

USEFUL PLANTS AND ANIMALS

5



SYLLABUS

Some useful plant and animal products.

Let us describe them one by one.

You have, in the previous lessons, studied the interrelationship between plants and animals. All animals depend upon plants for their food. Human beings, too depend upon plants and animals not only for their food but also for various other needs.

Plants are useful to us in many ways. They provide us with the basic requirements for survival. The most important necessities of humans are **food**, **clothing** and **shelter**. These requirements are largely fulfilled by the plants.

Plants keep our environment free of extra CO_2 by using it for preparing their food.

In addition to depending on plants for food, some animals and human beings also depend on other animals for food. Beside food, human beings also get several other valuable products from animals.

USEFUL PLANTS

Plants are the main source of food in the form of **cereals** (rice, wheat, etc.),

pulses, vegetables, fruits, oils, spices and beverages.

They are also the source of **clothing, medicines and various industrial products.**

1. PLANTS AS SOURCES OF FOOD

Cereals

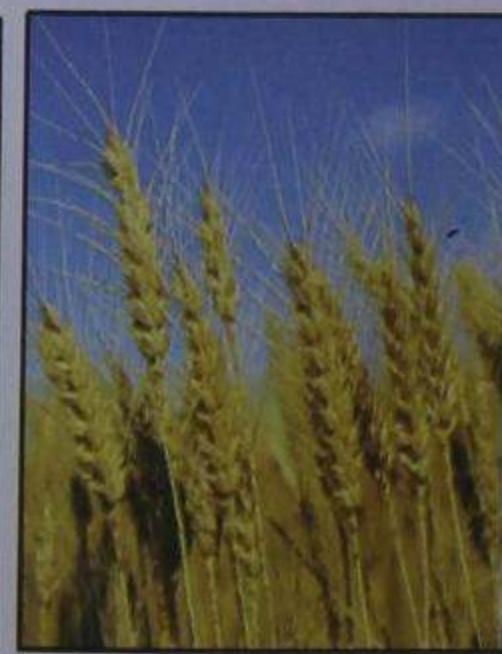
Cereals, also called grains, constitute the main food.

Rice, wheat and maize are the cereals (Fig. 5.1) used as food by majority of the people, whereas cereals like barley, oat and millet are eaten by very few people.

Cereals are rich sources of energy.



RICE



WHEAT



MAIZE

Fig. 5.1 Cereals

Pulses

Pea, gram, bean, cowpea, kidney beans ("moth") and lentils ("masoor") are

all pulses (Fig. 5.2). They are also called **leguminous crops** because their seeds are enclosed in pods called **legumes**. Pulses are rich in proteins which are required for body building, growth and repair of the body cells. Proteins also provide energy.



Fig. 5.2 Various pulses

Vegetables (Fig. 5.3)

Vegetable ordinarily means vegetative parts of a plant such as roots, stems or leaves that are cooked for meals. Certain fruits are also used as vegetables such as tomatoes and brinjals. They provide us minerals and vitamins which are essential nutrients to protect us from various diseases.

Some common vegetables provided by different parts of the plants are :

Roots : Carrot, turnip, radish, beetroot, etc.

Stem modified : Potatoes, onion, ginger, corm "arvi", etc.

Leaves : Spinach, cabbage, lettuce, etc.

Fruits : Gourd, pumpkin, tomatoes, brinjal, lady's finger, etc.



Fig. 5.3 Vegetables

Fruits (Fig. 5.4)

Fruits are generally eaten as such (uncooked). Orange, grapes, mango, apple, watermelon, banana, etc., are some common fruits. They are rich in vitamins, minerals and sugar. Fruits are not only protective but they also provide energy.



Fig. 5.4 Some common fruits

Oils

Seeds of groundnut, mustard, coconut, sunflower, soybean, sesame, etc., provide oil. Oil is an important cooking medium. Fats and oils also provide energy.

Spices (Fig. 5.5)

Spices are obtained from the plants. They have little nutritive value but they add taste and flavour to the food. Certain spices have medicinal value too.

Some common spices provided by different parts of the plants are as follows:-

Stem : Ginger, turmeric, onion, garlic.

Bark of Tree : Cinnamon ("Dalchini").

Leaves : Tejpatta, coriander, mint.

Flower bud : Clove ("Loung").

Flower part : Saffron.

Fruits : Chillies, pepper ("Kali mirch"), fennel ("Saunf").



Fig. 5.5 Some common spices

Beverages

Tea (Fig. 5.6), coffee, cocoabeans, etc. act as stimulants. They have caffeine which stimulates our nerves and reactivates us.



Fig. 5.6 Tea garden

2. PLANTS AS SOURCES OF CLOTH

Plant fibres

- Cotton (Fig. 5.7) is obtained from the "hair" of the seed coat of the cotton plant. Cotton fibres are used for weaving cloth.



Fig. 5.7 Fibre-yielding plants

- Hemp and jute are used for making ropes, bags and carpets.
- Jute fibre is obtained from the stem. Finer threads of jute are used to make dress material.
- Flax fibre is also obtained from the stem and used as fine fabric fibre. Examples : Linen cloth, thread, canvas, carpet, etc.

3. PLANTS AS SOURCES OF INDUSTRIAL PRODUCTS

Rubber : Rubber is obtained from the latex (milky juice) of the woody rubber plant (Fig. 5.8). It is used in the manufacture of tyres, tubes, sports goods, adhesives, chewing gum, etc.

Gum : Gum is obtained from "keekar" (Australian Acacia). It is used in adhesives,



Fig. 5.8 Latex obtained from a rubber plant

soaps, printing, paints, confectionery (candies), etc.

