What's our Water Really Like?

Materials Needed:

Introduction articles for students to read	Samples of Water
Introduction to the Biotic index	Fine Nets
Organism Identification Tables	Directions for Creating Spreadsheets

Step 1 (Time needed: 20 min)

- Students should prepare for class by searching for a newspaper article discussing water pollution-why a body of water is polluted, what means are being used to a clean the body of water, etc.
- At the start of class, have a few students share their findings.
- After sharing, pass out an article to the class on pollution. "Improved water quality is the goal of Little Patuxent watershed study" from the Baltimore Sun or "Bay Cleanup Estimate: 10 Years, $8.5 Billion" from the Washington Post are sufficient articles.
- Introduce the idea of biotic index as a means of evaluating water quality and how manipulating the biotic index can affect the quality of the water (refer to websites: www.rst2.edu/maters1999/ECOSYS/bioticindex.html www.wavcc.org/wvc/cadre/waterquality/macroinvertebrates.htm)

Step 2 (Time needed: 70 min)

- Prep for this step: You will need to collect samples of water in order for students to analyze it. For best results, groups of students should be provided a large sample of water, approximately a bucket full.
- Separate students into groups of three or four.
- Students will sift the water through a fine net to identify the organisms. Each group will need the following materials: a bucket sample from a local body of water, a very fine net to siphon the water, and a handout explaining biotic index, how to calculate biotic index, and the various tolerance levels for each type of organism.
- Students will siphon the water in the bucket, removing the various organisms they find and identifying them according to their handout. (Use the following website for identification of organisms: http://water.nr.state.ky.us/ww/bugs/intro.htm)
- Students will use Excel to find the biotic index for their water sample.

Step 3

- Now students are ready to create their own water environment. They will demonstrate their understanding of the biotic index and manipulating variables to create an environment within a certain biotic index range.
- Students will answer reflection questions based on this activity.