2010

The Importance of High School Nutrition Education

Rebecca Toisie Swanson
Central Washington University

Follow this and additional works at: https://digitalcommons.cwu.edu/graduate_projects

Part of the Curriculum and Instruction Commons, Health and Physical Education Commons, and the Secondary Education and Teaching Commons

Recommended Citation
Swanson, Rebecca Toisie, "The Importance of High School Nutrition Education" (2010). All Graduate Projects. 94.
https://digitalcommons.cwu.edu/graduate_projects/94

This Graduate Project is brought to you for free and open access by the Graduate Student Projects at ScholarWorks@CWU. It has been accepted for inclusion in All Graduate Projects by an authorized administrator of ScholarWorks@CWU. For more information, please contact pingfu@cwu.edu.
NOTE:

SIGNATURE PAGE OMITTED FOR SECURITY REASONS

THE REGULATIONS FOR SIGNATURE PAGES CAN BE FOUND ON CWU’S GRADUATE STUDIES WEBPAGE:

CWU.EDU/MASTERS/
THE IMPORTANCE OF HIGH SCHOOL NUTRITION EDUCATION

A Project
Presented to
The Graduate Faculty
Central Washington University

In Partial Fulfillment
of the Requirements for the Degree
Master of Education
Master Teacher

by
Rebecca Toisie Swanson
May 2010
ABSTRACT

THE IMPORTANCE OF NUTRITION EDUCATION

by

Rebecca Swanson

November 2009

This project looks at obesity and undernourishment in American students. The project discusses the importance of physical education and nutrition education and the lack thereof in the 21st Century. Research indicates current legislative mandates involving standardized testing and a stress on core academics, changing familial and societal structures and evolving food technology have helped lead to the obesity epidemic in the United States. The project also looks at different ethnic and socioeconomic groups and the impact nutrition and overall health plays in these groups. The project includes a nutrition curriculum that is designed to be used in a ninth grade Health course. If changes aren’t made now, it is estimated the current generation in school will be the first in American history to have a shorter life expectancy than their parents.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>THE PROBLEM</td>
<td>1 ****</td>
</tr>
<tr>
<td></td>
<td>Background of the Project</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Statement of the Problem</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Purpose of the Project</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Significance of the Project</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Limitations of the Project</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Definition of Terms</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Project Overview</td>
<td>6</td>
</tr>
<tr>
<td>II</td>
<td>REVIEW OF THE RELATED LITERATURE</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Health Requirements for School Age Children</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>History of Health, Nutrition, and Physical Education in American Schools</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>School Impact of Health and Well-being</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Societal Impact of Health and Well-being</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Multicultural Issues Regarding Health and Well-being</td>
<td>19</td>
</tr>
<tr>
<td>III</td>
<td>PROCEDURES</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Background of the Project</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Project Development</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Project Procedure</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Project Implementation</td>
<td>25</td>
</tr>
<tr>
<td>IV</td>
<td>DESCRIPTION OF THE PROJECT</td>
<td>27</td>
</tr>
<tr>
<td>V</td>
<td>SUMMARY, CONCLUSIONS, RECOMMENDATIONS</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Summary</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Conclusions</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Implications</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Recommendations</td>
<td>32</td>
</tr>
<tr>
<td>REFERENCES</td>
<td></td>
<td>33</td>
</tr>
<tr>
<td>APPENDIXES</td>
<td></td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>Appendix A—Nutrition Now! Curriculum</td>
<td>37</td>
</tr>
</tbody>
</table>
CHAPTER I
BACKGROUND OF THE PROJECT

The need for nutrition education has never been as important as in the 21st Century. Since the 1980s, the prevalence of overweight young people has doubled in children, ages 5-10, and tripled in adolescents, ages 11-18 (Larsen & Murray-Davis, 2005). Due to the convenience of fast food, packaged on-the-go type meals, sedentary lifestyles, and a lack of proper health education for children and adults, obesity has become an epidemic in the United States. It has been suggested that lack of physical activity and a poor diet may overtake tobacco use in coming years as the number one cause of preventable death in America (Larsen & Murray-Davis, 2005).

Obesity is linked to many health risks, including; heart disease, stroke, hypertension, type 2 diabetes, and certain types of cancers (Larsen & Murray-Davis, 2005). Obese children are more likely to become obese adults, raising an even greater risk for health problems throughout childhood and into adulthood (Larsen & Murray-Davis, 2005). Doctors and health personnel have seen debilitating health problems for overweight and obese children since the mid-1980s. Obesity in children can cause type 2 diabetes, hypertension, cardiovascular disease, and metabolic syndrome; a condition that greatly increases one’s risk for diabetes (Larsen & Murray-Davis, 2005). Researchers studying this national epidemic predict that the children of today will be the first generation in United States history to have life expectancies shorter than their parents (Woods & Weasmer, 2006).
Not only is the obesity epidemic a current health problem in United States society, incidences of eating disorders are at all time records also. It is estimated that 10 million females and 1 million males in the United States suffered from an eating disorder in 2008 (National Eating Disorders Association, 2008). Eating disorders, such as anorexia and bulimia are linked to health problems such as; abnormal heart beat, gastric and digestive problems, osteoporosis, peptic ulcers, tooth decay, and even death (National Eating Disorders Association, 2008). Currently, there is a definite need for adequate, useful, and life changing nutrition education in America.

In 2004, the Child Nutrition and WIC Reauthorization Act was passed by congress (Woods & Weasmer, 2006). This act states that “schools are deemed responsible for students’ awareness of good nutritional habits and engagement in daily physical activity” (Woods & Weasmer, 2006, p. 167). The policy also states that schools are responsible for setting nutrition education and physical activity goals, establishing nutrition standards for food and drink available on school grounds, setting goals for other school-related activities that are designed to promote wellness, and setting goals for measurement and evaluation of the items listed above (Woods & Weasmer, 2006). The schools around the United States have a huge impact on nutrition and wellness lifestyle factors of students. Woods and Weasmer (2006) state, “The USDA has determined that more than 28 million students use the National School Lunch Program daily, while approximately 7 million rely on the National School Breakfast Program” (p. 168). Looking at those statistics, one can see that for many students across the nation, most of
the food they consume day to day is eaten at school. But, looking at obesity and eating disorder statistics, one can also see nothing has changed and what has changed has made little to no impact with youth overall health and wellness since 2004 when this act was passed.

Statement of the Problem

Without adequate nutrition information, the state of health of America’s adults and children will be detrimental to society’s well-being. According to Larsen and Murray-Davis (2005), since the mid-1980s, the prevalence of overweight adolescents has tripled. It is vital that students get reliable, up to date, and useful nutrition information in school today. More than 95% of five to seventeen year olds in the United States are enrolled in school, making it a great place to promote nutrition, physical activity, and a positive well-being (Story, Kaphingst, & French, 2006). There is no other institution with as much continuous contact and possibility for influence as schools. It is vital nutrition and physical activity education are a focus of schools today.

