



Sources of Food

FOOD AND NUTRIENTS

What will happen to a car if it runs out of petrol? Its engine will stop. Petrol is the fuel that burns in a car engine and supplies it with energy. Similarly, your body also needs fuel to keep it working. The fuel you use is called **food**.

To keep a car engine running properly, it should be supplied with the right amounts of fuel and oxygen. Without a proper balance of these two substances, the engine will not run smoothly and may even stop. In the same way, to keep your body working properly, it must be supplied with the right amounts of the right chemicals in food. The chemical substances in food that your body needs are called **nutrients**.

Functions of food

Food has three main functions:

- ❖ It provides energy for various activities of the body.
- ❖ It helps the body to grow and replace worn-out cells.
- ❖ It protects the body from various diseases and keeps it fit and healthy.

Variety of food in India

India is a vast country with different types of soil and climate which determine the crops, vegetables and fruits that grow best in a place. People in different regions of India cook differently. These factors mean that the food

IN THIS CHAPTER

FOOD AND NUTRIENTS ♦ INGREDIENTS OF FOOD ♦ SOURCES OF FOOD ♦ FOOD HABITS OF ANIMALS ♦ FOOD CHAIN

SOURCES OF FOOD ♦ 5

ACTIVITY 1 (Collecting and analysing information)

Name two of your classmates who come from states different from yours. Find out what they eat every day. In what ways is their food different or similar to yours?

culture in various regions of the country is different.

Ingredients of food

A basic food dish such as boiled rice is made by boiling rice in water. This food has only two ingredients—rice and water. Chicken biryani, however, is made up of rice, water, chicken, salt, several spices and vegetable oil. It has several ingredients. Where do we get these ingredients from? We get them mainly from plants and animals. However, water and salt are two ingredients obtained from the earth.

SOURCES OF FOOD

We get food from plants and animals. You know that green plants prepare their own food from non-living things—carbon dioxide, water and sunlight—found in the environment. Green plants are known as **producers**. They prepare more food than they need. The extra food is stored in different parts of the plant as shown on page 5.

We get the following foods from animals:

- ❖ Milk, e.g. from cow, buffalo, goat and camel. Milk is used to prepare milk products such as cheese, butter, ghee, curd and ice-cream.
- ❖ Eggs, e.g. from hen, duck and quail.
- ❖ Meat, e.g. from hen, duck, goat, fish and crab.
- ❖ Honey from honeybees. Honeybees collect nectar from flowers and take it to their hive. There they convert it into honey and store it as food. We get honey from beehives.

ACTIVITY 2 (Collecting information):

To find out the ingredients and sources of your food

Make a list of food items brought for lunch by your friends. Find out the ingredients used to make each of them. Also find out the sources of these ingredients. Fill in a table as shown.

| FOOD ITEM | INGREDIENTS | SOURCES |
|-----------------|---|--|
| boiled rice | rice, water | rice—plants water—earth |
| chicken biryani | rice, water, chicken, salt, spices, vegetable oil | rice, spices, vegetable oil—plants chicken—animals water, salt—earth |

What do you find? Except salt and water, we get the ingredients from either plants or animals.

ACTIVITY 3 (Experimental investigation): To sprout some seeds

Take some seeds of *moong* or chickpea. Soak them overnight in water. Drain out the water the next day and wrap the seeds in a wet cloth. Keep the cloth wet by sprinkling water on it. Observe the seeds after one day. Has a small white structure grown out of the seeds? The seeds have **sprouted**. The white structure will develop into the root of a seedling. You can wash the sprouted seeds and eat them raw. You can also boil the sprouted seeds, add salt and spices and make a tasty snack.



FOOD FROM PLANTS

Fruits



BANANA



MANGO



APPLE

Leaves



SPINACH



CABBAGE



CORIANDER

Stems



POTATO



SUGARCANE



GINGER

Roots



RADISH



TURNIP



CARROT

Seeds



WHEAT



PEA



RICE

Flowers



CAULIFLOWER



BROCCOLI

FOOD HABITS OF ANIMALS

Animals cannot prepare their own food. They depend directly or indirectly on plants for their food. Different animals eat different kinds of foods. Their body parts are adapted to the kind of food they eat.

