

Sources of Food

1

LEARNING OBJECTIVES

After completion of the Chapter the students will be able to:

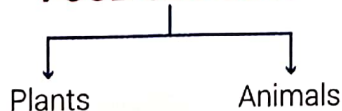
1. Understand the importance of food and nutrition for living.
2. Know that food varies from one place to another.
3. Analyse different types of food sources.
4. Compare the eating habits of different organisms.
5. Classify animals on the basis of their food habits—omnivores, carnivores, herbivores, parasites and scavengers.

Have you ever tried studying for a test when you were hungry? You may have found it hard to concentrate on your studies. This is because food is one of your most basic physical needs. The urge to meet this need is so strong that you cannot focus on anything else until this need has been fulfilled. Food is important because

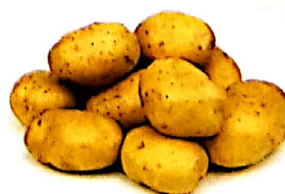
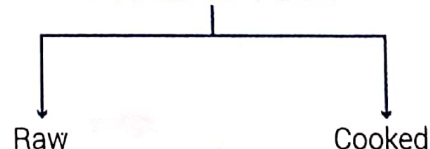
1. All living things require food for their survival.
2. Food acts as a fuel and provides energy to work and play.
3. It is essential for our growth, repair, wear and tear of our cells.
4. It protects us from different kinds of diseases and keeps us healthy.

Different kinds of food come from different sources. The main sources of food are plants and animals. There are different types of food available; some can be eaten raw while some are cooked

FOOD SOURCES



TYPES OF FOOD



before eating. Items like cucumber, banana, apple, tomato, salad leaves, etc. are eaten raw. Some food items like pulses, meat, fish, cauliflower, potatoes, etc. are cooked with different spices and herbs before eating.



Kheer

Our daily meal comprises of rice, chapati, vegetable, curd, milk, cottage cheese, meat, eggs, fruits, etc. People from different regions eat various varieties of food depending on what is easily available to them. Cooked food consists of various materials which are called its ingredients. For example: *kheer*—the ingredients used in making this typical Indian dish are rice, milk, sugar, crushed cardamom pods and some dry fruits. Every ingredient is cooked together to make this dish.

Salt and water are not obtained from plant or animal sources. They are obtained directly from the earth's surface.

Food Habits of People

In our country, people of different states have different food habits. Food habits are affected by food production and supply in the different places.

Some food habits of people of the different states are given below:

- ✓ ■ **Tamil Nadu:** Rice, sambhar, rasam, idli, dosa, coconut, etc.
- **Punjab and Haryana:** Parantha, pulses, chapati, rice, makki-ki-roti, sarson ka sag, etc.
- **Rajasthan:** Bajra, dalia, chapati, dal, rabdi, kachori, etc.



Idli of Tamil Nadu



Makki-ki-roti of Punjab



Kachori of Rajasthan

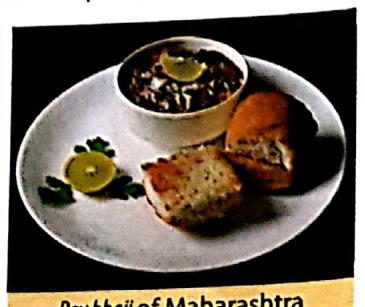
- **Gujarat:** Chapati, rice, dal, thepla, dhokla, khandvi, etc.
- **Andhra Pradesh:** Rice, dry vegetables, arhar dal, upma, dosa, rasam, curd, pickle, etc.
- **Maharashtra:** Pao bhaji, vindaloo, amboli, puran poli, etc.



Dhokla of Gujarat



Rasam of Andhra Pradesh



Pav bhaji of Maharashtra

ACTIVITY 1.1

- Divide the class in groups of five students each.
- Make a list of all the students in your group. Find out the state of their native origin and what type of food they eat.
- Note down the details in a table as shown.

Name of Student	State to which he/she belongs	Food habits			Vegetarian/ Non-vegetarian
		Breakfast	Lunch	Dinner	
1.					
2.					
3.					
4.					
5.					