In a rural Central Washington high school, there is a need for relevant and life-changing nutrition education for its students. As of 2009, there were approximately 1,500 students enrolled in the school district (OSPI, 2009). Currently, students enroll in a one quarter (9 week) Health class as high school freshmen. This is the only Health course students must take to pass state graduation requirements. With little classroom time devoted to health and wellness, up-to-date, adequate, and interesting nutrition material is a must.
Purpose of the Project

The purpose of this project is to provide a curriculum to be used in a high school Health course to give students applicable and relevant knowledge and skills in nutrition and wellness. The curriculum will provide lesson plans for two weeks of class time devoted to the nutrition unit. The unit created will give students knowledge on why it is important to maintain a healthy lifestyle when it comes to diet and exercise, but also expand on how to incorporate healthy lifestyle factors into one’s daily routine.

Significance of the Project

Children, adolescents, and adults are not adequately informed about the need to maintain nutrition and fitness throughout a lifetime. Obesity is a growing epidemic in the United States. The cost for obesity-related medical expenses was $117 billion in 2005 and has continued to climb (Larsen & Murray-Davis, 2005). Obesity in childhood and adulthood is linked with numerous health risks, such as; type 2 diabetes, cancers, heart and cardiovascular disease, hypertension, and depression (Larsen & Murray-Davis, 2005). Parents and educators need to teach, explain, and live by example the importance of proper nutrition and exercise. Without a change in eating habits and sedentary lifestyles across the country, people may be facing a “lifelong, perhaps multigenerational impact” (Larsen & Murray-Davis, 2005, p. 22).

In the rural Central Washington school district, the need for adequate nutrition education is high. Students only receive nine weeks of Health education during their high school career, making every nutrition lesson of vital importance. The school lunch
program at the high school is also a source of concern. Not only are there limited choices to students who choose to eat the hot lunch program, approximately 44 percent of the students within the district qualify for free and/or reduced lunch (OSPI, 2009). If students in this community gained better information and developed knowledge and practical health skills relating to nutrition, they would have the power to take control of their health for a lifetime. They could also potentially get healthier school lunch options put into place with help from dedicated educators, parents, and community members interested in the well-being of the community’s future citizens.

Limitations of the Project

The nutrition unit created is for ninth grade students. It would best fit a ninth grade health classroom, although it could be used for tenth through twelfth grade students with slight modifications. The unit includes information regarding nutrition and physical well-being. Unfortunately, the unit is only created at a high school level, but proper nutrition and the importance of physical activity should be taught earlier in a student’s academic development. If nutrition and physical activity education aren’t taught prior to high school, children can develop poor diet and exercise habits, which would be difficult to change later in life. Also, the science of nutrition changes frequently, so it is vital for health educators to stay up to date on current trends and information relating to nutrition and fitness.
Definition of Terms

Listed below are definitions of terms used throughout the project. This list will help the reader understand terms used within the project.


*Body Mass Index (BMI):* BMI is a measure that adjusts body weight for height. It is calculated as weight in kilograms divided by height in meters squared. Used to determine overweight and obese (Center for Disease Control, 2008).

*Bulimia Nervosa:* A serious, potentially life-threatening eating disorder characterized by a cycle of bingeing and compensatory behaviors such as self-induced vomiting designed to undo or compensate for the effects of binge eating (National Eating Disorders Association, 2008).

*Overweight:* For adults, BMI greater than or equal to 25. For children, at or above the age and sex specific 95th percentile (Center for Disease Control, 2008).

*Obese:* BMI greater than or equal to 30 (Center for Disease Control, 2008).

Project Overview

Chapter one explains the importance of a sound nutrition and healthy lifestyle curriculum in schools. Statistics and studies show the United States is headed towards a dangerous path if sedentary lifestyles and poor diets continue and changes are not made. The purpose of this project is to create an appropriate nutrition curriculum for high school
students. Chapter two reviews research and literature relating to children and adolescent nutrition and wellness. Chapter three will focus on project background, procedure, development, and implementation.
CHAPTER II
HEALTH REQUIREMENTS FOR SCHOOL AGE CHILDREN

The United States Government sets guidelines relating to health and wellness for citizens across the lifespan. Guidelines set for elementary aged children include a variety of wholesome foods listed in an easy to follow pyramid format. Specific amounts to be eaten each day include six ounces of grains (most should be whole grains), two and a half cups of vegetables, one and a half cups of fruit, three cups of low fat dairy products, and five ounces of meat or protein sources (My Pyramid, 2005). The United States Department of Agriculture (USDA) also recommends children limit their intake of sweet and fatty foods (My Pyramid, 2005). Exercise is also a vital part of a healthy lifestyle and it is recommended that children exercise for a minimum of sixty minutes per day (My Pyramid, 2005). The adult version of the recommended food guide pyramid is similar to the child version but with increases in vegetables, fruits, and protein. Adults need the same amount of whole grains and dairy products as children, but should increase vegetables to three cups per day, fruits to two and a half cups, and protein sources to five and a half ounces (My Pyramid, 2005). It is recommended adults exercise for a minimum of thirty minutes per day, but an hour of physical movement is preferred (My Pyramid, 2005). It is suggested that if American citizens would follow these guidelines they would be able to maintain a healthy lifestyle.
Health, nutrition, and physical education have not always been a part of American school. In the mid-nineteenth century, Ellen Swallow Richards, an American home economics pioneer revolutionized health education in school (AAFCS, 2009). As a chemist, Richards knew the importance of health, safety, and sanitation in the home (AAFCS, 2009). Through her research and findings, home economics in public schools began in the early 1900s (AAFCS, 2009). Through the following centuries, home economics has evolved in order to meet the needs of the ever-changing American family including nutrition, health, food preparation, and sanitation. Currently, home economics, now known as family and consumer sciences education, has a strong emphasis on the importance of nutrition over a lifespan (AAFCS, 2009). Family and consumer science educators are currently addressing the need for life changing nutrition curriculum to combat the American obesity epidemic.

**Current National Health Standards**

National health and fitness standards are broad, but in all areas cover the aspect of nutrition and well-being. The 2007 National Health and Fitness Standards state the following:

**HEALTH EDUCATION STANDARD 1** – Students will comprehend concepts related to health promotion and disease prevention to enhance health.
HEALTH EDUCATION STANDARD 2 – Students will analyze the influence of family, peers, culture, media, technology and other factors on health behaviors.

HEALTH EDUCATION STANDARD 3 – Students will demonstrate the ability to access valid information and products and services to enhance health.

HEALTH EDUCATION STANDARD 4 – Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

HEALTH EDUCATION STANDARD 5 – Students will demonstrate the ability to use decision-making skills to enhance health.

HEALTH EDUCATION STANDARD 6 – Students will demonstrate the ability to use goal-setting skills to enhance health.

HEALTH EDUCATION STANDARD 7 – Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

HEALTH EDUCATION STANDARD 8 – Students will demonstrate the ability to advocate for personal, family and community health.

(Taken from National Health Education Standards PreK-12 Second Edition, 2008)
Although the National Health Education Standards encompass aspects of nutrition and physical activity, health education teachers across the nation average only five hours a year teaching about nutrition and dietary behaviors (Story, et al. 2006). As of 2006, six states did not require schools to provide health education (Story, et al. 2006).

