

Food

Food Where Does It Come From?

Learning Objectives

1. Food provides energy and keeps the body fit and healthy.
2. We use a variety of ingredients to prepare food.
3. Food can be obtained from plants animals.
4. Plant sources are cereals, pulses, fruits, vegetables, oil, seeds, etc.
5. Animals' sources are milk, egg, meat, fish, etc.
6. There are three kinds of animals, herlivores, carnivores and omnivores.
7. Each animals is depended on ether plant or another animal for food.
8. A series of plants and animals depending on each other forms the food cycle.
9. Balance of nutrients in nature is necessary.

To keep a car engine running properly, it should be supplied with right amount of fuel and oxygen. Similarly to keep our body working properly, it must be supplied with right amount of right chemicals in food. These chemical substances in food that our body needs is called **nutrients**.

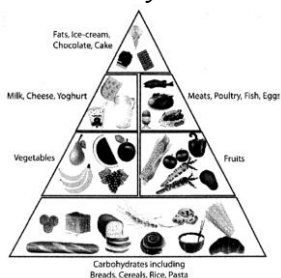
Functions of Food

Food has 3 main functions:

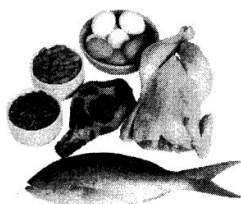
It provides energy for various activities of the body.

It helps the body to grow and replace old cells.

It protects the body from various diseases and keeps it fit and healthy.



Different food items containing carbohydrates, fats, proteins, vitamins, minerals, etc.



Proteins rich food



Fruits & vegetables

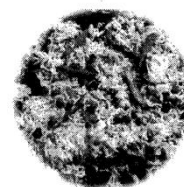
We eat different kinds of food, we eat grains, pulses, vegetables, fruits, fish, eggs, meat and different dairy products. Different food contain different nutrients. Some nutrients help us grow, some give energy and some help income pleating diseases.

India is a vast country and people in different regions cook different dishes. A basic dish like boilde rice contain only rice and water. A vegetable pulao/biryani contain rice, vegetables, spices, water, salt and oil. It has number of ingredients. These ingredients come from two sources - plants and animals.



Boiled rice

Boiled rice has 2 ingredients



Veg pulao/biryani

Vegetable pulao has many ingredients

SOURCES OF FOOD

Food from plants: Green plants prepare their own food with the help of carbon dioxide, water and sunlight by the process of photo synthesis. Green plants are therefore called **producers**. They prepare some extra food than they need. This extra food is stored in various parts of the plant.

Do You Know

Roots of Baobab tree are eaten during famine.

PLANTS PARTS THAT ARE EATEN

Roots: We eat roots of carrot, radish, sweet potato and beetroot. In Rajasthan roots of Khejri tree is eaten when the crops foil. It is considered to be very nutritious.

Stem: Some plants like potato, onion and ginger store food in their stems.

Banana shoots and lotus stem are also eaten.

Seeds: All the cereals like rice, wheat, maize and pulses like lentils, gram, moong are seeds. Pea is also a seed. The cereals give us energy and pulses are rich sources of proteins that help in growth. We also get oil from seeds of mustard and sunflower.

Leaves: Some common leaves that are eaten by people are spinach, cabbage, coriander, mint, neem, etc.

Flowers: We eat cauliflower and broccoli. Flowers of plants like drumstick, banana and pumpkin are eaten by people in some parts of India, rose petals are used to make rose water (gulabjal) and a sweet called gulkand.



Banana flower

People of Assam & West Bengal make delicacies out of this.

FOOD FROM PLANTS

Roots	Fruits
Pic of radish, carrot turnip	(Common fruits)
Stem	Vegetables
Onion, Potato, Sugarcane	(Common veg)
Leaves	Oil
Spinach, Cabbage, Methi	Mustard, Ground nut, Sunflower
Flowers	Seeds
Cauliflower, Broccoli, Louts	Wheat, Rice, Pea

Fruits: Common fruits are mango, apple, banana, orange, litchi, papaya, guava, grapes, etc. These are rich sources of vitamins and minerals. They also provide water and roughage.

Vegetables: Common vegetables are onion, potato, radish, carrot, spincach, methi, tomato, brinjal, etc.

Vegetables and fruits are good sources of vitamins and minerals. Both keepus healthy and prevent us from deficiency diseases.

Sugar: Food is incomplete without sugar. We get sugar from sugarcane & beetroot. Sugarcane is stem while beetroot is root. Sugar gives energy

Oil: Oil is the medium of cooking. We get oil from seeds of mustard, sunflower, soyabean, cotton, coconut and groundnut.

