Soil Erosion

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I. Causes and Effects of Soil Erosion

- Soil is eroded when it is moved from the place where it formed

- Erosion occurs when water flows along Earth's surface or when wind picks up and transports sediments.

- Erosion is more common on steep slopes and areas where there is little vegetation

- Under normal conditions soil forms at about the same rate as it erodes.
    - When vegetation is removed or slopes are steepened, soil erodes faster than it can be produced

A. Agricultural Cultivation

- Farming results in the turning over and loosening of soil
    - This practice leaves soil vulnerable to wind and water erosion

FACT: The population of Earth increases by almost 95 million people each year!

B. Forest Harvesting

- Forests are removed, soil is exposed and erosion increases
    - Tropical regions are especially at risk

FACT: Thousands of square kilometers of Tropical rain forest are cleared each year for lumber, farming and grazing!

C. Overgrazing

- Overgrazing can increase soil erosion

- In some areas of the world animals graze on grass until almost no vegetation is left to protect the soil

- Without protection the soil is carried away by wind and the moisture in the soil evaporates

D. Urban Construction

- During construction, land is cleared of vegetation and soil is moved.
- Soil can enter streams and cause them to fill up with sediments

FACT: Each year in the United States about 6,100 km^2 of land are developed for roadways and other structures!

II. Preventing Soil Erosion

- Farmers work to slow down soil erosion

- FACT: Each year more than 4 billion metric tons of soil are eroded in the United States!

A. Managing Crops

1. Farmers plant shelter belts of trees to break the force of wind

2. In dry areas, farmers will graze their animals on the vegetation

- Proper grazing management can maintain vegetation and reduce soil erosion

3. Many farmers have begun no-till farming

- Plant stalks are left in the field over the winter months which provides cover for the soil year-round
    - This reduces water runoff and slows soil erosion and the left over stalks prevent weeds from growing

III. Reduce Erosion on Slopes

- Contour farming is planting along the natural contours of the land
    - This slows the flow of water down the slope

- Terracing is a method in which steep-sided, level topped areas are built onto the sides of steep hills so that crops can be grown

- The terraces reduce runoff by creating flat areas and shorter sections of slope

IV. Reduce Erosion at Construction Sites

1. Exposed ground is sometimes covered with mulch, mats or plastic

2. Water is sprayed onto bare soil to prevent erosion by wind

3. When construction is complete, topsoil is added in areas where it was removed and trees are planted