

SOURCES OF FOOD

NOTE FOR THE TEACHERS

- Encourage and help them to gather as much related information as possible themselves by designing homework activities such as visit to a paddy field, visit to a nearby park, visit to a zoo, visit to a vegetable and/or fruit market etc. Suggest them to collect pictures of different foods from different magazines, newspapers and other sources.
- Encourage and help them to make simple projects on different common foods eaten by people in different parts of the country along with their pictures. They may take the help of their parents, grandparents, neighbours, relatives and friends.
- Draw their attention to special foods prepared on special occasions such as festivals, marriages, seasons etc. Help them to collect similar information for different parts of the country.

Key Learning Points

- Need for food.
- Variety of food.
- Feeding habits of organisms.
- Sources of food materials.
- Food from parts of plants.
- Food from animal products.

All living things – plants, animals including human beings need energy to live and grow. They get this energy from food. Thus, food acts as fuel for all living **organisms** and helps them to do various day-to-day activities efficiently. So all living organisms need food–

- To get energy
- For growth and development
- For repair and maintenance of body
- To fight diseases.
- To regulate all the body functions.

VARIETY OF FOOD

ACTIVITY - I

Observe the variety of food eaten by your classmates during the recess time and complete this table.



Name of your classmate	Food items

Different people eat different types of food according to their habits, lifestyle, taste and availability. Human beings are omnivores which means we eat food obtained from plants as well as from animals. On this basis people are classified as Vegetarians or Non-vegetarians.

Term Search

Organisms : It includes all living things plants, animals, bacteria, fungi, human beings etc.

Vegetarians

People who eat only plant products or parts of plants are called **vegetarians**.



Non-vegetarians

People who eat plant products as well as animal products such as meat, fish, etc. are called **non-vegetarians**.



ACTIVITY - 2

Ask the eating habits of your classmates and classify them as vegetarian or non-vegetarian.

S. No.	Name of the Student	Vegetarian	Non-vegetarian
1.			
2.			
3.			
4.			
5.			

Different kinds of food are eaten in different regions of India like South Indian food, Gujarati food, Rajasthani food, Punjabi food, Bengali food etc.



South Indian food



Gujarati food



Punjabi food



Rajasthani food



Bengali food



INSIGHT

Food is made up of two or more materials added together, e.g., cooked rice is made up of rice, salt and water. These materials are called **ingredients** of food. Common examples are water, salt, sugar, spices, milk, ghee, butter, oil, etc.



ACTIVITY - 3

Observe your mother in the kitchen while she is cooking food. Ask her about ingredients of various **dishes** which you have noted under Activity-1 and complete this table.

Food Items (dishes)	Ingredients
1. Boiled rice	Rice and water
2. Chapatti	Wheat flour and water
3. Dal	
4. Idli	
5. Kheer	
6. Omelette	

Term Search

Dishes : Prepared food served as a part of meal.

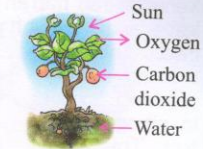
animal
non-

Food is taken both in cooked as well as raw (uncooked) form. We eat raw fruits like apple, papaya, mango, etc. Some vegetables like radish, carrot, tomato, etc. are also eaten raw. Wheat, rice, pulses, meat, etc. are cooked before eating. Do you eat cucumber in the raw or the cooked form?

GROUPING OF LIVING ORGANISMS ON THE BASIS OF THEIR FOOD HABITS

Autotrophs

Living organisms which can make their own food are called **autotrophs**. All green plants can make their food by the process of photosynthesis, i.e., they can make their food from carbon dioxide and water in the presence of sunlight and **chlorophyll**. They are also called **producers** as they produce food for themselves and for others.



Autotroph (Producer)

Heterotrophs

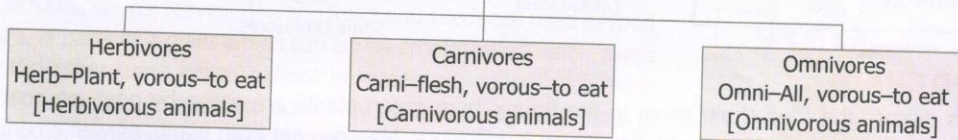
Living organisms which depend on autotrophs for their food directly or indirectly are called **heterotrophs**. They are also called **consumers**, e.g., animals, human beings etc.



