What's for Lunch?

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Overview
Rationale
Objectives
Strategies
Classroom Activities/Lesson Plans
Annotated Bibliography/Resources
Appendix/Standards

Overview

The number of overweight children in our country continues to grow. Should we worry about these extra pounds? Certainly. Children and adolescents who are overweight are at risk of becoming overweight adults. Considering the serious medical consequences that result from being overweight, childhood obesity is now deemed a major public health concern. Tackling the problem requires a joint effort from a variety of sources. The primary focus of this unit will be the school environment and its role in fostering healthy habits regarding food choices.

I am the computer teacher at Overbrook Elementary School. My assignments include supporting the curriculum with technology and working with students on projects to enhance their technological skills. This three-week curriculum is designed for fifth grade students and will incorporate language arts and technology in learning about health and nutrition. These students have the necessary technical skills for completing the assignments. This multidisciplinary approach to learning will study the history of the National School Lunch Program and investigate the food choices available to students during the school day.

Rationale

Overweight and obese children face many problems; they are at risk for chronic diseases and are subject to social and emotional setbacks. (Mustillo, 2004) Nutrition and fitness are therefore areas of the school's curriculum that need to be emphasized today. Although the school alone cannot turn the tide of childhood obesity, they have an important role in its prevention. Many children eat two meals at school as well as an after school snack. Recess time and physical education classes continue to disappear from the students' roster due to budget constraints and the pressure of improving test scores. Because health

education and physical education are not tested subjects, they are given low priority and, more often than not, are pushed out of the curriculum. (Jordan, 2008) However, even small changes in the school environment can deliver a healthier message to our students. The Institute of Medicine (2005) suggests that schools get involved with the prevention of obesity and not necessarily its treatment. Helping students who are not obese maintain a healthy weight is an important step in the right direction.

Background Information

The adage "you are what you eat" has long been a message from our health professionals, who tell us that in order to be fit and healthy you need to eat good food. "You are what you eat" has European roots, but was popularized in America in the 1940s by the nutritionist and weight loss pioneer, Victor Lindlahr, who published *You Are What You Eat: how to win and keep health with diet.* The phrase resurged during the 1960s with an emphasis on eating whole foods, nothing added and nothing taken away. (Martin, 2008) Given the current crisis of childhood obesity, the saying 'you are what you eat' is a relevant maxim for helping us teach our students the importance of making healthy food choices.

Before the Industrial Revolution many Americans ate their main meal, dinner, at midday. With the birth and growth of factories a lighter meal, called lunch, was initiated so workers could eat and get back to their jobs. When the development of transportation enabled people to work further from home, the midday meal became something light that could be carried to work; usually in a tin pail or brown bag. Children mirrored this pattern. For the most part, children in urban schools went home for lunch, while children in rural areas brought and ate their lunch at school. Sandwiches, soups, salads, and leftovers became common foods for lunch. The main meal was then eaten as a full meal in the evening hours when the family could be together. (Olver, 2004)

Historical Perspective on School Lunches

The school lunch program in the United States has an interesting history of growth and development. Charitable efforts, mostly from women's organizations, provided meals for school children from the mid 1800s to the early 1900s. During this period there were growing concerns that many of the nation's children were suffering from malnutrition. In 1853 the Children's Aid Society in New York City opened its first industrial school for poor children and initiated the first free school lunch program in the United States. However, it lacked momentum and other organizations did not follow its lead. (USDA, 2007)

In 1904 Robert Hunter, a pioneer social worker, published his book *Poverty*. Based on his experiences in Chicago and New York, Hunter attempted to define and measure poverty, to describe some of its evils, and to point out certain remedial actions. Hunter

argued in his book that thousands of school children in New York were not capable of doing good schoolwork due to malnourishment. He made the case that our nutrition due to poverty leads to little learning and urged that adequate provisions be made for the physical needs of school children from homes in poverty. This book had a strong influence on the effort to feed needy children in schools. (Gunderson)

