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Field Interpretive Techniques II
Final Lesson Plan

# Stream Ecology of Chester Creek

**Goal**: To teach the audience aspects of stream ecology in Chester Creek.

**Objectives**: Students will:
1) Be able to describe how a stream forms
2) Be able describe how erosion affects a stream
3) Be able to identify deposition and know where it occurs
4) Know how water gets to a stream
5) Know how to collect macro-invertebrates
6) Know how to identify macro-invertebrates

**Length**:
1) The lesson will be 1 hour in length.
2) The lesson will proceed as follows:
   a) 3 minutes - introduction (in parking lot at Chester Bowl)
   b) 2 minutes - walk to site
   c) 15 minutes - Discussion on stream ecology
      Topics: Erosion, deposition and turbulence
   d) 5 minutes – describe how to collect a macro-invertebrate sample and identifying them.
   e) 25 minutes – Collect and identify samples found
   f) 4 minutes - Discussion on what we found
   g) 4 minutes – Conclusion
   h) 2 minutes – walk back to parking lot

**Location**: Lesson will be taught downstream from Chester Bowl, near Chester Creek. Students will meet in the parking lot of Chester Bowl.

**Methods**: I will use the following methods: Demonstrate, Describe and Do, Discussion, and Guided Discovery

**Content**:
I will begin my lesson by introducing myself and will describe the background that I have in stream ecology (Field Interpretive Techniques Class). I will then describe to them what we will be doing during my lesson. We will then walk to our lesson site along Chester Creek.

When we arrive at the site, I will ask the audience if any of them have experience with stream ecology. If there are any students that do have experience, I will ask them to help others who do not have as much experience. My discussion on stream ecology will explain the following:

How water gets to a stream
- Overland flow, ground water, directly

Erosion
- Erosion, abrasion, down cutting, velocity, meandering streams and oxbow lakes

Deposition
- Where it occurs

Turbulence
- Eddy, holes, rocks and boulders

After I discuss these factors I will ask if there are any question to this point. I will answer question if asked. I will then begin to show the students who to collect macro-invertebrates. I will get into the stream with a net and I will stand looking downstream. I will kick the bottom soil of the stream around for approximately 30 seconds. After I collect soil and macro-invertebrates, I will dump the remains in the net into a plastic container. I will add a little water to the container. With a spoon I will look for macro-invertebrates. I will explain that this is what we will do for the next 25 minutes. I will then ask the students to get into groups of 3-4 people. The groups will then find an area in the stream to find macro-invertebrates. I will move around to each group during the 25 minutes to answer any question and help each group. While the groups find maco-invertebrates, they will identify them and record each of them.

After 25 minutes, I will bring everyone together and we will discuss what was found. We will debrief by talking about why we found each of these macro-invertebrates. I will conclude my lesson by asking evaluative questions (see evaluation).

**Equipment**:

Nets
Id Guides
Magnifying lenses
Plastic spoons
Plastic containers
Petri dishes
Recording worksheets

**Foul Weather Alternative**: Each of my participants should show up to the lesson prepared for any type of weather. I will have a tarp placed above the main area of discussion in case of inappropriate clothing.

**Evaluation**:
At the end of the lesson, I will ask my students evaluative question to evaluate the success of my lesson. Question will include:

- How does erosion affect the stream?
- What is an eddy?
- How does water get into the stream?
- What are examples of macro-invertebrates found in this area?
- What can you tell about this area by what you found?
- Where does turbulence occur?