

A Model for School Food Policy: How Schools Can Fight
Childhood Obesity by Changing Children's Food Preferences

By

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ABSTRACT

Purpose. The purpose of this study is to create a model for school food policy to be used by school food administrators to increase student preference for healthy foods.

Methods. A preliminary model for school food policy was developed based on literature and research on the topic of school food policy from which categories and survey questions were drawn. Surveys were sent out to 130 experts on the topic of school food policy, and 43 participants returned the surveys. The preliminary model was revised based on the responses of the survey participants to create the model for school food policy. *Results.* The preliminary model closely reflected the final model, except in the area of competitive foods. A higher than expected percent of survey participants responded that they would recommend selling competitive foods. *Conclusion.* A model for school food policy should include the following four elements: Farm to School, School Gardens, Competitive Foods, and Kitchens and Cafeterias.

About the Author

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TABLE OF CONTENTS

Chapter One: Introduction	1-6
Childhood Obesity in America	1-3
2010 Dietary Guidelines for Americans	4
The Role of Schools in Fighting Obesity.....	4-6
Research Purpose Statement.....	6
Chapter Two: Literature Review	7-28
Farm to School.....	7-13
<i>Why Schools Should Implement a Farm to School Program.....</i>	<i>7-9</i>
<i>Fieldtrips to Farms and Farmer School Visits</i>	<i>9</i>
<i>Encouraging Children to Eat Locally-Grown Food.....</i>	<i>10-11</i>
<i>Processing Foods Acquired via the Farm to School Program.....</i>	<i>11-12</i>
<i>Building Students' Awareness of the Benefits of Farm to School Programs.....</i>	<i>12-13</i>
<i>Farm to School Summary.....</i>	<i>13</i>
School Gardens	13-17
<i>Why Schools Should Have School Gardens.....</i>	<i>14</i>
<i>Using School Gardens to Teach Children about Food and Nutrition</i>	<i>14-15</i>
<i>Cooking Classes and Demonstrations</i>	<i>15-16</i>
<i>Increasing Student Interest in Consuming Foods Grown in School Gardens.....</i>	<i>16-17</i>
<i>School Gardens Summary.....</i>	<i>17</i>
Competitive Foods	17-22
<i>Eliminating Competitive Foods</i>	<i>18</i>
<i>Nutritional Qualifications for Competitive Foods.....</i>	<i>18-19</i>
<i>Screening Criteria for Competitive Foods.....</i>	<i>19-20</i>
<i>Eliminating or Altering Competitive Foods to Increase Food Sales</i>	<i>20-21</i>
<i>Competitive Foods Summary</i>	<i>21-22</i>
Kitchens and Cafeterias	22-25
<i>Requiring Students to Stay at School for Lunch</i>	<i>22-23</i>
<i>Offering a Salad Bar Option.....</i>	<i>23-24</i>
<i>Preparing Food In-House vs. Off-Site</i>	<i>24</i>
<i>Cafeterias that Encourage Healthy Eating.....</i>	<i>24-25</i>
<i>Kitchens and Cafeterias Summary.....</i>	<i>25</i>
Conceptual Framework.....	25-27
Literature Review Summary	27-28
Chapter Three: Methodology	29-32
Operationalization Table.....	30-32
Chapter Four: Results	33-40
Farm to School Survey Results.....	33-34
School Gardens Survey Results	34-35
Competitive Foods Survey Results.....	36-37

Kitchens and Cafeterias Survey Results	37-39
Additional Questions Survey Results	39
Results Summary	39-40
Chapter Five: Conclusion.....	41-44
Model for School Food Policy	41-43
Bibliography	43-48
Appendix.....	49-73
Appendix A – Human Subjects Protection	49
Appendix B – Survey	50
Appendix C – Most Common Responses to Open-Ended Survey Questions	51-57
Appendix D – Answers to Open-Ended Survey Questions	58-73

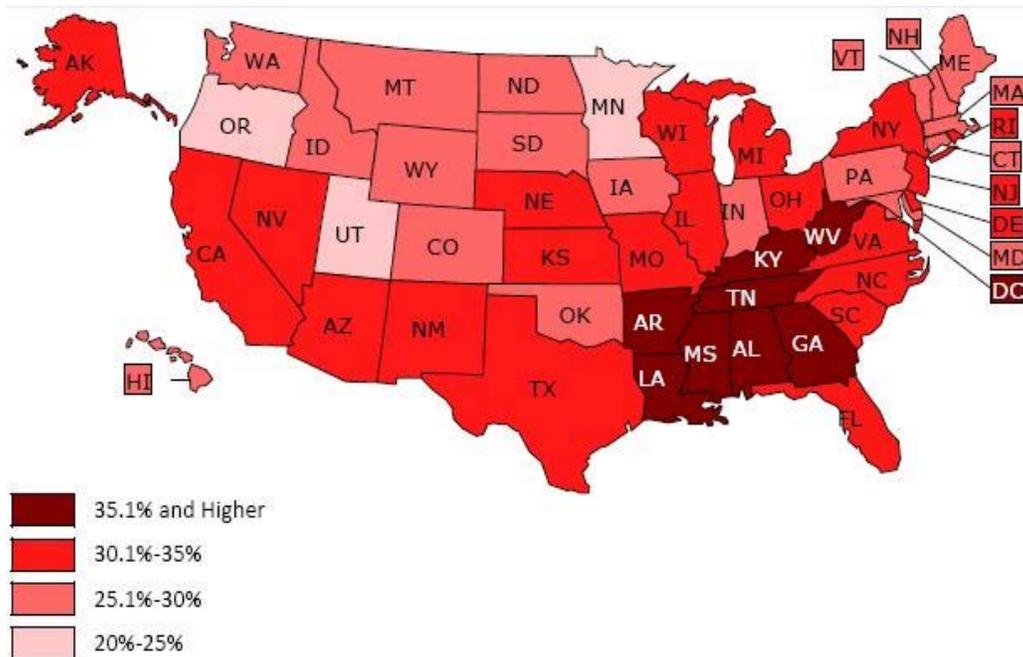
List of Figures & Tables

Figure 2.1 – 2007 Rates of Overweight and Obese Children	1
Figure 2.2 – Prevalence of Obesity among Boys by Race/Ethnicity	2
Figure 2.3 – Prevalence of Obesity among Girls by Race/Ethnicity	2
Figure 2.4 – My Plate.....	4
Figure 2.5 – IOM Suggested Nutrition Standards for Foods in Schools	20
Table 2.1 – Conceptual Framework.....	26-27
Table 3.1 – Operationalization Table.....	30-32
Table 4.1 – Farm to School Responses.....	34
Table 4.2 – School Gardens Responses	35
Table 4.3 – Competitive Foods Responses	37
Table 4.4 – Kitchens & Cafeterias Responses	38-39
Table 4.5 – Additional Questions Responses	39
Table 5.1 - Model for School Food Policy	41-43

Chapter One: Introduction

One of the biggest challenges facing America today is the rising level of childhood obesity. The National Health and Nutrition Examination Survey (NHANES), which collects data on childhood obesity rates, most recently showed that 16.9% of children and adolescents in the US are obese (Centers for Disease Control (CDC) 2012). Figure 2.1 shows the 2007 rates of overweight and obese children in the US.

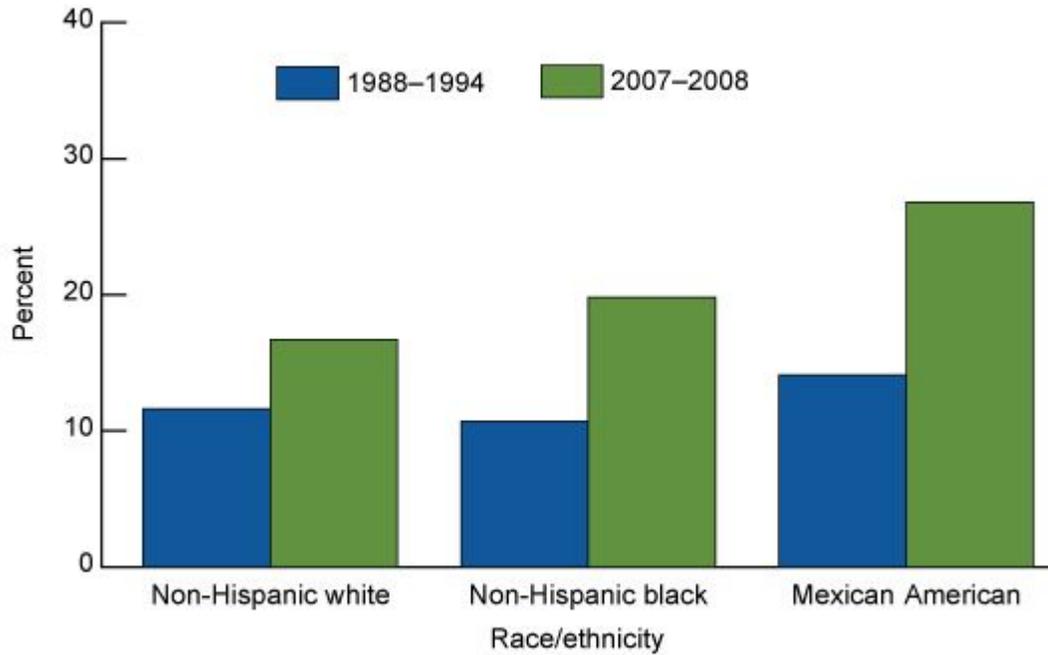
Figure 2.1: 2007 Rates of Overweight and Obese Children



Source: National Conference of State Legislatures 2012

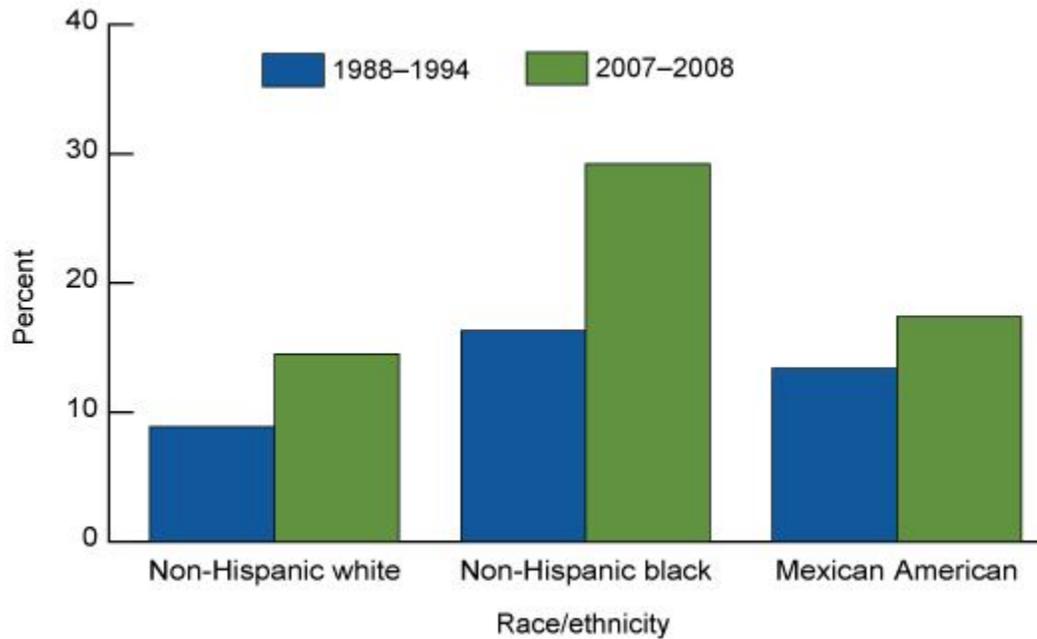
The 2007-2008 NHANES also revealed a significant disparity in obesity rates among children of different ethnicities. The survey showed that Hispanic boys have much higher rates of obesity than non-Hispanic white boys, and non-Hispanic black girls have much higher rates of obesity than non-Hispanic white girls (CDC 2012). Figure 2.2 shows the rates of obesity in boys by race/ethnicity, and Figure 2.3 shows the rates of obesity in girls by race/ethnicity.

Figure 2.2: Prevalence of Obesity among Boys by Race/Ethnicity



Source: CDC 2012

Figure 2.3: Prevalence of Obesity among Girls by Race/Ethnicity



Source: CDC 2012

Fighting childhood obesity should be considered a high priority because children who are overweight or obese are susceptible to a number of negative physical and psychological problems. High blood pressure and high cholesterol are two of the most common risk factors for cardiovascular disease (CVD). Children who are obese have a 70% chance of having at least one risk factor for CVD and have a 39% chance of having two or more risk factors for CVD (Freedman et al. 2007, 12-17). Overweight and obese children are more likely to have impaired glucose tolerance, insulin resistance, and type 2 diabetes (Whitlock et al. 2005, 125-44). These children are also more susceptible to breathing problems such as sleep apnea and asthma (Han, Lawlor, and Kimm 2010, 1737-48; Sutherland 2008, 589-602). Fatty liver disease, heartburn, and gallstones are also more common in overweight and obese children (Whitlock et al. 2005, 125-44; Han, Lawlor, and Kimm 2010, 1737-48).

In addition to increased health problems, overweight and obese children are more likely to suffer from stigmatization due to their appearance and consequently can develop poor self-esteem (Whitlock et al. 2005, 125-44). Studies have also shown that children who are overweight and obese tend to miss more school and have poorer academic performance than children who are a healthy weight (Chriqui et al. 2009, 1).