- How do food habits across the world vary?

► Food from Plants

Most of our food comes from plants. We get food from different parts of plants. The parts of a plant that can be eaten are called **edible parts**. The food we eat is either a root, leaf, stem, flower or fruit of plants.

Roots: Beetroot, radish, carrot and turnip are some of the roots that we eat as vegetables.



Beetroot



Radish



Carrot

Roots as vegetables

Leaves: Spinach, lettuce, fenugreek leaves, cabbage, etc. are some of the leaves that we eat as vegetables.



Spinach



Fenugreek



Lettuce

Leaves as vegetables

Stems: Potato, onion and ginger are some of the stems that we eat as vegetables.

Flowers: Broccoli and cauliflower are some of the flowers that we eat as vegetables.

There are some plants that have two or more edible parts. For example, seeds of a mustard plant give us oil and its leaves are used as vegetables.



Broccoli

Flower as vegetable

Fruits: All of us like to eat fruits. We get fruits from plants.

1. Fruits like mangoes, apples, papaya, watermelon and bananas are **fleshy fruits**.
2. Walnuts, dried figs, pistachio, sultanas and almonds are **dry fruits**.
3. Orange, lemon and gooseberry are **citrus fruits**.
4. Fruits like apples contain fibre (**roughage**) which helps in flushing out the undigested food from our body as waste.



Fleshy fruits



Dry fruits



Citrus fruits

Do You Know?

Sprouts are extremely healthy as they are rich in vitamins A, C, K, B complex, proteins, enzymes and are easy to digest.

We should eat plenty of fruits daily, especially seasonal fruits, as they keep us healthy and strong.

ACTIVITY 1.2

- The national fruit of India is Mango. Find out some of the varieties of mangoes grown in our country and name the region they are grown in.
- Many parts of a Banana plant are edible. Find out three such parts which can be eaten.



Rice



Wheat



Barley



Maize

Cereals are grains

Cereals: Cereals are the food grains produced by crops like rice, wheat, maize, barley, millet, etc. They are rich source of carbohydrates which gives us energy. Wheat flour is used for making *chapati* and *maida* or refined flour is used in making bread, pasta, cakes, noodles, etc. Barley is used for making pancakes, chapatis, breads, beverages, etc. Rice is used for making different delicacies like *biryani*, *idlis*, *dosas*, rice flakes, porridge, etc.

Pulses: Pulses or *dals* are the seeds that can be eaten. Beans, kidney beans, grams, peas, pigeon pea (*arhar*), green gram (*moong*) and black gram (*urad*) are some of the pulses that we eat. The sprouts of green and black gram are very healthy food.



Kidney beans



Grams



Black gram



Pigeon pea

Pulses are seeds

Pulses are very important for the growth of human beings and are rich sources of proteins.

ACTIVITY 1.3

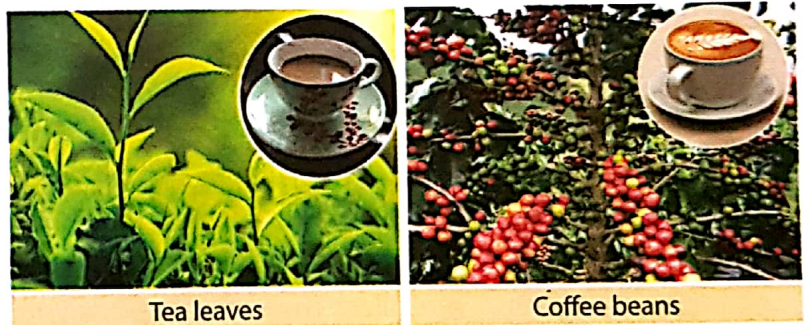
Germination of seeds or sprouting of seeds

- Take some dry whole seeds of moong or gram.
- Wash and soak these seeds in a beaker containing water for 24 hours.
- Next day, drain the water with a sieve and leave them overnight covered with wet cotton.
- You will observe the seeds have white structures emerging out of them. The seeds have sprouted.
- You can eat the sprouts as an addition to a salad or use them in cooking.



