



SOIL MUST BE PROTECTED

AGE: Grade 4-6

SUBJECT: Science, Social Studies

SKILLS: Analysis application, comparison and contrast, observation, discussion, evaluation, generalization, inference, visualization

DURATION: 20-30 minutes

GROUP SIZE: Any

KEY VOCABULARY: Contouring, cultivated land, crop rotation, furrows, grass waterway, strip cropping, water erosion, wind-break.

Description

Students will observe how strip cropping and contouring help to prevent water erosion.

Learner Objective

Students will be able to evaluate how contouring and strip cropping save soil from water erosion.

Background

Contour farming is one of the easiest and most widely accepted conservation practices. It is the use of implements across the slope of the land; that is, on the contour. Contouring alone will not stop erosion. But it reduces soil erosion as much as 50 percent on a wide range of soil and slope conditions. Steepness and length of slope are important, as well as the crop grown and the condition of the soil.

Material

- 3 aluminum turkey roasting pans; a pan of soil with rows going up and down, a pan of soil with rows going across, and a pan with strips of grass and bare fields.

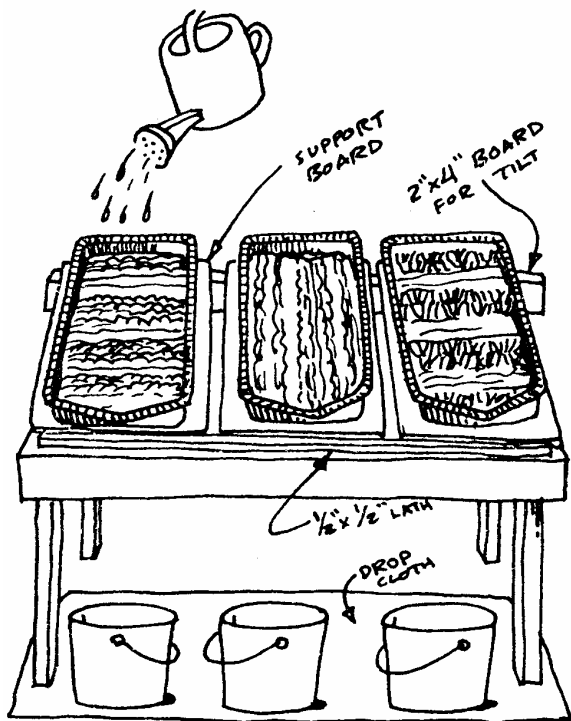
- Toy quart sprinkling can
- 3 plastic pails to catch run-off
- Large garbage bag cut apart under the plastic pails
- Colored markers
- Drawing paper

Be sure to have a board under each pan for support. On the front side of the support board, have a wooden strip to prevent the pans from sliding when tilted. Under the opposite end of the support board, place a 2" by 4" to tilt the pans.

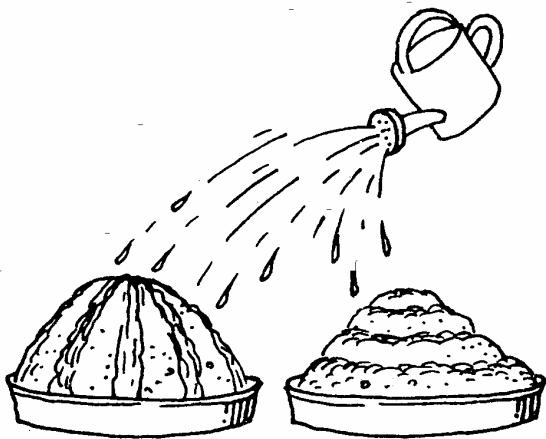
Form a spout in the pans by squeezing the edges. Set pans of soil on a table so the spouts extend over the edge. Place some two by fours under the other end to give them slope. Put a plastic bag on the floor under the pails that will catch the run-off.

Activity

1. With a pencil or your fingers make rows or furrows going ACROSS in one pan of soil. Make rows or furrows going UP and DOWN in the second pan of soil. The third pan will have alternating horizontal sections of sod and bare soil.



An option for demonstration would be mounds in cake pans.



Mounds in cake pans probably have much steeper slopes than most cultivated land.

2. Fill sprinkler with water. Sprinkle each pan at the same rate, at the same height (about a foot will be satisfactory) and with the same amount of water.
3. Which field absorbed the most rain? the least? Why was there a difference between how the fields absorbed the rain? Be specific in your answers.
4. How do contouring and strip cropping prevent erosion?
5. Have your students suggest all the different methods that can be used to prevent erosion. Make a list on the board. (contouring, windbreaks, conservation tillage, strip cropping, grassy swales, terracing)
6. Ask your students to choose one method of preventing erosion and draw a detailed picture of farmland using that method.

Evaluation

Given a list of ways to prevent erosion, students will draw a detailed picture depicting one method for preventing either wind or water erosion.

Extended Activity

1. Tell, in picture form or in a paragraph, how windbreaks help to prevent wind erosion.