WATER MOVES THROUGH SOIL COOPERATIVE LEARNING

Objective: For students to understand percolation and the potential for water contamination at this point in the water cycle.

Background: II 2., III A2, VB, VI

Subject: Science,

Skills: Observation, Record keeping

Materials:
3 one pound coffee cans
3 identical water glasses of glass jars
litmus paper
vinegar
red food coloring
coffee can half filled with dirt
3 cups of water

Procedure:

1. Prepare coffee cans as directed in step one of Stopping Runaway Runoff.

2. Place 3 inches of dirt in can #1 and label it "Control."
   Place 3 inches of dirt in can #2, add one teaspoon of food coloring to the dirt and mix it. Label the can "Dye."
   Place 3 inches of dirt in can #3, add one teaspoon of vinegar to the dirt and mix it. Label the can "Vinegar."

3. Place each can over a glass jar or water glass and assign a student to act as record keeper for each can.

4. Dip the litmus paper into the water and measure the results.

5. Pour one cup of water into each can. Record the condition of the water in the glass as it collects. Dip a piece of litmus paper into each glass and record the results.

Discussion: Did the water change after percolating through the control can?If the water looks dirty after the test, is it necessarily polluted? Why/why not. If the water looks clean, is it safe to drink?

Extension: How do septic systems work? (See Background V B) Using pages 15 and 16 of DEPE's Clean Water Book, describe how soil is used to clean wastewater. Discuss maintenance of septic systems and chemicals to not pour into the system because soil can not filter them. Discuss the link between poor septage system maintenance and groundwater contamination.