Current Washington State Standards

As of 2008, all Washington State high school graduates must pass a health and fitness course offered by their school (OSPI, 2008). Although all high school graduates have successfully completed a course in health and fitness, obesity rates prove the courses are not creating life long health conscious citizens. According to the Office of Superintendent of Public Instruction, the goal of Washington State health and fitness courses is to “develop good health and safety principles which can lead to a lifetime of healthy practices” (OSPI, 2008). Washington’s current health legislation states that health and fitness courses should be sequential. Health and fitness essential academic learning requirements (EALRs) are broken up into four main categories and are as follows:

**Health and Fitness EALR 1** - The student acquires the knowledge and skills necessary to maintain an active life: Movement, physical fitness, and nutrition.

**Health and Fitness EALR 2** - The student acquires the knowledge and skills necessary to maintain a healthy life: Recognizes dimensions of
health, recognizes stages of growth and development, reduces health risks, and lives safely.

**Health and Fitness EALR 3** – The student analyzes and evaluates the impact of real-life influences on health.

**Health and Fitness EALR 4** – The student effectively analyzes personal information to develop individualized health and fitness plans.

(Taken from OSPI: Health and Fitness Grade Level Expectations, 2008)

According to these learning requirements, students in schools should be learning nutrition and physical well being to be carried out throughout a lifetime, yet why are obesity statistics still so staggering?

**Fuel Up to Play 60**

Fuel Up To Play 60 is a national campaign started in 2008 in an effort to enhance the well being of American school children. The program is sponsored through a partnership between the National Dairy Council and the National Football League (NFL) (Fuel Up to Play 60, 2009). The aim of the program is to educate and encourage students in kindergarten through grade twelve to eat healthier and participate in more physical activity (Fuel Up to Play 60, 2009). The program’s hope is to bring the opportunity for students to gain knowledge and develop skills for incorporating healthy eating and exercise into one’s daily routine (Fuel Up to Play 60, 2009). Fuel Up to Play 60 uses online tools for students and schools to track their progress with chances to win prizes throughout the school year. Prizes include visits from NFL players, being in promotional...
ads, and iPods (Fuel Up to Play 60, 2009). Hopefully this nationwide campaign will have lasting effects on America’s youth.

School Impact of Health and Well-being

*Physical Education and Recess*

It is common knowledge that physical activity and exercise improve overall health. Health experts recommend children participate in 60 minutes of physical activity each day (CDC, 2009). However, since the 1990s, physical education courses and recess have been cut back in schools across the United States (Satcher, 2005). School educators and administrators are responsible for student physical activity because school is a place students spend a majority of their time at school. Less than 25 percent of children participate in at least 30 minutes of physical activity each day, in and out of school (Satcher, 2005). School research also shows that fewer than 30 percent of high school students enroll in a physical education course each day (Satcher, 2005). Even more staggering is that only 6 percent of middle and high schools across the country have daily physical education classes (Action for Healthy Kids, 2009). It is estimated that 20 percent of elementary schools across the country have abolished recess all together to create more academic classroom time (Satcher, 2005). With recess and physical education courses being cut and even abolished in some areas, it becomes clear that this aids in the obesity epidemic in the United States.

Physical activity and education are beneficial for many reasons. Physical activity improves circulation, reduces stress by raising endorphin levels, increases blood flow to
the brain, and can even calm children. Students who are physically fit are also less likely to partake in risky behaviors and miss school. Being physically fit has also been correlated to better academic performance in school (Taras, 2005). Through physical education, students are able to learn the benefits of physical activity and different ways to incorporate exercise into their lifestyle. With all of the physical, emotional, and cognitive benefits relating to physical activity it is concerning that school officials across the United States are reducing the time spent on physical education and physical activity during the school day. By cutting time spent on such a vital part of a healthy lifestyle, the United States education system may be instilling the idea that health is not important.

**Student Performance, Exercise, and Nutrition**

The nonprofit organization, Action for Healthy Kids, released a report in 2004 stating improvement of student health would likely improve their school performance (Action for Healthy Kids, 2009). Student health improvements need to be addressed mainly in the areas of nutrition and physical activity. Helping students learn to eat right and participate in lifelong physical activities benefits students for a lifetime. Studies have shown that increased time spent in physically active activities improved student concentration and reduced destructive behaviors (Satcher, 2005). Proper nutrition also guides academic performance. Inadequate consumption of foods has been correlated with low academic performance (Satcher, 2005). The lack of healthy eating deprives students of essential vitamins, minerals, proteins, and fats their bodies need for optimum cognitive function (Satcher, 2005). Links in brain research have also shown lack of adequate
nutrition during the most formative years of the brain have caused lower test scores in reading comprehension, general knowledge, and especially mathematics (Satcher, 2005).

There is reason to believe there is a strong tie between physical activity and academic function. Animal studies indicate that exercising rats have more neural connections than sedentary rats (Sallis, et al., 1998). A study done on adults has shown there are select advantages relating to cognitive reaction, especially math, and reaction time (Sallis, et al, 1998). Two out of three studies conducted by Sallis indicated enhanced benefits to academic performance through increased physical activity (Sallis, et al., 1998).

One of the studies conducted by Sallis took a randomized sample of fourth and fifth grade students in California. Sallis and colleagues studied the effects of the physical activity program, SPARK, on standardized test scores, using the Metropolitan Achievement Test (MAT). Students were split into two groups; one using the SPARK program along with academic classes and the other not receiving the SPARK program as part of their school regimen. Test results indicated that after two years involving the SPARK curriculum, tests results rose slightly (Sallis, 1998). This could indicate that over time and throughout a child’s education, incorporating physical education as part of the educational process could have positive lifelong effects.

No Child Left Behind and Standardized Tests

There are many barriers to creating lifelong health in American students today; two of such barriers may be the No Child Left Behind Act (NCLB) and the huge push in
legislation for standardized tests. NCLB was passed by congress in 2001 in an effort to improve education across the country (US Department of Education, 2009). Although congress had good intentions, the NCLB may be hurting American children more than helping. This act has incorporated more need for standardized testing to prove schools are meeting expectations. With these new mandates, physical and health education have been reduced and/or abolished in school districts across the country (Satcher, 2005). This fact is disheartening because of the abundance of research that proves physical activity is correlated to increased attendance, better school performance, and improved test scores in all areas (Satcher, 2005). The same research also suggests students who took time out of the school day for physical activity did equally as well and in some cases better than students who did not get physical activity during the school day (Satcher, 2005).

School Lunch Program

Not only are physical education and health education courses falling by the wayside in American schools, the National School Lunch Program is nothing to be proud of when looking at it through health-conscious lenses. It is common knowledge that good nutrition fosters healthy growth and development (Wander & Hair, 2009). The Federal Interagency Forum on Child and Family Statistics reported that during the 2001-2002 school year, more than eight in ten children had a diet that was poor or in need of improvement (Wander & Hair, 2009). They also reported that 80 percent of children do not eat the recommended daily allowance of fruits and vegetables (Wander & Hair,
2009). Also, Wander and Hair report that as children get older, the quality of their diets seem to decline (2009).

