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Food: Where does it Come from?

Learning Objectives

- To understand the need and functions of food.
- To identify the various sources of food.
- To explain the food chain and ecological balance in nature.

Every living organism requires energy to carry out their daily activities; to move, to grow and to reproduce. Animals and human beings get energy from the food they eat. Plants prepare their own food using the energy from the sun. Sun is therefore the ultimate source of energy.

4. **Protection from Diseases:** The food we eat also protects our body from various diseases and keeps it healthy.



Quick Facts

During a lifetime, an average person eats about 35 tons of food.

FUNCTIONS OF FOOD

Food performs the following functions:

1. **Growth:** Food is essential for growth. The cells in our body get nourishment from the food we eat and then they multiply leading to body growth. Without this nourishment, the cells will not multiply and growth will cease.
2. **Repair:** Constant work and body infections cause wear and tear of body cells. Food is required to repair these worn out cells and tissues in our body.
3. **Energy:** Any type of work that the living organisms do requires energy. This energy is obtained from the food they eat. If we do not eat enough food, our body becomes tired and is unable to perform any work.

FOOD IN INDIA

Indian food is tailor made to suit our body requirements. If cooked properly it is both healthy and delicious. Most Indian meals include flat breads (roti, nan, etc.), rice and vegetables which are cooked differently in different regions.

Food in Kashmir is prepared around the main course of rice and non-vegetarian items; rice being abundantly grown here.



Kashmiri Rogan Josh and Rice

States like Punjab, Haryana and Uttar Pradesh show high consumption of chapatis.

In Western India, a wide variety of dals and pickles are eaten along with the staple food.

In Eastern India, the staple food of people is rice and fish.



Dal, Bati, Choorma of Rajasthan



Dhokla of Gujarat



A Bengali Thali

South Indian states make great use of spices, fish and coconuts as most of them have coastal kitchens. They enjoy eating idli and dosa which have rice and urad dal as their main constituents.



Idli and Dosa from Tamil Nadu



Biryani from Hyderabad

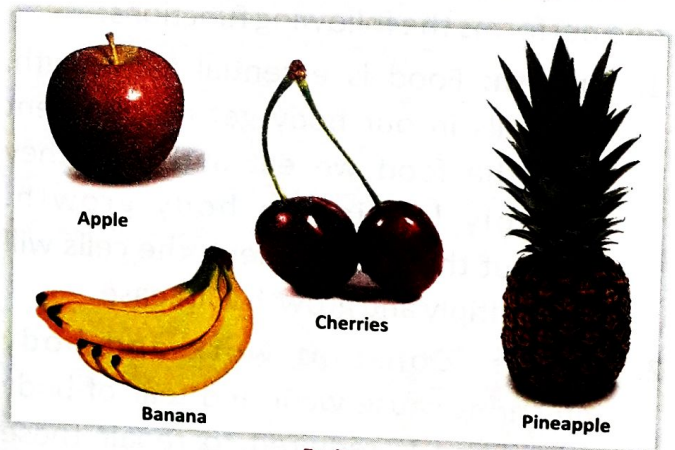
Name of the Family	State	Commonly Eaten Food
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____

SOURCES OF FOOD

The food we eat is mainly obtained from plants and animals.

Food from Plants

The green plants prepare their own food and are called **producers**. They store this food in different parts like the roots, stems, leaves, flowers and fruits which are their **edible parts**, and are consumed by animals and human beings. Thus, green plants are also called the **primary producers** of food on earth.