- Do all types of seeds form sprouts?

Coffee and Tea as Beverages: Any drink other than water is known as beverage. All beverages, whether alcoholic or non-alcoholic, are obtained from plants. The most common beverages are tea and coffee. Tea is obtained from the leaves of the tea plant and coffee is obtained from seeds of the coffee plant.



Tea leaves

Coffee beans

Beverages

Sugar: Sugar is made from sugarcane and sugar beet. Sugarcane is the stem of a plant and sugar beet is the root of a plant. Sugar gives us instant energy to do our work. Fruits are rich sources of sugars. It is an essential ingredient of our meals.

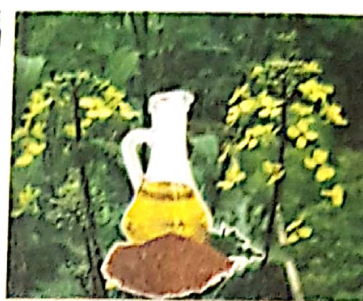
Oil: Different kinds of oils are used for preparing food. Plants are the main source of oils. But we can get oils from animals too, e.g., cod liver oil. Most of the oils are obtained by crushing the seeds or the dried fruits of some plants. Coconut, mustard, sunflower, soyabean, castor, groundnut and olive oils are the most common seed oils.



Sugar is made from sugarcane



Coconut tree and oil



Mustard plant and oil



Sunflower plant and oil

Oil giving plants

Oil is used for many purposes. It is used for cooking food. Some oils are also used as hair oil and in making soaps and medicines.

Spices: Plants also give us spices that add flavor to our food and cure a number of ailments. Cinnamon, cardamom, clove, turmeric, ginger, cumin seeds and pepper are some examples of spices. Spices like asafoetida, red chillies, turmeric, cumin seeds, mustard seeds, nutmeg, mace, cloves, black pepper, and coriander are used in our homes.



Cinnamon



Cardamom



Pepper



Cloves

Spices

ACTIVITY 1.4

- List some spices and find out their health benefits.
- Collect the various spices you can find in your kitchen.
- Are spices eaten raw or cooked?

✓ CHECK YOUR PROGRESS

1. Which of the following is obtained from plants? Write its source.
Oil, Salt, Egg, Milk
2. Which of the following is not obtained from milk? Write its source.
Curd, Cheese, Bread, Butter
3. Find out the uses of the different parts of a coconut tree.

► Food from Animals

Many food items that we eat are obtained from animals too.

1. People who eat meat, chicken, eggs, fish, prawns, etc. in addition to plant products are known as non-vegetarians.

- The people who eat only plant products are **vegetarians** but they too consume animal products such as milk, cheese, cottage cheese, curd, butter, *ghee* and honey.
- There are people who eat only vegetarian diet that excludes milk and dairy products, and all animal derived ingredients like honey. Such people are called **vegans**. They also refrain from eating refined white sugar as it is processed using animal products.

Honeybees give us honey. They collect nectar from flowers, convert it into honey and store it in their hives. They are active in summers but not in winters. The rearing of honeybees on a large scale is known as **apiculture**. Honey comprises of water, sugar, minerals and enzymes. It is used as an antiseptic because it destroys the growth of microbes.



Honeycomb

Do You Know?

Herbivores that gnaw woody plants possess teeth that can grow continuously throughout the animal's lifetime. These are known as rootless teeth. The beaver is a good example.

► Classification of Animals on the Basis of their Food Habits

Animals have different eating habits. According to their eating habits they have been categorised into the following:

Herbivores

Animals that eat only plants are known as **herbivores**. Herbivores range in size from tiny insects such as aphids to large animals, such as elephants. Their teeth are so designed that they can easily chew the plants. Their stomach is specially designed to digest leaves, grass and other plant materials. There are different types of herbivores like cow, buffalo, sheep, goat, horse, giraffe, donkey, grasshopper, leaf miner, etc. Some herbivores eat only specific parts of plants.



