

## 1

## Food and Health

**Let's Learn**

- The importance of healthy food
- Food from plants
- Food from animals
- Types of nutrients present in food
- The importance of water
- Raw food and cooked food
- Cooking methods and utensils
- Types of fuels used for cooking

**Kick Start**

Bottled foods



Bread



Cakes and desserts



Dairy produce



Drinks



Fish



Fruits



Grains and pulses



Meat



Vegetables

Susan went to the market yesterday and bought the above food. Which of the above would you like to carry in your tiffin box to school? Why is healthy food compulsory in your diet?

Our body performs various activities like playing, walking, talking, dancing and thinking every day. To perform these activities, we need energy. Energy is obtained by eating healthy food. Therefore, we need to eat healthy food.

**Importance of Healthy Food**

We require food because it provides us with energy to do our daily work. If healthy food is not eaten regularly, a person becomes weak and cannot perform daily activities well.

Healthy food also supplies us with all the essential nutrients required for proper growth and development of the body.

Plants are said to be the producers of food, for not only humans, but for the entire living world including humans and other animals. Which parts of plants do we eat?

### Food from Plants

Plants provide food for all living things. All the parts of the plants such as roots, stems, leaves, fruits and flowers are eaten by living things.

Plants give nutrients such as carbohydrates, proteins, fats, vitamins, and minerals.

Examples of food from plants:

Carrot and Beetroot are roots of plants.



Carrot



Beetroot

Spinach and lettuce are leaves of plants.



Spinach



Lettuce

Mango and apple are fruits of plants.



Apple



Mango

Rice and wheat are seeds of plants.



Rice grains



Wheat grains

We get oilseeds like groundnut and sesame from plants.



Groundnut



Sesame

We eat stems of plants like potato and ginger.



Potato



Ginger

We eat flowers of plants like cauliflower and broccoli



Broccoli



Cauliflower

Tea produced from tea leaves and coffee from coffee beans are obtained from plants.



Tea Plant



Coffee beans

### Activity

- Collect pictures of food which comes from plants
- Separate the pictures as roots, stem, leaves, flowers and fruits.
- Stick the pictures accordingly on a chart paper.

### Did You Know

Tomato and cucumber are not vegetables. According to science, they are the **fruits** that develop from flowers and contain **seeds**. Other vegetables such as pumpkin and capsicum are also not vegetables but fruits.

Animals have been useful to us since ancient times. We have domesticated them for our use. Sheep give us wool and dogs help us hunt; but do animals also give us food?

### Food from Animals

Animals provide us with many foods such as:

- White meat from chicken and red meat from goats and sheep
- Milk and milk products such as curd, cheese, *paneer*, butter and cream from cows and buffaloes



Milk



Milk products

- Seafood such as fish, shrimps, crabs and shellfish
- Honey from honeybees
- Eggs from hens, ducks and some other birds like ostriches



Honey and honeybee



Seafood

### Check Your Progress

#### Fill in the blanks.

1. Tea is obtained from \_\_\_\_\_.
2. Honey is obtained from \_\_\_\_\_.
3. Potato is the \_\_\_\_\_ of the plant.
4. \_\_\_\_\_ and \_\_\_\_\_ are oilseeds.

## Types of Nutrients Present in Food

### Carbohydrates

Foods such as rice, wheat, bread, sugar, potatoes, and bananas are rich in **carbohydrates**. They give us energy to work and play.

### Proteins

Foods such as pulses, nuts, eggs, meat, fish, milk, curd and cheese are rich in **proteins**. Proteins help in the growth and development our body. They build our muscles and repair the injured tissues of our body.

### Fats

**Fats** provide our body with energy. They also protect our internal organs. Butter, ghee and oil are some foods that provide us with fats.

### Vitamins and Minerals



Vegetables and fruits contain **vitamins and minerals**. They help us to fight diseases and keep us healthy.

All the nutrients have to be eaten in the right proportions for us to stay healthy and active.

#### Did You Know

- Octopuses, squids, clams and water snakes are eaten as seafood in various parts of the world.
- Insects like cockroaches, beetles are served as fried foods in some countries.
- Camel milk is rich in vitamin C and iron.

### Balanced Diet

A balanced diet is a diet that contains all the above nutrients in adequate amounts required for good health. Drinking adequate water and eating fresh fruits and vegetables, which help the body in digestion, are also important parts of a balanced diet.



