

## SCIENCE

### (Activity 17 – :To show that the roots of the plants help in preventing soil erosion)

#### Chapter 17–Forests: Our lifeline.

**CLASS –VII**

**Duration:35 minutes**

**Nature of activity: Group**

**Learning outcome :** The students will perform the activity and analyse how the roots of the plants help in preventing soil erosion.

**What we have to do?** To show that the roots of the plants help in preventing soil erosion.

**What is required?** Six big plastic bottles, wood glue, a wooden board, scissors, soil, dry leaves, small plants or grass with roots, water and strings.

**What do we need to know?** Plants provide protective cover on the land and prevent soil erosion. Plants slow down water as it flows over the land and this allows much of the rain to soak into the ground. Plant roots hold the soil in position and prevent it from being blown or washed away.

**How will you proceed ?**

❓ **Teacher' s activity**

Teacher will explain how roots of plants can bind the soil and arrange for the materials for the experiment.

❓ **Students 's activity**

- 1.Cut rectangular portions from sides of three of the big plastic bottles. A permanent marker can be used to draw the rectangle before it is cut.
- 2.Stick the bottles to the wood with wood glue making sure that the necks of the three bottles hang a little over the edge of the board. Fill the first bottle with plain garden soil. Plant the grasses.
3. Fill the second bottle with soil and dry leaves and the third bottle with only soil. Press down soil in all bottles to make it compact.
4. Cut out cups from the other three plastic bottles. Make holes in the collection cups and hang them from the neck of the bottles having soil using strings.
5. Slowly pour around 250 ml water from the top on the soil in each of the three bottle and observe the water collected in the collection cups hanging from the neck of the bottles.



### **What have you observed ?**

| S.No | Collection bottles | Colour of water in collection bottles. |
|------|--------------------|----------------------------------------|
| 1.   | First              |                                        |
| 2.   | Second             |                                        |
| 3    | Third              |                                        |

### **What you have learnt?**

The roots of the plants.....the soil and prevent.....

### **What more can we do?**

Compare the temperature using thermometer under a tree and on the open ground, in the afternoon. What do you observe? Why there is a difference in the temperature?

### **Extended Worksheet**

1. How do human activities lead to soil erosion?
2. How can soil erosion be reduced by terrace farming?
3. Describe a natural cause other than rain which can cause soil erosion?
4. How is soil formed?
5. What do you understand by the term 'healthy soil'?