The health problems associated with being overweight or obese as a child only increase into adulthood. Children who are overweight or obese are likely to be more severely overweight or obese as adults than children of a healthy weight (Biro and Wien 2010, 1499S-1505S). Overweight and obese adults face elevated risk for coronary heart disease, type 2 diabetes, stroke, breast cancer, and colon cancer (CDC 2012).

2010 Dietary Guidelines for Americans

Obesity is a national epidemic affecting Americans' health, productivity, and medical costs. The 2010 *Dietary Guidelines for Americans*, announced by the United States Department of Agriculture (USDA), emphasizes reducing calories and increasing physical activity as a way of confronting the obesity epidemic (USDA 2011). *My Plate* (Figure 2.4), which illustrates these new dietary guidelines, encourages Americans to fill half their plate with fruits and vegetables, fill a portion of their plate with whole grains, and fill the remaining portion of their plate with lean protein. In addition, *My Plate* recommends choosing low or non-fat dairy products.

Figure 2.4: My Plate



Source: USDA 2012

The Role of Schools in Fighting Obesity

While there has been an increase in obesity across all ethnicities and socio-economic groups, children that come from low-income and minority households are more likely to be obese. Children from these households also have much higher rates of enrollment in the National School Lunch Program (NSLP), a federally funded program that provides children in public and non-profit private schools with low-cost and free nutritionally-balanced lunches during the

school day, making improvements to the food served at school even more relevant to reversing the trends in obesity for the children most susceptible to the epidemic (Kumanyika and Grier 2006, 187-207).

Children spend the majority of their waking hours at school and consume 35% of their food (when only eating lunch) at school, making this the prime setting for implementing changes to children's diets and attitudes towards wellness (Molaison et al. 2011, 2). In 2010 the NSLP served 31.7 million children (USDA 2011). NSLP is required to follow the *Dietary Guidelines for Americans*, which recommends that no more than 30% of daily calories come from fat and no more than 10% of daily calories come from saturated fat. NSLP must also provide children with one-third of their daily Recommended Dietary Allowances for calories, protein, calcium, iron, Vitamin A, and Vitamin C (USDA 2011). School food authorities at the local level can decide which foods are served and how these foods are prepared as long as the basic nutritional guidelines are followed.

The 2004 US Child Nutrition and WIC (Women, Infants, and Children) Reauthorization Act required that schools receiving funding for NSLP from the federal government establish new school wellness policies by the 2006-2007 school year (Grenci, Hughes, and Savoca 2011, 1). When implemented successfully, the wellness policies would have the potential for significantly improving children's nutrition (Grenci, Hughes, and Savoca 2011, 2). One of the main challenges schools faced when implementing this mandate was a lack of cohesive planning about how to set up these new wellness policies. Studies were conducted in Utah, Virginia, and Pennsylvania on the creation and implementation of school wellness policies in compliance with the 2004 Reauthorization Act, and results showed that although most schools had a policy in place, there was still an incongruity between the plan and the implementation of the plan. In

particular, research showed that the person in charge of implementing the plan was not always clearly stated and that the language used in the plan tended to be vague (Molaison et al. 2011, 2). Wellness policies were to be implemented by the 2006 school year; however, at the time there was little research on how to go about implementing these plans. Since then more research has been conducted, yet a void still remains in creating a model for school food policy, which is the predominant component of a school wellness plan.

Research Purpose Statement

The purpose of this research is to provide a model for school food policy. This model contains four elements, which were determined to be the most effective strategies for improving children's preferences in food based upon a literature review and survey. The first element of this model involves the need for school food administrators to implement a farm to school program for sourcing much of the ingredients in their menu. The second element of this model involves creating and using school gardens as a resource for teaching children about food and nutrition. The third element of this model involves eliminating competitive foods or improving competitive foods to be more nutritious. The fourth element of this model involves designing kitchens and cafeterias in a way that encourages healthy eating. These four elements will create a model for school food policy.

Chapter Two: Literature Review

This literature review will focus on four programs and policies that schools can implement to encourage children to choose healthy foods, especially fruits and vegetables, which can prevent or reverse childhood obesity. Studies have shown that the programs and policies discussed in this literature review increase children's preference for healthy foods. These programs and policies include farm to school programs, school garden programs, policies towards competitive foods, and policies and programs related to setting up kitchens and cafeterias that support healthier food choices. These four programs and policies aim to help children prefer healthy foods over unhealthy foods, preferences that can lead to lifelong healthy eating habits. These lifelong healthy habits can help stop, and even reverse, the current trend in childhood obesity.

Farm to School

Farm to School (FTS) programs provide schools with fresh produce from local and regional farms in an effort to improve child nutrition, increase student awareness of where their food comes from, and promote local farm economies. According to the National Farm to School Network, an organization that provides support and resources for FTS programs, there are an estimated 2,518 FTS programs serving 9,945 schools nationwide (2012).

Why Schools Should Implement a Farm to School Program

Considering the first two FTS programs started just 15 years ago, the rate of growth in FTS programs across the country reflects a burgeoning awareness of society's need to regain the close relationship it once had to its source of food. FTS programs promote this close relationship to food at an early age, which is essential to changing how the next generation views food and the land from which it comes. FTS programs offer schools a sustainable source of fresh, locally-

grown food that not only benefits the students but also the surrounding community: a mutually beneficial relationship often referred to as community food security (CFS).

FTS programs support CFS which is defined as “a situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice” (Hamm and Bellows 2003, 37). This differs from the traditional definition of food security in that it places “an emphasis on human economic and social rights ...community empowerment and self-reliance (as opposed to self-sufficiency)...and a systemic understanding of sustainable natural resource use within a food system context” (Hamm and Bellows 2003, 37-38). The focus of CFS is on the long-term sustainability of a program rather than just the short-term needs of the community. One goal of CFS is to provide children with “nutritious meals at school that are culturally appropriate and generated via sustainable production practices” (Hamm and Bellows 2003, 38). Hamm and Bellows compared Anti-Hunger Food Programs (the traditional way of approaching school lunches) to CFS Programs. The goals of Anti-Hunger Food Programs are short-term and include treating hunger and sustaining cheap food prices. The goals of CFS Programs are long-term and include preventing obesity and supporting local agriculture (Allen and Guthman 2006, 401-415).

In addition to promoting CFS, FTS programs can have immediate and long-term impacts on children’s food preferences. Children are more likely to eat fresh, locally-grown fruits and vegetables because they taste better than fruits and vegetables transported over long distances says Marion Kalb, director of the Community Food Security Coalition’s National Farm to School Program and one of the initial proponents of the FTS movement (2009). FTS programs have support from advocates looking to improve child nutrition and support from advocates looking to

build sustainable local farm economies (Bagdonis, Hinrichs, and Schafft 2008, 107-119).

Schools should implement FTS programs to give students access to fresh, locally-grown food while also building a more sustainable supply chain that supports the local community.

Fieldtrips to Farms and Farmer School Visits

The most effective FTS programs not only supply schools with fresh produce and support the local farm economy but also incorporate learning experiences such as fieldtrips and farmer visits into the program. Fieldtrips to farms and farmer school visits offer a unique opportunity to teach children about food and nutrition. Fieldtrips to local farms give students a chance to see firsthand where their food is grown and may even give students the chance to plant and later to pick and prepare the crops grown at the farm. Well-implemented FTS programs also bring farmers into the school to talk to children about where the fruits and vegetables they are eating are grown.

In 2004, “The San Francisco Farm-to-School Report: Results from the 2003 Feasibility Study” was published. This report listed the five “key components” that farm to school programs aim to address. One of these “key components” involved taking students on field trips to local farms and having local growers visit the classroom (Rimkus, Jones, and Ona 2004, 5). Field trips to local farms and visits from local growers offer an “integrated nutrition curriculum that connects experiential learning at the farm...to healthy choices in the lunchroom” (Rimkus, Jones, and Ona 2004, 5-6). FTS programs should include fieldtrips to farms and farmer school visits as a way of improving child nutrition by increasing their knowledge, interest, and involvement in the food they eat.

Encouraging Children to Eat Locally-Grown Foods

One of the first FTS programs in the nation was at McKinley Elementary School in Santa Monica, California, which started when Robert Gottlieb, a parent, noticed that very few students were eating from the cafeteria salad bar. Gottlieb spoke with the director of a local farmers' market and formulated a plan for purchasing local produce from the market to use as part of a new Farmers' Market Salad Bar program. The new salad bar was introduced to the students on September 17, 1997, and was an immediate success. Rodney Taylor, the food service director of the Santa Monica-Malibu Unified School District, expanded the program to be district-wide upon seeing the program's success at McKinley (Santa Monica-Malibu Unified School District 2012). The Farmers' Market Salad Bar program is a great example of how using fresh, locally-grown foods can increase children's preference for and consumption of vegetables.

Many schools see an increase in school lunch sales and a decrease in food waste when fresh, local produce is served. This occurred at the Bend-La Pine School District in Oregon when they started advertising fresh, local produce on the menu. More parents wanted their children to eat the school lunches when locally-grown foods were served, plus there was less food being thrown out by the students (Rosenbald 2009). According to Jeff Rosenbald, the owner of Happy Harvest Farm and a supplier of fresh tomatoes to the school district, the students enjoyed eating the local produce because the farm was located "close to a lot of the schools and we can pick it when it's truly ripe, so you get the sweetness, the true goodness it was meant to have" (2009).

Betsey Cole of Santa Fe Public Schools also saw an increase in fruit consumption when locally-grown New Mexico apples were served in her school district. Cole says that once the very popular New Mexico apples went out of season, the out-of-state apples that took their place

were often thrown out by the students (Kalb 2009). By providing children with delicious, locally-grown fruits and vegetables, FTS programs have an immediate impact on improving child nutrition.

FTS programs can also have long-term impacts on the eating habits of children who are exposed to these programs. When children's palates are exposed to tasty fruits and vegetables at an early age, they are more likely to choose those same foods as adults. Kalb says taste tests are one of the most successful ways of exposing children to new foods because children feel peer pressure to try the new foods and have the encouragement of teachers and food service staff at the same time. According to Kalb, when kids get the opportunity to eat a fresh product, they will continue to do so because they enjoy the taste; "it becomes a way of life for them" (2009).

Processing Foods Acquired via the Farm to School Program

At the same time the Farmers' Market Salad Bar program was breaking new ground in southern California, the USDA was partnering with the New North Florida Cooperative (NNFC), a group comprised of low income African-American farmers, on an innovative project to bring fresh, local produce to schools in Florida's panhandle. The goal of NNFC was to increase participating farmers' profits by providing them with the opportunity to collectively market and sell their produce to buyers who required large volume, such as school districts. NNFC began by selling collard greens to ten schools and went from owning almost no equipment to purchasing a refrigerated truck and processing equipment. The Cooperative was able to provide a valuable product to schools by selling collard greens pre-chopped, bagged, and/or frozen, so the product was already prepped for cooking upon delivery. NNFC now distributes produce to schools in Florida, Alabama, Mississippi, and Georgia, and has expanded its offerings to include

watermelon, green beans, strawberries, and sweet potatoes (Joshi, Kalb, and Berry 2006, 6; National Farm to School Network 2012).

Schools should consider the methods they put in place for processing the foods they acquire through FTS programs. Convenience is important for making farm to school programs feasible in schools across the country. The NNFC addressed this issue of convenience for their customers by providing value-added, minimally processed foods to school kitchens. While some schools will have access to the equipment and staff needed to process FTS-supplied food, other schools may need to consider using suppliers like the NNFC who deliver the food ready to serve or cook.

Building Students' Awareness of the Benefits of Farm to School Programs

Schools should aim to build students' awareness of the benefits of FTS programs. Taste tests are one of the most effective ways of making students aware of the benefits of FTS programs (Kalb 2009). FTS programs give students the chance to taste locally-grown, seasonal produce, which is usually much more delicious than the commodity, canned and non-local produce often used as part of the school lunch program. FTS programs take an integrative approach to nutrition education by teaching students to love fruits and vegetables because they taste good rather than just because they are good for them (Kalb 2009). This approach gets to the heart of forming positive relationships to healthy foods which will affect food preferences into adulthood.

Students should also be taught the benefits of FTS programs to their communities. FTS programs can help protect farmland from encroaching urban sprawl while providing a stable income for small and often organic farms (Allen and Guthman 2006, 401-415). Farmers' livelihoods are increasingly being threatened by corporate-owned and foreign farms. FTS programs give small and organic farm-owners the opportunity to stay in business and continue

growing high-quality foods for local and regional consumers, thus keeping farmland from being lost to urbanization, maintaining the open spaces that border ever-expanding cities, and decreasing the amount of fossil fuels being used to transport food.

Farm to School Summary

FTS programs provide children with high-quality, delicious fruits and vegetables, while increasing student awareness of how these foods are grown. FTS programs are an excellent way to give children early memories of healthy foods (Bagdonis, Hinrichs, and Schafft 2009, 107-119). Instead of saying you should eat this piece of fruit because it is good for you, FTS programs say you should eat this piece of fruit because it tastes good (Kalb 2009). Building good relationships with food at an early age is essential for developing the habits and the food preferences necessary to sustain lifelong healthy eating habits.

School Gardens

School gardens are another very successful program for building good relationships to food. A school garden is a wonderful complement to any FTS program because it offers an additional method for teaching students about fresh, healthy foods in a setting that is essentially an outdoor classroom for teaching nutrition education. FTS programs and school gardens are two programs that should be used simultaneously to reinforce a love for healthy foods among children.

School gardens are hands-on learning environments that can be used to teach lessons in every subject and are especially useful as multi-sensory tools for teaching and reinforcing the message of healthy eating and sustainable living. School gardens may be as small as one or two raised beds or much larger, containing many beds with a variety of fruits, vegetables, and flowers.