Philadelphia

Philadelphia was among the first cities to introduce a school lunch program. In 1894 the Starr Center Association, a settlement house in Philadelphia's South Central district, began serving penny lunches. The Star Center Association later expanded to nine elementary schools throughout the city by establishing lunch committees at those schools. (Smedley, 1920)

Dr. Cheesman Herrick, the principal of William Penn High for Girls, succeeded in transferring the support of the lunch programs from charitable organizations to the Philadelphia School Board. His plan called for nutritious lunches served under the direction of a home economics graduate. This experiment proved successful and in 1912The School Board established a Department of High School Lunches and directed that food services be established in all high schools of the city. (Smedley)

Meanwhile the Home and School League continued the feeding program in the nine elementary schools. In May of 1915, the League reported to the Board that the need for a lunch system had been clearly demonstrated. Subsequently, the School Board placed the operation of high school and elementary lunch programs under the supervision of the Department of High School Lunches, extending the program to include other elementary schools. Except for light, heat, cooking gas and the original equipment supplied by the board, the lunch program was to be self-supporting. (Smedley)

National School Lunch Act

When it was reported that many American men were rejected for World War II military service because of diet-related health problems, Congress passed the National School Lunch Act in 1946 as a "measure of national security, to safeguard the health and well-being of the Nation's children and to encourage the domestic consumption of agricultural commodities and other food." (7CFR210.1) The NSLA provided surplus foods and financial support to schools that served USDA approved meals to children for free, or at a reduced price. These reimbursable meals were expected to meet the USDA minimum nutritional requirements. (Koplan, 2005)

The guidelines for school lunches have been revised to reflect changes in nutritional recommendations. The current regulations require that school meals meet the Dietary

Guidelines for Americans which recommend that no more than 30 percent of calories come from fat and that less than 10 percent come from saturated fat. Lunches must provide one-third of the Recommended Daily Allowance (RDA) of protein, vitamin A, vitamin C, iron and calcium. School breakfasts must contain one quarter of these RDA requirements mentioned. Furthermore, foods of minimal nutritional value (soda, gum, candy and water ices) cannot be sold during school lunch periods. Servings of fruits and vegetables are not specified and high calorie items (cakes, cookies, batter-fried food) can be served as part of a meal under the current guidelines. (Koplan)

At the beginning of the 2006 school year, school districts participating in the National School Lunch Program (NSLP) were required to adopt a wellness policy. This was doneto address the obesity concerns of the nation by promoting healthy eating habits, along with physical activity in the school environment. During the 2005-06 school year 30.1 million children participated in the National School Lunch Program. (FRAC)

Over its lifespan of sixty years, the focus of NSLP shifted from concerns about undernourishment to concerns about obesity. Because of its dual purpose to both help feed the nation's children, and boost the market for surplus agricultural goods (especially milk and meat products), the NSLP is overseen by the U.S. Department of Agriculture and not the Department of Health and Human Services. (*Rethinking Schools Online*, 2006)

Shifting Concerns

There is no easy fix for the School Lunch Program. Over time people have argued that free lunches undermine personal and parental responsibility, create humiliating requirements (proof needed to determine qualifications for free or reduced lunch), and are a luxury in hard times. One of the most notorious, and somewhat humorous, attacks came when President Regan, in his attempt to reduce the size and cost of school lunches, proposed that ketchup be considered a vegetable. The protest that followed returned ketchup to its proper place as condiment, but the lunch program suffered severe cuts. Balanced school meals and a balanced federal budget are intertwined. (Miner, 2006)

Other attempts were made to cut, reduce or move school lunches from federal to state control. However today the debate centers on the urgent need to update the nutritional guidelines of the program. Today's children, unlike those of sixty years ago, are threatened by obesity and obesity-related health issues rather than by poverty, hunger and malnutrition.