### Importance of Water

Water is the most important substance on planet Earth. All living organisms need water to live and grow. Besides food, we must also drink plenty of water every day to keep ourselves healthy.

Water helps the body to digest food. It also helps to transport the digested food to different body parts. Our body loses water in the form of sweat and urine; we need to replace it by drinking plenty of water.

### Check Your Progress

#### Who am I?

1. Without me you cannot make *rotis*. I am a grain that gives you the energy to do work.
2. Water is my home. I am a source of proteins.
3. You can eat me as a fruit. You can squeeze me for juice. My name is also a color. I am rich in vitamins.

### Raw Food and Cooked Food

Some vegetables and fruits are eaten raw. They are often included in salads. Carrot, radish, cabbage and cucumber are vegetables that are eaten raw. Fruits like papaya, orange, grapes and cherries are eaten raw. Raw foods help in digestion of food and smooth bowel movements.



Raw food

### Cooking Methods and Utensils

Most of the food we eat is cooked before eating. When we cook food, it becomes soft, tasty and easy to digest. Cooking also kills germs present in the food. There are different methods or ways of cooking like frying, roasting, boiling and baking.



Frying chips



Boiling eggs



Roasting chicken



Baking cookies

#### Activity

- Collect all the ingredients necessary to make *bhel*.
- Make the *bhel* and identify the raw and the cooked ingredients in your *bhel*.



Cooking methods	Utensils used
Frying	Deep frying pan, wok
Boiling	Saucepan, boiler, stockpot
Steaming	Steamer, pressure cooker
Roasting	Grill
Baking	Oven

Most cooking utensils are made from aluminium or stainless steel. Some of them are made from copper.



### Fuels Used for Cooking

After fire was discovered, man started using it to cook food. In order to light a fire, fuel is necessary. In the olden days, **wood** was used as fuel for cooking. The cooking stove was called as '**chulha**'. Slowly, wood was replaced by coal and coal stoves took over. Later, the coal stoves were replaced by kerosene stoves. In recent times, the most commonly used fuels are LPG (liquefied petroleum gas) cylinders and PNG (piped natural gas) that are used to operate gas stoves and hot plates.



**Did You Know**

- Animal waste can be converted into a fuel. The waste of cattle, popularly called 'cow-dung', is collected and made into a gas called biogas.
- The energy from sunrays is also trapped to cook food. The utensil used for such cooking is called a solar cooker.

**Activity**

- List some food at your home which is cooked by baking, frying, roasting and boiling.
- Discuss with your friends the method used to cook your favorite food.

**Check Your Progress**

**State whether the following statements are true or false.**

1. Proteins give us energy.
2. A wok is used for boiling.
3. LPG is liquefied petroleum gas.
4. Water helps the body to digest food.
5. Baking is one method of cooking.

**Eating Habits of Different People in a Family**

How many members are there in your family? Do all the members eat the same amount of food? What food does a new born baby eat?

Babies, children, teenagers, adults, older people all have different food needs. Babies do not have teeth; hence they cannot eat solid food till they start getting their teeth. Children and teenagers should eat a large amount of healthy food to grow. Milk should be compulsory in their diet as it provides



A family eating together

calcium and phosphorous which makes the bones strong. Adults who are working should eat healthy food and get proper physical exercise. Older people should eat a smaller amount of food as their ability to digest food is weaker.