Tannins : These are obtained from the wood, bark and roots. These are used as colour material for leather, and also as dyes, ink, medicines, etc. They give colour and flavour to tea leaves as well.

Wood and timber : Teak, "saal", "sheesham", pine, "deodar", mango, etc., are used as timber for building purposes. They are also used in making furniture, doors, windows, boxes, bridges, ships, boats, etc. Wood is also used as fuel in villages but doing so is now discouraged in order to preserve forests.

Try to avoid using wood as fuel because cutting of trees is harmful to the environment in many ways.

We can replace wooden articles by using plastic fibres or iron to save the forests.

Medicines : Since ancient times, several plants have been used as medicines. Herbal medicines are prepared from plants only, which may not cause any side effects.



CINCHONA PLANT
(SOURCE OF QUININE)



PENICILLIUM (MICROCOPIC)
(SOURCE OF PENICILLIN)

Fig. 5.9 Some medicinal plants

Quinine is obtained from the bark of the cinchona plant (Fig. 5.9) to treat malaria. Penicillin is obtained from the fungus, *Penicillium notatum* – Penicillin is an **antibiotic** and is used to kill disease causing bacteria. Neem, tulsi, eucalyptus, garlic, ginger and turmeric also have medicinal value.

USEFUL ANIMALS

Besides obtaining food from animals, we also get very important products like fibres, leather, fur, silk, tusks, etc. from them.

1. Milk

Cows and buffaloes give us milk in large quantities. Goat, sheep, camel and yak also give milk but in small quantities. Milk is a rich source of proteins, vitamins and minerals (Fig. 5.10).

2. Meat

Sheep, poultry and fish are our common sources of meat. Meat is a rich source of protein. The meat of cows and buffaloes is called 'beef', pig's meat is called 'pork' and goat's meat is called 'mutton'. Certain types of meat are prohibited in some religious groups on emotional grounds.

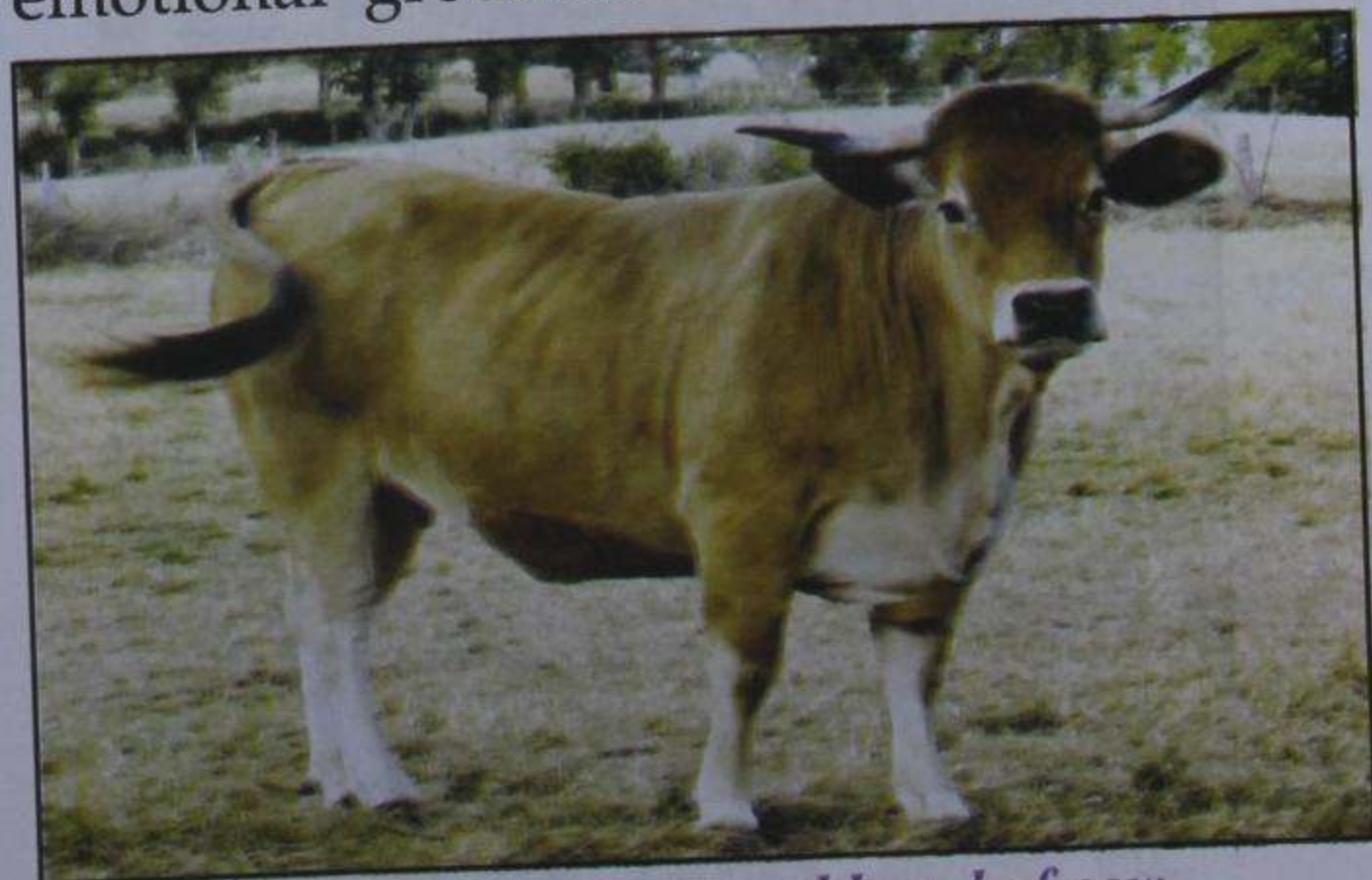


Fig. 5.10 An improved breed of cow

Fish is an important part of food for many people in the world. Liver oil of cod fish and shark is rich in Vitamin A and D. **Poultry** (hen, duck, turkey, etc.) provide eggs and meat.



