OSP Interactive Educational Programming

Lesson Title: What's in the water?	**Grade Level: 5th**
Teacher: Kathi Murray	**Duration:50 minutes**

Essential Question(s)/Objective(s):
What are microorganisms?
How can we see microorganisms?
What are macroorganisms?
How can we see macroorganisms?
What is an invertebrate?
How do we group/classify invertebrates?
How do we group photosynthetic organisms?

GPS:

S5CS1. Students will be aware of the importance of curiosity, honesty, openness, and skepticism in science and will exhibit these traits in their own efforts to understand how the world works.
a. Keep records of investigations and observations and do not alter the records later.
d. Take responsibility for understanding the importance of being safety conscious.

S5CS3. Students will use tools and instruments for observing, measuring, and manipulating objects in scientific activities.
d. Identify and practice accepted safety procedures in manipulating science materials and equipment.

S5CS5. Students will communicate scientific ideas and activities clearly.
b. Make sketches to aid in explaining scientific procedures or ideas.

S5CS8. Students will understand important features of the process of scientific inquiry.
Students will apply the following to inquiry learning practices:
a. Scientific investigations may take many different forms, including observing what things are like or what is happening somewhere, collecting specimens for analysis, and doing experiments.
c. Scientists use technology to increase their power to observe things and to measure and compare things accurately.
d. Science involves many different kinds of work and engages men and women of all ages and backgrounds.

S5L1. Students will classify organisms into groups and relate how they determined the groups with how and why scientists use classification.
a. Demonstrate how animals are sorted into groups (vertebrate and invertebrate) and how vertebrates are sorted into groups (fish, amphibian, reptile, bird, and mammal).
b. Demonstrate how plants are sorted into groups.

Key Vocabulary	**Microorganisms, invertebrate, vertebrate, classification, photosynthetic, Dissecting scope, microscope, bacteria, protists, crustaceans,**
Teacher Materials	Samples of various water, may be swamp, pond, ditch (A, B, C) Dissecting and microscopes, slides, droppers, lab sheet
Student Materials	pencil

Teaching Strategy/Procedures	Inquiry – have students move from station to station and observe each water sample (A, B, C) and document observations Have students look at samples from each sample and draw organisms found in the samples Identify organisms with guides and I.D. books
Differentiation	Have students analyze 1 set of samples at a time, all A's, then all B's, then all C's, then compare data
Summarizing Strategy	Teacher will explain why the different organisms are placed in their specific kingdom (for example, photosynthetic bacteria vs. photosynthetic algae a protist)
Assignment(s)	Group the different organisms found into their proper Kingdoms
Assessment For and/or Of Learning	Matching activity