Why Schools Should Have School Gardens

Proponents of school gardens have many motivations for supporting the school garden movement which include the desire to provide children with outdoor classrooms and beautiful environments where children can play, as well as environments that encourage children to consume fresh produce (Ozer 2006, 1). Garden-based learning sessions teach children about a number of topics such as sustainable environmental practices and American agricultural history. For example, many school gardens incorporate rain barrels for water collection and utilize irrigation canals for watering, thus teaching children about sustainable water management. Some school gardens also utilize sustainable farming methods like the “three sisters” technique used by Native Americans, in which squash, beans, and corn are planted in the same field, each giving added value to the plants around them (Grenci, Hughes, and Savoca 2011, 3). School gardens teach children to be more responsible and conscientious. When children participate in planting and nurturing a garden, they develop a respect for the small ecosystem they helped to create, a respect which will heighten their enjoyment of the foods grown in the garden.

Using School Gardens to Teach Children about Food and Nutrition

Like FTS programs, school gardens are an essential part of a school food policy that gets to the root of teaching lifelong healthy eating habits. According to exposure theory, frequent and repeated exposure to a new food is necessary for children to accept that new food (Birch and Marlin 1982, 353-360; Sullivan and Birch 1990, 545-551). School gardens increase the likelihood that children will continue choosing fruits and vegetables into adulthood because of the constant exposure it gives them to these foods.

Studies show that children who receive garden-based lessons about food and nutrition are more likely to eat fruits and vegetables. The School Lunch Initiative, a program funded by the

Chez Panisse Foundation, had four California schools incorporate school gardens into their nutrition education. The students who received garden-based nutrition education at these schools had greater knowledge of fruits and vegetables, ate more fruits and vegetables, and were more likely to eat from the school salad bar than the students who did not receive garden-based education (Rauzon et al. 2007, 1).

Another program called “Smart Bodies,” a 12-week intervention program to educate fourth and fifth grade students about food nutrition, also showed an increase in fruit and vegetable consumption. This program emphasized exposing the students to various fruits and vegetables with the goal of increasing fruit and vegetable consumption after the program was over. The study found that the program did increase students’ consumption of fruits and vegetables (Turri et al. 2009, 445-451). These studies show that garden-based education improves children’s consumption of fruits and vegetables, therefore schools should use school gardens to teach children about food and nutrition.

Cooking Classes and Demonstrations

The garden-based nutrition education of growing, harvesting, and preparing food should also include cooking classes and demonstrations. The Edible Schoolyard program gives children weekly cooking classes, an integrated approach to teaching children about food and nutrition, while increasing their enjoyment for the healthy foods used in the classes. Sand Lake Elementary School in Holmen, Wisconsin has also incorporated cooking demonstrations into their nutrition education curriculum. Chef Thomas Sacksteder, who volunteers his time to put on cooking demonstrations at Sand Lake, says “kids this age are so open to trying new things. They’re ready to go home to their parents and say ‘Hey Chef Thomas made this...can we make [this]?’” (Sacksteder 2011). One of the children attending the cooking demonstration said “I had

avored the carrots, even though I usually don't like carrots, they were roasted which was flavorful...tasty" (Sacksteder 2011). Research shows that by exposing children to fruits and vegetables through cooking classes and cooking demonstrations, schools can increase children's willingness to try and preference for these foods (Rauzon et al. 2007, 2).

Increasing Student Interest in Consuming Foods Grown in School Gardens

School gardens are an economical and highly effective way for schools to increase children's consumption of fruits and vegetables by giving them the opportunity to plant, water, harvest, and taste the fruit of their labor. School gardens have been shown to be highly effective at increasing children's consumption of fruits and vegetables in school. A 2009 study separated 320 sixth grade students into two groups. The control group was not exposed to garden-based learning sessions while the intervention group received one hour of garden-based learning sessions a week over a four-month period of time. The students from each group were then administered a survey asking them questions related to their ability to identify a variety of vegetables, their willingness to try a variety of vegetables, and their consumption of vegetables. The students who received the garden-based learning sessions showed a significant increase in their ability to identify vegetables, willingness to try new vegetables, and consumption of vegetables in school (Ratcliffe et al. 2009, 1-6). This study revealed that a successful strategy for increasing vegetable consumption in school is to provide "opportunities for students to taste and learn about produce through gardening activities" (Ratcliffe et al. 2009, 6).

Intervention subjects, however, did not show an increase in vegetable consumption at home in comparison to the control subjects. This could show the need for increased parental involvement in the school garden program, which might include family garden nights where parents get to help in the garden and learn about the garden (Ratcliffe et al. 2009, 5). Schools

might also consider sending home recipe cards that include information about the fruits and vegetables the children have tasted from the garden. The students could then ask their parents to prepare the fruits and vegetables they tried at school, thus encouraging healthier eating habits for the whole family.

School Gardens Summary

School gardens are an excellent hands-on approach for teaching children to enjoy fruits and vegetables, lessons that are essential for forming long-term healthy eating habits. Schools should implement garden-based learning as a way of teaching children about nutrition and as a way of developing preferences for healthy food.

Competitive Foods

While school gardens and FTS programs have been shown to increase children's consumption of fruits and vegetables, these programs will not achieve their full potential if unhealthy foods, like cookies and french fries, are available and competing with the healthier food choices. The least healthy foods in schools are usually those foods known as competitive foods. Competitive foods are foods sold or given to children in school that are not funded by the NSLP or School Breakfast Program (SAP). These include foods sold in school stores, a la carte items, vending machine items, foods sold as part of school fundraisers, foods sold at concession stands during afterschool events, and foods consumed during class parties. Often times these foods include candy bars, soft drinks, and other unhealthy snacks. These may also include lunch items, like pizza and french fries, that are sold by vendors contracted by the school to sell food in a different lunch line than the NSLP. Competitive foods usually have low nutritional value and are often high in fat and sugar.

Eliminating Competitive Foods

Competitive foods are one of the biggest challenges today in the fight against childhood obesity (Gordon et al. 2009, S20-S30). Students who have access to competitive foods have been shown to consume significantly fewer fruits and vegetables than students who do not have access to competitive foods (Cullen et al. 2000, 1482-1486). Supporters of eliminating competitive foods also cite that these foods allow children to overeat throughout the day, which can lead to obesity. Consuming food in class and in between class and using food as incentives for fundraisers have each been linked to a 10% increase in body mass index average of the school population (Kubik, Lytle, and Story 2005, 1111-1114).

There is also concern over the strong push by retailers to advertise to children knowing that children's preferences in food and drink are formed at an early age. Along with competitive foods, marketing is directed at children in schools mainly through posters, scoreboards, book covers, and year books (Litchfield and Wenz 2011, 2).

Screening Criteria for Competitive Foods

A recent study found that competitive foods are available in most middle and high schools (Story et al. 2008, 253-272). Studies have also shown that competitive foods decrease the amount of food purchased through the NSLP, meals which, unlike competitive foods, must follow the *Dietary Guidelines for Americans* (Litchfield and Wenz 2011, 1). Students who eat competitive foods consume fewer fruits and vegetables than students who eat from the NSLP (Cullen et al. 2000, 1484).

Schools that choose to continue selling competitive foods should set high screening criteria standards for these foods and offer mostly unprocessed foods. Healthy competitive foods might include water, apple slices, carrot sticks, and whole grain crackers. Some companies, like

H.U.M.A.N., now offer healthy vending options which may be a good alternative to current unhealthy vending options.

Schools should feel confident about setting high standards for competitive foods knowing that the food industry has a financial incentive to step up and meet these standards (Pomeranz and Gostin 2009, 62-75). Schools are a significant customer for big food companies, so if schools set the standards high, these companies will either meet the demand or lose some of their biggest customers to the smaller companies willing to step in and meet the schools' demands. Remember the old adage, "the customer is always right."

Screening Criteria for Competitive Foods

The Institute of Medicine (IOM) has suggested certain screening criteria that schools should use when determining what competitive foods will be allowed in school. The screening criteria are divided into two tiers. Tier 1 refers to foods available to any grade level and at any time of the day. Tier 2 refers to foods available only to high school students and available only after school. The following figure (Figure 2.5), which was developed by the CDC, shows the recommendations given by IOM.

Figure 2.5: IOM Suggested Nutrition Standards for Foods in Schools

For All Students at All Times of Day (Tier 1)	Examples
<ul style="list-style-type: none"> • Fruits, vegetables, whole grains, combination products, fat-free and low-fat milk and milk products, lactose-free and soy beverages, per portion as packaged: <ul style="list-style-type: none"> » ≤200 calories; » ≤35% of total calories from fat; » <10% of calories from saturated fats; » Zero trans fat (≤ 0.5 g per serving); » ≤35% of calories from total sugars; <i>and</i> » ≤200 mg sodium. 	<ul style="list-style-type: none"> • Individual fruits—apples, pears, oranges. • Fruit cups packed in juice or water. • Vegetables—baby carrots, broccoli, edamame. • Dried or dehydrated fruits—raisins, apricots, cherries. • 100% fruit juice or low-sodium 100% vegetable juice. • Low-fat, low-salt, whole-grain crackers or chips. • Whole-grain, low-sugar cereals. • 100% whole-grain mini bagels. • 8-oz servings of low-fat, fruit-flavored yogurt with ≤30 g of total sugars. • 8-oz servings of low-fat or nonfat chocolate or strawberry milk with ≤22 g of total sugars. • Low-sodium, whole-grain bars containing sunflower seeds, almonds, or walnuts.
For High School Students, After School Only (Tier 2)	Examples
<ul style="list-style-type: none"> • Any foods or beverages from Tier 1. • Snack foods that are ≤200 calories per portion as packaged, and <ul style="list-style-type: none"> » ≤35% of total calories from fat; » <10% of calories from saturated fats; » Zero trans fat (≤ 0.5 g per serving); » ≤35% of calories from total sugars; <i>and</i> » ≤200 mg sodium. • Sugar-free, caffeine-free beverages with <ul style="list-style-type: none"> » Nonnutritive sweeteners; » Not vitamin- or nutrient-fortified; <i>and</i> » <5 calories per portion as packaged. 	<ul style="list-style-type: none"> • Low-salt baked potato chips (≤200 mg of sodium), crackers, and pretzels. • Animal crackers with ≤35% of calories from sugars. • Graham crackers with ≤35% of calories from sugars. • Ice cream bars low in sugar and fat. • Caffeine-free, calorie-free, nonfortified soft drinks.
Examples of Items that <i>Do Not Meet the Standards</i>	
<ul style="list-style-type: none"> • Potato chips or pretzels that have too much sugar or salt (i.e., exceeding the values listed above). • Cheese crackers that have too much fat or sodium. • Breakfast or granola bars that have too much fat or sugar. • Ice cream products that have too much fat or sugar. 	<ul style="list-style-type: none"> • Cake, cupcakes, or cookies with too much sugar or salt. • Fortified sports drinks or fortified water. • Gum, licorice, or candy. • Fruit smoothies with added sugar. • Regular colas or sodas with sugar or caffeine.

Source: CDC 2009

Schools should use, at a minimum, the screening criteria suggested by the IOM. Some schools have set stricter screening criteria for competitive foods, such as only allowing fruits, vegetables, and water, and have been happy with the results.

Eliminating or Altering Competitive Foods to Increase Food Sales

Many school food service directors say they feel pressured to sell competitive foods because these foods are popular with students and are profitable for the school (Nollen et al. 2007, 18).

This line of thought may in fact be a misconception, as studies have shown that competitive food sales decrease NSLP food sales (Litchfield and Wenz 2011, 1). Schools are reimbursed by the federal government for NSLP, so the more students choose these meals, the more reimbursement the schools receive. Research has also shown that schools that have banned competitive foods, while at the same time improving their NSLP, have actually increased their revenue from food sales (Wojcicki and Heyman 2006, 1542-1547).

One study compared various published and unpublished studies to see if the findings showed improved health in children when schools improved their nutritional policies. The research was divided into three categories which included “nutritional guidelines,” “regulation of food and beverage availability,” and “price intervention” (Jaime and Locke 2009, 46). This study found that schools that only intervened in some areas, like reducing the price of fresh fruits and vegetables, but did not also ban competitive foods, such as ice cream, did not have the same level of effectiveness as the schools that took a more comprehensive approach. This study suggests “that regulation policies focused on a single unhealthy food are more likely to fail rather than those which implemented as part of a whole diet and food policy” (Jaime and Locke 2009, 51). They also discovered that reducing the “price of healthier foods, such as low-fat snacks and fruit and vegetables, might increase their sales, without loss of profits to school food stores or catering services” (Jaime and Locke 2009, 68).

Competitive Foods Summary

Schools have the unique opportunity, and therefore the responsibility, to set in place a preference for healthy foods among their students. Big food companies advertise to children in schools to build a loyal following of consumers who will continue to purchase their products into adulthood. Schools should be setting in place the programs that will create loyal consumers of

fruits and vegetables as opposed to candy and soda. Schools should consider the potential benefits of eliminating competitive foods, such as increased sales of NSLP and SAP foods, increased control over the quality of the food children are consuming, increased potential for FTS and school garden programs, and reduced exposure to advertising by large food companies. Eliminating, or at least improving competitive foods is essential for improving child nutrition in school and reinforcing preferences for healthy foods.