There are movements across the nation reforming school lunch programs to have healthier options for students of all ages, but many are not making a lasting impact. Wander and Hair report that foods served as part of the National School Lunch and Breakfast Program must adhere to nutrition standards, which are not rigid, and many schools also offer “competitive foods” (2009). National School Lunch Program nutrition guidelines are coordinated by the week (USDA, 2009). This method does not necessarily allow for daily requirements to be met because if the guidelines are met over the course of the school week, lunch programs are in compliance. “Competitive foods” are food items sold a la carte, on snack bars, or in vending machines and none of these types of foods need to adhere to national health standards (Wander & Hair, 2009). These are of particular concern because most lack nutritional value, replace fruits and vegetables in many children’s diets, and during the 2003-2004 school year were available in nine out of ten schools across the United States (Wander & Hair, 2009). Wander and Hair also state that although many schools, especially affluent schools, offer healthy fruit, vegetable, and whole grain options, most schools offer just as many unhealthy options to students (2009).
Societal Impact of Health and Well-being

Family

The family structure has an influence on all aspects of a child’s life. The family system is typically the foundation for the child’s habits, food choices, and other personal characteristics. Parents are key to developing a home environment that fosters healthful eating and physical activity among children and adolescents (Lindsay, et al. 2006). Parents play a vital role in children’s dietary practices and are extremely influential in the development of their children’s lifelong habits that contribute to wellness (Lindsay, et al. 2006). Through infancy to adolescence, parents influence their children’s health and well-being. Studies show that before an infant is born, the mother’s pregnancy can influence overweight or obesity in the child later in life (Lindsay, et al. 2006). Toddlers and preschool children develop most of their food habits through exposure and repeated experiences (Lindsay, et al. 2006). Parents exposing their young children frequently to healthy choices will reduce the likelihood of children making poor food choices later in life. Throughout childhood and into adolescence, parents still have much control over their children’s food choices. Little is known correlating parents’ activity levels to their children’s activity levels, but if food choice is directly related, researchers believe activity level would likely have similar results. The older a child gets, the less direct influence a parent has over the child’s choices; therefore making it vital for parents to positively influence their child in their early years to better their decision making when they are older (Lindsay, et al. 2006).
Data from 2009 are beginning to indicate the transition to adolescence is associated with a decline in physical activity (Terzian & Moore, 2009). Physical activity continues to decline between the ages of 14 to 18 as well (Terzian & Moore, 2009). Terzian and Moore report that 90 percent of nine to eleven year olds exercise regularly, compared with only 30 percent of fifteen year olds (2009). This lack of physical activity is of great concern as children get older because similar levels of physical activity (or inactivity) are likely to be maintained into adulthood causing alarm for obesity (Terzian & Moore, 2009). A study done by Terzian and Moore researched sedentary and active adolescents and linked commonalities between each of the two groups. Results were not shocking, but interesting. The research showed that sedentary adolescents were more likely to have parents that did not exercise and typically ate less than three meals per week with their families (Terzian & Moore, 2009). This study proves the needs and benefits for parental involvement in a child’s life throughout adolescence!

If parents have such a direct influence on children’s wellness, why is America dealing with obesity, eating disorders, and health problems associated with both like never before? With societal changes since the 1970s, it becomes obvious that positive development of healthy eating and regular physical activity have not been on the forefront in America’s families. With the increase of divorce, single parent households, and two working parents, family structure has evolved and changed; some of the many possible reasons the United States as a whole is overweight and unhealthy. Whether it be
lack of income to purchase quality food items or lack of time to prepare quality meals; America’s wellness is falling by the wayside.

*Media*

Television, computers, and the internet have allowed society to be connected globally like never before. They have enhanced awareness and education, but have also been linked to a sedentary lifestyle; a key factor in pinpointing a cause for obesity. A study conducted of five to six year old Hispanic children in Chicago found a link between television viewing and being overweight (Lindsay, et al. 2006). Another study done in New York found a link between obesity and televisions in children’s bedrooms (Lindsay, et al. 2006). Recent data indicate that 68 percent of children have a television in their bedroom (Lindsay, et al. 2006). Also reported was a staggering 50 percent of children have some type of video gaming system and/or VCR or DVD player (Lindsay, et al. 2006). No wonder society’s children are so overweight! This study has also found that children who watch television are exposed to a vast array of advertisements for soda, sugar sweetened cereal, candy, and fast food (Lindsay, et al. 2006). This research also suggests exposure to such food commercials influences children’s food preferences and can contribute to confusion of the health benefits of different foods (Lindsay, et al. 2006).

*Technology*

Food technology has greatly evolved over the course of American history. With the invention of Coca-cola in 1886, America has paved the way with a variety of sugar sweetened concoctions. Between 1965 and 1996, adolescent soft drink consumption
increased 150 percent (Lindsay, et al. 2006). A study conducted with eleven and twelve
year old students found for every sweetened drink consumed daily, the odds of becoming
overweight increased 60 percent (Lindsay, et al. 2006).

Multicultural Issues Regarding Health and Well-being

Poverty and Health

There is a direct link between a poor lifestyle and a poor diet. A Canadian study
reported in 2008 was the first to prove a food insecure home directly correlates to poor
nutrition (Mozes, 2008). The study also showed it was more likely for adults and teens to
eat a nutritionally poor diet than toddlers or infants in food insecure homes (Mozes,
2008). The quality of diet related to low income homes is of huge concern because many
calories consumed are refined grains and sugars, which are related to an increased risk of
obesity, Type II Diabetes, and heart disease (Mozes, 2008). Also of concern was lower
milk consumption in toddlers in low socioeconomic homes, as well as low fruit and
vegetable consumption in adolescent boys and girls (Mozes, 2008). Poverty stricken
adults were found to have low consumption of protein, fat, and fiber (Mozes, 2008).

A British study also looked at the effects of poverty stricken families and poor
nutrition. Starting from infancy, gaps begin in the nutritional deficits of children born into
food insecure homes versus children born into food secure homes. This British study
reported that breast feeding rates between middle class and lower class infants is
significantly different. At birth, 90 percent of middle class mothers breast fed while only
50 percent of low income mothers breast fed at birth (Nelson, 2000). By six months of
age, 42 percent of middle class mothers breastfeed and only 11 percent of low income mothers breastfeed (Nelson, 2000). This is of particular concern because it is proven that infants breastfed their first year of life show significant gains against infection and gut development, as well as better protection against diabetes, asthma, and eczema (Nelson, 2000). Low income families raising infants in this study also reported an increased amount of infant formulas, soft drinks, biscuits, and sugars fed to their babies whereas middle class families reported higher rates of breast milk and cow’s milk fed to their children (Nelson, 2000). By the time children entered school, this same study showed low income children had diets high in white bread, potatoes, chips, and sugar (Nelson, 2000). This evidence shows the correlation between poor diet and increased risk for obesity!

Poverty and nutrition is of great concern in the United States. In 2002, 11 percent of United States households reported food insecurity, meaning adequate or safe foods were not available at all times within the year surveyed (USDA, 2009). In November of 2009, food insecure homes rose to 15 percent nationwide (USDA, 2009). With poverty on the rise in America, optimal nutrition education and school lunch programs are vitally important.

