



SCIENCE



Written by :
Ritu Jain

6

New Edition

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Preface

Today's children will spend their adult lives in a multitasking, multifaceted, technology driven, diverse vibrant world, and thus they must arrive equipped to do so effectively.

This new edition of 'Science' has been completely prepared in accordance with National Curriculum framework. The most important aim of this series is to develop scientific attitude in children rather than providing information.

To fulfill our aim, the books are produced in large format, in full colour with attractive illustrations to enhance visual appeal. We hope that our attempt has been successful and a small step towards imparting necessary quality education to our children. Change is a way of life and our endeavour is to continue to evolve the series into a better product. Suggestions and comments are encouraged.

—Publisher





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Food : Where Does It Come From?

1

IN THIS CHAPTER

- *Need of food*
- *Classification of food*
- *Sources of food*
- *Food habits of animals*

NEED OF FOOD

We know that any machine or engine needs energy to work. A steam engine uses energy from steam to run. A diesel engine uses energy from diesel oil. All living organisms need food to live. During the pre-historic times, man used to hunt animals and collect fruits and roots of plants to meet his food requirements. Food acts as a fuel and gives us energy to work and play. Food is also essential for our growth. Different kinds of food comes from different sources.

CLASSIFICATION OF FOODS

Foods can be classified into three types according to their action on the body. The following table includes three major food groups based on their action on the body.

S.No.	Food group	Food items
1.	Energy-giving foods	Cereals, sugar and jaggery, oils, fats, starchy, vegetables etc.
2.	Body-building foods	milk, pulses, eggs, meat, fish etc.
3.	Productive foods	fruits, green leafy vegetables, other vegetables etc.

SOURCES OF FOOD

We get our food from two main sources :

1. From plants
2. From animals

Food which we get from Plants

We have learnt in the previous classes that a majority of plants are autotrops that means they can make their own food by the process of photosynthesis. Food that we get from plants are vegetables, fruits, cereals, pulses, oil etc.

Do You Know ?

There are some fruit which are used as vegetables. Tomato, gourd, pumpkin, brinjal, chillies, lady's fingers, bitter-gourd etc. are actually the fruits of the plants which are used by us as vegetable.



Vegetables

Generally we eat part of plants as vegetables. Turnip, carrot and radish are roots of plants. Onion, ginger, potato are underground stems vegetables like spinach bathua, methi cabbage are leaves. Some vegetables, like cauliflower are flowers. We should eat fresh and green vegetables. They are good for health. Vegetables can be eaten raw or cooked.

Fruits

We like to eat fruits. We get fruits from plants. Fruits like mangoes apples and bananas are fleshy fruits. Walnuts, almonds are dry fruits. Orange, lemon and amla are citrus fruits. Some fruits like apples contain fibres which help flushing the wastes out of the body.



Fleshy fruits

Citrus fruits

Dry fruits



Cereals

Cereals are the food grains produced by cereal crops like wheat, barley, millet, maize, rice etc. Wheat is used for making chapatis, bread and cakes. Rice is used for preparing idlis, dosas etc.

Pulses

Pulses or dals are plant seed that we eat. Pulses contain proteins which are necessary for the growth of our body. Pulses are the main source of proteins in a vegetarian diet. Most people use pulses with chapatis or boiled rice. Preparations like vadas, pakoris are also made from pulses.



arhar

chana

urad

peas

Oils

We use different kinds of oils while preparing our food. Plants are the main source of edible oil. Most of the oils are obtained by crushing the seeds or the dried fruit of the plants. Coconut, mustard, sunflower soyabean and olive oils are the most of the commonly used oils.



Coconut oil



Mustard oil



Ground nut oil

Do You Know ?

Seeds of mustard plants give us oil, and their leaves are used as vegetable.



Write the food items which you eat raw or uncooked. Also write down the food items which you eat after cooking. If pulses or cereals are eaten raw. How would you feel ?

S.No.	Food eaten raw or uncooked	Food eaten after cooking
1.		
2.		
3.		
4.		
5.		

Food which we get from Animals

Animals are also sources of food. Cows, buffaloes and goats gives us milk.

Milk

We get milk from goats, buffaloes and cows. In some parts of our country, milk obtained from camel and sheep is also used. We use milk to make curd, ghee, cheese as well as sweet.



Meat

Goat, pig, chicken and sheep are used as food sources of animal proteins. Other than goat, sheep and poultry meat, a major source of animal proteins is fish. Also some types of fish oil, such as cod and shark oil are rich sources of vitamin D. Fish generally grow in fresh water sources such as ponds, lakes and rivers and seawater. A person's food habit depends on the availability of these fishes. For example people in coastal areas eat marine fish and other sea food, whereas inland people eat fresh water fish. Catla Catla, Labeo, Rohita and cirrhima are some common fresh water fishes. Tuna cod etc. are marine fishes. Fish is only cooked and eaten right after the catch, but it is also eaten in drink form, pickled form and canned form.



Food from animals

FOOD HABITS OF ANIMALS

All creatures have different habits of getting and eating food. Man is a sagacious creature. He takes more nutrients (proteins, carbohydrates, fats, vitamins, mineral, salts and water) in his diet as compared to other animals. On the basis of the types of foods, a person can be vegetarian or non-vegetarian. On the basis of their food habits, animals can also be divided into the following classes.

Herbivores

Animals that eat only plants food are called herbivores. Their teeth are designed to chew plants and their stomach to digest them. As there are many different kinds of plants there are many different types of herbivores. Their sizes range from tiny to huge as you can see from adjoining pictures.

Cow, sheep, rabbit, goat, giraffe, camel, deer, horse, elephant etc. are the herbivores.