Heterotrophs (Consumers)

On the basis of their eating habits heterotrophs can be divided into various categories:

ANIMALS (HETEROTROPHS)



Herbivores : Animals that eat plants are called **herbivores** e.g., cow, buffalo, rabbit, deer, horse, giraffe etc.



Cow



Rabbit



Horse

Some Herbivores



INSIGHT

The name 'giraffe' is derived from the Arabic word Zarah. The giraffe is the world's tallest mammal. It is a herbivore animal.



Carnivores : Animals that eat flesh of other animals are called **carnivores** e.g., lion, snake, eagle, cheetah, vulture, kingfisher, wolf etc.



Lion



Snake



Eagle



INSIGHT

The Cheetah is the world's fastest land **mammal**, it can reach speeds of at least 105 km/hr.



Term Search

Chlorophyll : Green pigment presents in green plants which traps sunlight.

Mammals : Animals which give birth to babies and feed them.



INSIGHT

Do you know about "Insect eating plants". Some plants like 'venus fly trap' trap an insect in its leaves and digest soft parts of the insect. This plant is found in moist soil which is poor in nitrogen content. This is an example of a plant which is carnivorous in nature.



Vulture



Kingfisher



Wolf

Some Carnivores

Omnivores : Animals that eat both plants and animals are called **Omnivores** e.g., crows, cockroaches, bears, human beings etc.



Your Wisdom

Is ant a herbivore, carnivore or omnivore?



Cockroaches



Bear



Crow

Some Omnivores

FOOD CHAIN

Let us discuss the **food chain** given in the figure, here green plants are eaten by goat, so goat is a herbivore which in turn is eaten by lion which is carnivore. Man can eat both plants as well as animals (goat). So man is omnivore.



Let us Revise

1. Why do we need food ?
2. Give two examples of autotrophs.
3. What are heterotrophic organisms ?
4. Distinguish between vegetarian and non-vegetarian food habits.
5. On the basis of eating habits, animals can be divided into how many categories ?

SOURCES OF FOOD

Most of the food which we eat comes from plants and animals. So the main sources of our food are: Plants and Animals.

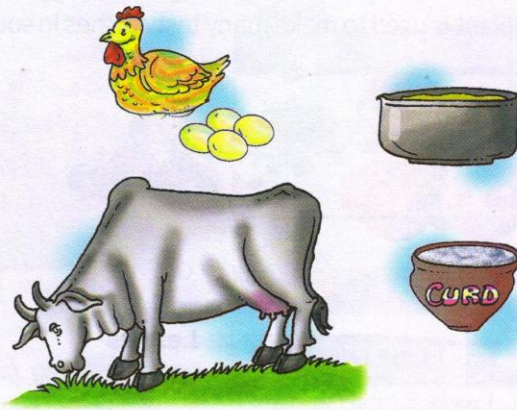
Term Search

Food Chain : A chain of organisms which shows "who eats whom".

ACTIVITY - 4

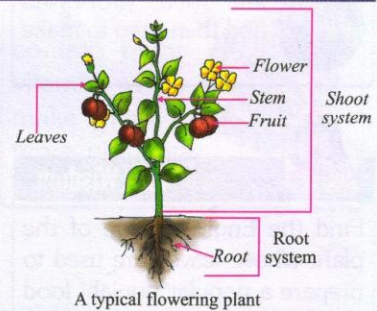
Find out the sources of food items eaten by us everyday, and complete this table.

Food Item	Its Sources
Rice	Plants
Egg	Hen
Potato	
Wheat	
Curd	
Milk	
Meat	



PLANTS AS A SOURCE OF OUR FOOD

Green plants are the primary sources of food. Various parts of plants such as roots, stems, leaves, flowers, fruits and seeds are used as food by us. The parts of a plant which can be eaten are called **edible parts** while the other parts which cannot be eaten are called **non-edible parts**. For example; in a tomato plant only the fruit part, i.e., tomato is edible, other parts like root, stem and leaves are non-edible.



A typical flowering plant

ACTIVITY - 5

Observe tomato plant, banana tree and brinjal plant and write down their edible and non-edible parts in the following table.

