

Secondary Lesson Plan

The pH of foods is currently designed to fit with both the Library Media and Chemistry standards. The non-fiction article meets the requirements of the Utah Core Standards. The standards used could easily be adjusted to fit with Health, Nutrition, CTE, or other curriculums. It is a simple research project based upon weighing pros and cons of a controversial subject. You could even switch out the article and adapt the lesson to another topic, article, or subject.

Just print out the next four pages and you are ready to go!

pH and your diet?

Standards and ILOs:

Chemistry Standard 6 Students will understand the properties that describe solutions in terms of concentration, solutes, solvents, and the behavior of acids and bases.

Objective 3 Differentiate between acids and bases in terms of hydrogen ion concentration.

Relate hydrogen ion concentration to pH values and to the terms acidic, basic or neutral.

Using an indicator, measure the pH of common household solutions and standard laboratory solutions, and identify them as acids or bases.

Determine the concentration of an acid or a base using a simple acid-base titration.

Research and report on the uses of acids and bases in industry, agriculture, medicine, mining, manufacturing, or construction.

Evaluate mechanisms by which pollutants modify the pH of various environments (e.g., aquatic, atmospheric, soil).

ILO 4. Communicate Effectively Using Science Language and Reasoning

Provide relevant data to support their inferences and conclusions.

Use precise scientific language in oral and written communication.

Use proper English in oral and written reports.

Use reference sources to obtain information and cite the sources.

Use mathematical language and reasoning to communicate information.

ILO 5. Demonstrate Awareness of Social and Historical Aspects of Science

Cite examples of how science affects human life.

Procedure:

Students will read the *pH Power* article. They will research and analyze the effect of pH of foods on the body (if any). They will then analyze both sides of the debate about eating an alkaline diet. For their final

reflection they will discuss the debate and why it is important to talk to their doctor about fad diets and diet changes. They should conclude that upon how the concentration and amounts of certain foods are important in a balanced diet; which does to some extent involve pH. i.e. you don't want to eat all acidic foods or all basic foods. Your body can maintain a balance if you don't give it extreme circumstances for the most part.

Proper research techniques will be used. This is a great place to work with the school librarian on research sources and techniques.

Assessment:

The class discussion will be used as a formative assessment.

Title:	PH power.
Authors:	Siple, Molly Leatart, Brian
Source:	Natural Health. Nov2005, Vol. 35 Issue 10, p37-42. 4p. 1 Color Photograph, 1 Chart.
Persistent link to this record (Permalink):	http://search.ebscohost.com/login.aspx?direct=true&db=hxh&AN=18682686&site=src-live
Data-base:	Health Source - Consumer Edition

Name: _____ Period: _____

What are some foods you regularly eat? Label each as acidic or basic.

Eating foods based on their pH is controversial. Research the pros and cons of eating by pH. Make sure that you use reliable and accurate sources (limit to .edu, .gov, and our database sources as much as possible). Create a t-chart to compare the pros and cons.

A large blue t-chart template for comparing pros and cons. It consists of a horizontal line and a vertical line intersecting at the center, forming a cross shape. The horizontal line is positioned above the vertical line, and the vertical line extends downwards from the intersection point.

List the sources from your research here:

After your research and the assigned article do you think that you should consider the pH of the foods you eat, to what extent should the pH of foods be considered?

Why do people think they should eat a diet of a certain pH?

Why do other groups say that the alkaline diet (eating by pH) is a myth?

Why is it important to talk with your doctor about starting a diet, fad dieting, or major diet changes?

Post your t-chart and responses to our Canvas discussion board. Respond to at least 3 other students with evidence from your research.