Kitchens and Cafeterias

In addition to FTS programs, school gardens, and policies regarding competitive foods, schools should also create dining environments that promote healthy eating. Kitchens and cafeterias play an important role in promoting healthy food choices among children, choices that will continue to influence their food preferences as adults. In order for school food policies to have the maximum impact on childhood obesity, students must be participating in the NSLP and consuming the healthy food options provided by the school. Recently schools have been struggling to get high school students to participate in the NSLP program. While 73% of elementary school students participate in the NSLP, only 44% of high school students participate in the program (Asperin and Castillo 2010, 1). Of all students ages five to 18, 34.9% are high-school aged; however, they only account for 26% of the NSLP participants (Asperin and Castillo 2010, 1). To increase student participation in NSLP, schools should set up kitchens and cafeterias in a way that promotes healthy eating and that is appealing to the students.

Requiring Students to Remain at School for Lunch

The proximity of a high school with an open-campus policy to off-campus food retailers plays a significant role in the rate of NSLP participation. One theory for why there is a growing trend towards high school students eating off-campus is because they are from the generation known

as the “millenials” (Gale 2007, 83). This generation is used to eating more meals outside of the home and has become accustomed to the foods served by commercial retailers, which are often high in fat and sodium (Asperin et al. 2010, 2).

High schools can increase participation in NSLP by implementing a closed-campus policy. Not only will this increase NSLP food sales and reimbursement, this will also eliminate the need for high schools to compete with fast food chains in the style of food they serve (Litchfield and Wenz 2011, 5). Open-campus schools often find they have to offer more unhealthy food options just to compete with off-campus food retailers (Marlowe 2002, 22-25). By requiring students to remain at school for lunch, schools will increase participation in NSLP and prevent competition with off-campus food retailers who serve unhealthy food options.

Offering a Salad Bar Option

Another recommendation for increasing NSLP participation is to offer a school salad bar like the Farmers’ Market Salad Bar at the Santa Monica-Malibu Unified Public School District (Brillinger, Ohmart, and Feensta 2003, 1). The Farmers’ Market Salad Bar program has earned a number of awards including Restaurant Hospitality’s “Best Kids Menu in America” and is a success with a third of the students choosing the salad bar option daily (Santa Monica-Malibu Unified School District 2012).

A study that was conducted on students’ lunch experiences showed that 21 key factors impact the experience of school lunch for high school students. These key factors were placed into three dimensions including food quality, program reliability, and staff responsiveness and empathy. Of the three dimensions, the food quality had the greatest effect on the students’ dining experience (Asperin and Castillo 2010, 2). By providing delicious and healthy food

options, like the Farmers' Market Salad Bar, schools can increase student participation in NSLP and increase students' consumption of healthy foods.

Preparing Food In-House vs. Off-Site

While many schools have limited kitchen space and staff that reduce the amount of food preparation that can take place at school, there are still steps these schools can take to ensure that children are receiving delicious and nutritious food. For example, schools with limited kitchen space or staff may consider the approach taken by the schools working with the New North Florida Cooperative, which delivers much of the fresh produce they sell pre-chopped and ready to cook (Joshi, Kalb, and Berry 2006, 6; National Farm to School Network 2012). Working with suppliers to bring in foods that are prepped and ready to cook is a great way to save time, work within the preexisting kitchen space, and eliminate the need for expensive equipment. There is no one method that will fit all schools when it comes to kitchens; however, every school should find a way to provide its students fresh, local, and delicious food options.

Cafeterias that Encourage Healthy Eating

For FTS and school garden programs to reach their full potential, it is important that children are actually choosing to eat these healthy meals. There are many factors that contribute to the rate of participation in the school lunch programs which include taste, food appearance, perceived healthfulness, portion size, dining environment, and variety (Asperin et al. 2010, 9). Other issues that contribute to participation include length of lunch time, seating availability, whether a school has an open- or closed-campus policy, dining environment, and variety of foods served. One study surveyed students and found that the students said they would participate in the school lunch program more often if there were more variety of foods offered, an improvement in the quality of food, and if there were less time spent in lunch lines (Asperin et al 2010, 9). This

research shows that cafeterias should be set up to encourage healthy eating by giving students more healthy options, giving students better tasting options, and giving students more time to eat their lunch.

Kitchens and Cafeterias Summary

Kitchens and cafeterias are an essential part of ensuring that children eat the healthy food options served at school. Schools will increase student participation in NSLP and will improve student nutrition by requiring all students to remain on campus during lunch, by offering a salad bar option, by preparing fresh produce in-house or having the local supplier deliver it ready to serve or cook, and by setting up cafeterias that encourage healthy eating.

Conceptual Framework

FTS programs, school gardens, competitive foods, and kitchens and cafeterias are the four program and policy areas that have been discussed in this literature review for the purpose of creating a preliminary model for school food policy. Literature and research on the topic of school food policy show these programs and policy areas to be highly effective at improving child nutrition. These four programs and policy areas have been developed into the categories for the conceptual framework. The conceptual framework (Table 2.1) outlines the categories of the preliminary model for school food policy and shows the supporting literature and research used to develop these categories.

Table 2.1: Conceptual Framework

Categories	Supporting Literature
<p><i>Farm to School</i></p> <ul style="list-style-type: none"> • Schools should implement a farm to school program. • Schools should take fieldtrips to farms and encourage farmers to visit their school to teach students about where their food comes from. • Students should be encouraged to eat locally grown foods. • Schools should find efficient ways of processing the food acquired via the farm to school program. • Students should be made aware of the benefits of a farm to school program. 	<p>Hamm and Bellows 2003; Allen and Guthman 2006; Kalb 2009; Bagdonis, Hinrichs, and Schafft 2008</p> <p>Rimkus, Jones, and Ona 2004</p> <p>Santa Monica-Malibu Unified School District 2012; Rosenbald 2009; Kalb 2009</p> <p>Joshi, Kalb, and Berry 2006; National Farm to School Network 2012</p> <p>Kalb 2009; Allen and Guthman 2006</p>
<p><i>School Gardens</i></p> <ul style="list-style-type: none"> • Schools should have a school garden. • Schools should use the school garden to teach students about food and nutrition. • Schools should offer cooking classes and cooking demonstrations to students. • Schools should find ways of making students more interested in consuming foods that are grown in the school garden. 	<p>Ozer 2006; Greci, Hughes, and Savoca 2011</p> <p>Birch and Marlin 1982; Sullivan and Birch 1990; Rauzon et al. 2007; Turri et al. 2009</p> <p>Sacksteder 2011; Rauzon et al. 2007</p> <p>Ratcliffe et al. 2009</p>

Table 2.1: Conceptual Framework (*Continued*)

Categories	Supporting Literature
<p><i>Competitive Foods</i></p> <ul style="list-style-type: none"> • Schools should eliminate all competitive foods. • If competitive foods are allowed, those foods should meet very strict nutritional qualifications. • If competitive foods are allowed, certain screening criteria should be used to make sure students consume healthy food at school. • Eliminating or altering competitive foods should increase food sales. 	<p>Gordon et al. 2009; Cullen et al. 2000; Kubick, Lytle, and Story 2005; Litchfield and Wenz 2011</p> <p>Story et al. 2008; Litchfield and Wenz 2011; Cullen et al. 2000; Pomeranz and Gostin 2009</p> <p>Centers for Disease Control 2009</p> <p>Nollen et al. 2007; Litchfield and Wenz 2011; Wojcicki and Heyman 2006; Jaime and Locke 2009</p>
<p><i>Kitchens & Cafeterias</i></p> <ul style="list-style-type: none"> • Schools should require that all students remain at school for lunch. • Schools should offer a salad bar option. • Schools should prepare food in-house or have the food delivered fresh and ready to serve or cook. • Schools should set-up cafeterias to encourage student to eat healthier food options. 	<p>Gale 2007; Asperin et al. 2010</p> <p>Brillinger, Ohmart, and Feensta 2003; Santa Monica-Malibu Unified School District 2012; Asperin and Castillo 2010</p> <p>Joshi, Kalb, and Berry 2006; National Farm to School Network 2012</p> <p>Asperin et al. 2010</p>

Literature Review Conclusion

The preliminary model for school food policy involves four elements which are FTS programs, school gardens, competitive foods, and kitchens and cafeterias. The preliminary model for school food policy emphasizes forming preferences for healthy foods, especially fresh fruits and vegetables, while eliminating unhealthy food options. When implemented, the preliminary

model for school food policy aims to give children the encouragement from adults and peers that they often need when trying new foods, experiences which also aid in developing positive associations with healthy foods. Many children, especially those from low-income and minority households, may not have the opportunity and adult support to try healthy foods outside of the school setting. Schools have the unique opportunity to get to the heart of food choice during the formative years of a child's life when he or she is developing either healthy or unhealthy preferences in food, preferences that will last a lifetime.

Chapter Three: Methodology

To create a preliminary model for school food policy, peer-reviewed literature and research on the topic of school food policy were reviewed. Categories for the preliminary model for school food policy were developed based upon the recommendations made in the peer-reviewed literature and research. To create the final model for school food policy, each of the categories in the preliminary model were formatted into questions which were then compiled into an electronic survey. The electronic survey was sent to 130 individuals who were considered to be experts in the field of school food policy because they held one of the following positions at the School Nutrition Association (SNA): state president, state director, or state newsletter editor. SNA, which is the professional association for school nutrition professionals, has over 55,000 members and has been working towards advancing school nutrition programs since 1946 (School Nutrition Association 2012).

The survey contained yes/no questions and open-ended questions. Open-ended questions were included in the survey so that ideas and opinions that were not addressed in the preliminary model could be addressed in the final model. Results from the yes/no survey questions were evaluated against the preliminary model and any categories in the preliminary model that did not agree with the majority of responses were altered for the final model. The responses to the open-ended questions were evaluated to find the most common answers for each question. The most common answers were then ranked according to popularity and the most popular answers were added to the final model. The following Operationalization Table (Table 3.1) shows the categories of the preliminary model and the questions developed from these categories.

Table 3.1: Operationalization Table

Categories	Questions	Measurement
<i>Farm to School</i>		
Schools should implement a farm to school program.	1. Would you recommend implementing a farm to school program to most school food administrators?	Yes/No
Schools should encourage farmers to visit their school in order to teach students about where their food comes from.	2. Would you recommend that a school encourage farmers to visit their school in order to teach students about where their food comes from?	Yes/No
Students should be encouraged to eat locally grown foods.	3. How can students be encouraged to consume locally-grown foods?	Open-ended
Classes should take fieldtrips to farms.	4. Do you recommend that classes take fieldtrips to farms?	Yes/No
Schools should find efficient ways of processing the food acquired via the farm to school program.	5. How do you recommend schools process the food acquired via the farm to school program?	Open-ended
Students should be made aware of the benefits of a farm to school program.	6. How can students be made aware of the benefits of a farm to school program?	Open-ended
<i>School Gardens</i>		
Schools should have a school garden.	1. Would you recommend creating a school garden?	Yes/No
Schools should use the school garden to teach students about food and nutrition.	2. Would you recommend using the school garden to teach students about food and nutrition?	Yes/No
Schools should offer cooking classes and cooking demonstrations to students.	3. Would you recommend offering cooking classes and cooking demonstrations to students?	Yes/No
Schools should find ways of making students more interested in consuming foods that are grown in the school garden.	4. How can students be made more interested in consuming foods that are grown in the school garden?	Open-ended

Table 3.1: Operationalization Table (*Continued*)

Categories	Questions	Measurement
	5. Do you have any other comments about school gardens?	Open-ended
<i>Competitive Foods</i>		
Schools should eliminate all competitive foods.	1. Would you recommend eliminating all competitive foods offered in schools?	Yes/No
If competitive foods are allowed, those foods should meet very strict nutritional qualifications.	2. Do you recommend allowing only competitive foods with certain nutritional qualifications?	Yes/No
If competitive foods are allowed, certain screening criteria should be used to make sure students consume healthy food at school.	3. If competitive foods are allowed to be present in school, what screening criteria should be used to make sure students consume healthy food at school?	Open-ended
Eliminating or altering competitive foods should increase food sales.	4. Do you think eliminating or altering competitive foods will increase or decrease food sales?	Open-ended
	5. Do you have any other comments about competitive foods?	Open-ended
<i>Kitchens & Cafeterias</i>		
Schools should require that all students remain at school for lunch.	1. Should schools require all students to remain at the school for lunch?	Yes/No
Schools should offer a salad bar option.	2. Should the school offer a salad bar option?	Yes/No
	3. What other food options should be offered?	Open-ended
Schools should prepare food in-house or have the food delivered fresh and ready to serve or cook.	4. Should the food be prepared in-house or brought in from a different location?	Open-ended
Schools should set up cafeterias to encourage student to eat healthier food options.	5. How could the cafeteria be set up to encourage student to eat healthier food options?	Open-ended

Table 3.1: Operationalization Table (*Continued*)

Categories	Questions	Measurement
	6. Do you have other recommendations for setting up a school kitchen or cafeteria that will encourage students to make healthier food choices?	Open-ended
<i>Additional questions</i>		
	1. Do you have any additional comments or recommendations for setting up a model school food program?	Open-ended

The questions in the Operationalization Table were compiled to create the electronic survey (see Appendix B). The individuals in the sample were asked to participate in the survey via email. Email addresses were acquired from the contact list on the SNA website. The email gave a brief summary of the research purpose, the reason for requesting participation, a statement of confidentiality, and a link to the survey. The individuals who did not respond to the first email within a week were sent a second email requesting their participation again.

To protect the study subjects, the identities of the subjects will not be disclosed and their information will not be shared. A request for exemption from the Texas State University Institutional Review Board was approved before the study was conducted (see Appendix A).