The School Environment

All students are eligible to partake in the NSLP. Participation is highest at elementary level and lowest at the high school level. However, foods served or sold at school that are not part of the federal school meal programs make it difficult to ensure that children eat nutritious meals at school. Schools often have vending machines, sell food at fundraisers, and/or have classroom snacks that are high in fat and/or sugar and low in nutritional value. Chips, candy, and cookies are often sold in direct competition to school meals. Presently, federal guidelines do not prohibit sale of these foods, but states and school districts can initiate their own guidelines to restrict competitive foods. This effort to restrict high-calorie foods during the school day is an important step for promoting good food choices. (Koplan, 2005)

Ensuring that up-to-date nutritional guidelines are met requires leadership and cooperation at national, state and local levels. One of the stumbling blocks to change is the issue of surplus commodities. Legislation in 1935 authorized the USDA to purchase surplus farm commodities and distribute them to the school lunch program. Each year the federal government buys up farm products and turns them over to the schools. In this way schools get free ingredients and farmers are guaranteed a steady income for their products. This seemingly win-win situation has a caveat. Most of the items provided are meat and dairy products high in saturated fat. Subsequently, school lunch menus have been determined more by surplus commodities than by children's nutrition needs. (Levine, 2008)

Another obstacle to change is the reluctance of schools to forgo profits from vending machines and fundraisers. School lunch programs are self-supporting. Schools that participate in the NSLP receive a fixed amount of reimbursement for each meal served. School foodservices frequently sell additional items to generate needed funds. Recent studies are looking into pricing strategies (higher cost for high-fat and reduced prices for fresh fruits and vegetables) to offer foodservices a way to promote healthy choices and generate revenues. (Koplan, 2005)

Interventions

Childhood and early adolescence are formative years during which children develop habits and attitudes toward healthy lifestyles. Interventions aimed at changing the eating behaviours of students are crucial for preventing obesity and its associated health risks, especially in the primary grades. Upon signing the National School Lunch Act in 1946, President Harry S. Truman said, "Nothing is more important in our national life than the welfare of our children, and proper nourishment comes first in attaining this welfare" (USDA, 2007) Interventions are multifaceted and varied components make them difficult to compare. However, efforts are being made to target total fat, saturated fat, fruit and vegetable intake, and physical activity.

The Food Trust

Nutrition education programs are finding their way into many schools. Currently, the School District of Philadelphia participates in The Food Trust Program, which was founded in 1992 and started out by offering nutrition classes for inner-city children at Reading Terminal Farmers' Market in Philadelphia. Today the Food Trust Program reaches over 50,000 students in public schools in southeast Pennsylvania.

The Food Trust Program offers a special program for Kindergarten to foster healthy eating and introduce young children to snacks from farms. They also offer the School Market Program, which is a hands-on learning experience that helps students improve their diets whilst developing marketing skills. As part of the School Market Program students get involved with packaging and selling cut-up fresh fruit at lunchtime.

In this unit I am looking into The Food Trust Programs, which aim at expelling soda and junk food from the school environment, and working with corner stores to provide healthy snacks. Their website (http://www.thefoodtrust.org) has resources for various activities to involve students, staff and parents. (Food Trust, 2004)

The Little Black Bag and Healthy Corner Stores

The "little black bag" is a common sight in a Philadelphia schoolyard. These black plastic bags are the carriers of junk food purchased at nearby corner stores. Students fill up on these items on their way to school and/or consume them for lunch. From observing students at my school, I found that students spend a dollar or two per day on these high caloric foods. The most popular contents are chips, cookies, candy, soda, and hugs, a sugary flavored water beverage.

Local and national networks are working to educate students and garner community support to provide alternatives to these contents. The Healthy Corner Store Network (HCSN) promotes the sale of healthy affordable foods in corner stores in low-income communities and areas with limited access to transportation. Because people in these neighborhoods often rely on these stores for their primary grocery shopping, the HCSN supports the work of local organizations that strive to help small stores and corner stores become healthy neighborhood food suppliers. (HCSN: http://www.healthycornerstores.org/index.html)

In Philadelphia, The Food Trust Corner Store Campaign seeks to create the availability of healthier snack choices in neighborhoods stores. They are currently working with 10 stores located in North and South Philadelphia to market and promote "Smart Snacks." They help educate parents about the value of school meals and the importance of healthy food choices on the way to and from school, as well as during the

school day. They work to ensure that foods offered in Philadelphia schools promote good nutrition and contribute to the development of lifelong healthy eating habits.

