

Land use and soil erosion

Resource sheet 1 (for students)

Demonstration of raindrop splash on bare soil

Materials

- Sheet of paper covered with fine dry soil (1 mm thickness)
- Eye-dropper

Method

1. Fill the eye-dropper with water and hold it 25 cm above the surface of the soil-covered paper.
2. Allow single drops of water to fall from the dropper onto the soil.
3. Observe the effects of the water on the soil. Repeat, holding the dropper at greater heights above the soil.

Results and analysis

- What effect does the impact of the water have on the soil?
- How would the presence of plant cover change this?

Demonstration of the effects of running water on exposed soil

Materials

- Shallow tray or box
- Loose soil
- Watering can or similar source of water

Method

1. Place the tray of soil at a slight angle, then pour water from the top of the soil and allow it to run down the tray. Note the effect of the water on the soil.
2. Replace the soil and repeat the experiment with the tray at a greater angle. Again note the effect of the water on the soil.

Results and analysis

- Describe the effect of water on the soil.
- Compare the two trials of the experiment. How did the angle of elevation affect the rate at which soil was removed?

Demonstration of the effects of contour banks on water movement

Materials

- 3 shallow trays or boxes
- Loose soil
- Watering can or similar source of water

Method

1. Set up three identical trays of soil, with the trays at an equal angle. Construct furrows to represent contour banks in the soil in two of the trays. One tray should have the contours across the slope and the other with the contours down the slope. One tray should be without contour furrows. See the diagram below.
2. Slowly pour water from the top, noting the movement of water.
3. Compare the movement of soil in the three trays.

Results and analysis

- What differences were observed between the three trays?
- Does the construction of contour banks aid in the prevention of soil erosion? Explain.