Fig. 5.11 Poultry farming

3. Honey and wax

Honeybees collect **nectar** from the flowers, convert it into honey (glucose) and store it in their hives. Honey is a rich source of energy and minerals. The nest of the bee is called a 'hive'. It is made up of wax secreted by bees. Wax is used for making ointments and candles. The rearing of honey bees for commercial purposes is called **Apiculture**.



Fig. 5.12 A beehive



ACTIVITY 1 : To test the purity of honey.

Sometimes, honey is adulterated with sugar. To test the presence of sugar in honey, take a glass of water and put a few drops of honey in it. If it gets dissolved, it is adulterated with sugar but if it forms a thread throughout the depth of the glass, it is pure honey.



Test for the purity of honey

4. Eggs

Poultry provides not only meat but also eggs. Eggs are a rich source of proteins.

5. Animal fibres

Wool : Sheep (Fig. 5.13), goats and other hairy animals provide us wool. Pashmina obtained from a particular goat (Fig. 5.14) is very expensive. These



Fig. 5.13 Sheep produce wool

animals are commonly found in Kashmir and other hilly areas.



Fig. 5.14 Pashmina goat

Silk : Silkworm produces cocoon (pupa stage) which is made up of silk threads. Before the moth comes out of the hard casing (cocoon), it is put into boiling water. Pupa dies and silk thread is obtained. The young ones of silk moth, called silkworms (larvae), feed on mulberry leaves (Fig. 5.15). The rearing of the silk moth larvae for its thread is called **Sericulture**.

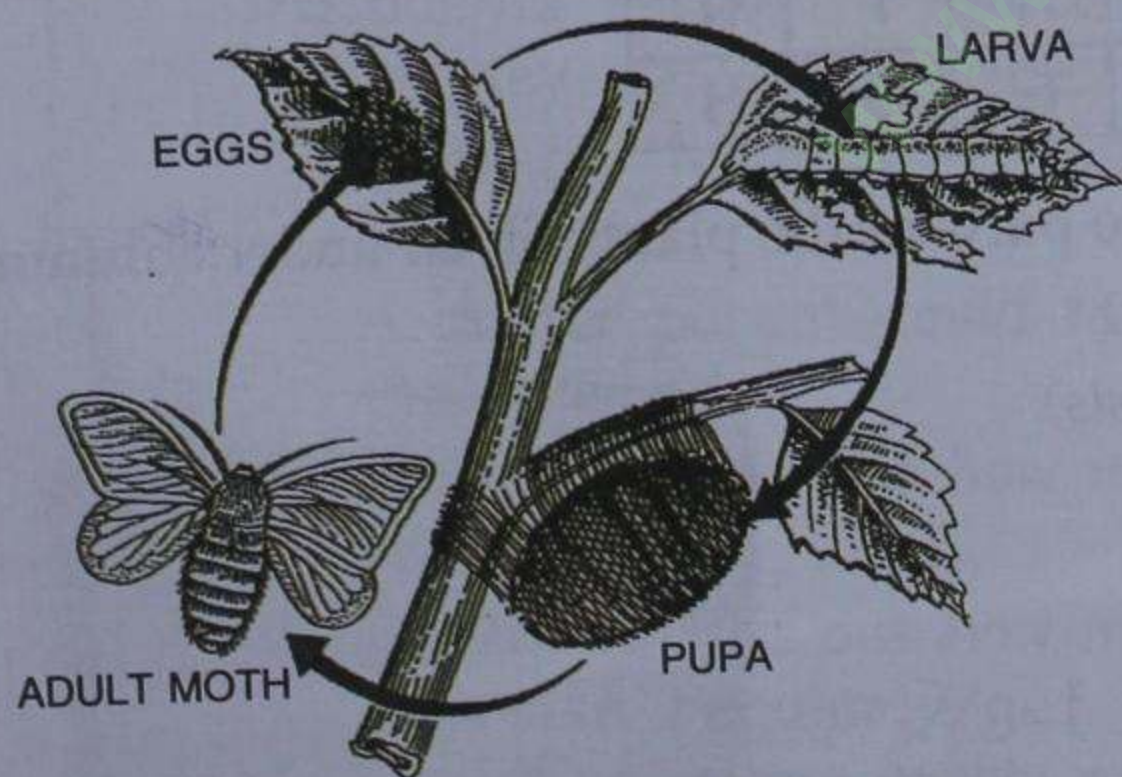


Fig. 5.15 Life cycle of silk moth

Skins and fur : Skins of cows, buffalo, calf, crocodile, snake, etc., are processed to convert them into hides which are used for leather goods such as shoes, jackets, belts, purses and bags, etc.

Killing of wild animals for the purpose of their skins is banned to protect endangered and rare species.



ACTIVITY 2

Visit a tailor shop near your house along with your elders. Request the tailor to give you small pieces of various types of fabrics like cotton, jute, silk and synthetic cloth. Paste them in your file and label. Write below them, the source from where they are obtained.

OTHER USES OF PLANTS AND ANIMALS

- **Perfumes, scent** and **rose water** are prepared from the flowers of certain plants.
- **Ornamental plants** are grown for decoration in gardens and houses, e.g., sunflower, croton, rose, lotus, dahlia, etc.
- **Pearl** is obtained from the oysters which is a mollusc and is reared for pearl culture.
- **Lac** is obtained from the lac insect. The lac insect lives on plants like *ber*, *palas*, etc. Lac is purified and called 'shellac'. It is used for making polish, varnish, bangles, etc.
- Elephant **tusks** provide 'ivory', and have been used in decorative showpieces. Calcium carbonate is obtained from the shells of molluscs and corals.