Plants	Edible Part	Non-edible Part
Tomato plant		
Banana tree		
Brinjal Plant		



Brinjal plant



Tomato plant

Various parts of different plants that we eat as food:

Roots

In plants like carrot, radish, beetroot, sweet potato and turnip, roots are swollen up due to storage of food. These **modified** roots are used as a source of food by us.

In some countries, sugar is obtained from beetroot.



Carrot



Beetroot



Sweet potato



Turnip



Radish

Term Search

Modified : Whose appearance has changed.

Stems

Modified underground stems of some plants are used as a source of food e.g., onion, potato, ginger, garlic, turmeric, colocasia (arvi). We get sugar and jaggery (gur) from the stem of sugar cane. The stem of the banana plant is used to make many tasty dishes in southern India.



Potato



Ginger



Garlic



Turmeric



INSIGHT



Leaves of the tea plant are dried, processed and then used to make tea.



Your Wisdom

Find the English name of the plant whose leaves are used to prepare a popular punjabi food "Sarson ka saag". Is any other part of this plant edible?



INSIGHT

Cauliflower and Broccoli are cultivated forms of wild cabbage.



Cabbage



Lettuce



Spinach

Flowers

Flowers of certain plants are also used as a source of food e.g., cauliflower, rose, broccoli.



Cauliflower



Rose



Broccoli

Fruits

Fruits of many plants are used as food. Many fruits are eaten raw. Fruits of plants are also used as vegetables e.g., brinjal, tomato, pumpkin, pea, ladyfinger, cucumber, beans are fruits of plants that develop from flower and have seeds. In some plants fruits are dried and eaten by us.



Strawberry



Mango

Fruits



Dried apricots



Raisins

Dry fruits



Brinjal



Tomato



Pumpkin

Fruits used as vegetables

Seeds

Seeds are a rich sources of food for human beings and animals.

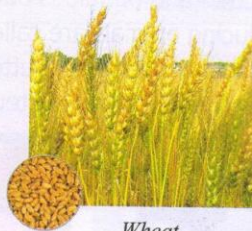
Cereals : Cereals are rich sources of carbohydrates e.g., wheat, rice, pulses, maize, millets, sorghum etc.



Maize



Rice



Wheat



INSIGHT



Coffee seeds are used to make coffee (beverages).



INSIGHT

When the seeds begin to germinate by developing tiny roots, they are called **sprouts**. The sprouts contain many vitamins which make them a more nutritious food.



Pulses (dal) : Gram (*chana*), green gram (*mung*), black gram, pigeon pea etc. are **protein** rich food.



Bengal gram



Green gram



Rajma

Oilseeds : Some seeds also provide us with oil. Some oil yielding seeds are mustard, sesame, groundnut, soyabean, castor, sunflower etc.



Mustard



Sesame (Til)



Sunflower



Castor

Nuts : Seeds of some plants contain nuts which are high-energy foods.



Cashew nut



Almonds



Groundnuts

Term Search

Protein : A very important component of food. You will study more about it in Chapter 2.

ACTIVITY - 6

Prepare a chart of plant products and animal products eaten by you in your meals in one day.

Meal	A		B
	Plant Products	Plant Part	Animal Products
Breakfast			
Lunch			
Dinner			

Let us Revise

1. What are the edible parts of a plant? Give a few examples.
2. Name the main sources of food.
3. Name the following :
 - a. Two plants whose stems we eat : _____
 - b. Two plants whose roots we eat : _____
 - c. Two plants whose fruits we eat : _____
 - d. Two seeds used to extract oil : _____
 - e. An insect which makes honey : _____
 - f. A fish used to make cod liver oil : _____

Quick Review

- Food is a substance that is eaten by us for nutrition and living.
- There is a large variety of food eaten in different regions of India.
- Autotrophs or producers are green plants which make their own food.
- Heterotrophs or consumers are animals including human beings which cannot make their own food.
- On the basis of their food habits, animals can be divided into herbivores, carnivores and omnivores.
- The main sources of our food are plants and animals.
- Different parts of different plants are eaten as food.
- Parts of plant which we eat are called edible and other parts are called non-edible.
- Animals also provide us with a variety of food.
- Animals like cow, buffalo, goat which provide us with milk are called 'milch animals'.