Spices: Spices add flavor to the food. Different parts of plants are used as spices. Ginger (Adrak), Coriander (Dhania), Fennel (Saunf), Thyme (Ajwain), Cumin (Jeera), Fenugreek (Methi), Clove (Laung), Cardamom (Elaichi), Nutmeg (Jaiphal), etc.



Common spices

Sprouts: Sprouted seeds of moong, chickpea (Bengal gram) is very nutritious.

Sprouting is done by soaking seeds in water and then draining the water after about 7-8 hours. Then they are left overnight to germinate. Sprouts can be eaten raw as well as cooked.

Sprouts provide instant energy and are high on protein.



Sprout salad

Animals as a source of food

Animals also provide us food in the form of milk, meat, fish, eggs and honey.

Milk: Milk is rich in proteins. It is very beneficial to children and elderly.

Main milk yielding animals are cows, sheep, buffaloes, goat, camel, yak etc.

Such animals are called Milching animals.

Milk is a complete food. It is rich in Calcium and is required for bones and teeth.

Do You Know

India is the largest producer of bananas in the world.

Humans cultivate 2000 varieties of plants for food.

Health corner Brown rice is more healthy than white rice.

Products made from milk are known as dairy products.

(i) Paneer (Cottage Cheese): It is prepared by adding vinegar or lemon to milk. This process is called curdling of milk.

(ii) Cheese: These are made from curdled milk of cow, goat, sheep or buffalo.

(iii) **Cream:** It is made by collecting the top fatty layer of milk.

(iv) **Butter:** This is made by churning fresh creams.

(v) **Ghee:** When butter is heated and the solid matter is removed, ghee separates out.

(vi) **Curd:** Small amount of milk is added to warm milk and left for sometime. The bacteria (*Lacto bacillus*) helps in setting the milk. It is microorganism.

Do You Know

Some plants are poisonous.

Do not eat berries, seeds or nuts from plants you do not know.

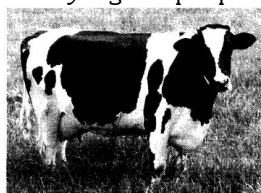
They may make you ill.

Meat: The main sources of meat are goat, pig, sheep, poultry. Birds like hen, duck, turkey also give meat. Meats are rich in proteins.

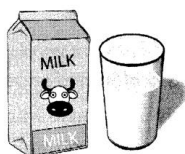
Do You Know

People in deserts drink camels milk.

In hilly regions people also drink yaks's milk.



Cow, Milk



Oil Fish



Honey and Bee



Chicken

Egg laying hen is called layer and hens reared for chicken meat is called

Egg: Different kinds of eggs

Egg are mainly obtained from hens and ducks.

Fish: Fish is a good source of animal protein. It is highly digestible. Fishes may be fresh water or sea water fish. Both are equally good.

Do You Know

Health Corner Yolk of an egg is rich in fats and lipids, while white is rich in proteins.



Cod fish

Cod liver oil is rich in vitamin D

Honey: It is obtained from bees (insects). It is not only nutritious but also has medicinal value. Honeybees collect nectar from flowers and store in their hive.

Do You Know

Apiculture is the art of bee cultivation to get honey and wax. A place where beehives are kept is called Apiary.



Honey

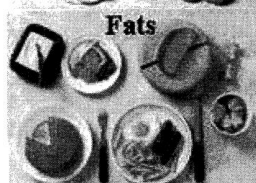
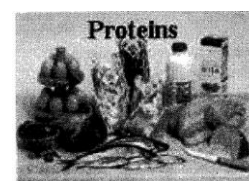
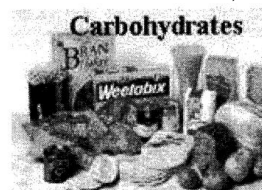
Honey is used to cure sore throat and cold.

A Balanced Diet

It is important that we consume all nutrients, but it is equally important that we consume them in adequate quantity. This makes our diet a balanced diet.

"A balanced diet is one which contains all the nutrients in proper amount."

People of different age need different nutrients in different quantities. Growing children need more proteins for muscle growth and repair of cells of all the food items, milk is considered complete food. It has vitamins, minerals and protein.



Protein source Fats minerals + Vitamins
Carbohydrates A Balanced Diet

Cooking of Food

We cannot eat food like grains, cereals, meat, fish etc without cooking. Cooking helps in following ways:

1. It makes food edible.
2. It makes food soft, easily chewable and digestible.
3. It improves tastes of food.
4. It kills germs and other microbes found in raw food.