Objectives

This unit will address Standards from the School District of Philadelphia's Core Curriculum. Students will have ample opportunities to learn about health and nutrition as they engage in language arts and technology activities. The primary focus of the unit is to raise awareness about making good food choices in the school environment. Students will first establish a timeline for the history of American Public School lunches and research a topic related to that history. They will organize and report information as they examine current school lunch choices and the presence of competitive foods at school. They will study the nutritional value of foods and discover the health issues associated with overconsumption of junk foods and fast foods. Students will learn appropriate technology skills to access information and prepare presentations and reports.

Strategies

I will work in partnership with the fifth grade teacher. Some of the lessons will be conducted in the classroom and others in the computer lab. We will compile a reading list for students to read independently to support their learning. These books will be chosen to encompass the range of reading levels of the students.

I intend to use available technologies to enable students to learn from and learn with specific software applications. For example, they will use the software application, *Inspiration* (Inspiration Software: http://www.inspiration.com) to brainstorm a list of food choices during their time in school and categorize them according to their perceived nutritional value. They will use the Internet to do a mini-research project on the timeline of American School Lunches and prepare a PowerPoint presentation to illustrate some aspect of school lunches through the decades. They might choose menus, locations, time, and/or containers used to carry lunch to school.

Students will work in small groups to collect data on food choices in the school environment. Some will use digital voice recorders to interview students about their before and after evaluation of eating lunch at school. Other students will use digital cameras to document foods eaten in school in addition to lunch (snacks from teachers, candy sold for fund raiser, contents of "black bag")

All students will keep a journal to document their activities, reflect on what they have learned, compile a glossary of terms and list questions for further learning. This work will assist students in our culminating project of creating a podcast on what they have learned about health and nutrition in the school environment.

For their culminating activity students may choose to use the application program *GarangeBand* (software for digital recording, part of the iLife suite for Macintosh Computers) to create a podcast as they discuss the importance of healthy food choices; use the software application, *iMovie*, (a video editing software application for Macintosh Computers) to create a digital story about school lunches; or compose, illustrate, and edit an ABC Book of Nutrition that will be shared with students in lower grades. Students will also work in groups to create a PowerPoint presentation for a Home and School Meeting to inform parents and staff about the importance of good food choices in the school environment.

Classroom Activities/Lesson Plans

Lesson 1: School Lunch: Then and Now

Objectives: Students will begin an inquiry into the history of school lunches. They will compare and contrast the way children have eaten lunch through the decades.

Duration: Two periods: 45 minutes each

Procedure:

Day 1: We will begin by brainstorming the contents of lunch eaten at home (weekends, summer time) and lunch eaten in the school cafeteria. Students will place sticky notes on chart paper to indicate how many days each week they bring their lunch, eat a school lunch or a combination of both.

With a presentation system, I will use the software application, *Inspiration*, to help students compare a list of food choices available during their time in school with choices available at home. We will categorize them according to their perceived high, medium or low nutritional value. We will then access the website of The Overall Nutritional Quality Index (http://www.griffinhealth.org/Research/ONQIpages/Rankings.aspx) to compare our lists with their numerical rankings. Students will then return to their graphic organizer and determine which of their food choices yielded better scores.

Follow up: For a homework assignment each student will design an incentive chart to encourage healthy eating: more fruits and vegetables, less junk foods. They will use these throughout the unit to record their daily choices.

Day 2: Students will then use the computer lab to view the Food Museum Online Exhibit. They will observe and record observations about the physical environment, food, menus and lunch boxes They will begin gathering resources for a mini-research project to illustrate some aspect of school lunches through the decades. They might choose menus,

locations, time, and/or containers used to carry lunch to school.