### Word Galaxy

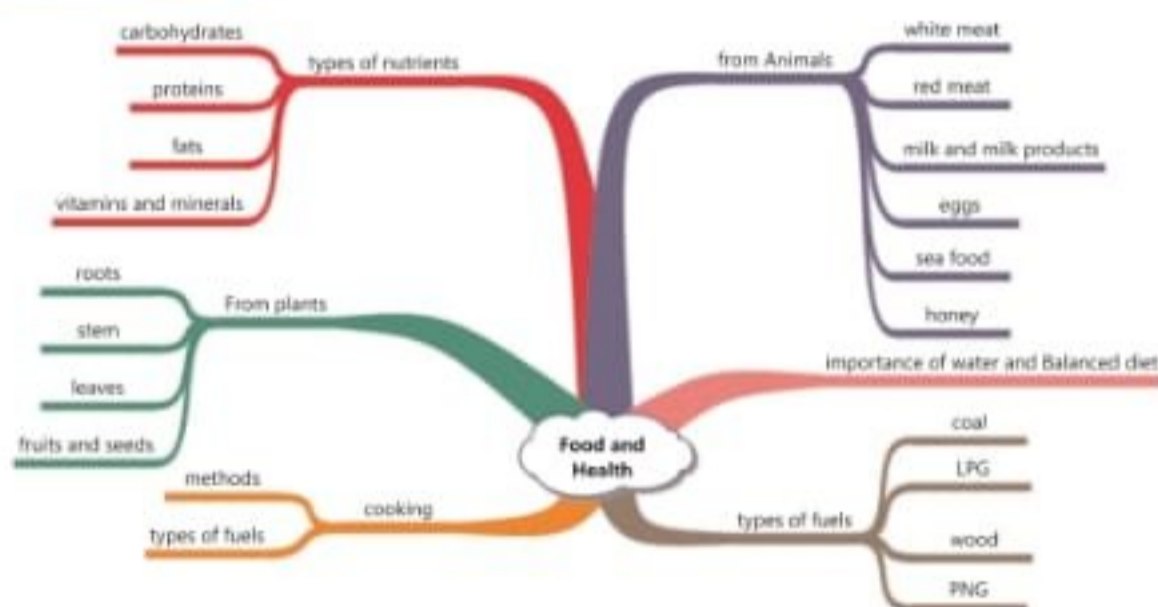
**digest** – break down of food

**nutrients** – substances present in food that are required for humans to live, grow and function

**adequate** – sufficient quantity



### Concept Map



### Let's Exercise



#### 1. Fill in the blanks with the correct option.

- Butter is rich in \_\_\_\_\_. (proteins/fats)
- Cooking makes food \_\_\_\_\_ to digest. (difficult/easy)
- \_\_\_\_\_ is a method of cooking which is done in pressure cookers. (Baking/Steaming)
- Spinach is the \_\_\_\_\_ of the plant. (flower/leaf)
- Eggs are rich in \_\_\_\_\_. (proteins/carbohydrates)

**2. Name the following.**

- A diet that contains all the nutrients in adequate quantities for good health.
- A cooking stove which uses wood as fuel.
- A plant root eaten as a vegetable.
- A food rich in calcium that is necessary for children.

**3. Match the columns.**

Column A		Column B	
a.	Cheese	i.	seafood
b.	Wheat	ii.	leaves of a plant
c.	Carrot	iii.	milk product
d.	Lettuce	iv.	root of a plant
e.	Shrimp	v.	seed of a plant

**4. Answer the following questions in 3 to 5 sentences.**

- Why is solid food not given to babies?
- Why is it important to drink water?
- List the different types of nutrients present in food.
- Why is it important to include vitamins and minerals in our diet?
- Name the different plant foods eaten by humans.

**5. Picture study**

The food given below are rich sources of nutrients. Identify the nutrients.



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_

**HOTS**

Unscramble the words given in columns A and B to get the names of some foods and the nutrients provided by them. Then match the columns.



Column A		Column B	
Foods		Nutrients	
a.	radeb	i.	torpiens
b.	splues	ii.	mitavins and rinalmes
c.	rainblj	iii.	dracobrythesa

**Let's Create**

Collect and stick pictures of different food dishes prepared during festivals. Write all the nutrients that each food dish provides.

**Life Skills**

Celebrate a healthy tiffin day. Make a healthy sandwich, sprouts *bhel*, or any other dish without using fuel (fireless cooking). Take it to school and enjoy the food with your friends.

**Do It to Know It!****Poster Making**

Let's make a poster on 'Sources of food'

- Select two foods, one each from a plant and an animal.
- Draw or paste pictures of those foods.
- Write a paragraph on each describing-
  - ✓ From which plant or animal, it is obtained?
  - ✓ How is it eaten? (raw/cooked)

**WEBLINKS**

<https://www.englishclub.com/vocabulary/food-types.php>

<https://www.vegsoc.org/info-hub/definition/>

<https://kidshealth.org/en/parents/habits.html>

As on 30/04/2019



## 02

# Soil

### Let's Learn

- What soil is
- Formation of soil
- Layers of soil
- Types of soil
- Uses of soil
- Soil erosion
- Soil conservation



### Kick Start

Nisha has planted three plants inside her house.

She keeps the three pots near the window so that the plants get sunlight and air. She waters the plants every day.

She has also put a brown substance, which is important for plants in all three pots.



What is this brown substance?

