

OSP Interactive Educational Programming

Lesson Title: What's pH is it?	Grade Level: 5th
Teacher: Kathi Murray	Duration: 40 -50 minutes
Essential Question(s)/Objective(s): What does pH of a solution tell us? If it is clear, is it water? Does all water have the same pH?	
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	pH, acids, bases, alkaline
Teacher Materials	Samples of various water samples and solutions Cups, lab sheet, graph sheet IMPORTANT – students must understand they are not to smell, put their hands in, or drink the solutions
Student Materials	Pencil/pen
Teaching Strategy/Procedures	Inquiry have students in groups of 4 or 8 measure the pH of various water samples and solutions Have the students compare the pH of the water samples to their solutions and complete their lab sheet Students will transfer their lab sheet data to the bar group lab sheet

Differentiation	Split into 2 groups – have 1 group testing acids and the other bases, then switch
Summarizing Strategy	<p>Teacher will explain that different water sources have different pH and that the organisms found in each have adapted to that environment</p> <p>For example, the pH of Swamp water is acidic but the pH of River water is closer to neutral. Organisms that live in the swamp have adapted to an acidic environment.</p>
Assignment(s)	Test the pH of various water samples and solutions and complete their lab sheet
Assessment For and/or Of Learning	Complete the pH graph sheet