We will conclude the lesson by making a journal entry about school lunches. Students will choose from the following prompts:

- If you had the chance would you like to go home for lunch? What would be the advantages/disadvantages?
- How can we make eating lunch in school a good experience? What seating arrangements would help students enjoy their lunch? Do you get fresh fruit and vegetables at lunch?

These entries will be saved for possible inclusion in our podcast at the end of the unit.

Lesson 2: The Pyramid vs. The Black Bag

Objective: Students will become acquainted with nutrition concepts through activities using the Food Pyramid. They will evaluate popular lunch snacks sold at the corner store and brought to school in a little black bag.

Duration: Two periods: 45 minutes each

Procedure:

Day 1: We will begin the lesson by looking at a Food Pyramid for Kids Poster (download from http://www.fns.usda.gov/TN/Resources/mypyramidcloselook.html) and briefly discuss each part: the colors that represent the five food groups to choose from each day; different sizes of stripes to indicate more choices from wider stripes; a wideness at bottom of stripes to choose healthier foods from each groups; climbing the stairs to promote physical activity each day.

We will then use the script from "A Conversation with Pyramid Pal" (download from http://www.fns.usda.gov/TN/Resources/mypyramidcloselook.html) to plan and present a reader's theater activity. Students will create a character for each food group and dramatize the conversation between food group characters and Pyramid Pal.

To conclude the lesson students will make a journal entry using the following prompts:

- How can the Food Pyramid help you develop good eating habits?
- How can the Food Pyramid help you choose more healthful snacks?
- Do you eat a healthy lunch at school? Why or Why not?

Follow-up activities:

Students will play the interactive Internet "My Pyramid Blast-Off Game." (http://www.MyPyramid.gov) The game will review concepts learned as they fuel the engine from good food choices to make rocket blast off.

Students will create a PowerPoint presentation for a Home and School Meeting to inform parents and staff about what they have learned about the importance of good food choices in the school environment.

Day 2: I will prepare ahead of time a photo slideshow presentation of some students carrying a lunch box or bag from home and others carrying the "little black plastic bag." I will ask students to predict the contents of each and we will record their answers on chart paper and compare food groups for the predicted included items. I will then display a list of the actual contents and have students comment nutritional value of food brought to school.

Students will then compose questions for an interview form that they will use to help raise awareness about making better choices for food and beverage items brought to school or lunch or for snacks. Possible questions might include:

- Do you buy snacks at the corner store to bring to school?
- Do you eat these for your lunch or as snacks other than lunch?
- How much do you spend each day?
- Does the corner store have any healthy snacks you can choose (nuts, popcorn, fresh fruit)?

Students will sign up to use our digital cameras and digital voice recorders to interview students and document the contents of the little black plastic bags. They will be given time to upload their video and audio files to the computers in the computer lab. This data will be used for possible inclusion in our podcast at the end of the unit.

Lesson 3: Lunch Time

Objectives: Students will become aware of available resources about school. They will be invited to take an active stance in investigating and reporting on steps for making healthful food choices in the lunchroom and school environment.

Duration: Two periods: 45 minutes each

Procedure:

Day 1: Students will use the Internet to access their school lunch menus for a particular month by clicking on their state and then their school district. (http://www.schoolmenu.com/). They will each select one week and compare the menu to the guidelines of the Food Pyramids. They will tally number of meat items, fruits and vegetables (are fresh ones available?) kinds of beverages. They will be directed to take

note of the comment, "Menu Items are Subject to Change Based on Availability."

Students will print out a weekly menu to keep in their journal. Those who eat the school lunch will check off which items they ate, which items on the menu were changed and any other food they brought or bought for lunch. Those who bring their lunch will receive a blank menu so they can record their food items. Students will also record food that came from teacher rewards, parties in the classroom or other sources of treats.

During the week, students will reflect in their journal about the food items available during lunchtime and other times in the school environment. Does knowing what is on the lunch menu help them decide to bring a lunch or supplement it with fresh fruit or a healthy treat?