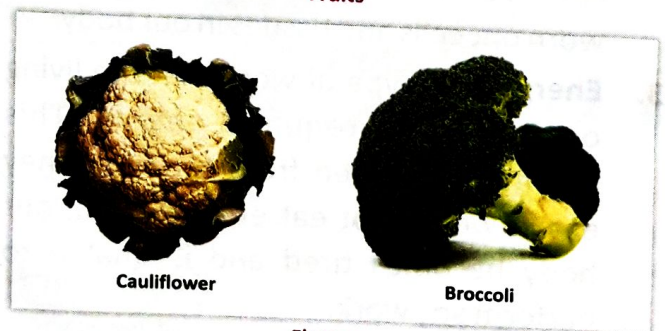
Apple

Cherries

Banana

Pineapple

Fruits



Cauliflower

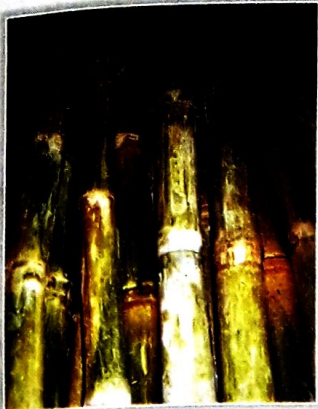
Broccoli

Flowers

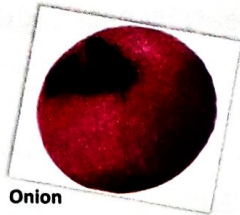


Get Active

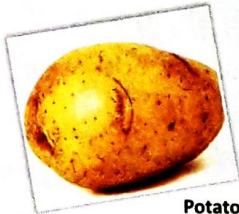
Interview any five people living in your neighbourhood and find out the state to which they belong and the food they commonly eat at home.



Sugarcane



Onion



Potato

Stems



Wheat



Pea



Corn



Rice

Seeds



Coriander



Cabbage



Spinach

Leaves



Radish



Turnip

Roots

Quick Review

1. Why do living organisms need food?
2. What is the main food constituent of idli and dosa?
3. What do you understand by producers?
4. Which plant parts are called edible?

Quick Facts



- Apples constitute 25% air, which is why they float.
- Cherries are a member of the rose family.
- Corns always have an even number of rows on each ear.
- Lemons contain more sugar than strawberries.
- Honey is the only edible food that never gets stale.
- Cabbage contains 91% water.



Get Active

Making sprouted moong dal

(To prepare sprouted moong dal, wash whole moong dal and soak overnight. Drain and tie in a wet muslin cloth. Keep the bundle moist by sprinkling water over it. After two days, tiny white out growths will be seen coming out from the dal.) Steam the sprouted dal, sprinkle salt and lemon juice and it is ready to eat.

Extension: Find out if warmer or colder temperature has any effect on the sprouting time.



A Bowl of Sprouted Moong Dal

Food from Animals

Ans
E5 Food from the animals can be obtained in the form of meat, chicken, egg, milk, honey, etc.

Milk: It is obtained from animals such as cows, buffaloes, camels and goats. It is a good source of protein and calcium, and is required for the growth and development of our body. Milk can be used to prepare a variety of food items like butter, ghee, cheese, yoghurt, etc. All these milk products are known as **dairy products**, and rearing animals for milk and its products is called **dairy farming**.



Milk



Cheese and Yoghurt

Quick Facts

Despite its creamy texture, milk is 85-95% water. The rest of its volume is made up by vitamins and fats.

Meat: Meat is obtained from animals like goat, chicken and fish, etc. Prawns and other sea creatures like crabs and lobsters are also relished in a few places.



Mutton, Chicken, Fish



Prawns



Crabs

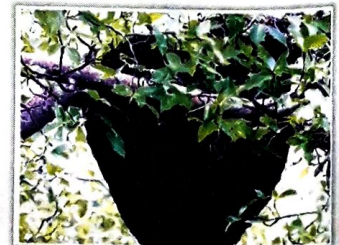
Eggs: Eggs are obtained from animals like hens, ducks, etc. They are a rich source of proteins and vitamins.

Quick Facts

A hen can lay about 250 eggs per year.