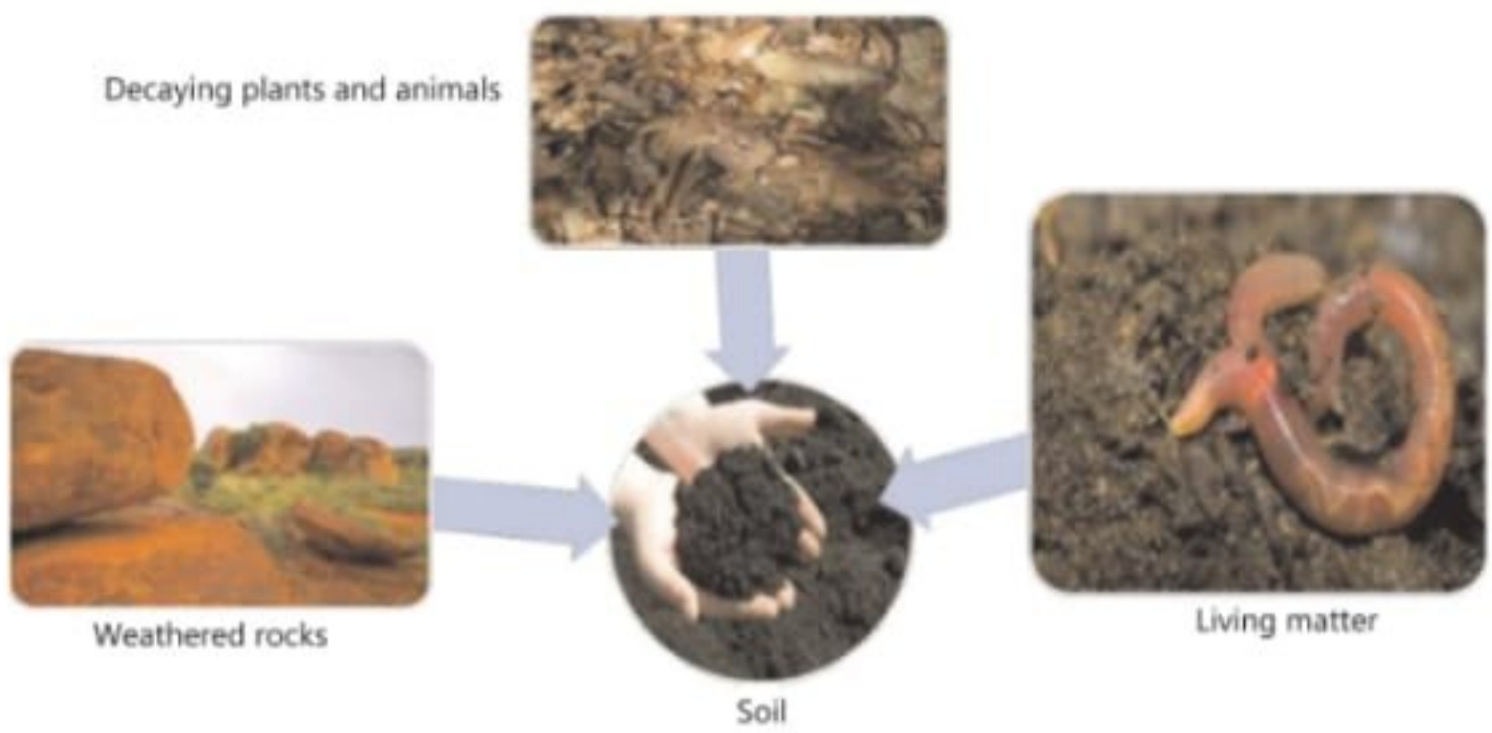
S \_ \_ \_ [hint – this substance is also found in gardens]

### Soil

Soil is a natural resource. It is the top, thin layer of Earth where plants grow. Soil gives water and food to the plants. Humans and animals eat plants to live. That is why, without soil there would be no life on earth.

Soil is made up of weathered rock, living matter, decaying plants and animals.





### Formation of soil

Soil is formed by the weathering of rocks. Weathering is breaking down of rocks into smaller pieces. When these smaller pieces of rock break down further, they form sand. This sand along with the decaying plants and animals and living matter forms the soil.

Have you ever wondered, what is below the soil?