Hispanic Origin and Health

People of Hispanic origin are the fastest growing culture in the United States during the 21st Century (HHS, 2003). As of 2000, people of Hispanic origin composed thirteen percent of the American population (HHS, 2003). This subgroup is no exception from the obesity epidemic sweeping across the United States. In 2003, Hispanic females
and males had a greater chance of becoming overweight or obese than their non-Hispanic counterparts (HHS, 2003). In 2002, Hispanic males ages six to eleven living in the United States had an obesity rate of 17.4 percent (HHS, 2003). Researchers for the Health and Human Services Division of the United States government linked obesity in the Hispanic population with a disproportioned amount of energy intake and physical activity expenditure (HHS, 2003). The same research also found that many Mexican Americans lacked leisure time activities, which may be a risk factor involved with high obesity rates (HHS, 2003). Also discovered was the diets of Mexican Americans was far worse than Mexicans living in Mexico (HHS, 2003). Heavily Hispanic populated parts of the United States were studied on health and some populations showed an alarming rate of Type II Diabetes, a health condition related to poor diet and obesity (HHS, 2003). Parts of Texas have shown as much as 50 percent of the Hispanic population reporting Type II Diabetes (HHS, 2003). These results are alarming, especially because the United States Hispanic population continues to grow substantially.

Native American Origin and Health

Although Native Americans are among a minority in the United States, their health is still of great concern. In 2009, obesity was the number one health-related concern of Native American children (IHS Child Health Notes, 2009). It is interesting that less than 40 years ago, the number one health-related concern regarding Native American children was underweight, including kwashiorkor and marasmus, two forms of malnutrition caused by lack of protein in the diet (IHS Child Health Notes, 2009). A 1969
study reported that 15 percent of Navajo infants were below the 3rd percentile for weight and height (IHS Child Health Notes, 2009). Researchers write that although Native American genetics have not changed, their environment has, which is probably why the increase has affected this population group as well as others in the United States (IHS Child Health Notes, 2009). As early as 1991, researchers began to see an upward shift in obesity rates among Native American children. In 1991, nine percent of preschool aged Native American children were overweight compared to just over six percent of Caucasian preschool children that same year (IHS Child Health Notes, 2009). That same trend has continued into the 21st Century and in April of 2009, 31 percent of Native American children were considered obese (IHS Child Health Notes, 2009).

Summary

It is estimated that the current school aged generation will be the first generation in American history to have a shorter life expectancy than their parents. This all stems from environmental changes in the form of food product availability and choice and physical activity, or lack thereof, as well as family dynamic shifts in the 21st Century. Although some changes are being made in schools across the country to improve cafeteria lunch and breakfast choices, they are not making large enough positive changes to outweigh the decreased time children are spending in physical education classes. The rise of obesity in the United States is leading to an unhealthy, overweight, diabetic, heart disease laden society. There is a great need for relevant, up to date, and life changing nutrition education in American schools.
CHAPTER III

BACKGROUND OF THE PROJECT

The project that was created was designed to be used in a ninth grade health class. The project is a comprehensive nine day nutrition curriculum; incorporating relevant, up to date nutrition information and practical skills to teach students the importance of nutrition and physical activity throughout their lifetime. It was created due to the growing trend of obesity and other obesity related diseases, such as hypertension, heart disease, type II diabetes, certain types of cancers and depression in the United States. Research suggests obese children are likely to become obese adults. By teaching students from an early age about the importance of healthy living through a healthy diet and regular exercise, it is more likely they will maintain healthy living styles throughout their lifetime. Through educating the youth of the 21st Century on the importance of nutrition, it is the hope that they will break the growing trend of obesity and become an active and healthy society.

Project Development

The project was developed using many practical nutrition resources and tools available to the general public. The nutrition curriculum designed is inclusive and contains relevant knowledge and real world skills. The project was developed using the national Health standards and Washington State grade level equivalencies (GLEs) and essential academic learning requirements (EALRs) to ensure all requirements were being met through the course material. The nutrition curriculum also encompasses a
Washington State classroom based assessment (CBA); a state derived assessment required in all health classes throughout the state. The curriculum was developed using key points about healthy eating and exercise; including the make-up of food, reading a nutrition label, the food guide pyramid, health benefits of exercise and eating healthy, and health risks of a lack of exercise and unhealthy diet. The project was developed to interest adolescent minds by incorporating popular media, hands on projects, cooperative learning experiences, and real world examples. The popular television series, “The Biggest Loser,” is incorporated into the curriculum as well as the use of readily available diet analysis software from the food guide pyramid website, www.mypyramid.gov. Overall, the project was designed to be extremely educational and exciting as well as interesting for young minds.

**Project Procedure**

The curriculum that was designed was created with the intent of drawing the attention of high school students about the growing need of healthy nutrition education and practices in society today. Teaching practices were incorporated that enhance student learning in a high school setting. The project was created to incorporate teaching best practices, relevant and up to date material, and fun resources for students to explore nutrition. The curriculum includes lesson plans and all supplemental materials making it convenient to adopt and use in any health class.
Project Implementation

The ninth grade nutrition curriculum that was created has not yet been implemented into a ninth grade health class. The project is tentatively planned to be implemented into the health class offered in the fall of 2010. The curriculum will replace the existing nutrition classroom material. The new curriculum is approximately two days longer in sequence than the current curriculum so adjusting other units to fit the nutrition curriculum will need to take place.
CHAPTER IV

The project is a ninth grade health curriculum that is split up into nine separate lessons. Each lesson takes approximately 90 minutes to complete. Lesson topics include the importance of eating healthy and exercising, nutrients, the food guide pyramid, benefits of eating healthy, risks of unhealthy eating, a case study relating to energy drinks, and an evaluation of one's dietary consumption. The beginning of the unit is intended to interest the students in the importance of nutrition and exercise by showing them the results and risk factors of not leading a nutritious and physically active life. The television series, “The Biggest Loser” is used to represent the downside of poor health. Throughout the nine lessons, students are engaged in multiple cooperative learning experiences including presentations relating to the food groups, learning stations on the importance of exercise, and a cooking lab on creating healthy snacks. This curriculum also uses diet analysis software available online to help students better evaluate their own eating patterns and how they correlate to the recommendations from the food guide pyramid. The case study on energy drinks allows students to take an in depth and hands on approach to look at the popular concoctions often mislabeled as healthy drink choices. Students also participate in a nutrient scavenger hunt to discover what each nutrient is, why each is important for the body, and foods that contain each. At the end of the unit, a formal assessment is administered and students are able to see the finale of the television series, “The Biggest Loser” that they began earlier in the unit. This allows students to see how different lives can be through healthy diet and exercise. It is the hope of the writer of
the curriculum that student lives can be changed through their desire to lead healthy, active, and nutritious lives once becoming educated on its importance.
CHAPTER V

SUMMARY

The growing trend of obesity in the United States is leading to an unhealthy epidemic sweeping across the nation. Since the 1980s, obesity and obesity related health problems, such as type II diabetes, hypertension, and certain cancers, have been increasing substantially (Larsen & Murray-Davis, 2005). One third of American children are considered overweight (Larsen & Murray-Davis, 2005). Societal changes, educational trends, media, and technological changes in the way food is grown and processed have all had influence on the breakdown of healthy eating and living across America. Society has evolved in the United States to include many single parent households as well as an increased number of households who are near poverty. There is direct correlation between socioeconomic class and the amount of healthy food consumed in the home (Nelson, 2005). There have also been studies that show a relationship between income and physical activity of students which conclude lower socioeconomic families typically are less involved in physical activity and have diets low in fresh fruits and vegetables. Educational trends such as increased rigor of standardized tests may have helped create an obese generation of school-aged children. With the increased demands of standardized tests, recess and physical education courses have been reduced and in some cases abandoned in schools across the United States. Media and food advertising has helped pave the way for junk foods to be common staples in many American pantries. Food technology has allowed artificial and/or highly processed ingredients to become everyday food items for many. Through these many changes in society, America has become...
the fattest and unhealthiest nation in the world. Nutrition education and practice reform is needed immediately.