Killing of elephants (for ivory) is now illegal and banned.

- Certain animals are used as pets, e.g. dog, cat, parrot, horse, etc.

REVIEW QUESTIONS

1. List any *five* medicinal plants.

2. Name any *three* animals which provide us clothing material.

3. Name the plant from which gum is obtained.

4. Name *five* plants from the seeds of which we obtain oil.

5. What is the importance of fruits in our diet ?

6. What is latex ?

7. What will happen to the earth's environment if all the forests get destroyed ?

8. Names of certain modified roots and certain modified stems are hidden in the alongside maze. Try to locate them. (**Hint** : The hidden names can appear vertically upwards or downwards :

For example : "GINGER in the third vertical column.

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

9. Match the vegetables given under **column I** with the parts of the plants given under **column II** :

Column I

(Vegetables)

- (i) Beet root
- (ii) Onion
- (iii) Cabbage
- (iv) Radish
- (v) Tomatoes

Column II

(Plant parts)

- (a) Leaves
- (b) Fruit
- (c) Stem
- (d) Roots
- (e) Roots

10. Names of some of the spices are given below. Mention the **part of the plant** from where they are obtained :

- (i) Turmeric : _____
- (ii) Cinnamon : _____
- (iii) Tejpatta : _____
- (iv) Saffron : _____
- (v) Pepper : _____

11. Name any *three* plants which provide timber. (i) _____ (ii) _____ (iii) _____

12. List any *five* economically important animals. _____



SYLLABUS

Factors affecting maintenance of good health.

1. Balanced diet (brief revision of food groups - learnt in junior classes).
2. Adequate exercise and rest.
3. Maintaining personal cleanliness — bathing, care of hair, teeth, eyes; frequent washing of hands.
4. Maintaining cleanliness of the surroundings.
5. Basic first aid — how to deal with cuts and bruises, small burns.
6. How diseases spread — coughs and colds (droplet infection), contaminated food/water (gastro-intestinal infections), direct contact (conjunctivitis, lice), vectors (mosquitoes - malaria, dengue).
7. How pollution affects our health — polluted air and water, noise pollution.

Classroom discussion will elicit much of the information needed. Students should be encouraged to talk about personal experiences, how they can avoid sickness etc.

- * First aid training — practical training with the help of the local Red Cross/a doctor.
- * A doctor parent could talk to students about common diseases and their remedies.
- * Survey to find out how many students consume unsafe food outside home (E).
- * Survey to find out how many students eat an excess of fast foods/exercise regularly/get enough sleep/watch TV for long hours (resulting in eye strain and lack of sleep) (E).
- * Listing causes of air, water and noise pollution in their city.

WHAT IS HEALTH ?

Normally, a person is said to be healthy if he or she is not suffering from any disease. True, but a healthy person should also be in a state of complete mental and social well-being.

The World Health Organisation (WHO) in 1984, defined 'health' as follows :

"Health is a state of complete physical, mental and social well-being, and not merely an absence of disease or infirmity."

A person is said to be healthy if he or she has :

- No physical deformity.
- All the body organs are functioning properly.
- There are no symptoms of disease or anxiety and no mental problems.

Factors Affecting Health

We generally believe that good food gives good health and keeps us disease free. But there are other factors too which determine the state of our health. These are as follows :

1. Balanced diet.

2. Adequate exercise and rest.
3. Personal cleanliness.
4. Community hygiene.
5. Protection from infectious diseases.

Kinds of foods

Food is essential for all living beings as it provides vital **nutrients**. Nutrients like, fats, carbohydrates, proteins, vitamins, etc. are substances which the body needs to grow and keep healthy. They also provide energy for our activities like running, jumping, playing, etc. Thus, it is important that not only various types but balanced food should be included in our diet.

ENERGY - GIVING FOODS

(Carbohydrates and fat)



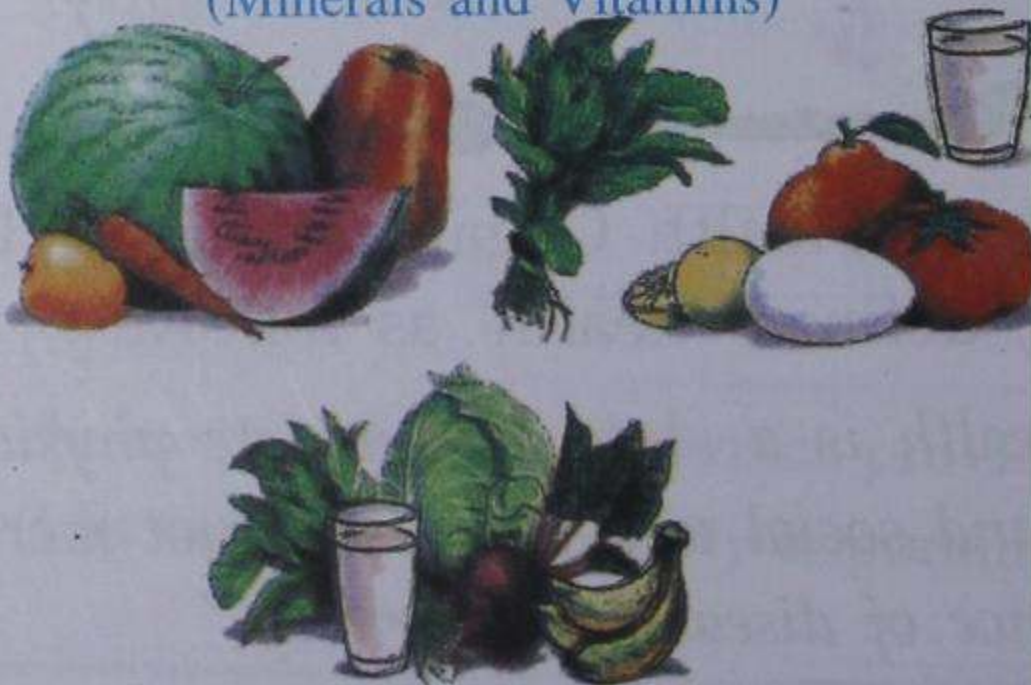
BODY - BUILDING FOODS

(Proteins)



PROTECTIVE FOODS

(Minerals and Vitamins)



Include some items from each group for good health

FOOD & DIET

Food is any substance which we eat or drink and which contains nutrients.

