Caitlyn Yackeren

***Topic: Measuring Acidity***

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| **What's the Scoop on Juice?** |
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| **Purpose:**This activity will involve measuring the pH of a set of juices in order to determine the concentration of hydronium ion in each. Measure the pH of five different solutions of juices. Manipulate the data to determine the amount of hydronium ion in each solution, [H3O+1]. **Materials needed  per group:*** A set of five different juice solutions- cranberry, pineapple, grape juice, orange, apple
* 5 plastic cups for the solutions
* pH paper
* Calculator
* Worsheet
* Graph Paper
* Ruler
* Pencil

**Prior knowledge:** The student should be able to exponentiate a pH value using the following formula:[H3O+1] = 10-pHStudents should understand that a greater concentration of hydronium ion is associated with greater acidity.  **Procedure:**1. Students should work in groups of 2.
2. Obtain 5 cups, each containing approximately 10 mL of juice.
3. Using the pH paper, determine the pH of each solution.
4. The pH of each solution will be recorded in the data table.

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| type of juice |   |   |   |   |   |
| pH of juice |   |   |   |   |   |

1. The set of juices will be returned to the lab table to be used again by the next lab group.

**Analysis:**Using the pH, calculate the [H3O+1] in each of the juices.

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| type of juice  |   |   |   |   |   |
| pH of juice  |   |   |   |   |   |
| [H3O+1]Decimal form |   |   |   |   |   |
| [H3O+1]Scientific Notation |   |   |   |   |   |

1. Create a graph with pH as the independent variable and concentration of H3O+1 as the dependent variable and use the statistics capabilities of a graphing utility to graph the data.
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Source: <http://www.algebralab.org/activities/activity.aspx?file=Science_Juice.xml>