Conclusions

Informative, relevant, and life changing nutrition education is essential for generations of American children to break the growing trend of obesity and obesity related health problems. It is extremely important for students to be educated in healthy eating and living to maintain a lifetime. Although it is essential schools provide adequate nutrition information to all students, nutrition and physical activity practices need to be set in place in the home, where children spend much of their time. Parents and caregivers need to educated about the importance of healthy eating and regular exercise throughout the lifespan as well as children and adolescents. Incorporating an exciting and educational nutrition curriculum in a ninth grade health class is a small step towards changing the way students eat and live. Even a small change in one student’s diet or exercise regimen would make the nutrition curriculum well worth the time and effort. It is with great intent that many small steps could someday lead to a large reform of healthy eating and regular exercise. Eventually, all people must practice healthy living strategies if the obesity epidemic is going to change in the United States.

Implications

By using the new nutrition curriculum in ninth grade health courses, it is implied that students will receive beneficial information regarding nutrition and exercise to make healthful choices for their lives. The intent is to educate students on the importance of
eating healthy across the lifespan by following the food guide pyramid, understanding nutrients essential for living, and knowing how to read a nutrition label on food packages. Also, at the conclusion of the nutrition unit, students should have the knowledge as to why regular exercise is important across the lifespan. Students will have gained not only insight and knowledge, but also practical skills to carry with them throughout their lives.

Recommendations

Further study will be necessary as the science of nutrition is constantly evolving and advancing. Medicine and science are continually gaining deeper insight into how the body metabolizes vitamins, minerals, and energy. As more research is done, the benefits of regular exercise on the body are discovered. Food technology continually changes in American society making it vital for researchers, educators, and others associated with children to be current with their food and nutrition knowledge. Further study as time progresses will also allow educators and researchers to gain knowledge about obesity related trends across the United States. Current research is essential in making the obesity epidemic come to a halt in America. Without constant research in this area, researchers, educators, and American society will not be able to come together to form a healthy American population. Research should never stop in the field of nutrition and exercise. As long as people need to eat and exercise, continual research and further study should be done to advance the sciences of nutrition and exercise.
References


NUTRITION NOW!

9th Grade Nutrition Curriculum

Rebecca Swanson
Nutrition Now! was developed because of the need for relevant, up to date, and interesting nutrition education. This curriculum is designed to be used in a 9th grade Health class. The unit is split into nine 90 minute class periods. Modifications could be made for shorter class periods, but the amount of days needed to cover the material would increase. The curriculum is aligned with National Health Standards and Washington State GLEs and EALRs. Nutrition Now! is formatted in an easy to follow format and each of the lessons could be used as standalone lessons to supplement already developed nutrition units, although it is recommended the curriculum be used in its entirety. The curriculum includes step by step directions for teachers and also includes all supplemental materials needed for students, including two assessments. Nutrition Now! is interactive, fun, and extremely educational for all!
<table>
<thead>
<tr>
<th>Lesson</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1: Introduction: The Importance of Eating Healthy</td>
<td>40</td>
</tr>
<tr>
<td>Day 2: Nutrients: The Building Blocks of Foods</td>
<td>49</td>
</tr>
<tr>
<td>Day 3: My Pyramid: The Food Groups</td>
<td>57</td>
</tr>
<tr>
<td>Day 4: Being a Conscious Consumer: Nutrition Facts and Labels</td>
<td>61</td>
</tr>
<tr>
<td>Day 5: Energy Drinks: Friend or Foe?</td>
<td>83</td>
</tr>
<tr>
<td>Day 6: The Diet: Health Benefits of Healthy Eating</td>
<td>88</td>
</tr>
<tr>
<td>Day 7: The Diet: Health Risks of Unhealthy Eating</td>
<td>91</td>
</tr>
<tr>
<td>Day 8: Assessing One’s Diet: My Pyramid Tracker</td>
<td>93</td>
</tr>
<tr>
<td>Day 9: Conclusion: Nutrition and Healthy Eating Assessment</td>
<td>96</td>
</tr>
</tbody>
</table>
**Day 1: Introduction: The Importance of Nutrition and Healthy Eating**

**National Health Standards:**

Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health.

Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.

**Washington Health Standards:**

EALR 2: The student acquires the knowledge and skills necessary to maintain a healthy life: Recognizes dimensions of health, recognizes stages of growth and development, reduces health risks, and lives safely.

GLE 2.1.1 Evaluates dimensions of health and relates to personal health behaviors.

GLE 3.2.1 Evaluates health and fitness information, products, and services.

**Student Objectives:**

1. Recognize the importance of nutrition and healthy lifestyle education.
2. Recognize the health risks involved with a poor diet.
3. Discuss through a written summary the history, health risks, and other factors about a contestant on the TV series, The Biggest Loser.

**LESSON PLAN:**

**ENTRY TASK: JOURNAL**

Begin by sharing with class the latest CDC information relating to obesity, diabetes, and heart disease in the United States. Info available on [www.cdc.gov](http://www.cdc.gov). Ask the class if they know anyone who suffers from any of these diseases. Have a brief conversation about the importance of healthy eating and exercise and how they relate to these diseases.

Pass out the class survey relating to nutrition and healthy eating. Have students turn in the surveys when they are finished. Use this information to help guide your teaching in the coming days.
Introduce The Biggest Loser TV Series to the class. Explain the history of the show, the purpose of the show, and the premiere for the last or latest season. All information and the latest season of the show can be found at www.nbc.com and www.biggestloser.com. Show the season premiere to the class.

After the episode, have each student choose one of the contestants they would like to monitor during this unit. Have them write a summary of the person they are choosing to follow and why they are choosing to follow them. Be sure to include health risks they have seen relating to their weight, etc...

Wrap up the lesson having students share their summaries with a partner and handing them in on their way out!
CDC: U.S. Obesity Trends


Obesity is defined as a body mass index (BMI) of 30 or greater. BMI is calculated from a person's weight and height and provides a reasonable indicator of body fatness and weight categories that may lead to health problems. Obesity is a major risk factor for cardiovascular disease, certain types of cancer, and type 2 diabetes.

Download the State Maps

The prevalence of obesity is depicted in a PowerPoint slide presentation format. (25 slides total, PPT-1.42Mb)

This is also available as a text-only Acrobat file.(PDF-1.75Mb)

During the past 20 years there has been a dramatic increase in obesity in the United States. In 2008, only one state (Colorado) had a prevalence of obesity less than 20%. Thirty-two states had a prevalence equal to or greater than 25%; six of these states (Alabama, Mississippi, Oklahoma, South Carolina, Tennessee, and West Virginia ) had a prevalence of obesity equal to or greater than 30%.

The animated map below shows the United States obesity prevalence from 1985 through 2008.