Herbivores are animals that eat plants. Buffaloes, cows, deer and horses are herbivorous animals. They have sharp, cutting teeth in front and flat, grinding teeth at the back.

Carnivores are animals that eat the flesh of other animals. Lions, tigers, wolves, dogs,



FIG. 1.1 Herbivores eat plants.

IT'S A FACT!

The teeth of herbivores have to do a lot of grinding, as a result of which their teeth are constantly being worn away. However, this is not a problem for them as their teeth keep growing continuously.

snakes, eagles and vultures are carnivores. The animals have long, sharp teeth and the birds have strong, pointed beaks to tear the flesh. Snakes have small teeth, which are used only to help in swallowing the prey as a whole.



FIG. 1.2 Carnivores eat flesh.



FIG. 1.3 Omnivores eat both plants and animals.

Omnivores are animals that eat both plants and animals. Humans are omnivores. Bears, crows and cockroaches are also omnivorous animals. Some carnivores and omnivores, known as **scavengers**, mainly consume dead bodies of animals and help to keep the surroundings clean. Some examples are crows, jackals, hyenas and vultures.

Parasites are small animals that depend on other living animals for their food. Mosquitoes live on blood that they suck from humans and other animals. A mosquito has a long, sharp pipe instead of teeth, which is used to pierce the skin and suck the blood. Fleas, leeches and bugs are also parasites. Some parasites such as tapeworm, roundworm and hookworm live inside the bodies of animals and eat the food after it has been digested by the animals.



FIG. 1.4 Scavengers mainly eat dead bodies of animals.

FOOD CHAIN

A grasshopper eats a green plant, a frog eats the grasshopper, the frog is eaten by a snake and the snake is eaten by an eagle.

This chain of events is called a **food chain**. A food chain shows how each living thing gets its food in a particular environment.

The study of food chains also shows us the interdependence of various organisms in the environment. In a grassland, the following food chain exists: grass → zebra → lion

A typical food chain in a pond is: algae (small plants) → small fish → large fish

Note that all food chains begin from green plants. What does this mean? It means that all animals are dependent on green plants for food—either directly or indirectly.

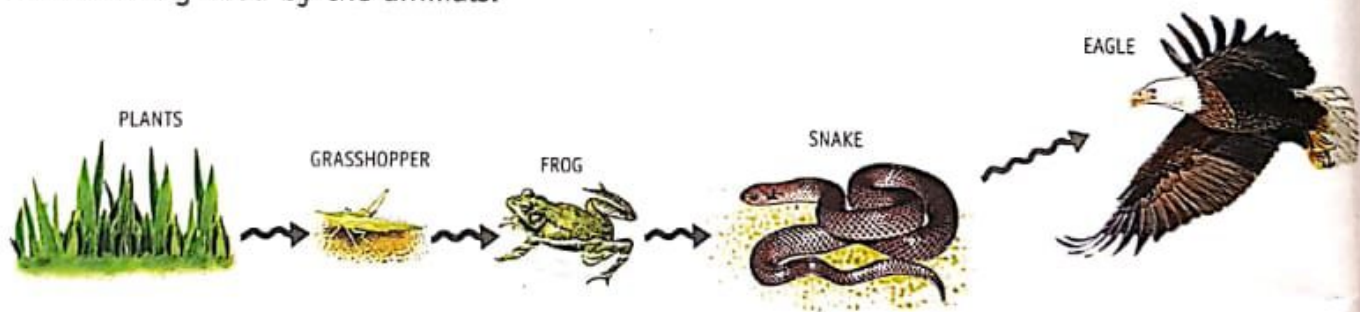


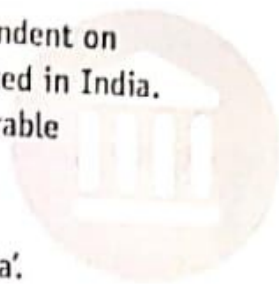
FIG. 1.5 A food chain

ORAL QUESTIONS

1. Other than providing energy to our body, what else is food needed for?
2. The skeleton of an animal found during excavations showed that it had broad and sharp teeth in front, and flat teeth at the back. What kind of food do you think the animal ate?
3. Can a food chain start from an animal? Give reasons.
4. We make our own food in the kitchen, and hence we are producers. True or false? Give reasons.