Chapter Four: Results

Of the 130 individuals who received the electronic surveys, 43 individuals started the survey and 42 individuals completed the survey in its entirety, although some of the open-ended questions had various response rates ranging from 17-41 responses. The results of the yes/no questions are displayed in tables in this chapter. The results of the open-ended questions have been tabulated based upon the most common responses, and these results are listed in this chapter in order of popularity. Tables displaying the number and percent of common responses to the open-ended questions are in Appendix C. The original answers to the open-ended questions are listed in Appendix D. The goal of this chapter is to evaluate expert's opinions about the categories that comprise the preliminary model for school food policy.

Farm to School

The majority of experts agreed that schools should implement a farm to school program, encourage farmers to visit their school to teach students about where their food comes from, and encourage students to eat locally-grown foods. The following are the open-ended questions and the most common responses to these questions in order of popularity.

How can students be encouraged to consume locally-grown food?

1. Classroom activities, posters, projects, and pictures about the food.
2. Taste testing the food.
3. Having a school garden.
4. Advertising the food as locally-grown on the menu.

How do you recommend schools process the food acquired via the farm to school program?

1. Carefully wash and prepare the food to ensure that it is safe to eat.
2. Use minimal processing, serving the food fresh and whole as often as possible.

3. Only use growers and processors who use safety guidelines.
4. Have the food delivered pre-cut and ready to cook or serve.

How can students be made aware of the benefits of a farm to school program?

1. Classroom education.
2. Create marketing materials about the program.
3. Promotions in the cafeteria.
4. Have farmers visit the school to talk about the food.

The following table (Table 4.1) displays the results of the yes/no questions about farm to school programs.

Table 4.1: Farm to School Survey Results

Questions	Responses	Yes	No	% Total
1. Would you recommend implementing a farm to school program to most school food administrators?	43	40 (93%)	3 (7%)	100%
2. Would you recommend that a school encourage farmers to visit their school in order to teach students about where their food comes from?	43	43 (100%)	0 (0%)	100%
3. How can students be encouraged to consume locally-grown foods?	43	41 (95%)	2 (5%)	100%
4. Do you recommend that classes take fieldtrips to farms?	Varied	See appendix	See appendix	See appendix
5. How do you recommend schools process the food acquired via the farm to school program?	Varied	See appendix	See appendix	See appendix
6. How can students be made aware of the benefits of a farm to school program?	Varied	See appendix	See appendix	See appendix

School Gardens

The majority of experts agreed that schools should create a school garden, use the school garden to teach students about food and nutrition, and offer cooking classes and demonstrations to

students. The following are the open-ended questions and the most common responses to these questions in order of popularity.

How can students be made more interested in consuming foods that are grown in the school garden?

1. Make students responsible for caring for the garden.
2. Classroom education and activities.
3. Have the students prepare dishes using the foods grown in the garden.
4. Taste tests.

Do you have any other comments about school gardens?

1. Would recommend a school garden.
2. Divide up the responsibility of caring for the garden.
3. Get the community involved in the care of the garden.
4. Use a greenhouse or grow food in containers (depending on weather conditions).

The following table (Table 4.2) displays the results of the yes/no questions about school gardens.

Table 4.2: School Gardens Survey Results

Questions	Responses	Yes	No	% Total
1. Would you recommend creating a school garden?	43	41 (95%)	2 (5%)	100%
2. Would you recommend using the school garden to teach students about food and nutrition?	43	43 (100%)	0 (0%)	100%
3. Would you recommend offering cooking classes and cooking demonstrations to students?	43	41 (95%)	2 (5%)	100%
4. How can students be made more interested in consuming foods that are grown in the school garden?	Varied	See appendix	See appendix	See appendix
5. Do you have any other comments about school gardens?	Varied	See appendix	See appendix	See appendix

Competitive Foods

The majority of experts did not agree that schools should eliminate competitive foods; however the majority of experts agreed that schools should allow only competitive foods to be sold that meet certain nutritional qualifications. The following are the open-ended questions and the most common responses to these questions in order of popularity.

If competitive foods are allowed to be present in school, what screening criteria should be used to make sure students consume healthy food at school?

1. Follow federal, state, or district guidelines.
2. No foods high in added sugar.
3. No foods high in fat.
4. Same nutritional guidelines as are followed by NSLP.

Do you think eliminating or altering competitive foods will increase or decrease food sales?

1. Food sales will increase without competition from competitive foods.
2. Food sales would stay the same if competitive foods are eliminated.
3. Eliminating competitive foods will decrease food sales.

Do you have any other comments about competitive foods?

1. Only healthy competitive foods should be allowed (fruits, vegetables, whole grains, baked chips, milk, water, etc.).

The following table (Table 4.3) displays the results of the yes/no questions about competitive foods.

Table 4.3: Competitive Foods Survey Results

Questions	Responses	Yes	No	% Total
1. Would you recommend eliminating all competitive food offered in schools?	43	12 (28%)	31 (72%)	100%
2. Do you recommend allowing only competitive foods with certain nutritional qualifications?	43	39 (91%)	4 (9%)	100%
3. If competitive foods are allowed to be present in school, what screening criteria should be used to make sure students consume healthy food at school?	Varied	See appendix	See appendix	See appendix
4. Do you think eliminating or altering competitive foods will increase or decrease food sales?	Varied	See appendix	See appendix	See appendix
5. Do you have any other comments about competitive foods?	Varied	See appendix	See appendix	See appendix

Kitchens and Cafeterias

The majority of experts agreed that schools should require all students to remain at school for lunch and that schools should offer a salad bar option to their students. The following are the open-ended questions and the most common responses to these questions, in order of popularity.

What other food options should be offered?

1. A variety of fruits and vegetables every day.
2. Variety of “bars” like a deli bar, pasta bar, taco bar, potato bar, etc.
3. Salad bar.
4. Recipes based on student population (ethnic, regional, & seasonal recipes).
5. Healthy versions of kid-friendly foods, like pizza.

Should the food be prepared in-house or brought in from a different location?

1. Food should be prepared in-house.
2. Either, depending on the resources available to the school.

How could the cafeteria be set up to encourage students to eat healthier food options?

1. Put the fruits and vegetables at the beginning of the line.
2. Have a lot of healthy options available.
3. Set up the healthy food options in a “food court” type setting.
4. Have healthy food posters on the cafeteria walls.
5. Create a “retail” type environment with good lighting, clean eating spaces, and low music.
6. Give children plenty of time to eat.

Do you have other recommendations for setting up a school kitchen or cafeteria that will encourage students to make healthier food choices?

1. Only offer healthy food options.
2. Give students plenty of options.
3. Give the cafeteria a “retail” feel.
4. Have friendly food service personnel who believe in healthy eating programs.

The following table (Table 4.4) displays the results of the yes/no questions about Farm to School programs.

Table 4.4: Kitchens & Cafeterias Survey Results

Questions	Responses	Yes	No	% Total
1. Should schools require all students to remain at the school for lunch?	42	34 (81%)	8 (19%)	100%
2. Should the school offer a salad bar option?	42	34 (81%)	8 (19%)	100%
3. What other food options should be offered?	Varied	See appendix	See appendix	See appendix
4. Should the food be prepared in-house or brought-in from a different location?	Varied	See appendix	See appendix	See appendix

Table 4.4: Kitchens & Cafeterias Survey Results (*Continued*)

Questions	Responses	Yes	No	% Total
5. How could the cafeteria be set up to encourage students to eat healthier food options?	Varied	See appendix	See appendix	See appendix
6. Do you have other recommendations for setting-up a school kitchen or cafeteria that will encourage students to make healthier food choices?	Varied	See appendix	See appendix	See appendix

Additional Questions

The final question on the survey was a request for additional comments on setting up a model for school food policy. The most prevalent response to this question emphasized the need for getting parents, teachers, and staff involved. The following is the open-ended question and the most common response to this question.

Do you have any additional comments or recommendations for setting up a model school food program?

1. Get parents, teachers, and staff involved.

The following table (Table 4.5) displays the question asked in the Additional Questions section of the survey and the total number of responses received for this question.

Table 4.5: Additional Questions Survey Results

Questions	Responses	Yes	No	% Total
1. Do you have any additional comments or recommendations for setting-up a model school food program?	34	See appendix	See appendix	See appendix

Results Summary

The survey results reveal that the majority of experts who participated in this survey agree that schools should implement a farm to school program, create a school garden, set high nutritional standards for the competitive foods sold in schools, set up kitchens and cafeterias in an appealing

manner that gives students plenty of healthy food options, and get parents, teachers, and staff involved in these programs and policies.

Chapter Five: Conclusion

The information gathered from the literature review and survey shows that there are four elements that should be included in the model for school food policy. This model can be used by school food administrators and others wishing to provide healthier meals to the students they serve. According to the model for school food policy, all schools should implement a farm to school program, a school garden, high nutritional standards for competitive foods (if they are offered), and set up a kitchen and cafeteria that encourage the consumption of healthy food options. The following table (Table 5.1) shows the model for school food policy and the elements the model should include.

Table 5.1: Model for School Food Policy

Categories
<i>Farm to School</i>
Schools should implement a FTS program.
Schools should encourage farmers to visit their school in order to teach students about where their food is grown.
Students should be encouraged to eat locally-grown foods through the following methods: <ol style="list-style-type: none"> 5. Classroom activities, posters, projects, and pictures about the food. 6. Taste testing the food. 7. Having a school garden. 8. Advertising the food as locally grown on the menu.
Classes should take fieldtrips to farms.
Schools should find efficient ways of processing the food acquired via the FTS program. When processing the food supplied via the FTS program, schools should do the following: <ol style="list-style-type: none"> 5. Carefully wash and prepare the food to ensure that it is safe to eat. 6. Use minimal processing, serving the food fresh and whole as often as possible. 7. Only use growers and processors who use safety guidelines.
Students should be made aware of the benefits of the FTS program through the following methods: <ol style="list-style-type: none"> 5. Classroom education. 6. Marketing materials about the program. 7. Promotions in the cafeteria. 8. Have farmers visit the school to talk about the food.
<i>School Gardens</i>
Schools should have a school garden.
Schools should use the school garden to teach students about food and nutrition.
Schools should offer cooking classes and cooking demonstrations to students.

Table 5.1: Model for School Food Policy (*Continued*)

Categories
Schools should make students more interested in consuming foods that are grown in the school garden through the following methods: <ol style="list-style-type: none"> 5. Make students responsible for caring for the garden. 6. Classroom education and activities. 7. Have the students prepare dishes using the foods grown in the garden. 8. Taste tests.
Schools should also consider the following when starting a school garden: <ol style="list-style-type: none"> 5. Divide up the responsibility of caring for the garden. 6. Get the community involved in the care of the garden. 7. Use a greenhouse or grow food in containers (depending on weather conditions).
<i>Competitive Foods</i>
Schools should not eliminate all competitive foods.
If competitive foods are allowed, those foods should meet very strict nutritional qualifications.
If competitive foods are allowed, those foods should meet the following screening criteria to make sure students consume healthy food at school: <ol style="list-style-type: none"> 5. Follow federal, state, or district guidelines. 6. No foods high in added sugar. 7. No foods high in fat. 8. Same nutritional guidelines as are followed by NSLP.
Eliminating competitive foods should cause food sales to increase.
Only healthy competitive foods should be allowed (fruits, vegetables, whole grains, baked chips, milk, water, etc.).
<i>Kitchens & Cafeterias</i>
Schools should require that all students remain at school for lunch.
Schools should offer the following options: <ol style="list-style-type: none"> 6. A variety of fruits and vegetables every day. 7. Variety of “bars” like deli bar, pasta bar, taco bar, potato bar, etc. 8. Salad bar. 9. Recipes based on student population (ethnic, regional, & seasonal recipes). 10. Healthy versions of kid-friendly foods, like pizza.
Schools should prepare the food in-house whenever possible.
Schools should set up cafeterias in the following way to encourage students to eat healthier food options: <ol style="list-style-type: none"> 7. Put the fruits and vegetables at the beginning of the line. 8. Have a lot of healthy options available. 9. Set up the healthy food options in a “food court” type setting. 10. Have healthy food posters on the cafeteria walls. 11. Create a “retail” type environment with good lighting, clean eating spaces, and low music. 12. Give children plenty of time to eat.

Table 5.1: Model for School Food Policy (*Continued*)

Categories
Schools should also do the following to promote healthy eating in the cafeteria: <ol style="list-style-type: none">1. Only offer healthy food options.2. Give students plenty of options.3. Give the cafeteria a “retail” feel.4. Have friendly food service personnel who believe in the healthy eating programs.
Schools should involve parents, teachers, and staff in all of these programs and policies.

While these four programs and policy areas are important for implementing a model for school food policy, many schools face limited financial resources and may need grants to make the suggested changes. In addition, not all schools are located in areas with a sufficient supply of diverse agriculture. More research needs to be done on linking areas rich in agricultural diversity to areas that do not have these resources.

Many food service directors want to make improvements in the food they serve to their students; however, with tight budgetary restrictions and an overworked staff, they may find it difficult to take on the challenge of implementing these changes. The programs and policies recommended in this model for school food policy can be started with the efforts of school food service directors or with the efforts a few highly motivated individuals, or “champions” of the cause, who want to make a change in their communities. Often these individuals can be very helpful in doing the legwork required for starting these programs, which may include making the initial contact with local farmers, writing grants for funding, and coordinating a system for transporting the food to the schools (Kalb 2009). These “champions” can start by gathering together a team of key players, who might include parents, teachers, food service staff, nonprofits, farmers, and school board members, to discuss some of the menu items that could be replaced with locally-grown produce. While there are many logistical factors to consider when implementing the four elements of the model for school food policy, the most important factor is

the inertia that comes from putting together a proactive, supportive, and creative group of team players to champion the cause.

