number of other links. Therefore, you can understand that all the living beings are important to maintain the balance of the environment.

Have you heard about pandas that live in the forests of China? Panda is a herbivorous animal. This animal has faced a threat of extinction because their only food is bamboo. Now, steps to conserve these animals have already been taken. Animals feed on a variety of foods. When there is a large diversity in food consumed by animals, their existence is more established.



Fig 10.9 ▲ Panda

Every animal has a right to live free in the environment. You as well as the other living organisms are an important part in the environment. So it is your duty not to harm animals or plants.



Summary

- Animals are categorized into three major groups according to their feeding habits. They are herbivorous, carnivorous and omnivorous.
- Animals that consume only plant or plant materials are known as herbivorous.
- Animals that consume only flesh of other animals are known as carnivorous.
- Animals that consume both plant materials and flesh of other animals are known as omnivorous.
- Green plants that produce food within themselves are known as producers.
- A linear sequence that starts from a green plant and shows the flow of energy from one living organism to other is known as a food chain.
- A diagram that shows the inter relationships among animals and plants for food, is known as a food web.
- The existence of every living organism is very important for the balance of the eco system.
- The green plants produce food using the energy of sun light. This energy is transferred among animals through food chains and food webs.

Exercise

01. Choose the best answer.

i. Animals that consume only plants or plant materials are known as

- | | |
|----------------|-----------------|
| a) herbivorous | b) carnivorous |
| c) omnivorous | d) plant eaters |

ii. Plants do not use in producing food.

- | | |
|--------------------------|-----------|
| a) sun light/solar power | b) water |
| c) carbon dioxide | d) oxygen |

iii. Select the false sentence.

- A food web is created by inter connecting number of different food chains.
- The first link of a food chain is known as a producer.
- The second link of a food chain may be an animal that consumes plants.
- The third link of a food chain is always an omnivore.

iv) plant → grass hopper → → monitor

What is the most suitable sentence about the animal that should be in the blank?

- It is definitely an omnivore.
- It is not a herbivore.
- It is definitely a carnivore.
- all the above are incorrect.

02) Build up three food chains that can be seen in fresh water pond.

03) Answer the given questions referring to the following food chain.

grass → grass hopper → frog → cobra

- Name the producer of the food chain.
- Name a herbivore in the food chain.
- How many links are there in the food chain?
- How many consumers are there in the food chain?

Technical terms

Herbivore	- ஸாகஸகீகரகர	- தாவரவுண்ணிகள்
Carnivore	- மஃஸகஸகீகரகர	- ஊனுண்ணிகள்
Omnivore	- ஸர்ஸகஸகீகரகர	- அனைத்துமுண்ணிகள்
Food chain	- ஂஂஂஂ ஂஂஂஂ	- உணவுச்சங்கிலி
Food web	- ஂஂஂஂ ஂஂஂஂ	- உணவுவலை
Food habits	- ஂஂஂஂஂஂ ஂஂஂ	- ஂஂஂஂஂஂ ஂஂஂ
Producer	- ஂஂஂஂஂஂஂ	- உற்பத்தியாக்கி
Consumer	- ஂஂஂஂஂஂ	- நுகரி
Link	- ஂஂஂஂ	- இணைப்பு