Day 2: Students will select one of the following activities to raise awareness about the importance of healthy food choices for school lunch and snacks. They will have access to Internet resources for important facts. They can choose from a collection of templates from the ReadWriteThink Printing Press Website: (http://interactives.mped.org/view interactive.aspx?id=110&title=)

- Look back over your journal entries and other resources used in the unit to prepare a poster, brochure or flyer to inform students about the importance of eating a good school lunch and making healthy food choices. Ask permission to display in the lunchroom.
- Prepare a flyer for corner stores to encourage them to display healthy snacks in a prominent place. Ask storeowners to display. Visit The Food Trust site for information:
 - http://www.thefoodtrust.org/php/programs/corner.store.campaign.php
- Write a persuasive letter to your Principal and Home and School Organization to request participation in the "Healthy Times Project" sponsored by The Food Trust. Visit their webpage to get salient points for your letter. (http://www.thefoodtrust.org/php/programs/healthy.times.php)

Culminating Activities

Students will work in groups to complete one of the following activities for their culminating project. During the third week they will have working time in the classroom and time in the computer lab.

1. Recording a Podcast

Objective: Students will use information from previous activities to write and record sound bytes telling about the importance of healthy food choices in the fight against obesity.

Procedure: I will begin by sharing a podcast from the Learning in Hand website. (http://www.learninginhand.com) I will ask students what theynoticed about content and presentation of facts. We will brainstorm on what kinds ofinformation we could include in publishing our podcast about school lunches and healthy good food choices. Students will work in pairs to pull together interesting content and ways to present it. The information will be written into one-paragraph scripts. Some possibilities are:

- Super size or Downsize
- Smart Snacks
- Food Pyramid

Students will have time to revise, edit and practice their scripts before recording. I will work individually with students as they record their segments on the application Garageband. The podcast will be uploaded to a server hosted by School District of Philadelphia (http://podcast.phila.k12.pa.us/)

2. Making a Movie

Objective: Students will gather information from various sources and incorporate it into the making of a movie about students' experience and opinions of school lunches

Procedure: I will show students examples of iMovies and ask them to make a flow chart about the steps that they need to take. What should they do first? What kind of a plan (storyboard) do they need? I will have them practice doing an interview and give them help for keeping it interesting. Students will use the questions from Lesson 2 to interview various students about their school lunches. They will have digital voice recorders and digital cameras to capture audio and video content. The students will use the software application iMovie to put import and edit data. The completed projects will be shown to students in other classes in an effort to have the issue of making good food choices a school wide topic of concern.

I will show them the tutorial from the Apple Web Site (www.apple.com/ilife/tutorials) that explains the step-by-step directions.

3. ABC Book of Tips for School Lunches

Objective: Students will continue to research and reflect on the importance of good food choices in the school environment.

Procedure: Students will brainstorm a list of words and concepts to communicate the importance of good food choices in an ABC format. They will compose brief paragraphs and provide illustrations, either their own drawings or pictures taken around the school.

There will be Nutrition books available for students to read to help them with content and design.

- Sarah Schuette: An Alphabet Salad
- Dianne Warren: The Fruit Bowl: A Contest Among the Fruit
- Dianne Warren: Vegetable Soup: The Nutritional ABC's
- Tershia D'Elgin: What Should I Eat? A Complete Guide to the New Food Pyramid
- Lizzy Rockwell: Good Enough to Eat: A Kids' Guide to Food and Nutrition

Some possibilities for their ABC Book might include:

- An Apple A Day
- Beware Of Sugary Beverages
- Corner Store Snacks
- Discover New Foods
- Eat Your Colors

The completed book will be bound and shared with students in other classes.

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This article looks at how sedentary lifestyles and poor dietary habits contribute to the problem of childhood obesity. Suggestions for school-based intervention are presented.

