

Codorus Creek Improvement Partnership (CCIP)
Junior High Living Classroom Lesson Plan
Humans and the Environment

Objectives:

- 1) Aid instructors in teaching PA Environmental Education criteria for 4.8.7
- 2) Increase student awareness of local habitat and ecosystems.
- 3) Provide access to tangible teaching materials.
- 4) Introduce the idea of stream restoration and conservation to students.
- 5) Illustrate the positive and negative effects of human interaction with the environment.

Materials: (If materials are unavailable consult CCIP's equipment library.)

Thermometers

Hip Boots (only necessary if students are getting in water to take temperature and do not desire to get wet)

Measuring Stick

Landscape tape measure

Dictionary or environmental science textbook

This lesson plan works best with classes of 20 or less when outside whether is warmer.

Lesson Outline

Part 1 - Explain the concept of Codorus Creek Improvement Partnership's efforts to restore Willis Run and why. (10-15 Minutes)

Things to Include:

- a) Willis Run is a tributary to Codorus Creek
- b) Restoring of buffer zone and its function
- c) The city's drinking water comes from the Codorus Creek
- d) The need to restore ecosystem to sustain life (mention endangered species such as egrets and black-crowned knight heron)
- e) Offers better value and atmosphere to community

Explain how Willis Run's water comes from a quarry. The quarry decides how much water is released in the stream and controls the flow. Explain how water flow affects water quality through events such as temperature, depth and velocity. Clarify how temperatures are a deciding factor as to whether certain organisms can live in the waterway.

- f) Discuss Pennsylvania's conservation and environmental agencies and what they do. Additional information at included websites.
 - a. DCNR- www.dcnr.state.pa.us/
 - b. DEP- www.dep.state.pa.us/
 - c. Western Pennsylvania Conservancy- www.paconserve.org/
 - d. Forestry Department- www.dcnr.state.pa.us/forestry/
 - e. Game Commission- www.pgc.state.pa.us/
 - f. Fish Commission-<http://www.fish.state.pa.us/mpag1.htm>

Part 2- Interactive exploration

- 1) Break students into groups of five (or size suitable for amount in class).
- 2) Give each group a thermometer
- 3) Have two groups take water temperature in Willis Run between restored buffer zone and concert canal.
- 4) Have the other two groups take temperature at Kiwanis Lake.
- 5) In order to prevent flaw in temperature readings instruct each group to take the temperature in the sunlight and to only submerge the thermometer one to two inches below the surface of the water. Temperatures will be taken in degrees Celsius.
- 6) Have groups gather together as a class and present data to be filled in on handout.
- 7) Have students regroup into their previous groups.
- 8) Give groups a number 1-4 or accordingly to class size.
- 9) Handout yard sticks to each group.
- 10) Have each group measure the depth of Willis Run at four separate locations before the concrete canal.
- 11) Separate each group by approximately ten feet.
- 12) Have group come back as a class and get depth data from all groups.
- 13) Instruct students to fill out remaining part of worksheet.

Terms to Know:

- a. Conservation
- b. Restoration
- c. Buffer Zone
- d. Erosion
- e. Run-Off
- f. Habitat
- g. Endangered
- h. Land-Use
- i. Watershed
- j. Natural Resources