Diet is the combination of food items in our meals. Diets are highly selective even for different members in the same family. For example : some may take onion, garlic, etc. others may not, some like to take rice, others like chapatis and so on.

Foods are classified into five main categories according to requirement in our body :

- (a) Energy giving foods
- (b) Body building food
- (c) Protective foods
- (d) Roughage
- (e) Transport medium — Water

(a) **Energy giving foods** : **Carbohydrates** and **fats** are energy giving foods. Fats give more energy as compared to carbohydrates. Sources : **cereals, sugar, jaggery, noodles, potatoes**, etc. for carbohydrates, and **butter, ghee, oils**, etc. for fats.

(b) **Body building foods** : **Proteins** are body building foods. The major sources : **pulses, soyabean, milk, egg, meat**, etc.

(c) **Protective foods** : **Minerals** and **vitamins** are protective foods. These prevent many diseases. These nutrients are needed in small quantities and are essential everyday for good health and growth. There are various kinds of vitamins. They are found in many food items but a single food does not contain all vitamins. So, we should include a variety of foods in our daily diet. The main sources of vitamins are **green leafy vegetables, fruits, milk, eggs, cheese**, etc.

The minerals help the body to function normally and use other nutrients properly. They have no

energy value. Some minerals like **calcium** and **phosphorus** are required for the proper development and growth of **bones** and **teeth**. The rich sources of minerals are **milk, green leafy vegetables, pulses, meat** and **eggs**.

(d) **Roughage** : Roughage are fibres which provide bulk to the food we eat. It prevents us from constipation. Raw vegetables provide good roughage.

(e) **Transport medium — Water** : Water plays a vital role in human body and is required in large quantity. It is a medium of transporting food substances and their absorption within the body. It maintains body temperature and helps to eliminate harmful substances from the body.

1. **BALANCED DIET**

A diet which consists of all the essential nutrients like carbohydrates, proteins, fats, vitamins, minerals and roughage in adequate quantities is called a **balanced diet**.

According to one's choice a person should take a diet containing **pulses, chapatis, vegetables, rice, curd, egg, fish** or **meat** and **fruits** in adequate quantities.

Effects of not taking a Balanced Diet

If one does not take adequate quantities of carbohydrates, minerals, fats, proteins, vitamins and roughage (fibres), etc. he may not keep healthy. Let

us know, what happens if any one of these nutrients is consumed less or in excess than required.

1. **Lack of carbohydrates** in our diet causes tiredness, lethargy and inactivity. Excess of carbohydrates results in obesity (fatness). An obese person may be eating excess food but may not be getting the essential nutrients since his diet is not balanced.
2. **Lack of fats** in our daily diet causes rough skin, weak eyesight and thin body. Excess of fats leads to obesity.
3. **Insufficient protein** in diet may slow down the growth and development of children. They may get tired quickly. Excess of proteins taken for a long time may damage the kidney.

Thus, when a person does not take a balanced diet, he remains **undernourished**. He may suffer from **deficiency diseases** or suffer from obesity.

The quantity of various nutrients also depends upon the age and activities of a person and the gender. For example, young, growing children need more **carbohydrates** and **proteins** in their diet than older people. This is essential for the energy needed for physical activities and for the building of body tissues. Males require more energy than females even if they are doing the same kind of work.

A person doing mental work needs less energy than a person who is doing physical work.

The energy supplied by the food items is measured in **calories**. Our body

weight depends on the number of calories we take in and the number of calories we use everyday. One who takes more calories and uses less of it may suffer from obesity. A person who takes the same amount of calories that are being used up maintains a constant body weight.

Properties of Balanced Diet

1. It meets the nutritional requirements of the body.
2. It consists of a variety of food items in adequate proportion.
3. It provides an adequate amount of energy.



ACTIVITY 1

Prepare a daily chart for your diet that you would like to take in breakfast, lunch and dinner in a table given below.

Days	Breakfast	Lunch	Dinner
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			

After you have completed the chart for one week, check whether your diet is a balanced diet or not.

Eating Habits and Health

Eating balanced diet is not enough for keeping good health. Following care should be taken while eating food :

1. Wash your hands with soap before taking the food.
2. Eat at regular intervals. Avoid overeating.
3. Chew your food properly. This helps digestion.
4. Drink at least 3-5 litres of clean water everyday.

2. ADEQUATE EXERCISE AND REST

Physical Exercise

Physical exercise is necessary for all age groups, specially children, adolescents and young people. Long, unhurried walks are enough for the old. Physical exercise should be systematic and regular. It improves blood circulation.



Fig. 6.1 Make exercise a regular habit

Rest and Sleep

After doing much work, all organs of the body including the brain need rest. In general, the body obtains adequate rest by means of sleep. Adequate sleep helps us to stay mentally alert and active. The amount of sleep required

varies with age. Infants sleep for most of the day. While for adults, 6–7 hours of continuous and undisturbed sleep is sufficient.