Panda



Koala

Herbivores

Carnivores

Carnivores are animals that eat the flesh of other animals. They catch their prey by their strong and sharp teeth or claws and break and tear it. Some like the frog and lizard have long tongues to catch worms and insects. On the other hand a spider weaves a web to trap insects.

Generally the muscles of carnivorous animals are stronger than those of herbivorous animals.



Large Carnivores

Omnivores

Omnivores are animals that eat the flesh of other animals and plants. Human beings are omnivores. Bears, crows and cockroaches are also omnivores. Some carnivores and omnivores known as scavengers, mainly consume dead bodies of animals and help to keep the environment clean. Some examples of scavengers are cows, jackals and vultures.



Crow



Sparrow



Hen



Woodpecker



Blue whale



Flamingoes

Do You Know ?

Honey is collected by the honeybees from flowers and stored in their honeycomb. Thus, honey is obtained from the honeycomb. It is taken as food and also as medicines.

Parasites

Parasites are small animals that depend on other living animals for their food. Mosquitoes live on blood that they suck from human beings and other animals. They have a long sharp pipe like organ 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.



Parasites



Activity Time

List four animals in each category.

S.No.	Herbivores	Carnivores	Omnivores	Parasites
1.				
2.				
3.				
4.				

What is Honey?

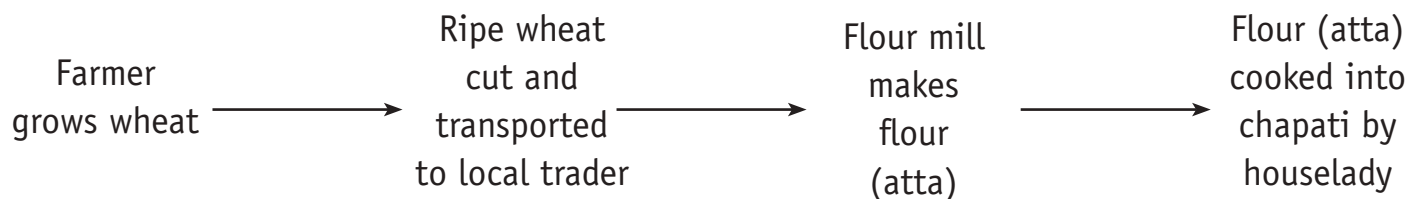
Honey is produced by honey bees from the nectar of flowers. It consists of water, sugar, minerals and enzymes. It is an **antiseptic** (which destroys the growth of micro-organisms) and easily digestible. For this reason, honey is used in medicines.

Contributors of Our Food

Many food items grown in farms or fields cannot be eaten by us directly as they are being grown far away from our place of living. Some fruits and vegetables can, however, be eaten directly if

being cultivated near your place of living. Do you know, how a chapati is made available to you ? From being grown by the farmer in his field, it undergoes a number of steps till it is ready to be a chapati. Can you think of these steps.

Fig. below gives the flowchart showing the different contributors of food in case of a chapati.



You can make such flowcharts for different items like butter/ghee, honey, vegetables and fruits. Fig. below gives the flowchart showing the preparation of butter and ghee.



Some Steps to Avoid Wastage of Food

Food, in our country, is not available in sufficient quantity to all people. Some do not have enough money to buy. Because of this reason, these people suffer from diseases. So we must ensure that :

1. Food that is produced should not be allowed to (i) get spoiled, or (ii) eaten away by animals like rats and squirrels.
2. We should eat only that much quantity of food which is required by our body. Excess eating will lead to obesity (growing fat).
3. In parties or even in our homes we should not leave food uneaten in our plates.

Know the Keywords :

Herbivores : Animals that eat only plants are called herbivores.

Carnivores : Animals that eat only flesh of other animals are called carnivores.

Omnivores : Animals that eat both plants and animals are called omnivores.

Point to Remember

- Food acts as a fuel and gives us energy to work and play.
- Food can be classified into three type- energy-giving, body-building and productive food.
- We get food like fruits, vegetables, cereals, pulses etc. from plants.
- We get food like milk, meat etc. from animals.

EXERCISE TIME

A. Answer the following questions :

1. What food items do we get from plants ?
2. Why do we need food ? Give reasons.
3. How does a frog catches its prey ?
4. What are herbivorous animals ? Write their main characteristics.
5. What are pulses ?
6. What are the difference between carnivorous and omnivorous animals ?

B. Fill in the blanks :

1. Food is required for _____, _____ and _____.
2. _____ animals have sharp pointed teeth in front and flat, grinding teeth at the back.
3. _____ animals eat flesh of other animals.
4. Frog and lizard are _____ animals.

C. Write 'T' for true and 'F' for false statement :

1. Green grain, pigeon pea, lentil etc. are pulses.
2. Man is a carnivorous animal.
3. A hen and a pig are called carnivorous animals.
4. A mouse and a bug are parasites.



D. Match the following :

Column 'A'

1. Milk, curd, paneer, ghee
2. Lions and tigers
3. Carnivores
4. Carrot, cauliflower and spinach

Column 'B'

- (i) are vegetables
- (ii) eat other animals
- (iii) are all animal products
- (iv) are large carnivores

E. Write a short note on parasites in the space below.

F. Tick (✓) the correct option :

1. Which animal can be classified as both – herbivores and carnivores ?
(i) lion (ii) man (iii) cat
2. Which of the following is a cereal ?
(i) cuminseed (ii) black gram (iii) rice
3. Which is not a cereal ?
(i) black pepper (ii) wheat (iii) rice
4. Which animal eats meat ?
(i) parrot (ii) lion (iii) elephant



Creative Work

- Find out the names of the food items in the crossword given below and write them in your notebook.

O	R	A	N	G	E
T	C	S	M	S	R
A	P	P	L	E	F
M	A	N	G	O	I
O	N	I	O	N	G
T	U	R	N	I	P