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Institutional Review Board

Request For Exemption

Certificate of Approval

Applicant: Jamie McGee

Request Number : EXP2010R1846

Date of Approval: 09/29/10

Handwritten signature of M. Blanks in cursive.

Assistant Vice President for Research
and Federal Relations

Handwritten signature of Jon Lane in cursive.

Chair, Institutional Review Board

Appendix B – Survey

Questions	Measurement
Farm to School	
1. Would you recommend implementing a farm to school program to most school food administrators?	Yes/No
2. Would you recommend that a school encourage farmers to visit their school in order to teach students about where their food is grown?	Yes/No
3. How can students be encouraged to consume locally-grown foods?	Open-ended
4. Do you recommend that classes take fieldtrips to farms?	Yes/No
5. How do you recommend schools process the food acquired via the farm to school program?	Open-ended
6. How can students be made aware of the benefits of a farm to school program?	Open-ended
School Gardens	
1. Would you recommend creating a school garden?	Yes/No
2. Would you recommend using the school garden to teach students about food and nutrition?	Yes/No
3. Would you recommend offering cooking classes and cooking demonstrations to students?	Yes/No
4. How can students be made more interested in consuming foods that are grown in the school garden?	Open-ended
5. Do you have any other comments about school gardens?	Open-ended
Competitive Foods	
1. Would you recommend eliminating all competitive foods offered in schools?	Yes/No
2. Do you recommend allowing only competitive foods with certain nutritional qualifications?	Yes/No
3. If competitive foods are allowed to be present in school, what screening criteria should be used to make sure students consume healthy food at school?	Open-ended
4. Do you think eliminating or altering competitive foods will increase or decrease food sales?	Open-ended
5. Do you have any other comments about competitive foods?	Open-ended
Kitchens & Cafeterias	
1. Should schools require all students to remain at the school for lunch?	Yes/No
2. Should the school offer a salad bar option?	Yes/No
3. What other food options should be offered?	Open-ended
4. Should the food be prepared in-house or brought in from a different location?	Open-ended
5. How could the cafeteria be set up to encourage student to eat healthier food options?	Open-ended
6. Do you have other recommendations for setting up a school kitchen or cafeteria that will encourage students to make healthier food choices?	Open-ended
Additional Questions	
1. Do you have any additional comments or recommendations for setting up a model school food program?	Open-ended

Appendix C – Most Common Responses to Open-Ended Survey Questions

Famer to School Open-Ended Questions

How can students be encouraged to consume locally-grown foods?

Most responses included one or more of the following answers.	Total number of responses for this question.	Percent of responses which included this answer.	Number of responses which included this answer.
Taking fieldtrips to farms	41	7%	3
Taste testing the food	41	27%	11
Having farmers visit school to talk about the food	41	5%	2
Teaching the value of supporting local farms	41	7%	3
Having a school garden	41	17%	7
Classroom activities, posters, projects, and pictures about the foods	41	32%	13
Preparing the foods in a manner that appeals to children	41	7%	3
Advertising locally grown foods on the menu	41	12%	5

How do you recommend schools process the food acquired via the farm to school program?

Most responses included one or more of the following answers.	Total number of responses for this question.	Percent of responses which included this answer.	Number of responses which included this answer.
Carefully wash and prepare food to ensure it is safe to eat.	38	29%	11
Only use growers and processors that follow safety guidelines.	38	8%	3
Use minimal processing, serving food fresh and whole as often as possible.	38	13%	5
Have the food delivered pre-cut and ready to cook or serve.	38	5%	2

How do you recommend schools process the food acquired via the farm to school program?
(Continued)

Most responses included one or more of the following answers.	Total number of responses for this question.	Percent of responses which included this answer.	Number of responses which included this answer.
Prepare and serve the food quickly to ensure maximum freshness.	38	5%	2
Freeze some of the food.	38	5%	2

How can students be made aware of the benefits of a farm to school program?

Most responses included one or more of the following answers.	Total number of responses for this question.	Percent of responses which included this answer.	Number of responses which included this answer.
Classroom education.	41	44%	18
Fieldtrips to the farm.	41	7%	3
Taste tests.	41	7%	3
Create marketing materials about the program.	41	32%	13
Promotions in the cafeteria.	41	27%	11
Have the farmers visit the school to talk about the food.	41	10%	4

School Garden Open-Ended Questions

How can students be made more interested in consuming foods that are grown in the school garden?

Most responses included one or more of the following answers.	Total number of responses for this question.	Percent of responses which included this answer.	Number of responses which included this answer.
Make students responsible for caring for the garden.	41	46%	19
Classroom education and activities.	41	20%	8
Cooking demonstrations in the cafeteria.	41	7%	3
Taste tests.	41	12%	5

How can students be made more interested in consuming foods that are grown in the school garden? (*Continued*)

Most responses included one or more of the following answers.	Total number of responses for this question.	Percent of responses which included this answer.	Number of responses which included this answer.
Incorporate the food into the menu.	41	10%	4
Have the students prepare dishes using the foods grown in the garden.	41	17%	7

Do you have any other comments about school gardens?

Most responses included one or more of the following answers.	Total number of responses for this question.	Percent of responses which included this answer.	Number of responses which included this answer.
Get the community involved in the care of the garden.	28	7%	2
Would recommend a school garden.	28	50%	14
Divide up the responsibility of caring for the garden.	28	11%	3
Use a greenhouse or grow foods in containers.	28	7%	2

Competitive Foods Open-Ended Questions

If competitive foods are allowed to be present in school, what screening criteria should be used to make sure students consume healthy food at school?

Most responses included one or more of the following answers.	Total number of responses for this question.	Percent of responses which included this answer.	Number of responses which included this answer.
All food sold in vending machines follow the school's nutritional criteria.	38	5%	2
No foods high in added sugar.	38	16%	6

If competitive foods are allowed to be present in school, what screening criteria should be used to make sure students consume healthy food at school? (*Continued*)

Most responses included one or more of the following answers.	Total number of responses for this question.	Percent of responses which included this answer.	Number of responses which included this answer.
Same nutritional guidelines as are followed by NSLP.	38	11%	4
Follow federal, state, or district guidelines.	38	26%	10
No foods high in fat.	38	16%	6

Do you think eliminating or altering competitive foods will increase or decrease food sales?

Most responses included one or more of the following answers.	Total number of responses for this question.	Percent of responses which included this answer.	Number of responses which included this answer.
Food sales will increase without completion from competitive foods.	38	32%	12
Eliminating competitive foods will decrease food sales.	38	18%	7
Food sales would stay the same if competitive foods are eliminated.	38	26%	10

Do you have any other comments about competitive foods?

Most responses included one or more of the following answers.	Total number of responses for this question.	Percent of responses which included this answer.	Number of responses which included this answer.
Only healthy competitive foods should be allowed (fruits, vegetables, whole grains, baked chips, milk, water, etc.).	21	29%	6

Kitchens & Cafeterias Open-Ended Questions

What other food options should be offered?

Most responses included one or more of the following answers.	Total number of responses for this question.	Percent of responses which included this answer.	Number of responses which included this answer.
A variety of fruits and vegetables every day.	37	30%	11
Variety of “bars” like deli bar, pasta bar, taco bar, potato bar, etc.	37	16%	6
Salad bar.	37	11%	4
Recipes based on student population (ethnic, regional, & seasonal recipes).	37	11%	4
Healthy versions of kid-friendly foods, like pizza.	37	8%	3

Should the food be prepared in-house or brought in from a different location?

Most responses included one or more of the following answers.	Total number of responses for this question.	Percent of responses which included this answer.	Number of responses which included this answer.
Food should be prepared in-house.	40	53%	21
Either, depending on the resources available to the school.	40	45%	18

How could the cafeteria be set up to encourage students to eat healthier food options?

Most responses included one or more of the following answers.	Total number of responses for this question.	Percent of responses which included this answer.	Number of responses which included this answer.
Have healthy food posters on the cafeteria walls.	36	11%	4
Put the fruits and vegetables at the beginning of the line.	36	19%	7
Give children plenty of time to eat.	36	6%	2

How could the cafeteria be set up to encourage students to eat healthier food options?
(Continued)

Most responses included one or more of the following answers.	Total number of responses for this question.	Percent of responses which included this answer.	Number of responses which included this answer.
Create a “retail” type environment with good lighting, clean eating spaces, and low music.	36	8%	3
Have friendly food service personnel who support healthy eating programs.	36	11%	4
Set-up the healthy food options in a “food court” type setting.	36	14%	5
Have a lot of healthy options available.	36	19%	7

Do you have other recommendations for setting up a school kitchen or cafeteria that will encourage students to make healthier food choices?

Most responses included one or more of the following answers.	Total number of responses for this question.	Percent of responses which included this answer.	Number of responses which included this answer.
Give the cafeteria a “retail” feel.	24	8%	2
Only offer healthy food options.	24	13%	3
Have friendly food service personnel who believe the in healthy eating programs.	24	8%	2
Give students plenty of options.	24	13%	3

Additional Questions

Do you have any additional comments or recommendations for setting up a model school food program?

Most responses included one or more of the following answers.	Total number of responses for this question.	Percent of responses which included this answer.	Number of responses which included this answer.
Get parents, teachers, and staff involved.	17	29%	5

Appendix D – Answers to Open-Ended Survey Questions

Farm to School
How can students be encouraged to consume locally-grown foods?
<ol style="list-style-type: none"> 1. If they have visited the farms and see where the food comes from it might make them more likely to taste new foods. 2. introduce them to fresh f/v in small group session 3. Allow them to help grow them within the school grounds, community and get the parents to help. 4. By making the students aware that the food offered is locally grown. 5. Introduce them to the foods and the cycle. 6. Plant a garden. 7. Teaching the value in fresh produce and the economic value of supporting the local farmer 8. Expose them to them 9. Some of the above questions hit upon good ideas, field trips, farmers interacting with students. I would also say serving the food to them. They would notice the difference and talk about the taste changes. 10. Give them samples to eat. Invite the farmer to the cafeteria or to the classroom to show the raw crop or to talk about the process or animal. 11. Make them look appealing and then prepare them well. 12. Coordinate F2S product between classroom and cafeteria: pictures, posters, classroom activities and curriculum 13. taste testing. seeing where grown 14. offer them in attractive serving ideas on school menus. 15. By serving them in the cafeteria. 16. Taste test. Learn about where they came from. 17. class room education, school gardens, demonstrations, cafeteria teaching moments, CES, 18. Encourage students to eat fruits and veggies and encourage parents to take them to local produce markets as an outing. 19. education on how, where, it grows. IF they can help plant, harvest it helps them want to try them. 20. By having a school garden to see where food comes from and having a Farm-to-School program. 21. taste testing Teaching them about the growing process and introducing them to different products. 22. We did a poster board that highlighted the difference in mileage from California and Florida to Kentucky and the amount of fuel necessary to get it to our location. 23. It needs to be cooked and presented properly 24. Education of students and families through the classroom, with materials sent home, and through the local extension services. 25. Visiting farms and curriculum in the classroom. 26. Nutrition education. Stressing importance of consuming fresh fruits/vegetables; advantage of having foods that are more fresh since produce would not have to be shipped as far.

Economic benefit to the community.

27. Create ways that students can be involved in planting, caring for, harvesting and preparing the foods.
28. Taste-testing, making recipes, picking from the garden
29. Farmers markets and education
30. incorporate locally grown foods into the cafeteria, teach lessons using locally grown foods
31. Teach them about where foods come from; field trips, etc.
32. mall samples with nutrition education such as in the Fresh Fruit and Vegetable Program
33. Learn more about them.
34. Grow some things themselves, meet the farmers, visit farms.
35. Provide fresh fruits/veggies on the lunch menu ... market them when they are locally grown.
36. Advertisement of products that are locally grown
37. Schools could contact staff at the individual state Departments of Education and/or Depts of Agriculture and talk with the Farm-to-School coordinators for a lot of ideas.
38. The can visit the farms. Learn how and where the food comes from. Maybe even have a taste testing event or dictate what the farmer might plant. Get kids involved into the marketing campaign (such as creating posters) to get their buy-in and ownership.
39. market the produce and farmers to students
40. education, awareness
41. You first need to educate parents, so that they offer them at home.

How do you recommend schools process the food acquired via the farm to school program?

1. It would require more careful washing and preparing to insure the safety of the food.
2. process as little as possible, use fresh cut up or whole if at all possible.
3. Yes, During the summer months school with farms could hire staff or have student help with the cooking and canning of the items
4. Quickly to retain the nutrients and flavor.
5. From a raw state.
6. Purchase through the local produce vendor.
7. Menuing them
8. That is a tricky issue that is not easily answered. Food programs are extremely tight with their operating budget and if one were to ask additional labor steps from the kitchens, they would need additional time, which probably is not available.
9. Work with distributor and/or local processors, if possible.
10. Make them look appealing and then prepare them well.
11. Food should come into cafeteria rinsed and needing minimum cleaning
12. as natural as possible
13. wash any whole fresh produce that can be consumed as is.
14. according to food safety procedures developed specifically for schools.
15. Based on state health regulations and USDA regs. Food is to be procured from sound, reliable sources. Is the farm GAP?
16. Clean and care for these items carefully and prepare quickly.
17. Follow food safety guidelines. It does take more labor than ready made.
18. We do not recommend how schools process the food.