III OUR HERITAGE

Several decades back India did not produce enough food grains and was dependent on imports to feed the people. In 1963, high-yielding wheat seeds were introduced in India. Also, modern farming methods began to be used. This brought about considerable increase in wheat production and India became self-sufficient in food grains. This increase in food grain production is known as the **Green Revolution**. Dr M. S. Swaminathan is known as the 'Father of the Green Revolution in India'.



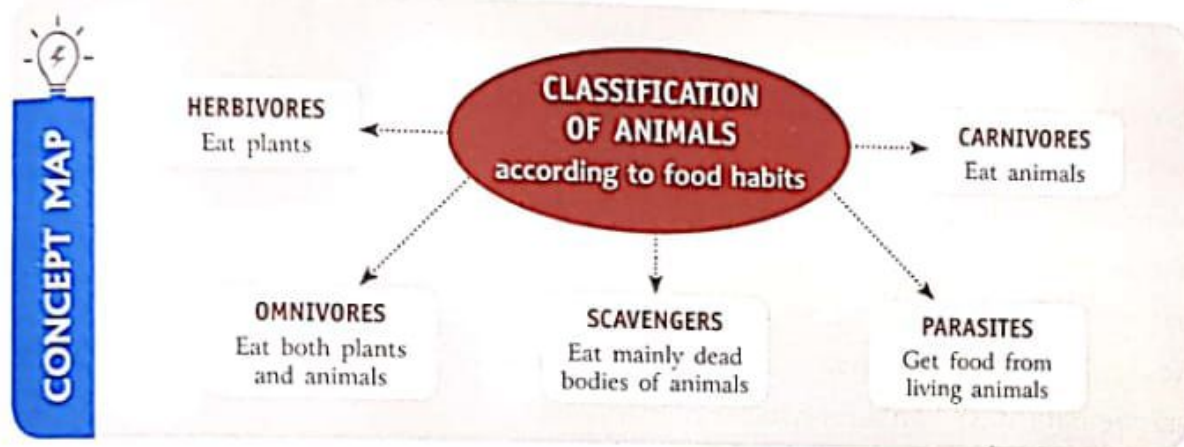
NEW WORDS

NUTRIENTS—the chemical substances in food that our body needs

PARASITES—small animals that depend on other living animals for their food

NOW YOU KNOW

- ❖ The ingredients used to make food are mainly obtained from plants and animals.
- ❖ Herbivores eat only plants; carnivores eat the flesh of other animals; omnivores eat both plants and animals; parasites depend on other living animals for food.
- ❖ A food chain tells us who eats what in the environment. All food chains begin from green plants.



EXERCISES

A. Choose the most appropriate answer.

- Which of these is obtained from plants?
a. honey b. curd c. rice d. egg
- Which of these is obtained from animals?
a. pulses b. cheese c. cereals d. sugar
- Which of these food ingredients do we not get from plants or animals?
a. salt b. honey c. milk d. wheat
- The first link in all food chains is
a. herbivores. b. carnivores. c. plants. d. omnivores.

5. Which of these eats food digested by other animals?
 a. a cow b. a lion c. a cockroach d. a tapeworm
6. Which of these animals does have teeth?
 a. snake b. eagle c. mosquito d. tapeworm

B. VERY SHORT-ANSWER QUESTIONS: Give one-word answers.

1. Name one stem that has food stored in it.
2. Are humans herbivores, carnivores or omnivores?
3. Some animals usually eat the dead bodies of other animals. What are they called?
4. Some food chains end at herbivores. True or false?
5. The chemical substances in food that your body needs are called _____
6. Do all living things eat the same kind of food?

C. SHORT-ANSWER QUESTIONS: Answer in a sentence or two.

1. Name the sources from where we get the ingredients used in food.
2. Why are green plants known as producers?
3. Name three plants and their parts that we eat.
4. In what way is a scavenger useful to the environment?
5. Why does a mosquito not have teeth?
6. We get our food items from plants and animals. Do you agree? Give reasons.