- Friesz, Mary. *Food, Fitness 'n Fun.* Florida: Designs for Healthy Lifestyles, 2002. The book is a guide to teaching children the value of nutrition, and the incorporation of fitness into their daily life. It is especially useful for parental involvement in nutrition education.
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This book provides an extensive examination of the nature, extent, and consequences of obesity in U.S. children and youth. Chapter Seven covers the school environment.

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 This book is a good resource for background information. It takes you through a typical grocery store aisle by aisle,. It identifies products and what you need to know about them in order to make informed decisions during your grocery shopping trips. Portions can be used for classroom activities.
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 This is an upside down book using pictures and verse to teach the benefits of eating fruits and vegetables.

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This book helps students understand My Pyramid's information and the new nutritional guidelines health and fitness needs.

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http://www.kidshealth.org/kid/stay healthy. Retrieved on 4/22/08.

This website on childhood wellness issues encourages kids to take care of their bodies, eat healthy and stay fit.

Lapow, Gary. "Food "N Fun: A Rockin' Celebration of Good Eatin'." Berkley: Springboard Records, 2005.

A CD with songs related to healthy eating. This collection of songs encourages good nutrition habits.

The Food Museum Online Exhibit. "School Lunch." Retrieved on 3/29/08 from the website:

http://www.foodmuseum.com/exhbitschoollunch.html

The goal of this website is to tackle childhood obesity by giving school children interactive experiences that nudge them away from poor food choices and towards healthy eating, The exhibit provides an historical context on the topic of school lunches.

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This book offers all of the basics found in an adult nutrition guide in a format designed specifically for kids. The only drawback is that it has the older Food Pyramid.

Schlosser, Eric and Charles Wilson. *Chew On This: Everything You Don't Want to Know About Fast Food*. New York: Houghton Mifflin, 2007.

Schlosser (author of *Fast Food Nation*) and Wilson share with young readers the fascinating and sometimes frightening truth about what lurks behind their fast food favorites.

Schuette, Sarah. An Alphabet Salad. Minnesota: Capstone Press, 2000.

The book uses color photography and nonfiction format to showcase various fruits and vegetables.

VanCleave, Janice. *Food and Nutrition for Every Kid.* New York: John Wiley & Sons, Inc., 1999. This book provides an interesting introduction to the importance of healthful food choices. Answers to questions and simple experiments help students explore the science of nutrition.

Vincent, Tony (2006) Learing in Hand. "Retrieved on 6/2/08 from the website:

http://www.learninginhand.com.

This site has steps for designing, creating and publishing a podcast.

Appendix

Materials Needed:

Presentation System: Computer, Projector, Screen Computer (and Internet) Access for each student Digital Cameras

Digital voice Recorders

Video and Audio Software: GarageBand,,iPhoto and iMovie. These are standard applications on the Macintosh Computers in our school.

Pennsylvania Academic Standards for Reading, Writing, Speaking, and Listening

Students will have opportunities to read and understand essential content of informational texts and documents; use, understand and evaluate a variety of media; and use spoken, written, and visual language to accomplish their own purposes

- 1.1 Learning to Read Independently (A, B)
- 1.2 Reading Critically in all Content Areas (A, B, C)
- 1.4 Types of Writing (A, B, C)
- 1.6 Speaking and Listening (A, D, E)
- 1.8 Research (A, B)

Pennsylvania Academic Standards for Health and Physical Education

Students will acquire the knowledge and skills needed to understand nutritional concepts and their impact on their present and future health.

- 10.1.6 Analyze nutritional concepts that impact health. (C)
- 10.1.6 Identify health problems that can occur throughout life and describe ways to prevent them. (E)
- 10-.2.6 Explain the relationship between health-related information and consumer choices. (B)
- 10.1.6 Explain the media's effect on health and safety issues. (E)

Pennsylvania Academic Standards for Science and Technology

Students will use a variety of technological and information resources to gather and synthesize information, and to create and communicate knowledge

- 3.6 Technology Education (B)
 3.7 Technological Devices (C, D, E)
 3.8 Science, Technology and Human Endeavors (A, C)