19. Have a written procedure and steps to follow regarding washing, cutting and serving.
20. It can be used in a variety of ways. We usually get vegetables and cook them as part of the meal.
21. In accordance with state and local health department standards and in accordance with HACCP plans.
22. If possible buy prewashed precut produce.
23. I don't understand the question. Does this relate to procurement or preparing the food to be served to the students?
24. Each school has different needs and abilities. If they can be made aware of their options, they can determine what would work best for them.
25. Some schools use community volunteers with FS staff to process food. Some items frozen for future use.
26. Eat fresh
27. the same as foods acquired from other sources
28. As per food safety rules first; add to frozen if not sufficient amounts; use a taste tests if not sufficient amounts to serve school wide.
29. Schools need training on safe handling of produce.
30. Follow all HACCP Procedures.
31. Buy products that require a small amount of processing.
32. Be extremely careful of the vendor ... make sure they follow strict health guidelines for growers/producers.
33. Most produce items eaten as a 'whole item' (i.e. apple, orange, etc) are difficult to serve because a farmer cannot guarantee that they are the proper size. Most foods would need to be cut for cooking or used in salads or as sliced items to ensure that the proper serving size is served.
34. Again, ideas can be found at the above places.
35. By utilizing the Food Service Department and their required safety procedures.
36. Fresh, freeze
37. Handle the food carefully - wash it thoroughly. Very few of our schools get food acquired through farm-to-school. Part of my struggle here is with definition of "recommend". We don't necessarily recommend that they implement it (as in you really should do this), but certainly suggest that they look into it and implement it if it works for them. There are very few options around here for something like this - farmers have their fields tied up in corn, beans, sunflowers, and wheat. They don't want to "mess around with" high labor-intense crops such as food crops.
38. The same way as when they get them in from vendors.

How can students be made aware of the benefits of a farm to school program?

1. Through nutrition education in the classroom.
2. small group sessions at school or visits to the farm
3. EDUCATION let them try it taste it and get their hands dirty
4. Through marketing
5. Market the program
6. Through nutrition education.

7. Education
8. Through newsletters and classroom education
9. Hand-outs, articles in school newspapers, information talked about during serving times at school.
10. By tasting the food. The nutrition is the same, but the taste is usually more fresh.
11. Various promotions and literature being given to children.
12. Curriculum and classroom activities coordinated with cafeteria promotions
13. posters. teaching
14. invite the farmer to breakfast and have him talk with students
15. Through outreach materials.
16. Through Education
17. Through life experiences and hands on projects. Education, On line modules, outreach/marketing campaigns,
18. Explaining to the students how this food is grown and consumed at the school will make students proud of the work and the feeling of worth of their labor.
19. That the food is grown close to them. If they visit the farm, it makes more sense or if the farmer comes and talks to them.
20. The best way is to having a leader/teacher at the school that champions the program.
21. Marketing in the cafeteria. Allow the food service director to talk for a few minutes in classrooms.
22. Working with teachers.
23. Signs saying what we have.
24. Education of students and families through the classroom, with materials sent home, and through the local extension services.
25. Nutrition education.
26. Education from the agency responsible for the administration of farm to school, as well as the child nutrition director at the local level.
27. Have a farmer visit the school, take students on field trips to farm, bring locally grown products into school for taste testing and meals.
28. Participating in curriculum and activities. Farm to School Grants, Junior Iron Chef competitions with local foods
29. assemblies and sampling
30. classroom and cafeteria education, newsletters, family involvement, menu backs
31. Ag in the classroom
32. Through education in the classroom and in the cafeteria.
33. Movies, research.
34. through classroom activities, cafeteria activities
35. Tell them. Marketing.
36. Students respond well to items that are tied in with their curriculum and would also benefit from having a school garden (something that can be controlled in-house). Older students may benefit from work programs on farms (depending on the area of the district) or using lessons that discuss carbon footprints etc.
37. Same as above. There are lots of ways.

38. Nutrition education from teachers, food service staff and parents.
39. classroom education, cafeteria presentations
40. teachers food service farmers
41. Schools need to allow time for instructional time if that means a teacher, farmer or allowing someone from foodservice to to speak with the kids

School Garden

How can students be made more interested in consuming foods that are grown in the school garden?

1. Let them have some hands on responsibility for the garden.
2. Let them assist planting and caring for the garden, give them a reason to be outside
3. Get them to be involved bring in students from local colleges to talk about farms and maybe show them the movie green horn
4. By using the products grown in the meals prepared.
5. Have them grow them
6. Through activities in their classes.
7. By teaching them how they can be menued- Perhaps performing a cooking demo in the cafeteria using local produce
8. By having them become involved
9. I think it is more of a "if you build it they will come" type situation. They will be automatically more interested in the food if it is grown in a school garden.
10. By having students serve the foods
11. Literature
12. Participating in planting and food preparation
13. helping with the garden
14. grow tomatoes and serve them on tacos in Sept.
15. By participating in the garden, offering cooking classes and teaching classes about local foods
16. Taste test, work in the garden planting and harvesting.
17. make it fun, interesting, use local produce, use celebrity chefs,
18. Give them recipes that can be used to cook some of the products at a food lab.
19. If they help prepare the foods, they want to try them.
20. Serve in lunch program or on salad bar.
21. cooking demos if staff time allows and school allows. Actually work in the garden.
22. By involving them.
23. Have them be part of the process from start to finish
24. Education of students and families through the classroom, with materials sent home, and through the local extension services.
25. Tasting and preparing them themselves.
26. If they are actually involved in the process, from deciding what to grow through the actual harvesting. Also, if they knew that they actually played a part in having the items prepared and served to the students, this would be a big incentive.
27. using the foods to make recipes and taste test
28. Allow them to be involved in all aspects of growing the garden.

29. student council and FFA
30. being involved in the process
31. Teach and try it
32. If they help grow the food they are more apt to consume it.
33. Teacher advising to.
34. Grow, pick, cook and eat what they have helped with.
35. Give them a chance to grow it and eat it.
36. Advertising!!
37. See same people as mentioned before or USDA Team Nutrition grant recipients.
38. Providing education around the food they are growing and harvesting the produce, such as cleaning, preparing and cooking.
39. taste tests, role modeling
40. Serve it in the cafeteria
41. They need to be involved in the process

Do you have any other comments about school gardens?

1. if done correctly, it is a very good teaching tool. if not it is a waste of time.
2. They are great start small and work out the details do not grow a lot of items only those that you will use and them get bigger. get the whole community to help. garden club, PTO, retired groups.
3. They are fun.
4. I think they are great!
5. No only that they are a great resource for school nutrition programs and kids alike
6. I think they are a great idea, but they are a lot of work.
7. I think school gardens perhaps might be easier to get going then the farm to school foods. Teachers, students and administrators actually SEE the food and would be more drawn to helping it become mainstream.
8. I think they can be very educational and fun for kids.
9. Every school should have a school garden...
10. yes, they are amazingly worthwhile.
11. They are a great idea and an excellent learning tool.
12. If completed properly and the responsibility is delineated as to the upkeep, weeding cultivation and harvesting you can have a very satisfactory experience for students teachers and food service personal.
13. Depending on the climate, the availability of a variety of foods can be limited, but this shouldn't stop them from trying. Also there needs to be a group of adults in charge that will oversee the garden during off school hours, such as summer. Start a program that includes students over the summer.
14. See previous on Farm-to-School.
15. Engaging students to understand the entire growing process would be helpful.
16. Very difficult to coordinate
17. It is hard to get people to tend them during the summer.
18. Just need to make sure all health/sanitation issues are followed.
19. Support for them can be attained through local farmers and growers

20. Students are definitely more likely to try a new food item if they are involved in growing it.
21. use greenhouses
22. Even a small container garden can help students learn where good comes from and encourage them to taste.
23. Love them.
24. Coordinate with your school kitchens to make the most of the produce grown.
25. Many schools have had great success. Go to the Team Nutrition websites sponsored by the USDA for specifics.
26. They are an excellent way to teach children how and where their food comes from as well as reinforcing a healthy lifestyle.
27. Again, this is very difficult for us. School gets out in mid-May and usually no one is around in the summer to care for the garden. Some schools are out in the country - not in town where it would be easy for someone to drop in to care for the garden. Harvesting of some crops would happen before school even is back in session so the opportunity to do some pieces of education are gone. Our growing season is not exactly conducive to school gardens.
28. In Kansas our products are usually all ready in the summer when students are not in school

Competitive Foods

If competitive foods are allowed to be present in school, what screening criteria should be used to make sure students consume healthy food at school?

1. All competitive foods sold in my schools are screened by my office to insure they are of sound nutritional quality. If they do not meet those requirements, they are removed from the vending machines.
2. no pear juice based products, no candy bars, no high fructose corn syrup bases products
3. Foods that are sold should be low in fat, salt and cal to fat should be low. I do not believe candy baked lays (chips) more items at High level non at k-8th
4. government regulations
5. The school food service should manage all vending.
6. I think that as long as the foods meet a strict nutritional guideline how can you claim they are not part of the “healthy” food at school? I think this area gives way for too many regulations, schools do not make students fat and we need to start looking at that. Competitive foods are very helpful in providing the funding needed to pay for the more expensive whole grains and fresh fruits and vegetables. As long as I am meeting a strict nutrition guideline they should not be looked at as the “enemy”.
7. They would have to meet the same nutritional standards that the meal programs have to follow.
8. Same nutritionals as School Food Service
9. Varies...Major discussion....
10. I don't think screening can be done to make kids eat healthy food. We must offer variety with the hopes kids will make the right choice. You will never be able to force kids to eat certain things. They will either not get it or simply just will not eat it if they are forced to place on their plate.
11. the same as with school lunch programs
12. amount of fat per serving, amount of sugar per serving

13. I would focus on portion sizes and nutritional content
14. screening criteria for calories per serving, sugar content and fat content as well as serving size.
15. IOM criteria
16. The major nutrients and fiber contents
17. They must meet USDA guidelines and not interfere with the school meals program.
18. Criteria from USDA HUSSC at the Gold Level, Alliance for a Healthier Generation
19. Would not need to screen if had standards.
20. Sugar, fat content
21. Limits on calories, fat, sodium, etc
22. Standards established with input from local health authorities and parents.
23. Looking at the nutritional value.
24. We have state statutes on the books that detail what can be served in the vending machines (i.e. limits on sugar content, no sodas, etc). You can check our website under wellness policies <http://scn.ky.gov>
25. All foods should meet a minimum criteria established through a nutrition policy
26. Develop nutrition standards for the items.
27. Follow USDA guidelines
28. specific nutrition standards, e.g., in Connecticut we have our own state standards based on the Dietary Guidelines and IOM recommendations
29. Approval at the state level
30. They should have to meet the same nutrient standard as school meals.
31. Hard to do. Students need to learn how to make choices that will carry over into the real world.
32. District wellness policy
33. they should abide by state and federal guidelines for foods by grade group. Students should become educated about making better choices, but should not be denied an occasional cookie.
34. Follow USDA guidelines. They are changing, so wait before writing anything in stone.
35. Create Nutrition Standards and then enforce the implementation of those standards.
36. set standards for fat, sugar, sodium,
37. 30-30-10 guidelines
38. Cannot be offered during breakfast or lunch periods at all.

Do you think eliminating or altering competitive foods will increase or decrease food sales?

1. The food sales have a potential to increase if there is not competition.
2. No
3. No students will then purchase meals. But you must have close campus not open the field of regulations need to be equal for school meals.
4. Neither
5. eliminating them will decrease food sales
6. Increase
7. If we handle this properly it can be increase
8. It will definitely decrease the revenue generated by the food service department. I cannot say

for sure it will alter food sales. These are extras and many of the sack lunches have food items that are inferior to school meals but that is not always the driving force to purchase school meals.

9. I think competitive foods have no place in schools. I do think that a la carte food may have a place but it is not competitive. They are two different things.
10. Yes, it has in our district
11. It will probably increase some because we are forcing kids to consume what we have and not giving them choices.
12. decrease
13. no effect on sales
14. Total food sales or reimbursable meal sales? I believe that eliminating competitive foods would certainly increase the amount of reimbursable meals sold. If desirable 66 nutritional foods are offered it may drive more business to the cafeteria which could also positively impact school meal sales.
15. It may be that over time, it has no effect.
16. At first sales would drop. Later the sales would increase but not to the previous levels.
17. possibly, depending on history of sales.
18. In any cases food sales have increased
19. May decrease at first but should level out.
20. Increase
21. stay the same
22. minimal impact anticipated
23. Decrease.
24. Not for the reimbursable meals. I think if foods sold a la carte meet the same nutritional standards, it's a win situation.
25. Food sales will definitely impacted. Over time the sales may increase, but initially sales will go down as students are accustomed to purchasing sugar sweetened beverages, sport drinks and chips.
26. It might increase the sale of reimbursable meals.
27. shouldn't have much difference
28. It decreases at first but then usually levels off. It depends on the type of program and what the choices are
29. I believe students will continue to buy food that is available.
30. Decrease – students will be mad at the cafeteria.
31. Eliminating or altering would change patterns of eating. It would change.
32. Increase
33. It will definitely decrease. Ask any district who has made changes and they are seeing decreases of more than 20%
34. Kids will eat if they are hungry and have something good in front of them. Adults need to provide appropriate options for the kids.
35. At first it decrease due to the removal of some favorites but eventually recovers and maintains a steady growth.
36. decrease at the beginning, likely even out in the long run.

37. probably stay the same

38. Increase

Do you have any other comments about competitive foods?