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 food. Based on their feeding habits, animals can be divided into three groups:



Herbivores: These are animals that eat plants. e.g. are cows, deer, horses, buffaloes.

Herbi+vores → plant eater

These animals have sharp, cutting teeth in front and flat grinding teeth at the back.

Squirrels have sharp front teeth to grow food items like nuts.



Squirrel eating a nut

Cows and Buffaloes have a strange habit of eating. They graze grass and swallow the food without chewing it. Later, they bring it back to the mouth and chew it properly this is called 'Chewing the cud'.

Elephants are also herbivores. They have largest teeth on the planet! The tusks but these are not used for chewing. They have four Massine molars, one in each side of both jaws, that are used for grinding food.



Elephant eating the plants

Carnivores

Carni + vores → meat eater

These are animals that eat flesh of other animals, eg. Lions, Tigers, Wolves, Dogs, Snakes, Eagles, Vultures.

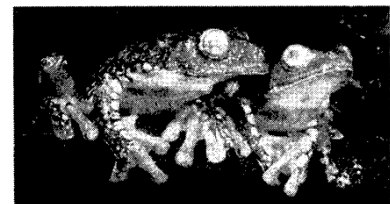
These animals have strong, pointed and sharp teeth. The birds have pointed beak to tear the flesh. [Snakes have tiny teeth which are used to swallow the prey as a whole.]



Snake swallowing



Lion eating flesh



Frog catching insects

Do You Know

Insectivores

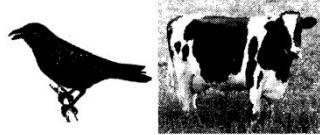
Plant: There are some plants that eat insects. e.g. venus fly trap, pitcher plant,

Lizards and frogs do not have teeth. They have long sticky tongues so that they can catch flies insects.

Carnivore fish like sharks have several small teeth that help them eat flesh.

Omnivores: There are animals which eat both plants and flesh of animals, e.g. humans and bears.

Omni + vores all eater



Crow & Cockroach

These are also omnivores.

Omnivores have different types of teeth that help them to eat both plant parts and meat.

Scavengers: Some animals eat dead bodies of animals and help in keeping the environment clean.

E.g. crows, jackals, hyenas, vultures.

Parasites: These are small animals that depend on other living animals. E.g. mosquito, roundworm, tapeworm, fleas, leeches.



Mosquito

Mosquitoes have long sharp pipe through which they suck blood.

Decomposers: Bacteria and fungi help in decay of dead organic matter. They help in maintaining the balance of nutrients in nature.

Health corner: Some mushrooms are good sources of proteins.



Fungi (Mushroom)

Food chain: In nature there are large number of organisms. They are all dependent on one another. One organism eats another animal and in turn is eaten by a third animal. Thus there is a link between the various organisms based on their food requirements. The whole cycle of who eats whom forms the food chain.



Food chain: Grass → grasshopper → frog → peacock ← snake

An Example of food chain

A typical food chain in a pond is:

Algae (small plants) → small fish → large fish

All animals are dependent on green plants for food either directly or indirectly.

Plants are the producers and are called Autotrophs.

Food Habits of People of different regions of India.

(i) North India: People of Punjab, Haryana, Rajasthan, Himachal Pradesh grow lot of wheat, so they eat chapatis, piranhas, pulses and drink lassi.

They have lot of dairy products in their diet.

(ii) East India: In Bihar, Odisha, West Bengal, Assam people mainly eat rice and fish. Odisha and West Bengal produce lot of fish and sea food.

(iii) West India: In Maharashtra, Goa and Gujarat, people consume lot of fish and rice. They also have dhokia, pulses and groundnut. They use cottonoil.

(iv) South India: Rice is grown in plenty in this region so people eat rice, fish and sea food. Their favourite items are idli, dosa, sambhar, coconut chutney.

Coconut oil is used in cooking.

KEYWORDS

Food: It refers to a substance that provides energy and material for growth and repair.

Nutrient: A substance that an organism obtained from food to get energy and material for growth and repair.

Ingredients: Refers to different materials that are needed to prepare a food item.

Herbivore: An animal that eats plants and plant products.

Carnivore: An animal that eats other animals.

Omnivore: An animal that eats both plants and animals.

Autotrophs: Green plants that manufacture their own food.

Heterotrophs: Animals that are dependent on plants and other animals for food.

Milch animals: Animals that provide milk.

Microorganisms: Tiny organisms that can be seen only with the help of microscope.