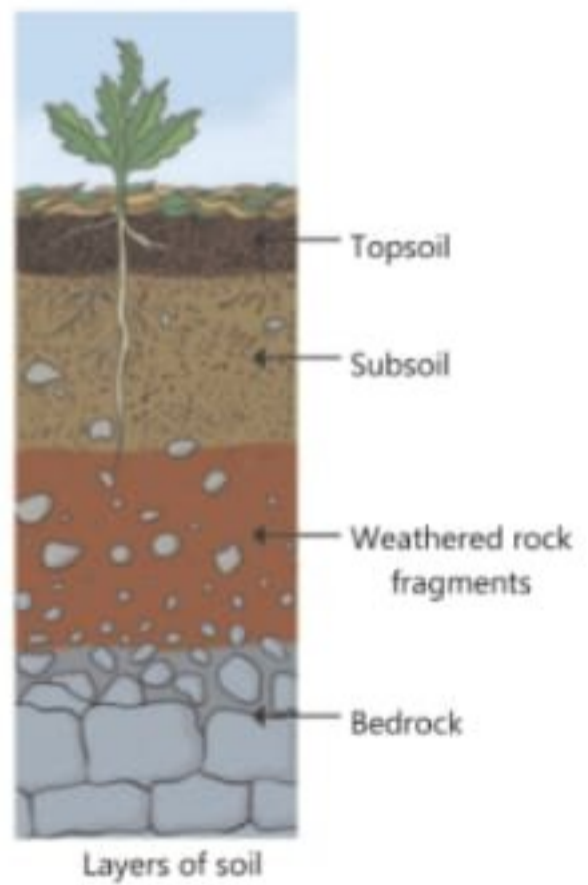
### Layers of soil

**Topsoil** - Topsoil is the uppermost layer of soil. It is on the Earth's surface or just below it. It is the most fertile layer of the soil.

**Subsoil** - Subsoil is below the top soil. It contains small particles such as sand and silt. It is less fertile than topsoil.

**Weathered rock fragments** - The next layer below the subsoil has weathered rock fragments. These are small pieces of rocks formed due to the weathering of the bedrock.

**Bedrock** - The layer at the bottom is called bedrock. It has unbroken solid rocks.



### Check Your Progress

State whether the following statements are true or false.

1. Soil is a natural resource.
2. Soil does not have living matter in it.
3. Topsoil is the fertile layer of soil.
4. Soil is formed by weathering of rocks.

What differences do you see in the pictures given below?



Sand



Soil

### Types of soil

Sandy soil, loamy soil and clayey soil are the three main types of soil found in different parts of the world. Each of these soils look different, feel different and have different water-holding capacity. Based on their characteristics, different soils have different uses.

Types of soil			
Features	Sandy soil	Loamy soil	Clayey soil
Texture/ appearance	It is granular soil that contains small rocks and mineral particles.	It is composed of sand, silt and clay.	It is a finely grained soil. This soil is heavy, because of the small size of the particles.
Water- holding capacity	This soil holds very little water.	This soil can hold some amount of water.	This soil can hold lots of water.





Uses	It is used for construction and growing vegetables.	It is used for gardening and agriculture.	It is used to make earthen pots and toys. It also has medicinal properties.
			
	Sandy soil	Loamy soil	Clayey soil



### Soil erosion

When the top fertile layer of the soil is washed away by natural forces like water or wind, it is called **soil erosion**. Besides the natural forces, deforestation plays a part in soil erosion too. When trees are cut down, there are no roots to hold the soil so it can get washed away by water or blown away by the wind. Overgrazing by cattle also leads to soil erosion. Crops cannot grow in an area where the soil has been eroded and this affects the life of people living in that region.

### Soil conservation

Stopping the loss of soil caused by soil erosion is called **soil conservation**. Afforestation and keeping a check on overgrazing are some of the methods of soil conservation.



#### Check Your Progress

Unscramble the words using the given hints.

Hint	Word	Answer
A type of soil which holds very little water.	DNYAS	
Soil used to make earthen pots.	YLCAYE	
Loss of the top layer of the soil.	IOSL REOSNIO	

