

# VIDYA BHAWAN BALIKA VIDYAPEETH

## STUDY MATERIAL SCIENCE CLASS-VII

Date : 27-07-2021

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### ▸ Soil

Soil is one of the most important natural resources. It is the uppermost layer of earth's crust which is blackish-brown in colour. Major functions of the soil are:

- It supports plant growth by holding the roots firmly and supplying water and nutrients to the plants.
- It acts as a natural habitat for many organisms like an earthworm, fungi, bacteria, ants, etc.
- It is also essential for agriculture which provides us with food, clothing and shelter for all.
- It supplies water and nutrients to plants.

Therefore, we can say that soil is an inseparable part of our life.

### **Soil Teeming with Life**

Soil contains air, water and countless living organisms like fungi, bacteria, insects (like ants and beetles), earthworms, rodents, moles and plant roots. Some organisms are too small that they cannot be seen by naked eyes (e.g. fungi and bacteria). An important soil organism is an earthworm, it is visible only in the rainy season. It increases the fertility of soil. An analysis of different soil samples is summarised in the table given below:

Soil Source	Plants	Animals	Any other observations
Garden soil	Grasses and roots	Ants, earthworms, termites and beetles	Concrete
Soil from roadside	Dry roots	Ants and termites	Concrete, plastic bags and glass particles
Soil from the area where construction is going on	No plants	Ants	Gravels, plastic articles, polythene bags, sand, etc
Soil from agricultural land	Grass roots and plant roots	Earthworms, milipedes, centipedes, fungi and bacteria	Concretes, glass materials and manure (cow dung)
Soil from river side	Dry grasses, hays and humus	Milipedes, centipedes, and lichens	Glass particles, concrete, plastic articles, and polythene bags

### Soil Pollution

Sometimes people throw polythene bags and plastic articles in the soil. They pollute the soil and also kill the useful organisms living in the soil. Some other substances like chemicals and pesticides also pollute the soil.

To prevent the soil pollution, the use of polythene bags must be banned, and the waste products and chemicals must be treated before they are released into the soil. The use of pesticides in the agricultural field must also be minimised in order to prevent soil pollution.

### **Soil Profile**

Soil is formed by breaking down of rocks by the action of wind, water or climate by the process called weathering. During this process, the rocks are worn away to form small particles by long exposure to the elements of weather.

Weathering is a very slow process as it takes thousands of years for a huge rock to turn into fine particles. The nature of the soil depends upon the rocks from which it has been formed and types of vegetation that grow on it.

The soil profile is a vertical section through different layers of the soil.

Soil profile consists of different layers of soil which are called horizon. Each horizon differs in texture, colour, depth and chemical composition. Different horizons of the soil are discussed further.