1. soft drink companies have used the schools to provide customer bases for their products long after students graduate
2. it is important to have closed campus, It is important that all school fund raising is not food based and if it is you have fresh fruits and veggies, whole grain bread, crackers,
3. I think they need to be looked at differently. Setting up nutrition guidelines for these foods will help ensure that the students are learning how to purchase in moderation, it will also teach them to choose the “healthier” alternative when picking snacks. Ie: baked chips vs. fried chips, whole grain cookie vs. refined cookie, etc.
4. Competitive foods are food sold during meal services at school, by other. This isn’t allowed but I think that if the nutrition programs were involved then perhaps revenue sharing could be arranged and as long as the nutritional standards are met, there may be room for a la carte.
5. This is a complex subject that needs a lot of discussion....Not easy to address....e.g., individual milk bottles can be sold as competitive food
6. students are going to purchase similar items at a local c- store, we should offer healthy choices at school and gain this revenue
7. A good idea may be to only allow the younger children to purchase these foods after they have consumed a reimbursable meal (to ensure that they are at least getting the opportunity to consume a balanced meal).
8. These should be sold to complement an existing menu, not to take away from the meal
9. They should be limited to being offered by the school nutrition dept. only, so that they don’t interfere with meal sales.
10. believe not a good idea to teach the good food bad food thing. Moderation.
11. I only sell water, and I have a high meal count.
12. Need to be strictly regulated. We have penalties associated with the vending machines and the timing of when they are on. We have progressive discipline in place (loss of funds in the vending machines up to discontinuance of machines for extended periods of time). Only foods that meet strict nutritional standards should be allowed in the machines.
13. Food service programs should be the entities that are offering and choosing the food items available in school.
14. There will always be a market for competitive foods in schools. Schools can be proactive by setting their own nutrition standards, and by involving the students in determining which items will be sold (within the nutrition standards set)
15. district wide should be followed
16. If parents don’t send money; children won’t buy.
17. Do not allow competitive foods at the elementary level. Secondary only.
18. These support our operations financially and need to be from both a financial and nutritional prospective.
19. As long as they are healthy and meet adequate nutritional requirements I believe a small amount is fine.
20. It is the administrators and those special interest groups that benefit from the accounts that

benefit from the sales that will take convincing in these times of tight budgets. Some students will also resist. Saw a great cartoon a while ago – a student flashing open a big coat with candy & pop in various products inside. Caption: “Students will benefit from sale of healthy foods at school.”

21. We have found that kids are eating more fruits and vegetables, but we also do not allow competitive foods

Kitchens & Cafeterias

What other food options should be offered?

1. Choices of main entree and several f/veg to choose from.
2. Deli bars and salad bars if possible
3. first you need to look at the population of the school and ethnic background you cannot have a one type fits all.
4. fresh, local foods
5. We need longer lunch periods so the students have time to eat.
6. Anything healthy and that meet the criteria that a particular state has
7. There should always be a variety of entrees offered so that students have a choice. Both hot and cold entrees. I also want to clarify that I answered no to schools offering a salad bar. In my opinion they are germ magnets and require extra staffing to keep them clean during the lunch period. I am a BIG proponent of offering fresh fruits and vegetables I just offer them in pre-portioned servings on the serving line, I have at least 4 choices each day and they can take as many as they wish to eat.
8. One could use the salad bar option as a baked potato bar, taco bar, soup bar, etc. Mix it up so the burden of always trying to supply fresh is eased up.
9. Variety
10. pizza
11. whole grain items
12. Whole grains, fresh fruits and vegetables, dark green and orange/red vegetables and healthy protein choices.
13. Healthy "fast food" options. home-prepared
14. healthy a la carte items
15. A variety of ethnic foods on the menu.
16. lots of fruits and veggie choices every meal
17. As many choices as possible as children like to make their own choices and this is why salad bars work.
18. Pre packaged healthier options.
19. Variety on serving lines.
20. Deli Bar
21. Local cultural foods that are familiar to students, that also incorporate variations to expand exposure to more food options.
22. Fresh fruits and vegetables, whole grains and low fat dairy.
23. More foods made from scratch rather than processed foods. This would mean education on the part of the child nutrition staff as many students may not have had exposure. Also offer more fruits/vegetables that students may not be able to receive at home. Recommend taste testing by students to determine if they would eat the foods. This would also encourage them

to try new foods.

24. A variety of choices, especially fruits and vegetables. Healthier versions of commonly preferred items, such as pizza and tacos, etc.
25. Sandwiches and soups, fresh fruit and vegetable choices, healthful pizzas, pastas and "bun" items may be offered that are nutrient dense and low in fat.
26. fresh deli, sandwiches, pasta,
27. Fresh fruits every day
28. Healthy Grab and Go Options or Vended Meals
29. I think we need to continue to train our students not force them.
30. Whatever choices the staff size can accommodate. Even if the choice is between green beans and carrots - at least it is a choice and we're happier when we have those choices.
31. Sandwiches, hot foods, fruits and vegetables.
32. Depends on the facility and equipment
33. Theme bars/ self-serve items
34. Lots of fresh fruits and veggies
35. It would be great to see seasonal menus.
36. potato bar , soup 7 salad option
37. Only healthy options

Should the food be prepared in-house or brought in from a different location?

1. Prepared in house.
2. In house if at all possible
3. the best is in-house but that isn't the real world
4. In house
5. in house as much as possible.
6. In house
7. In house is preferred
8. I do not think making food "in-house" makes it any healthier. If I have a manufacturer who can make me a whole grain, low fat, low sodium macaroni and cheese what makes it inferior to me making it in my kitchens? I can cut back on my labor expenses by buying from a manufacturer who can make it all the same. I cannot guarantee that all my cafeterias will make the same macaroni and cheese even with a standardized recipe. I think that as a society we need to re-evaluate the negative connotation of getting food from a manufacturer.
9. Food should definitely be prepared in-house. Less chance of food borne illness or contamination. Better tasting.
10. Depends on the school, the location of the school and school resources
11. in house
12. in house
13. in house
14. That should be a local level decision based on the needs of the individual school or school district.
15. In-house
16. either
17. In house or from a school close by to be finished cooking at the school

18. this depends on if it is a full service kitchen or satellite kitchen
19. Depends on the kitchen facilities available at each school.
20. both work fine
21. Depends totally on the situation.
22. In house
23. Whatever is safest and most efficient for the school and school system.
24. Prepared in- house is usually the best option.
25. In house.
26. Depends on the school. A lot of schools don't have a functional kitchen, or even room to add a kitchen.
27. It depends on the facility and staff expertise.
28. in house
29. whatever works for the individual school
30. depends on the existing equipment in each facility
31. In-house if possible
32. Should not matter.
33. whatever works - it's a local decision. Preparation on site is usually higher quality but some are not set up for that and would need a large amount of money to set up preparation kitchens and increase in staffing to cover the labor for that, also.
34. Depends on facilities, budget and other factors
35. Prepared in-house when possible
36. Prepared in house when possible. Not all schools have kitchens. You do risk food safety when items such as Chipotle are brought from off-site operations.
37. Whatever works best for the school
38. Whatever works best for the school as long as the nutritional and safety requirements are met.
39. either
40. In house definitely

How could the cafeteria be set up to encourage students to eat healthier food options?

1. We do not offer competitive foods in our cafeterias.
2. bright and cheery, clean and uncluttered, personnel with clean clothes and good attitudes who want to be there to help the children
3. Better lights, color, more like a retail environment with music or nicer tables and chairs. Let the kids talk and enjoy the time
4. Have multiple healthy line options
5. Merchandise more....
6. Offering a variety of foods set up similar to a food court idea only with only healthy options
7. Education needs to be taught in the classroom and at home. The cafeteria can be set up with colorful motif and maybe signs to show students what those foods do for them when they eat them. ie: milk=strong bones, carrots=good eyesight, etc.
8. Like a food court.
9. Make eating in the cafeteria the "IN" thing...
10. Variety of good foods

11. friendly environment
12. more of a food court and less of a straight line
13. Make the healthy choices more accessible and affordable than the unhealthy foods.
14. Marketing and attractively display healthy option.
15. Place fit/veggie items first, make it attractive, easy access, reasonable price
16. Active menu boards showing the options available to students and what these foods help their body.
17. there should be food carts after the end of the line, located in another portion of the cafeteria. so that students can help themselves. or at the end of the line where they can take their time to pick their selections.
18. Every student has time to go through the lunch line and then has time to eat lunch
19. Marketing. Make the food look good. Put the healthier options first.
20. Once again, depends totally on age/space/equipment/personnel.
21. Make snacks difficult to obtain. Have many varieties of fruits and vegetables available as choices.
22. Good Management from the site and and system and education of the student about nutrition in the classroom and sent home.
23. Attractive display with a variety of healthy choices.
24. It could be set up with kiosks, or different areas of the kitchens could be set up to provide salad bar options, sandwich options, etc.
25. Place the healthier food items at the beginning of the serving line. Offer salad bars. Don't make healthier foods seem like a punishment. Adults should be role models, eat the same healthy foods that they want the students to eat.
26. Friendly eating spaces, brightly lit, warm colors, good displays as students go through the line. Put fruits and veggies first to market them. Self serve with good marketing techniques would be beneficial.
27. food court with lots of options
28. less processed foods and more whole foods
29. put the healthier items first; for teachers and guests, reduce the sale price of the healthier items and increase the price of the less healthy items
30. Offer fruits and vegetable first in the serving line
31. First of all, adequate time. That may not be what you would normally consider in how the cafeteria should be set up, but it is critical. Salad bars with friendly helpers for the little ones the first week or so - after that, they know how to utilize it.
32. Healthier foods should be the first and the faster foods to get.
33. Put fresh fruits and vegies on the serving line in clean, colorful arrangements (variety).
34. Advertise healthy items....mark them with a sticker, use colorful signs to highlight, focus on them on your menus, have a food of the day that is healthy, list nutrition facts online, etc.
35. Don't offer unhealthy options. Provide reasons to kids through the educational programs.
36. quick fast lines and prepackaged options

Do you have other recommendations for setting up a school kitchen or cafeteria that will encourage students to make healthier food choices?

1. Re. each cafeteria as if you are looking for a new restaurant to dine. Is it cluttered or dirty, is the paint peeling or fresh, ask yourself what would you look for in a restaurant that would

make you want to come back. Prepare food in a fresh and appetizing manner. Find out what the staff does well and build on that.

2. Do not make it like a straight food line. Allow for the student to pick items and allow for Take away the institutional look and have a more retail feel
3. We need the help of people in the marketing business.
4. only offering healthy choices..... Taste testing seems to work
5. I think you need to define healthier food choices. I can serve a slice of pizza on whole grain or whole wheat crust, with reduced fat cheese, and vitamin enriched sauce, a chef salad with low sodium ham and cheese, romaine lettuce and tomato and low fat ranch, a sub sandwich on a whole wheat roll, reduced sodium ham & turkey and reduced sodium low fat cheese. Each of those items are "healthy".
6. Be the best we can and educate kids.
7. signs add interest
8. No- but you could ask the students for ideas. The more involved they are the more likely they are to actually make the "right" choices.
9. well trained staff who appreciate healthy foods and like to eat healthy food themselves. Good customer service.
10. the cart must be clean, accessible and monitored by an adult for food safety and restocked as needed
11. Stations are sometimes a good option.
12. Designate more space for serving areas.
13. The attitude of the servers makes a difference.
14. Clean facilities with attractive presentation in serving pans.
15. Make the healthy options the most easily accessible.
16. Survey the students! If they have input, it makes them feel ownership in the process.
17. Offer as many options as feasible to try to reach as many student preferences as possible.
18. all choices of food should be healthy so that any meal option would be a good one!
19. student involvement
20. nutrition education materials (posters, flyers, glass cling-ons, etc.) at the point of service
21. Give them many options; don't dictate. Go slowly on changes.
22. The menu options and the space varies from place to place in size and utilization so each agency needs to be able to make their own decisions.
23. Put them in the forefront, make them attractive.
24. More healthier choices

Additional Questions

Do you have any additional comments or recommendations for setting up a model school food program?

1. Work with your parents, school Adm, SNA, and education your staff on what you are doing. get the students to take part they are the client and they should have input
2. offer as much fresh fruits and vegetables as possible and allow the kids to take seconds at no charge.
3. Contact Steve Bonino in West Palm Beach, Florida. He is very innovative and is trying a new concept.
4. Do what is best for students--operate a good program offering healthy choices. Don't

place profit over what is best.

5. I think you need to be careful to not "generalize" or criticize school lunch in its current form. Not all schools are created equal and just because a district cooks from scratch does not make it better than one that purchases items from a manufacturer.
6. Lower the cost of food! :)
7. Get the students, staff and parents involved at the local level. These individuals will be the most invested and typically have great ideas.
8. The program has to have support of the whole school environment and parents to make it work
9. Still need to engage more than just the cafeteria. Getting administration, teachers, parents and nurses involved is so helpful.
10. More time needs to be allocated for students to consume meals.
11. Just keep trying and keep your minds open to new ideas.
12. It really depends on the school, especially support from administration, faculty and foodservice to create a healthy school food program. A positive attitude and strong belief in the success of the program makes all the difference. Children are extremely flexible for the most part. They adapt quickly to changes in school foodservice. Adults, however, tend to fight change. If they aren't willing to support the changes needed to create a model school food program, it is very difficult to make the necessary changes.
13. the staff should be knowledgeable, friendly and creative. There should be funding available either through the meals served or in the food service budget to support a quality program that serves fresh and local food, with staff and equipment resources to make this possible.
14. Follow USDA guidelines
15. If we could start from scratch, it would be wonderful. Most are dealing with very old kitchens and dining areas that have been around long before many of these ideas came up. Encouragement to do what you can, even if it is just one or two little things will be more helpful than saying "this is a model program" and then they are in a space that cannot achieve those grand goals until they have a new space.
16. go to the School Nutrition Association Website for lots of great ideas.
17. Having closed lunch hours is a safety issue. I have heard too many times that a student has been killed or injured over lunch periods that are open campuses. One child is ONE too many!