3. PERSONAL CLEANLINESS

Personal hygiene is most essential. It keeps our body disease-free and prevents from microbes (the disease germs) thriving in unhygienic conditions. We are continually handling a variety of things which are commonly shared by others too — furniture, books, coins, currency notes, seats and supporting rods in buses, pets and other domestic animals, tools and machinery in workshops, and so on. All such objects may carry germs which may be picked up by our fingers and transferred over to other parts of the body or into the mouth through food. Thus, **hands** and **skin** must be cleaned regularly. The practice of washing hands with soap after using toilets is very essential. Some important personal hygiene practices are given below.

- A **daily bath** keeps the skin clean and free of germs. The body odours given out in perspiration are removed and the sweat pores keep open. Undergarments and handkerchiefs must be washed daily.
- **Hair** should be kept clean by frequent washing and regular combing. This keeps them healthy and free of parasites (like lice).
- **Teeth** should be brushed and cleaned at least twice a day — before going to bed at night and after getting up in the morning. Use a soft tooth brush.

The mouth should be rinsed after

every meal so that food particles do not stick between the teeth. Avoid eating sweet and sticky things, such as chocolates and toffees. Eating raw vegetables like carrot and radish is good for teeth.

- **Breathe through the nose** and never through the mouth. While sneezing and yawning, one should hold a handkerchief in front of the mouth and the nose.
- **Eyes** must be cleaned and washed with clear water two or three times everyday. Trachoma (Hindi : "Rohey") and conjunctivitis are two common diseases of the eye, caused through dust and contamination of hands and towels.

Healthy Habits

One should develop healthy habits such as **going to bed** at night at a regular time, **taking food** at regular hours, etc. Going to bed at late hours or immediately after taking dinner are not good habits. **Bowels** should be cleared everyday, preferably in the morning. **Tobacco** should be avoided — it is injurious to health and may even lead to cancer. **Drinking alcoholic beverages** is harmful to one's own body as well as to the family and society.

The living room should be well ventilated. Plenty of fresh air and sunlight should come through. Fresh air brings oxygen, and the sunlight kills germs.

4. COMMUNITY HYGIENE

People living together in a particular area form a community. Community **health** includes such activities or

programmes that contribute to the improvement of the general health of the people. Municipality and panchayats are responsible for these services.

The community health programmes must provide for the following :

Safe-drinking water : In towns and cities, the civic bodies are supposed to supply clean drinking water. But this is a misfortune that even in big cities, people are not always getting adequate clean drinking water, they have to make their own arrangements. The best way to ensure that your drinking water is safe the following steps should be taken :

1. Filter the water and boil it for 10-15 minutes and then cool it. Boiling kills germs.
2. Use chlorine tablets to treat the water. Chlorine kills any possible germs.
3. Use water purifiers that kill germs with the help of ultraviolet rays.

Disposal of wastes : Civic bodies maintain sewage pipes and drains that carry waste water from homes, markets, hospitals, offices, etc. They do arrange for the collection of garbage for its safe disposal so as to prevent breeding of insects.

Dumping of wastes : Garbage and solid waste is generally dumped in pits away from human habitation. Each layer should be covered by soil so that garbage is not scattered by animals. In developing cities, these dumping grounds are reclaimed after many years. Parks, gardens, etc. can be developed on them.

Composting : Vegetable and fruit peels, farm wastes and excreta of animals are biodegradable which means that they can be decomposed by microorganisms. Such waste is dumped into pits which are covered with soil. The micro-organisms convert them into manure. This is called **composting**. Sometimes, earthworms are also released into the pits. This is called **vermi-composting**.

There are many other services which should be provided by the municipality or panchayats, such as :

- **Open areas** with parks and gardens for fresh air.
- **Medical aid** to people and **vaccination facility** for the children and the grown-ups — to prevent communicable diseases.
- **Family planning advice; maternal and child health care.**
- **Prevention of food adulteration.**
- **Health services** for school children and **prevention of alcohol and drug addiction.**
- **Management of different types of environmental pollution.**
- **Eating places, such as hotels,**

restaurants, roadside *dhabas* and their surroundings must be kept clean and free of flies. All eatables must be kept covered. All utensils, cups, glass tumblers and spoons, etc., must be thoroughly washed preferably with soap and hot water.

5. PROTECTION FROM INFECTIOUS DISEASES

Flies, mosquitoes and insects should not be allowed to breed. They spread many diseases. Flies contaminate our food, and mosquitoes, while feeding on our blood, inject the germs of many diseases (such as malaria, dengue, etc.) in our body.

Steps should be taken to control or to eradicate them. Control of **houseflies** and **mosquitoes** should be given maximum priority. These two insects are considered the worst public enemies.



Fig. 6.2 Housefly



Fig. 6.3 Mosquito sucking blood

Table 6.1 : Diseases spread by various organisms.

Animal	Disease	Way of spreading
1. House fly	Dysentery, cholera, typhoid, jaundice, conjunctivitis (eye infection).	Contaminated food, water and other drinks.
2. Mosquitoes	Malaria, filaria, yellow fever, dengue	While biting, inject germs.
3. Rat flea	Plague	By biting while sucking blood.
4. Sandfly	Kala azar	Bite
5. Head louse	Typhus fever	Bite



ACTIVITY 2

Visit your surroundings along with your friends. Survey the status of cleanliness, sewage disposal system, open drains, public waste bin, etc. Do you find that they are all in perfect condition ?

If not, then report to your local authorities with the help of your parents.

How to get rid of Disease-carriers ?