KEY

WORDS

Food	A substance eaten by an organism used for providing energy for its life processes.
Autotrophs	Organisms which can make their own food.
Heterotrophs	Organisms which derive their food from other organisms.
Producers	Organisms which produce food for themselves or for others.
Herbivores	Animals that eat only plants.
Carnivores	Animals that eat flesh of other animals.
Omnivores	Animals that eat both plants and animals.
Milch animals	Milk producing animals.
Pisciculture	The rearing of fish on a large scale.
Apiculture	The rearing of honeybees.
Poultry animals	Birds which produce eggs.

EXERCISES

A. Multiple Choice Questions:

- Plants make their own food in the presence of
 - Sunlight
 - Water
 - CO₂
 - All of these
- Food
 - Gives us energy
 - Helps us in growth
 - Repairs body parts
 - All of these
- _____ is not a milk product.
 - Bread
 - Curd
 - Cheese
 - Butter
- Roti, rice, samber, vegetables are examples of
 - Ingredients
 - Food
 - Animal products as food
 - All of these
- Two underground stems utilized as food are
 - Potato, onion
 - Carrot, radish
 - Cabbage, turnip
 - Arvi, asparagus
- What are heterotrophs?
 - Animals
 - Plants
 - Both animals and plants
 - None of these
- Animals provide us with _____, _____ and _____.
 - Meat
 - Milk
 - Eggs
 - All of the above

8. Non-vegetarians eat

- a. Meat
- b. Fish
- c. Chicken
- d. All of these

B. Fill in the blanks:

1. The main sources of our food are _____ and _____.
2. Animals which eat only plants are called _____.
3. Animals which eat only other animals are called _____.
4. Animals which eat both plants as well as other animals are called _____.
5. Lion is a _____ because it eats only meat.
6. A cow eats only plant products and so, it is called a _____.
7. Milk is an _____ product.
8. Food gives us _____ to do work.
9. _____ is the process by which green plants make their own food.
10. Farmer gives _____ to cattle as feed.
11. Tomato is a _____ of a plant used as vegetable.
12. Rearing of honey bees is known as _____.

C. Alternative Response Type:

State True or False:

1. All green plants make their food in leaves.
2. Plants are also called consumers.
3. Potato and onion are modified stems which grow below the ground.

State Yes or No:

1. Is honey produced by plants?
2. Are cockroaches omnivores?
3. Are bees, cow, deer carnivores?

State Right or Wrong:

1. Fish is used as food.
2. Plants are also called autotrophs.
3. Honey has good medicinal value and is useful in cough and cold.

D. Analogy Type:

1. Vegetarians : Milk and plant products :: Non-vegetarians : _____
2. Milk : Animal :: Mango : _____
3. Cabbage : Leaf :: Ginger : _____

E. Complete the following table, some examples have been done for you.

Food Item	Part of the Plant we eat
Onion	Stem
Carrot	Root
Mustard	Leaves/Seeds
Sweet potato	
Sugar cane	
Cauliflower	
Potato	

F. Find out more about plant products like soyabean, rubber, maize, etc. and match the following:

Plant part	Product
1. Sap from trunk of tree	A. Cornflour
2. Seed of maize plant	B. Sprouts
3. Soyabean seeds	C. Paper
4. Moong dal	D. Furniture
5. Bark and stem	E. Soya milk/Tofu
6. Trunk of tree	F. Rubber

G. Very Short Answer Type Questions:

- Why do we need food ?
- Name a few sources of food.
- What are autotrophs?
- What are heterotrophs?
- Which insect collects honey for us?
- What are ingredients of following food items :
 - Cooked rice
 - Chapatti
- Give two examples of leaves used as food by human beings.
- Name two animals that provide us with milk.
- Name a few milk products used at your home.
- Which animal products are used at your home?

H. Short Answer Type Questions:

- What are the main functions of food?
- What is a food chain? Give an example.
- Give two examples of each:
 - Herbivores
 - Carnivores
 - Omnivores
- State the part of plant in the following:
 - Rice
 - Apple
 - Sugar cane
 - Cabbage
- Write any two differences between herbivore and carnivore animals.
- Write the difference between autotrophs and heterotrophs.
- Draw a picture of a plant naming all its parts.
- What are the edible and non-edible parts of a plant?
- What is the difference between a vegetarian and a non-vegetarian person ?

I. Long Answer Type Questions:

- What are the different sources of food for human beings? Explain in brief in reference to plants as source of food.
- Describe the animal products used as food by human beings.