

techniques and erices

Learning About Our Soil

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I. Objectives

1. To know that one of the natural resources of our country is soil.
2. To learn how soils differ from one another; how to make a suitable soil mixture.
3. To understand what is meant by erosion; what causes erosion of soil.
4. To find out what farming practices hurt the soil; what can be done to conserve the soil.
5. To realize the great importance of soil and be ready to contribute, in whatever little way, to use our soil or conserve it wisely.

II. What may be taken up in the study of the unit

A. What soil means to every one

1. keeps us alive — soil is a factor in the environment of living things
2. soil means food, clothes, shelter
3. soil means jobs — most of our industrial raw materials come from soil; many Filipinos are employed in factories which manufacture raw materials which came from the soil

B. Kinds of soil — vary not only in chemical composition but in their physical properties, too.

1. sandy soil —
 - a. formed by the erosion of sandstones which contain large quantities of silicon compounds
 - b. not easily dissolved by water so it is not good for plant life
 - c. water is not retained well in this kind of soil; it is porous
2. clay soil
 - a. generally rich in humus than sand and contains more plant food

- b. can support more plant life than sandy soil
- c. however, when dry, clay soil becomes hard and baked
3. loam soil
 - a. best type of soil for plant growth
 - b. is a mixture of clay and soil; holds water fairly well and does not become hard when dry
 - c. kinds of loam soil
 - (1) sandy loam — contains more sand than clay
 - (2) clay loam — contains more clay than sand
 - d. loam soil is easy to plow and fit for seeding and cultivation so is best for most agricultural crops

C. How to make a suitable soil mixture

1. by preparing a compost heap in an out of the way corner of the yard
 - a. consists of leaves, sod, garden refuse, manure mixed with garden loam and left to decay
 - b. pile leaves, garden refuse and soil compactly in layers alternating with layers of manure
 - c. pile should be kept moist in order to help in the decay
 - d. mix materials thoroughly once a month for the bacteria to grow so the rotting will be faster
 - e. when well decayed, the mixture will be useful for potting plants, flower beds, shrubs or top-dressing lawns

D. what erosion means; causes or factors of erosion of soil

1. term "erosion" means washing away of soil
2. causes of erosion of soil

a. heavy rains

b. steepness of the land — the steeper a slope is, the faster water rushes down the slope; the faster the water can rush along, the more it erodes the land

c. harmful farming practices

- (1) clean tillage — growing of crops in rows (Ex — corn); soil between rows is cultivated in order to prevent weeds from growing; this “clean” soil is left without covering; when the rain falls, water runs off rapidly instead of sinking into the ground
- (2) plowing up and down hillsides. If plowing is done this way, channels in which water flows swiftly down the slope are made
- (3) cutting down trees on hillside
- (4) overgrazing creates erosion by destroying grass
- (5) overworking the soil

E. Methods to conserve soil

1. trees and grass must be planted to protect easily eroded land

2. cover crops make a sod which protects the soil from washing (Examples — camote and peanuts)

3. crop rotation — planting of different crops in a particular field each year for several years

4. contour farming — planting and cultivating crops in curved lines across a slope instead of in straight lines up and down the hill

5. strip cropping — strips of cover crops are planted on the contour between strips of new crops. The crowded cover crops catch the soil particles which are carried downhill by the water from the clean tillage area above.

6. Terracing

F. How to keep the fertility of the soil —

1. topsoil should be kept
2. plant food can be returned to the soil in the form of fertilizers
3. crops can be rotated
4. legumes which supply nitrogen to the soil can be grown
5. plowing under the unused parts of crops such as the stalks of corn

III. Projects and Problems for Discussion

A. Projects to do

1. Experiment with different kinds of soil

Get 3 flower pots; fill one with sand, one with loam and one with clay. Plant two or three different kinds of seeds in each. Keep each pot under exactly the same conditions as the others, giving the same quantity of water.

Note the pot in which the seeds sprout first; note in which pot the soil seems to dry quickest and in which the plants seem to grow best.

2. Make clay models of farms showing the various methods of conserving soil.

3. Draw a poster to show the need for soil conservation.

4. Go around your locality. Talk with some of the farmers. Ask them how they conserve the soil; how they preserve the fertility of their soil.

5. Visit the school garden. Observe how fertilizers are used and the effect upon plants.

6. Write to the Department of Agriculture and Natural Resources to ask for any material about our soil and how it is being conserved.

B. Problems for discussion

1. Discuss:

a. Why conservation is everybody's business

b. Sick land makes sick people

c. The things you eat and use which can be traced to the soil

d. How soil has helped man all through the centuries of years

e. How man has improved the fertility of the soil

2. Have a little debate on this topic:

Farmers have a right to do what they wanted to do with the land.

3. Research and report on countries which have been farmed for centuries yet the soil remains fertile. Discuss the report afterwards especially emphasizing about the methods of farming in those countries.

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