1. **Elimination of their breeding places.** For example, do not let **cow dung** and other **filthy places** to remain exposed.
2. **Spraying of insecticides** (other than DDT which has now been banned for preventing a kind of pollution), but there are other much less harmful alternatives, such as malathion, pyrethrum, etc.
3. **Food should be kept covered.**
4. Water should not be allowed to stagnate to **prevent breeding** of mosquitoes.
5. **Garbage should be kept covered** to prevent breeding of flies.

Some Infectious Diseases

There are disease-causing germs, which we cannot see with our naked eyes. They enter our body through air,

Table 6.2 : Some infectious (communicable) diseases.

Disease	Causative agent	Spread by
Common cold	Virus	Water droplets while sneezing.
Chicken Pox	Virus	Contact with infected person, air.
Measles	Virus	Air and direct contact.
Jaundice (Hepatitis)	Virus	Unhygienic food and drinks.
Cholera	Bacteria	Contaminated food and water by flies.
Tuberculosis	Bacteria	Air and contact.
Typhoid	Bacteria	Contaminated food and milk.
Tetanus	Bacteria	Enters blood through cuts or wounds in the skin from soil.
Malaria	Protozoa	Mosquito bite.

water or food we take in. Such disease-causing germs are minute organisms (*micro-organisms*) like bacteria, fungi, viruses and protozoa. They cause diseases which could spread from one sick person to another healthy one. Such diseases are called **infectious** or **communicable** diseases. The table below gives examples of some such diseases.

How to Avoid Infectious Diseases ?

1. Always drink boiled or filtered water.
2. Never eat food from open eateries. Flies visit them and spread disease carrying microbes on it.
3. Do not allow conditions like stagnant water, garbage heaps to avoid breeding of mosquitoes.
4. Do not use clothes, food items of a patient suffering from some infectious disease.



ACTIVITY 3

Discuss with your teacher or your parents and list at least five common communicable diseases and the measures to be adopted to avoid them.

	Name of the disease	Measures to avoid the disease
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____

POLLUTION — AFFECTS HEALTH

Pollution is the addition of any **unwanted and harmful substances** to the surroundings which adversely alter the natural quality of environment. The rising standard of living, population growth, urbanisation (cities and megacities) and industrialization are the main causes of pollution.

Various activities of humans have added a lot of harmful substances into the surrounding air, water and soil causing many health problems. These harmful substances are called **pollutants**.

In this chapter, you will learn only about the effects of various types of pollution on our health. The prevention and control of pollution will be dealt with in Chapter 9 of this book.

Air Pollution

Air pollution affects human health in many ways. A few of them are as follows:

- Large quantities of **smoke** and other **particles** cause lung diseases including lung cancer.
- **Sulphur dioxide** which is produced due to burning of coal causes serious damage to the air passages of the respiratory system.
- **Smog** (smoke + fog) is known to increase the death rate of infants, old people and the ones who have become weak due to some disease.
- **Carbon monoxide** (CO) is highly poisonous. Its inhalation in large quantities, as from burning coal in a small closed room or from the exhausts of a motor vehicle in a closed garage, may lead to death. In



Fig. 6.4 Air pollution

small quantities, it causes headache and nausea.

- Inhalation of **cigarette smoke**, released by other active smokers may cause lung diseases. It is called passive (indirect) smoking.

Water Pollution

- **Sewage** is a major source of water pollution. Many cities still continue to pour their sewage directly into rivers without treating it. This poses health hazards (causing cholera, typhoid, etc.) to the population which subsequently uses this water.