Percent of Obese (BMI ≥ 30) in U.S. Adults

2008

No Data <10% 10%-14% 15%-19% 20%-24% 25%-29% ≥30%
### 2008 State Obesity Rates

<table>
<thead>
<tr>
<th>State</th>
<th>%</th>
<th>State</th>
<th>%</th>
<th>State</th>
<th>%</th>
<th>State</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>31.4</td>
<td>Illinois</td>
<td>26.4</td>
<td>Montana</td>
<td>23.9</td>
<td>Rhode Island</td>
<td>21.5</td>
</tr>
<tr>
<td>Alaska</td>
<td>26.1</td>
<td>Indiana</td>
<td>26.3</td>
<td>Nebraska</td>
<td>26.6</td>
<td>South Carolina</td>
<td>30.1</td>
</tr>
<tr>
<td>Arizona</td>
<td>24.8</td>
<td>Iowa</td>
<td>26.0</td>
<td>Nevada</td>
<td>25.0</td>
<td>South Dakota</td>
<td>27.5</td>
</tr>
<tr>
<td>Arkansas</td>
<td>28.7</td>
<td>Kansas</td>
<td>27.4</td>
<td>New Hampshire</td>
<td>24.0</td>
<td>Tennessee</td>
<td>30.6</td>
</tr>
<tr>
<td>California</td>
<td>23.7</td>
<td>Kentucky</td>
<td>29.8</td>
<td>New Jersey</td>
<td>22.9</td>
<td>Texas</td>
<td>28.3</td>
</tr>
<tr>
<td>Colorado</td>
<td>18.5</td>
<td>Louisiana</td>
<td>28.3</td>
<td>New Mexico</td>
<td>25.2</td>
<td>Utah</td>
<td>22.5</td>
</tr>
<tr>
<td>Connecticut</td>
<td>21.0</td>
<td>Maine</td>
<td>25.2</td>
<td>New York</td>
<td>24.4</td>
<td>Vermont</td>
<td>22.7</td>
</tr>
<tr>
<td>Delaware</td>
<td>27.0</td>
<td>Maryland</td>
<td>26.0</td>
<td>North Carolina</td>
<td>29.0</td>
<td>Virginia</td>
<td>25.0</td>
</tr>
<tr>
<td>Washington DC</td>
<td>21.8</td>
<td>Massachusetts</td>
<td>20.9</td>
<td>North Dakota</td>
<td>27.1</td>
<td>Washington</td>
<td>25.4</td>
</tr>
<tr>
<td>Florida</td>
<td>24.4</td>
<td>Michigan</td>
<td>28.9</td>
<td>Ohio</td>
<td>28.7</td>
<td>West Virginia</td>
<td>31.2</td>
</tr>
<tr>
<td>Georgia</td>
<td>27.3</td>
<td>Minnesota</td>
<td>24.3</td>
<td>Oklahoma</td>
<td>30.3</td>
<td>Wisconsin</td>
<td>25.4</td>
</tr>
<tr>
<td>Hawaii</td>
<td>22.6</td>
<td>Mississippi</td>
<td>32.8</td>
<td>Oregon</td>
<td>24.2</td>
<td>Wyoming</td>
<td>24.6</td>
</tr>
<tr>
<td>Idaho</td>
<td>24.5</td>
<td>Missouri</td>
<td>28.5</td>
<td>Pennsylvania</td>
<td>27.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The data shown in these maps were collected through the CDC's Behavioral Risk Factor Surveillance System (BRFSS). Each year, state health departments use standard procedures to collect data through a series of monthly telephone interviews with U.S. adults. Prevalence estimates generated for the maps may vary slightly from those generated for the states by the BRFSS as slightly different analytic methods are used.

#### Download the Race/Ethnicity Data

The prevalence of obesity is depicted in a PowerPoint slide presentation format. (9 slides total, PPT-430k)

Also available in a PDF version (PDF-161k).

#### Obesity by Race/Ethnicity 2006-2008

New Obesity Data Shows Blacks Have the Highest Rates of Obesity

Blacks had 51 percent higher prevalence of obesity, and Hispanics had 21 percent higher obesity prevalence compared with whites.
Greater prevalences of obesity for blacks and whites were found in the South and Midwest than in the West and Northeast. Hispanics in the Northeast had lower obesity prevalence than Hispanics in the Midwest, South or West.

For this study analysis, CDC analyzed the 2006–2008 BRFSS data.

For more, see Differences in Prevalence of Obesity Among Black, White, and Hispanic Adults — United States, 2006–2008. Also available in a PDF version (PDF-1.3Mb).

White Non-Hispanic

[Map of the United States showing prevalence of obesity by state, with color coding for different BMI categories: Insufficient Sample, 25-29, <20, 20-24, 30-34, and 35+.]

Insufficient Sample
25-29
<20
20-24
30-34
35+
Counties-Specific Diabetes and Obesity Prevalence, 2007
Wide sections of the Southeast, Appalachia, and some tribal lands in the West and Northern Plains have the nation's highest rates of obesity and diabetes. In many counties in those regions, rates of diagnosed diabetes exceed 10 percent and obesity prevalence is more than 30 percent.

Eighty-one percent of counties in the Appalachian region that includes Kentucky, Tennessee, and West Virginia have high rates of diabetes and obesity. So do three-quarters of counties in the southern region that includes Alabama, Georgia, Louisiana, Mississippi, and South Carolina.

The estimates, in this week’s Morbidity and Mortality Weekly Report, are the first to provide county-level snapshots of obesity across the United States. They also update diabetes county-level estimates released in 2008.

For more, see

- Estimated County-Level Prevalence of Diabetes and Obesity - United States, 2007
  *MMWR*, November 20, 2009 / 58(45);1259-1263
  Also available in a PDF version (PDF-2.5Mb)
- Diabetes Data and Trends
  County-level estimates of obesity and diagnosed diabetes.
- PowerPoint Slides on Diabetes Data and Trends
- Diabetes Public Health Resource

Obesity

[Map of United States showing obesity rates]

Age-adjusted percent of adults ≥ 20 years old who are obese

- 0 - 26.2
- 26.3 - 27.7
- 27.8 - 29.1
- 29.2 - 30.8
- ≥ 30.9
Diabetes

2007
Age-adjusted percent of adults ≥ 20 years old with diabetes

0 - 7.0
7.1 - 8.1
8.2 - 9.0
9.1 - 10.5
≥ 10.6

Adapted from http://www.cdc.gov/obesity/data/trends.html#State
NUTRITION SURVEY

Please rate each of the following on a scale of 1 to 10 (1 being low and 10 being high). Explain your ratings for each statement.

It is important for me to...

1. Eat healthy.
2. Exercise regularly.
3. Know how to read a nutrition label.
4. Know the ingredients of the food I’m eating.
5. Stay fit for my lifetime.
6. Know the consequences of poor nutrition.
7. Find fun ways to exercise and eat healthy throughout my life.
Day 2: Nutrients: The Building Blocks of Food

National Health Standards:

Standard 3: Students will demonstrate the ability to access valid information, products, and services to enhance health.

Standard 4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

Washington Health Standards:

EALR 2: The student acquires the knowledge and skills necessary to maintain a healthy life: Recognizes dimensions of health, recognizes stages of growth and development, reduces health risks, and lives safely.