Cow (Herbivore)



Grasshopper (Herbivore)

Carnivores

Carnivores are flesh-eating animals. A carnivore is also known as **predator** because it has to find and catch its prey. Their prey could be herbivores, omnivores or other small carnivores. Just like herbivores, carnivores also have different shapes and sizes. The teeth of these carnivores are adapted to eat the flesh of their prey. There are different kinds of carnivores like lion, tiger, python, etc. The carnivorous birds have large, curved and pointed beaks which help them tear the flesh from the bone.



Lion (Carnivore)



Shark (Omnivore)

Omnivores

Animals which eat both plants as well as animals are known as **omnivores**. Terrestrial animals like bear, fox, dog, cat, including

humans are all omnivores. Humans who eat only plants are called as vegetarians and not herbivores. Crow, sparrow, shark, whales, fish and mammals are omnivores.



Jackal (Scavenger)

Scavengers

Scavengers are animals that feed on dead, injured or decaying animals. They clean the earth of organic garbage. Many types of worms, insects, remoras, vulture, crow, hyenas, etc. are scavengers. When food is scarce then some carnivores like jackals, bear, shark, leopard, etc. become scavengers.



Earthworm (Decomposer)

Decomposers

Decomposers break down dead plants and animals into simple nutrients which mix easily with the soil and are reused by plants. Earthworms are decomposers.



Tapeworm (Parasite)

Parasites

A parasite is a small organism that depends on another organism, known as a host, for food and shelter. For example, tapeworms live in the body of a large variety of animals including human being. The tapeworms have no digestive system of their own, but absorb food through their skin from partially digested food from its host. The common examples of parasites are fleas, leeches, hookworms, etc.

Do You Know?

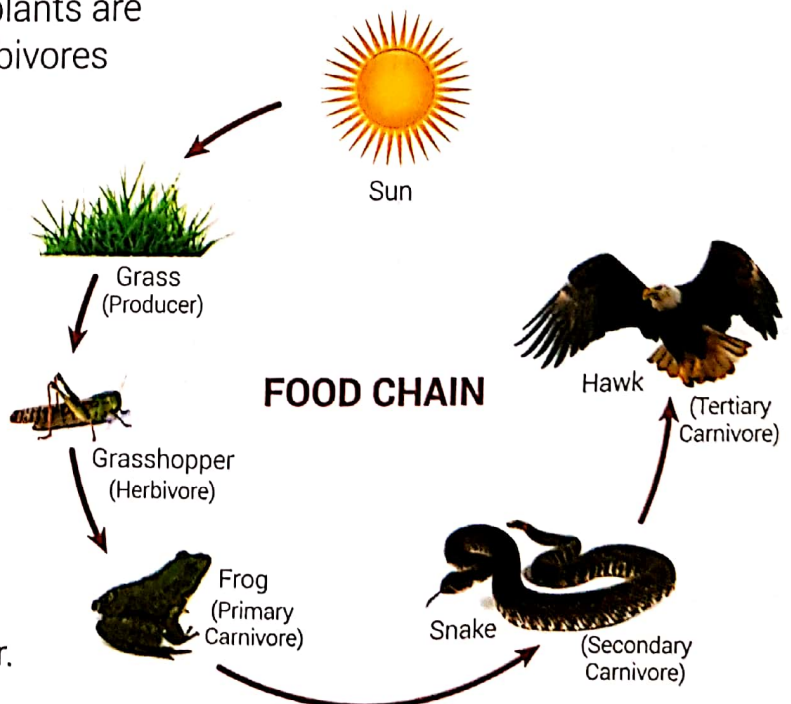
Fishing birds have long pointed beaks to spear fish. The stork has this type of beak. The pelican has a very strange beak. It is long and pointed like the stork's beak, but the bottom part has a bag. The pelican swims on the surface of the water and scoops up fish which gets trapped in the bag. The bag stretches as more fish are added to it.



Stork

► Food Chain

All the organisms are interdependent for food. A food chain begins with plants as they convert the sun's energy into food. These plants are then eaten by herbivores and they are, in turn, eaten by carnivores and omnivores. This chain of eating and being eaten constitutes a food chain. A food chain is a sequence of organisms that feed on each other.