Honey: Honey is a sweet liquid prepared by honey bees from the nectar of flowers. It is collected from the beehives by trained professionals. Rearing of honey bees for large scale extraction of honey is called **apiculture**. Honey has high medicinal value.



Beehive

Quick Review

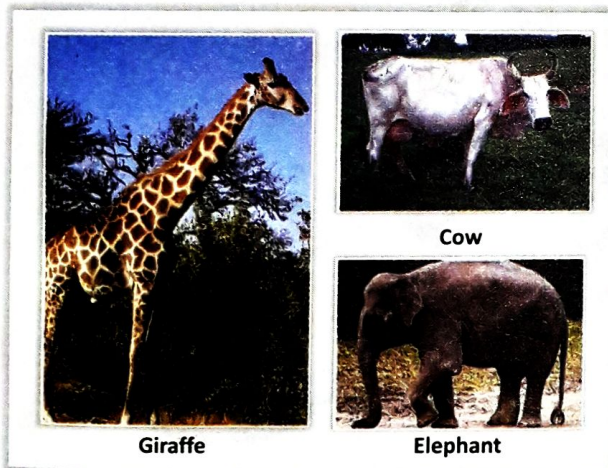
• Fill in the blanks.

1. Milk is a good source of _____ and _____ for our body.
2. Butter, ghee, cheese, etc., are called _____ products.
3. Eggs provide us _____ and proteins.
4. Rearing of honey bees is called _____.
5. _____ and _____ are sea creatures relished by non-vegetarians.

FOOD HABITS OF ANIMALS

Animals cannot prepare their own food. They depend on plants or other animals for their food. According to the food they eat, animals can be classified into various groups.

Herbivores: These animals eat only plants. Cows, horses, camels, elephants, etc., are **herbivores**. They have sharp, flat teeth in front for cutting, and flat, grinding teeth at the back for chewing food. Their digestive system is adapted to digest cellulose present in the plants.



Herbivores

Quick Facts

Cows and camels have the ability to bring back previously swallowed food for re-chewing in their mouth.

Carnivores: These animals are meat eaters. Lions, tigers, jackals, dogs, eagles, etc., are **carnivores**. Carnivorous animals have long, sharp teeth for tearing the flesh and carnivorous birds have a strong and pointed beak.



Jackal



Fox



Tiger



Eagle

Carnivores

Quick Facts

Snakes have small teeth which are helpful in swallowing the prey as a whole and have no role in chewing it.



Omnivores: Some animals which eat both plants and flesh of other animals are called **omnivores**. Bears, crows and even human beings are omnivores. Some omnivores hunt and eat their food while ^{animals} some others eat the remains of dead animals and plants. These are called **scavengers**. Vultures, hyenas, crows, etc., are scavengers. They act to clean the nature or else the dead carcasses of animals would be a nuisance for both sight and smell.



Bear



Crow



Vulture



Human Being

Omnivores

Decomposers: Certain living organisms like fungi and bacteria feed on dead plant and animal matter to decompose it. They are called **decomposers**. They have a very important role to play in nature as they return many nutrients to the soil.

FOOD CHAIN

A **food chain** is a series which shows how each living thing is dependent on the other to obtain nourishment. All food chains begin with green plants directly or indirectly.

Food chains help us to understand the interdependence of various organisms on each other in the environment. They also help us to understand why the extinction of one specie, affects the entire food chain, and hence disturbs the ecological balance.

eg: Grass → Deer → Lion → Vulture



Get Active

A. Let us look at the following food chain.



Mosquito



Frog



Snake



Peacock

What do you think will be the result of excess hunting and killing of snakes for their skin?

B. Draw another food chain which includes an animal which is nearing extinction. Discuss the implications of removal of that animal from the food chain.



Key Words

Producers	Green plants are called producers as they make their own food.
Edible	The part of the plant that can be eaten.
Herbivores	Animals that depend on plants or plant parts for nourishment.
Carnivores	Animals that depend on flesh of other animals for nourishment.
Omnivores	Animals that feed both on plants and animals.
Decomposers	Animals or organisms that feed on dead plant and animal matter to decompose it.
Food chain	The series that shows the dependence of one living organism on another.