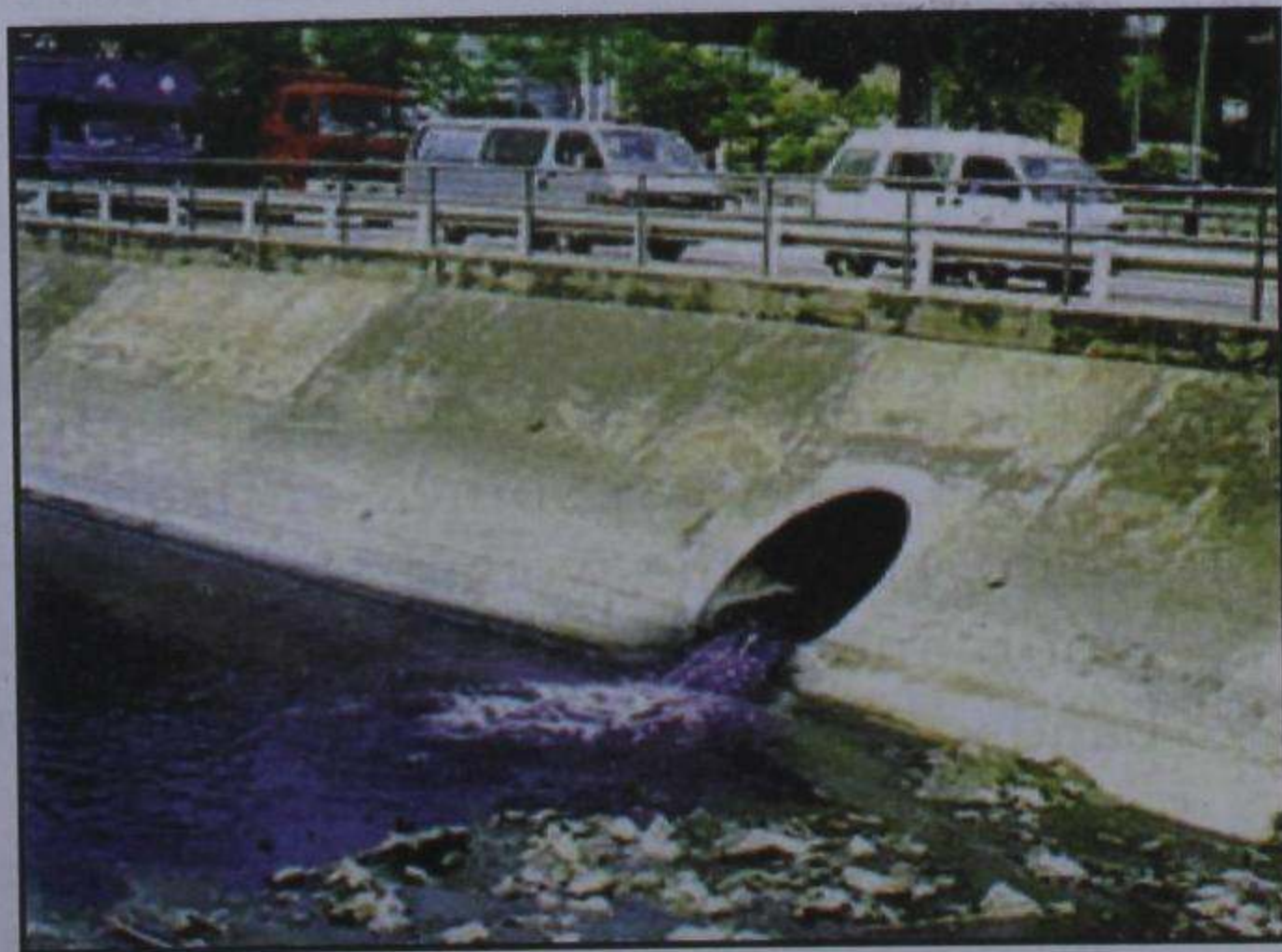


Fig. 6.5 Water pollution

Noise Pollution

Noise pollution means **unwanted sound**. Noisy vehicles like buses, trucks, cars, loud speakers, music systems, televisions, jet planes, etc., cause noise pollution. High intensity sounds are harmful to humans.

Noise reduces concentration of work, reduces hearing efficiency, and causes headache.



Fig. 6.6 Noise pollution

FIRST AID

First aid is the immediate care given to the victim at the time of emergency before he or she is taken to a doctor.

There are several situations where immediate care of the patient is needed to prevent further damage, such as :

1. **Deep Cut** – In case of deep cut, to avoid further bleeding, raise the cut part, wash with some antiseptic lotions, apply some antiseptic cream, cover the wound with cotton wool and tie tightly with some bandage.
2. **Bruises** – When tissues become injured under the skin, blood vessels break and blood oozes out into the

First-aid kit : A first-aid kit should always be available in each house, school, office, etc. Such kit should have the following items in it.

Sterilized cotton, bandages, dropper, scissors, scalpel, blade, pins, forceps, torch, match box, candle, thread and cord, a bottle of some antiseptic such as dettol, spirit, pain killers (tablets as well as sprays), aspirin, etc.

surrounding area. The affected area becomes dark and creates bluish black marks. These are called bruises. In such cases, application of ice packs is useful to discolour and remove swelling.

3. **Breaking of bone or fracture** – Lay the person comfortably, loosen his clothes around the broken part, in case of arms tie a sling.
4. **Eye** – Do not rub with hands, wash with clean water by sprinkling and press softly with a clean handkerchief.
5. **Faint** – If someone faints or becomes unconscious, lay him down comfortably, loosen his clothes, open the doors and windows for fresh air and sprinkle some water drops on his face.
6. **Burns** – In case of a minor burn, wash with cold water for sometime. Do not rub the burnt part, apply burn creams. Do not use water in case of deep burns but cover with clean cloth.
6. **Poisoning** – Make him drink plenty

of salt water forcibly to induce vomiting.

7. **Snake bite** – Squeeze out some blood from the bitten part. Tie a tourniquet very tightly above the bitten part to prevent the flow of poisonous blood upward.
8. **Sting by bee or wasp** – Try to pull out the sting by pressing the wound with two fingers to squeeze out poisonous blood. Apply some alkali, such as baking soda to neutralize the acidic effect of sting.

What you should do under emergency situations :

- Never give any fluid to an unconscious person because fluid can block his air passage.
- Protect the victim from further injury.
- Do not move the victim unless it is necessary.
- Wait for the ambulance to come.



ACTIVITY 4

First-aid box is generally available in the chemist shop. You can also make your own first-aid box yourself by assembling the following items.

Take a small middle sized box. Write phone numbers of nearby hospitals, doctors, nursing homes, your family doctor, police department, fire department, etc., on a plain paper and paste it on the inner side of the lid of the box.

Now collect the following items and keep them in the box. Label the box as First-Aid Box.

Items : Scissors, needles, cotton, thermometer, torch, bandages, elastic bandages, aspirin, antibiotic cream, antacid tablets, spirit, some antiseptic lotions such as dettol or savlon. Though these items are good, you can include some more items in it by discussing with your elders.

REVIEW QUESTIONS

1. Define the term "health".
2. What is meant by personal hygiene ?
3. What is meant by communicable disease ?
4. What is a balanced diet ?
5. Name the different kinds of pollution. Briefly mention their effect on human health.
6. What is the role of Municipality and Panchayat in maintaining community health and cleanliness ?
7. Rewrite the following jumbled words correctly (these are related to food, pollution, etc.) :
(i) BORAHYCTEDRA (ii) NTRPOIE (iii) ISNOE
(iv) LUIPOONLT (v) DEBNLAAC TDEI
8. Classify foods in the main categories according to their requirements in our body.
9. Briefly describe energy giving foods, body building foods and protective foods. Give **two** examples of each.
10. Eating a diet is not enough for keeping good health. Eating habits also play an important role in keeping you healthy. List any **four** good eating habits which you should follow ?
11. Briefly discuss the different ways by which you can get rid of disease-carriers.