Steps to Avoid Wastage of Food

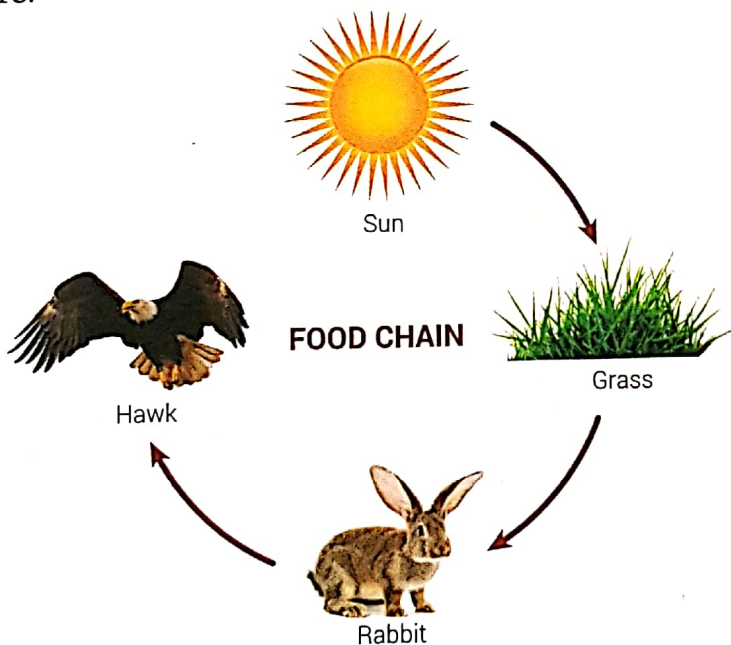
Food is precious and should not be wasted. There are many people in our country who do not get sufficient food to eat. Many people suffer from diseases as a result of insufficient food. Given below are some tips that may help to prevent wastage of food.

1. Food should not be allowed to get spoiled or eaten away by animals like rats, squirrels, etc. and should be stored properly.
2. We must eat only that much quantity of food which is required by our body. Overeating can lead to obesity.
3. Never leave food uneaten in your plates.
4. We should eat food which is easily available in the region and is seasonal.