Points to Remember

- All living organisms derive energy from the food they eat.
- Food is required for growth, energy and repair of worn out cells and tissues.
- Food in India differs from state to state.
- Green plants are called producers.
- The food we eat is obtained from plant and animal sources.
- (On the basis of their feeding habits, animals are classified as herbivores, carnivores and omnivores.)
- All food chains begin with green plants. They show the link between various organisms in the environment.

Q. No. D1

Exercises

A. Tick (✓) the correct option in each case.

- We need food _____.
 - to grow
 - to reproduce
 - to get energy
 - all of these
- People from North India like to eat _____.
 - vada and sambhar
 - chapati and vegetables
 - cakes and biscuits
 - none of these



- Dhokla is a famous dish from _____.
 - Gujarat
 - Kashmir
 - Tamil Nadu
 - West Bengal
- We eat the roots of _____.
 - pineapple and pear plant
 - radish and carrot plant
 - onion and potato plant
 - tomato and bean plant
- _____ is a seedless fruit.
 - Tomato
 - Potato
 - Cherry
 - Banana
- Which of these is the leaf of a plant?
 - Banana
 - Carrot
 - Spinach
 - Tapioca
- Which of these is a dairy product?
 - Rice
 - Cream
 - Apple
 - Strawberry
- Omnivores eat _____.
 - only plants
 - plants and flesh
 - only flesh
 - all of these



B. Fill in the blanks.

- A vulture is a Scavengers.
- Creamy texture are not obtained from milk in a substantial amount.
- The Stem is the edible part of potato.
- Green plants are called primary producers.
- Herbivores have Flat front teeth.
- Food provides us energy to do work.
- Crows and Vultures act as cleaners of the nature.
- Sun is a major source of energy on earth.

C. State whether the following are true or false.

- A food chain shows the link between the various living organisms.
- Honey is obtained from houseflies.
- Butter and cheese are dairy products.
- Camel and horse are omnivorous animals.
- Hawk is a scavenger.

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F
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F

6. Green plants prepare their own food.
7. Sprouts are germinated seeds.
8. The food we eat protects our body from diseases.

T
T
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D. Very short answer questions.

1. Classify the animals on the basis of their food habits. Pg. no. - 13
2. Name the animals that eat only plants and plant products. *Herbivores*
3. Name any two carnivores birds. → *Eagle and Hawk*
4. Define omnivores with examples. Pg. no. - 11
5. What is a food chain? Pg. no. - 13
6. What are primary producers? *Green plants*

E. Short answer questions.

1. What are scavengers? Give examples. Pg. no. - 11
2. List any three plants whose stem is an edible part. *Sugar cane, potato and onion*
3. Define with examples the different kinds of animals based on their eating habits. Pg. no. - 11
- ④ What is the difference between the teeth of herbivores and carnivores?
5. Write a note on animals as a source of food. Pg. no. - 10

F. Long answer questions.

1. Why do we need food? Pg. no. - 7
2. What are sprouts and how are they prepared? Pg. no. - 9
- ③ Differentiate between the following:
 - a. herbivores and omnivores
 - b. carnivores and decomposers
 - c. scavengers and decomposers
4. Why are scavengers useful for the environment? What do you think will happen if vultures get extinct? Pg. no. - 11
5. What is a food chain? Explain with examples. Pg. no. - 12

G. Give reasons.

1. Scavengers are called cleans of the environment. *because they eat the remains of dead animals and plants*
- ② Food is essential for our growth.
3. Green plants are called producers. *because they prepare their own food.*
4. Carnivores have long sharp teeth. *for tearing the flesh*
5. Extinction of one specie affects the entire food chain. *because it disturb the ecological balance.*