

Preventing Soil Erosion

Name: _____ Period: _____ Date: _____

Essential Question: How do farmers prevent soil erosion?

Erosion is the moving of sediments like topsoil, rocks, pebbles by water and wind. There are many harmful effects of soil erosion - it affects the quality of the soil and reduces the productivity of soil to a great extent. The **soil loses its fertility** which is difficult to be regained. The **critical harmful effects of soil erosion** are that the farmlands become unproductive and in some cases completely barren, and the agricultural output of such areas is none or very less. This results to starvation in many countries.

Ways to Prevent Soil Erosion

1. Planting Vegetation as ground cover: Farmers plant trees and grass to cover and bind the soil. Plants prevent wind and water erosion by covering the soil and binding the soil with their roots. The best choice of plants to prevent soil erosion are herbs, wild flowers and small trees. Some excellent plants that help to prevent soil erosion are creepers because instead of growing straight up, they spread on the ground by crawling around.



2. Applying Mulches: Mulching soil, greatly help in soil erosion control. Mulching is done by putting dead leaves and shredded wood on the soil.

Mulching acts as a protective covering for the tree and plants against extreme weathers. Mulching allows water to reach the soil slowly, and thus reduce the impact of rainfall or heavy watering. Mulches help to prevent the soil from turning acidic and suppresses weeds from growing. Over time, mulches made from organic materials break down and increase soil's structure and fertility.

3. Matting the soil: Matting is the process of covering the soil with biodegradable materials that include mulch, straw, coconut fiber and wood chips. These are held together with biodegradable netting made from coco coir. It is like covering the soil with a biodegradable carpet. Biodegradable spikes are used to hold the matting material in place.



Biodegradable means it can decompose or decay and turn to soil fertilizer. **Plastic is non-biodegradable** that is why it is not good for the environment.



4. Contour farming and terracing: The practice of tilling sloped land along lines of consistent elevation in order to conserve rainwater and to reduce soil losses from surface erosion. Contour farming act as reservoirs to catch and retain rainwater, thus permitting increased infiltration and more uniform distribution of the water.

5. Creation of windbreakers by planting evergreen trees around gardens or farmland, to prevent the wind blowing away the soil. Windbreakers helps in protecting crops from damage caused by strong & severe wind and improve plant health, quality and yield. Crop protected from wind are able to retain significantly more moisture.



Clarifying Questions:

1. What is **erosion**?

2. What are the **critical harmful effects of soil erosion**?

3. How can **soil lose its fertility** due to erosion? Think!

4. List the FIVE different ways to prevent soil erosion.

5. Why do farmers plant trees and grasses on their farms?

6. What are the best plants that help prevent soil erosion?

7. How can mulching prevent soil erosion?

8. How is mulching done?

9. Aside from preventing soil erosion, what are the other benefits of soil mulching?

10. How is soil matting done?

11. What does it mean by biodegradable?

12. Why are plastics not good for the environment?

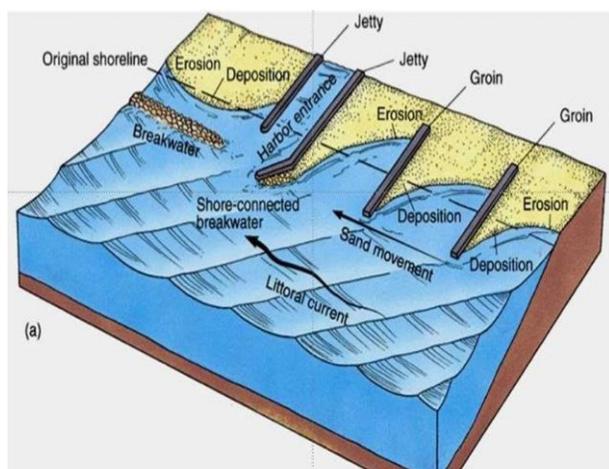
13. What is contour farming and terracing?

14. Why do farmers do contour farming and terracing?

15. How can windbreakers prevent soil erosion and help plants grow healthy? Think!

Three Ways to Prevent Coastal Erosion.

1. **Groins** are man-made structures designed to trap sand as it is moved down the beach by the longshore drift. *Longshore drift is a process of transportation. It involves eroded material being moved along a coastline.*
2. **Jetty** is a man-made wall that is placed along the sides of an inlet. The reason that jetties are installed are to prevent the inlet from shifting positions and to keep it open permanently.
3. **Breakwaters** consist of large piles of rocks laid parallel to the shore. Breakwaters are generally used to calm waters for harbors and artificial marinas.



16. What are the three ways that help prevent coastal erosion?

17. Which is used to prevent longshore drift erosion?

18. Which is used to maintain the depths of the inlets and prevent harbor openings from closing or becoming too shallow?

19. Which is used to calm water before reaching the coastlines, and marinas?

20. Why do we need to protect the coastlines? Think!

http://www.youtube.com/watch?v=_UeVvUzgJAY&playnext=1&list=PLC5635A4903856D32&feature=results_main

http://www.youtube.com/watch?v=P_GyRCSHjj4 <http://www.youtube.com/watch?v=Lb2sdsHUCLQ>

Preventing coastal erosion: https://www.youtube.com/watch?v=nujYG_b8II8

<https://classconnection.s3.amazonaws.com/691/flashcards/3018691/jpg/stabilization1364488426393.jpg>

Jetties <http://geologyspot.blogspot.com/2012/03/jetties.html>

