SNBP International & Senior Secondary School, Chikhali, Pune.
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NOTES

CLASS: IV
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Prepared on _____

SUBJECT: Science
LESSON-1. Soil
Shared on _____

New words

1) Weathering
2) Gravel
3) Loam
4) Silt
5) Bedrock
6) Desertification
7) Devastating
8) Clay
9) Soil erosion
10) Subsoil
11) Top soil
12) Overcultivation
13) Overgrazing
14) Embankments

Pre activity

1. Name the living things that are present in the soil.

2. What could have happened if there was no soil on Earth?

Q1) Give reasons for each of these.

1. An earthworm is called a friend of the farmer.
Ans. An earthworm helps the farmer by loosening the soil. Hence, it is called a farmer's friend.

2. Potters use clay to make mud pots and not sand.
Ans. Clay is very fine soil that is sticky. Sand on the other hand is not sticky. Hence, it cannot be used to make pots.

3. Hardly any trees grow in deserts.
Ans. Deserts are the areas that have very little or no water. So, trees do not grow there.

Q2) Answer these questions in brief.

1. Why is soil important for us?
Ans. Soil is essential for life on Earth. It covers the Earth's surface. Plants and trees grow on it and provide food for most living things

2. What is soil made up of?
Ans. Soil is made up of gravel, sand, clay particles, humus, water, air, minerals, and microorganisms like bacteria.

3. List different types of soil.
Ans. Sand, clay, gravel, silt, and loam.

4. What are the disadvantages of soil erosion?
Ans. Soil erosion results in

- infertile land
- desertification
- devastating floods

5. What is crop rotation?
Ans. Crop rotation is the practice of growing different kinds of crops on the same field in different seasons. Different crops require different kinds of nutrients. Thus, crop rotation maintains the fertility of the soil.

Q3) Answer these questions in detail.

1. Explain the process of soil formation from rocks.

Ans. Soil formation is a long and slow process.

- Over hundreds of years, large pieces of rocks are broken down into smaller pieces by the action of rain, heat, and wind till some become powdery and form soil. This is called weathering.
- Plants like *peepal* and banyan grow from the cracks in the rocks. As they grow bigger, their roots push down and break the rocks into smaller pieces.
- Some animals also burrow and crack rocks. Over a period, the rocks break into finer powder called sand.
- The remains of dead animals and plants get mixed in the soil and form humus

2. What is soil profile? Explain three layers of soil.

Ans**.** Soil profile refers to the layers of soil that we see when we dig downwards into the surface of the Earth. There are three layers of soil—topsoil, subsoil, and bedrock.

- Topsoil: It is the uppermost layer of soil that contains different types of particles such as sand, gravel, humus, air, and water. Plants grow on the topsoil.
- Subsoil: The middle layer of soil is called the subsoil. It is right below the topsoil. It is rich in minerals. It contains broken pieces of rocks. It has water and very little humus.
- Bedrock: The bottom layer of soil is called the bedrock. It is quite deep inside the Earth and is largely made up of rocks. There is not much water present here.

3. What is soil erosion? How does it happen?

Ans. The wearing away of topsoil by the action of wind, rain, or human activity is called soil erosion. Soil erosion is a natural process. Human activities like overcultivation, deforestation, mechanized farming (usage of machines on the farms), and overgrazing by animals haveten soil erosion.

4. What is the conservation of soil? Write different ways to conserve soil.

Ans. Prevention of soil from erosion is called soil conservation. Some ways in which we can conserve soil are:

- Plant more trees in place of the ones being cut down.
- Avoid overgrazing by cattle. This means that we should not allow the cattle to graze in the same area for a long period.
- Practice crop rotation by growing different kinds of crops on the same field in different seasons.
- Build embankments (walls of stone or Earth made to keep the water in the river) along the riverbanks. This prevents the fertile topsoil from getting carried away during floods. This also saves the crops from getting damaged.

- Stop the soil in hilly areas from flowing down by creating terrace fields.

5. Which layer of soil is important for the growth of plants? Why?

Ans. Plants grow best in the top layer of soil as this layer contains all the nutrients a plant requires as well as humus, air, and water.

Q4. Out of the box

1. Ravi planted a sapling in a pot. He learned that plants need water. Therefore, he watered the plant 3 times in a day, and the plant died. Why do you think this happened?
Ans. Ravi overwatered the plant, that is why, it wilted. When we water a plant a lot, the soil that is constantly wet will not have enough air space and the plant will not be able to breathe by taking up oxygen with its roots.

Post activity

1. Draw the concept map of soil.

SUBJECT TEACHER H.O.D. COORDINATOR PRINCIPAL