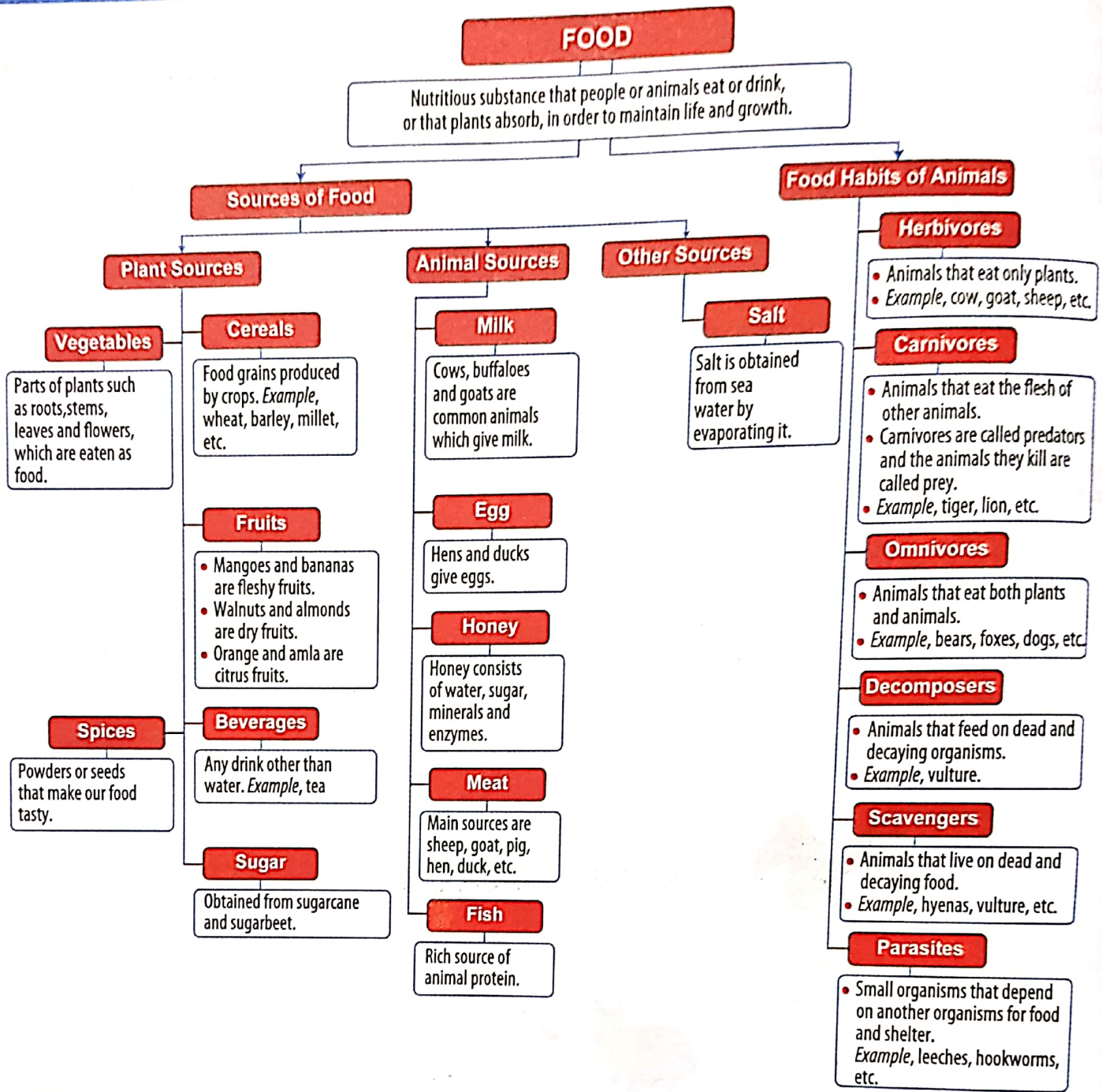
✓ CHECK YOUR PROGRESS

1. Study the food chain given here and identify the herbivore and carnivore.



2. Without decomposers and scavengers, the world would be covered with dead plants and animals. Comment.

SUMMARY—A FLOW CHART



ASSESSMENT

A. Multiple Choice Questions

Tick (✓) the correct option.

- Which one of the following is a cereal?
 (a) Almond (b) Gram (c) Mustard (d) Wheat
- People of a village eat lots of fish, crabs and prawns. The village is most probably
 (a) in a forest (b) near the sea
 (c) in a hilly region (d) in a desert
- Which one of the following contains proteins?
 (a) Rice (b) Maize (c) Gram (d) All of these

4. Which one of the following adds flavour to our food?
 (a) Spices (b) Oils (c) Coffee (d) Cereals
5. Which one of the following is not an animal product?
 (a) Honey (b) Cheese (c) Millet (d) Milk
6. Which of the following living organisms uses sunlight to make its food?
 (a) Cat (b) Frog
 (c) Snake (d) Coconut tree
7. Herbivores do not eat meat but can eat
 (a) beef (b) fish (c) fruit (d) steak
8. Which of the following is a root?
 (a) Potato (b) Carrot (c) Cucumber (d) Onion

B. Fill in the blanks.

carnivore

herbivores

milk

sugarcane

- Lion is a _____ because it eats only meat.
- Sugar is obtained from _____.
- Elephants eat only plant products, so they are called _____.
- We drink _____ got from cows and buffaloes.

C. Answer the following questions in one or two sentences.

- Why do we need food?
- What are ingredients? Name the ingredients used in making chapatis.
- Mention one food item typical of:
 (a) Tamil Nadu (b) Punjab (c) Rajasthan
- Why do we use spices?
- From which plant stem, sugar can be obtained?
- Label the different parts of the plant given below.

