Soil Erosion and the Civilian Conservation Corps

STANDARD COURSE OF STUDY CORRELATIONS:

Science, Grade 3, Goal 2: The learner will conduct investigations to build an understanding of soil properties.

2.03 Determine the ability of soil to support the growth of many plants, including those important to our food supply.

Social Studies, Grade 3, Goal 1: The learner will characterize qualities of good citizenship by identifying people who made a difference in the community and other social environments.

1.01 Identify and demonstrate characteristics of responsible citizenship and explain how citizen participation can impact changes within a community.

Social Studies, Grade 3, Goal 5: The learner will apply basic economic principles to the study of communities.

5.01 Define and identify examples of scarcity.

5.05 Distinguish and analyze the economic resources within communities.

5.07 Identify historic figures and leaders who have influenced the economies of communities and evaluate the effectiveness of their contributions.

Science, Grade 5, Goal 1: The learner will conduct investigations to build an understanding of the interdependence of plants and animals.

1.04 Discuss and determine the role of light, temperature, and soil composition in an ecosystem's capacity to support life.

1.06 Explain and evaluate some ways that humans affect ecosystems.
- Habitat reduction due to development.
- Pollutants.
- Increased nutrients.

Science, Grade 5, Goal 2: The learner will make observations and conduct investigations to build an understanding of landforms.

2.05 Discuss how the flow of water and the slope of the land affect erosion.

2.07 Discuss and analyze how humans influence erosion and deposition in local communities, including school grounds, as a result of:
- Clearing land.
- Planting vegetation.
- Building dams.

Social Studies, Grade 8, Goal 6: The learner will analyze the immediate and long-term effects of the Great Depression and World War II on North Carolina.

6.01 Identify the causes and effects of the Great Depression and analyze the impact of New Deal policies on Depression Era life in North Carolina.

INTRODUCTION TO LESSON: Students will view photos of land erosion and explore the significance of this phenomenon during the Great Depression. They will do a hands-on simulation of erosion and devise ways to prevent erosion. They will then research a soil or forestry topic and report findings to their classmates.

BACKGROUND FOR TEACHER: Too often, humans have consumed Earth's resources as if they were inexhaustible. Forestry, farming and industrial practices have frequently scarred the land. In the United States, this destruction has never been more apparent than during the Great Depression. In 1933, Congress established the Civilian Conservation Corps, which provided a source of manpower for soil conservation projects.

MATERIALS

- Basins for holding soil, three per group
- Soil (native soil or commercial potting soil/topsoil)
- Plant material (leaves, sticks, weeds, etc.)
- Spray/spritz bottles, one per group
- Erosion-control material (craft sticks, toothpicks, marbles, small rocks or pebbles, artificial craft moss/miniature trees, etc.)

PREPARATION

- Fill each basin with soil, creating a slope. In half of the basins, place an assortment of plant material on top of the soil. (Each group will need one basin filled with soil only and another containing soil and plant material.)
- Fill bottles with water.
- Prepare a set of erosion-control material for each group.
- Have Internet access ready to show the photos at http://soil.gsfc.nasa.gov/stories/erosion.htm or print the images to display. You might also locate supplemental images depicting land erosion in your area.

For a follow-along viewing guide for students, see Viewing Guide 16.

Tractor photo courtesy of Jack Dykinga, USDA Agricultural Research Service.

From left: Soil erodes in an Alabama cotton field; Civilian Conservation Corps enrollees clear land for soil conservation; in 1934 and 1936, drought and dust storms ravaged the great American plains. Courtesy of the Franklin D. Roosevelt Presidential Library and Museum.

engage ➢ Display the images at http://soil.gsfc.nasa.gov/stories/erosion.htm and discuss the difference in the soil clods in the last picture of the series (bottom of Web page). Ask students why one beaker of water is cloudy and the other is not. Emphasize that although these images tell a story of land erosion in Ethiopia, the protection of soil resources is a universal challenge. Give students a brief background of The Great Depression in American history. Show Chapters 2 and 3 of the video.

explore ➢ Divide class into groups and distribute basins and water bottles. Instruct students to spritz water over the bare soil until runoff is produced, then have them spritz water over the basin containing both soil and plant material. (For a more accurate comparison, have them spray equal amounts of water each time.) Discuss observations with each group, having them note whether the soil in the basins moved or stayed put and why. Have groups share observations, hypotheses or explanations with the class. Discuss the parallels of this activity to land-use issues during the Great Depression.

explain ➢ Show Chapters 7, 8 and 9 of the video. Tell students they are to conduct a simulation in which they will become members of the Civilian Conservation Corps. Their mission is to improve the welfare of the land by devising ways to prevent soil erosion. Distribute erosion-control materials. Reusing the container of bare soil, students are to arrange the materials in ways they think will prevent water from running off quickly. Instruct them to test their systems by spritzing water onto the surface and observing any movement of soil. After students have had time to experiment, have groups describe their strategies with the class, detailing which methods were least effective and most effective.

elaborate ➢ Divide class into small groups or pairs and have them complete one of the following exercises. Have them share their findings with the class through posters, written reports, Kid Pix or PowerPoint presentations, mock interview, song or any other creative way they choose.

- Research the history of North America's first forestry school. http://forestry.about.com/od/foresthistory1/ss/cradle_forestry.htm http://www.learnnc.org/lp/editions/nchist-newsouth/4577
- Research the reforestation projects of the Civilian Conservation Corps. http://www.u-s-history.com/pages/h1586.html
- Research CCC or other erosion-control projects that may have been done locally. http://www.archives.ncdcr.gov/exhibits/wpa/ccc.htm
- Chronicle a day in the life of a CCC worker. http://newdeal.feri.org/texts/browse.cfm?MainCatID=55
- Profile a leader who made a difference: FDR.
- Locate a surviving CCC worker and interview him.

evaluate ➢ Assess participation in team and class discussions by taking notes on a class roll throughout the activities.

BEYOND THE CLASSROOM
Explore the school campus or nearby areas to observe the effects of human activities, positive and negative, on the land. Discuss the pros and cons of each situation.

Additional Resources:

http://urbanext.illinois.edu/gpe/tg/c2-deeper.html • An exercise on soil appreciation.

Soil Science Education Web page • http://soil.gsfc.nasa.gov/index.html

New Deal Network • http://newdeal.feri.org/classrm/default.cfm • Classroom lesson plans and other resources.

Out of the Dust. Hesse, Karen. 1997. New York: Scholastic Press.

Videos of first-person accounts of the Dust Bowl • http://www.livinghistoryfarm.org/farminginthe30s/water_02.html

Dust Bowl images • http://www.weru.ksu.edu/new_weru/multimedia/dustbowl/dustbowlpics.html