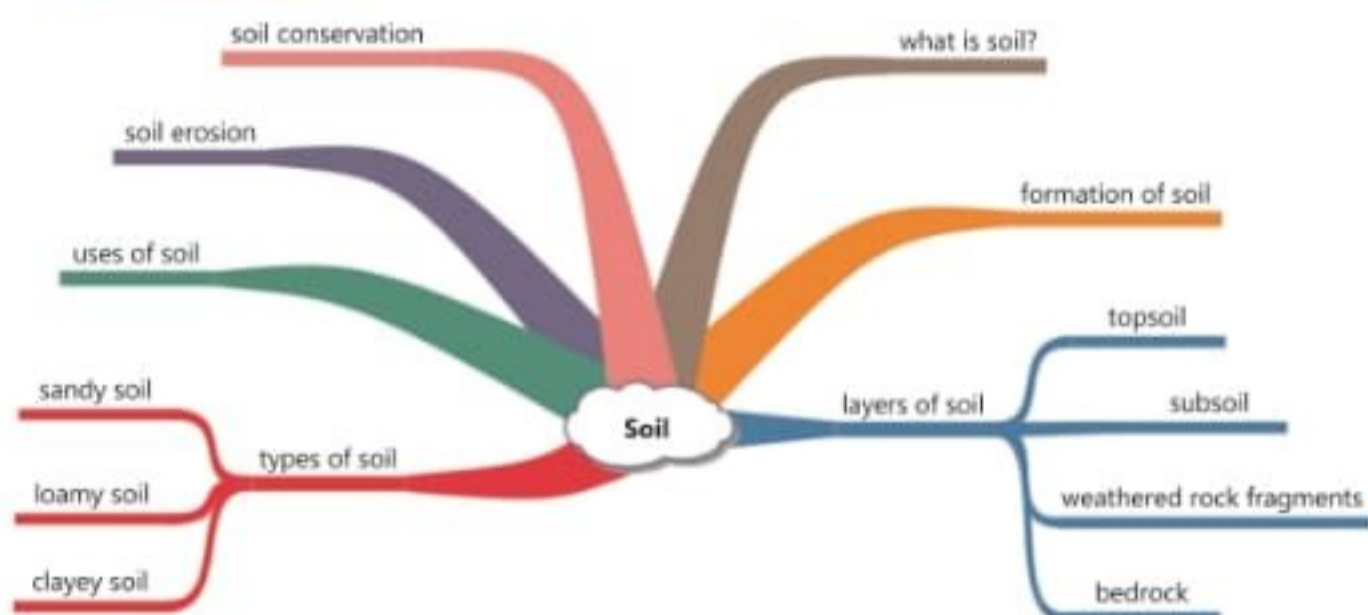


## Word Galaxy

- decaying** – rotting due to bacteria and fungi
- fertile** – producing many crops in great quantities
- granular** – having small particles
- deforestation** – cutting down of a large number of trees in an area
- conservation** – protecting and preserving
- afforestation** – planting of many trees in an area
- silt** – small particles of soil that are larger than clay but smaller than sand
- natural resource** – material or substance found in nature that can be used by humans



## Concept Map



## Let's Exercise



1. Fill in the blanks with the correct option.
  - a. Besides the natural forces, \_\_\_\_\_ is a cause of soil erosion. (deforestation/afforestation)

- b. Soil is formed by \_\_\_\_\_ of rocks. (weathering/joining)
- c. Soil is a \_\_\_\_\_ resource. (natural/artificial)
- d. \_\_\_\_\_ soil is composed of sand, silt and clay. (Loamy/Sandy)

**2. Match the columns.**

Column A		Column B	
a.	Bedrock	i.	Uppermost, fertile layer of the soil
b.	Weathered rock fragments	ii.	Less fertile than topsoil
c.	Subsoil	iii.	Small pieces of rocks formed due to weathering of the bedrock
d.	Topsoil	iv.	Unbroken solid rocks

**3. Answer the following questions in 3 to 5 sentences.**

- a. How is soil formed?
- b. State any two ways of soil conservation.
- c. What is the weathering of rocks?
- d. What is soil erosion?
- e. Describe clayey soil.

**4. Picture study**

Look at the pictures and identify the type of soil.



A



B



C

**HOTS**

Why is sandy soil used for construction?



**Let's Create**

Collect pictures of plants which grow in sandy soil, loamy soil and clayey soil. Separate these pictures into the three groups and stick them on a chart paper. Display the chart in the class.

**Life Skills**

Take up a plantation drive in your school and society. Encourage every person to plant at least one tree.

**Do It to Know It!****Chart Making**

Let's make a chart on 'Types of soil'

Collect samples of sandy, loamy and clayey soils. Prepare a chart comparing the appearance of these three soils. Stick the sample of each soil below its description. Write a slogan on importance of soil.

(Soil samples can be placed in zip-lock bags.)

**WEBLINKS**

<https://easyscienceforkids.com/all-about-soil/>

[https://kids.kiddle.co/Soil\\_erosion](https://kids.kiddle.co/Soil_erosion)

<https://www.kidcyber.com.au/soil-and-soil-erosion>

As on 30/04/2019