D. LONG-ANSWER QUESTIONS: Answer these questions.

1. How is honey made?
2. Explain the difference between herbivores, carnivores and omnivores.
3. What are the functions of food?
4. What is a food chain? Explain with an example.
5. How are the teeth of carnivores different from those of herbivores?
6. What are parasites? Explain giving two examples.

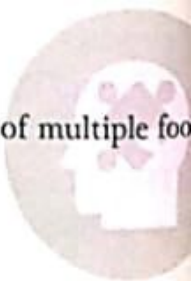
HOTS QUESTIONS: Think and answer.

1. Both carnivores and parasites depend on other animals for food. In what way is a carnivore different from a parasite?
2. Humans eat both plants and animals. Which teeth in humans are suitable for tearing flesh?
3. A food chain consists of several organisms. Suppose one of the organisms in the chain disappears. What effect can this have on the other organisms in the food chain?

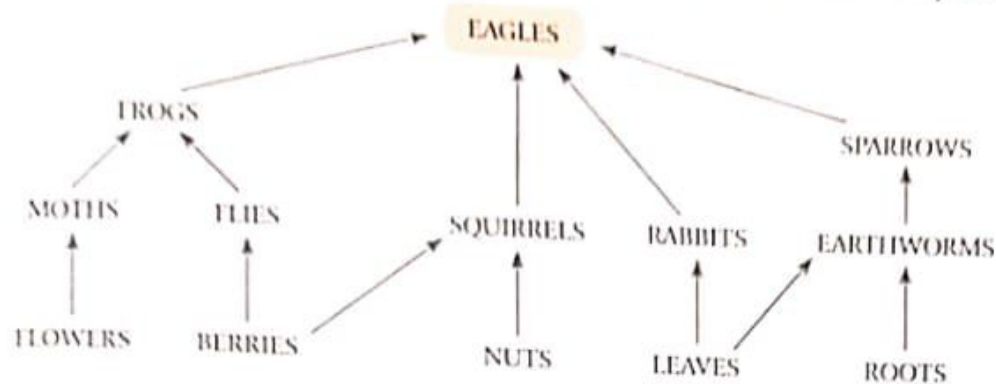


BE A SCIENTIST

You have read about food chains in this chapter. Each living thing is a part of multiple food chains—for example, grass is a part of the food chain: grass → grasshopper → frog → snake → eagle, and also of the food chain: grass → deer → tiger.



All of the interconnected and overlapping food chains in a habitat make up a food web.



See the given food web and answer these questions.

- From the food web, construct two different food chains, each with four links.
- If all the eagles were killed, what would happen to the number of
 - squirrels?
 - earthworms?

VALUES

In 1965, Prime Minister Lal Bahadur Shastri gave a simple slogan to the people of India—*Jai Jawan Jai Kisan* (Hail the farmer, hail the soldier).

What value does this slogan show? Which other people in your life would you like to pay a similar tribute to?

ENRICHMENT ACTIVITIES

In the Library—Research Project

Find out about the main food items eaten by people in different regions of India. Prepare a state-wise list. Try to get pictures. Paste the list or pictures on the respective states on a large map of India.

My Virtual Library—Research/Activities on the Internet

- ☐ Visit rsgr.in/lsc-6 and click on **LINK 1** to find out about history of food in India.
- ☐ Visit rsgr.in/lsc-6 and click on **LINK 2** to get a lot of information about food—sources, cooking, manufacture, etc.
- ☐ Visit rsgr.in/lsc-6 and click on **LINK 3**. Now click on the play button under the heading 'Food chains' for an interactive activity on food chains.

(Suggested sites for a group research project on foods in India and around the world)

Talk to the Class—Presentation

Make a group presentation on the research done on foods around the world above.

TEACHER'S NOTES

- Have a discussion in Class of different types of food that children eat—food from different parts of India as well as from other countries. Analyse the ingredients used in each food with their help.
- While explaining the importance of food chain, discuss where vegetarian and non-vegetarian humans figure in the food chain (at the end even if vegetarian since humans are not eaten by anyone).