Student Objectives:

1. List the 6 nutrients essential for human life.
2. Describe the importance of each of the nutrients to the body.
3. Given a food item, recognize the nutrients present in the food.

LESSON PLAN:

ENTRY TASK: JOURNAL

Welcome students to class and ask them to Think, Pair, Share about what they learned in class yesterday with the people they are sitting near. Discuss again the startling statistics of obesity and obesity related diseases in the United States. Also, discuss some of the results that were discovered from the class survey yesterday. State that some of the most important issues will be addressed and hopefully everyone will become better consumers of food products for their health by the end of the unit!

Begin discussing nutrients. Have different colored building blocks in 6 colors (Legos would work), each labeled with the name of a nutrient (water, vitamins, minerals, fats,
carbohydrates, and proteins). Tell the class that every food we eat is made up of a combination of these nutrients and that humans cannot live without these six “building blocks” of food. Give a few examples of foods and “build” the nutrients together that would make up part of the food. Then, give the class the name of a few foods and see if they can figure out which nutrients would be present.

Split the class into six groups and assign each group a nutrient to research. They may use the Health textbook, the internet (as long as it is a reputable source), or other nutrition information you may have in your classroom. Give each group about 10 minutes to find the importance of each nutrient to share with the class. After the 10 minutes are up, split each of the members from the groups into new groups so there is 1 member from each of the nutrients now sitting together. Hand out a nutrient chart and have each of the group members teach each other about the nutrient they were assigned. Other group members should fill out their charts as group members present. Briefly go over answers as a large group so everyone has the correct answers.

Introduce the Nutrient Scavenger Hunt and have students complete the scavenger hunt for enrichment of the nutrients. Students should turn in their scavenger hunts at the end of class.
<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Definition</th>
<th>Why Eat It?</th>
<th>Food Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>WATER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CARBOHYDRATE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROTEIN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAT/LIPID</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MINERAL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VITAMIN</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. Just like light switches provide energy to lights in the room, these substances supply energy, allow you to grow, and repair your cells. Your body can't live without these... The name of these substances is ____________________________.

2. There are six different types of ____________________________ (answer #1). Under each kitchen sink you'll find the names of the six. Write each name below and then use the glossary of your textbook or your notes to write a short definition of each.
   a.
   b.
   c.
   d.
   e.
   f.

3. Unscramble the letters below to discover the 2 different types of carbohydrates. Just like there are 2 types of carbs, there are 2 different types of stools in the room. Find the definitions and write them in the spaces provided.
   a. Pismel
   b. Mpxeclo

4. Most carbohydrates come from grains. What carbohydrates have YOU eaten today?

5. What role do carbohydrates play in your body? Find a picture of Martha Stewart...if she was baking cookies in that location, she would use this. The appliance will have the answer for #5.
6. What is fiber? Use your book glossary or reputable website to find the answer.

7. How many grams of fiber should you eat per day? The answer will be found where many fresh fruits and vegetables would be stored (they are GREAT sources of fiber!)

8. ____________ help your body maintain body tissues. They are composed of amino acids. Your body can produce 9 of the 20 amino acids necessary for life. Where do the rest of the amino acids come from?

9. There are 2 types of proteins. Using your book or a reputable website, list the 2 types of proteins below. Also include at least 4 different foods you can eat to get each type.
   a. 
   b. 

10. Calories per gram (cal/g) tells us the amount of energy per gram of food we are eating. Proteins and carbs have the same amount of cal/g. Take 2 + 10 + 8, the divide that number by 4 and subtract 1. How many cal/g are in proteins and carbs?

11. Lipid is another term for _________________. The square root of 81 will tell you the amount of cal/g of this nutrient. What is it?

12. There are 2 main types of fats. If your clothing were saturated in water, you would want to put them in here to dry. That is also where you can find the names of the two types of fats. Include the names and definitions below.
   a. 
   b. 

13. One type of fat is related to heart disease. Which one do you think? Why??
14. Technology is used to transform some types of fats into others. Go to a piece of technology in the classroom to discover more. Write a brief synopsis of “technology fat” below.

15. The type of fat in question 14 is often used in heavily processed and prepared foods because it maintains shelflife (foods that last for a VERY long time without spoiling). List 3 types of prepared foods. Think: foods that take little to no preparation as soon as you buy them. Now, look online and find out if they have any trans fat.

16. Read the short paragraph about the role of fats in your body in your book. Why are fats necessary for humans?

17. There are 2 main classifications of vitamins. They are classified by the substance they dissolve in. Doing the dishes uses one of these substances. Find a sink with this substance and write down the two types of vitamin classifications.
   a.
   b.

18. What does h20 stand for?

19. There are 4 vitamins that dissolve in water. One is found in a citrus fruit that shares its name with a color. Find a piece of paper hanging in the classroom this color and write down the 4 h20 soluble vitamins.

20. Use your book to create a list of 10 foods you can eat to make sure you’re getting enough of the vitamins listed in question 19.
21. There are 4 vitamins that don't dissolve in water, but dissolve in ____________.

22. Go to a cold, cold, cold location to find the name of the fat soluble vitamins. List them below.

23. Use your book to create a list of 10 foods you can eat to make sure you're getting enough of the vitamins listed in question 22.

24. ______________________________ are substances your body can't make by itself, but are vital for forming teeth, bones, and they regulate how your body works. A common one of these substances is found in milk… which is where you’ll find your next answer. List the name of 4 of these substances below.

25. Using your book, create a list of at least 5 foods you can eat to ensure you are getting enough of the substances you listed in question 24.

26. The earth is covered in a nutrient that is essential to every day life. Go get a drink of this in the hallway. Look up and you’ll find how many glasses of this nutrient you need EACH day. Write the number below.

27. Carbohydrates and proteins have _________ cal/g and fats have _________ cal/g. (See previous questions!) Your body burns calories by physical activity. Create a list of 5 physical activities you enjoy doing.
28. What is the order of nutrients your body uses for calories or energy? Crab walk or crawl around the classroom looking under tables to find your answer. Write it below.

29. What is your teacher’s favorite fruit?

30. What are 2 of your favorite foods?

31. Why is it important to eat different types of foods every day?
Day 3: My Pyramid: The Food Groups

National Health Standards:

Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health.

Standard 3: Students will demonstrate the ability to access valid information, products, and services to enhance health.

Standard 4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

Washington Health Standards:

EALR 2: The student acquires the knowledge and skills necessary to maintain a healthy life: Recognizes dimensions of health, recognizes stages of growth and development, reduces health risks, and lives safely.

EALR 3: The student analyzes and evaluates the impact of real-life influences on health.

GLE 3.2.1 Evaluates health and fitness information, products, and services.

Student Objectives:

1. Recognize the history and importance of the food guide pyramid.
2. Label the food guide pyramid with the correct food groups in the correct places.
3. Describe the importance of each food group to the body.
4. List the amount of each food group that should be consumed each day for adequate nutrition.

LESSON PLAN:

ENTRY TASK: JOURNAL

Have students break into small groups (3-4 people). Have them review the 6 nutrients, their functions, and foods that each can be found in. Share briefly as a large group and explain the lesson for the day.

Give a brief history of the Food Guide Pyramid and the purpose behind it. Information is available at www.mypyramid.gov.
Break students into 6 groups. Assign each group one of the food groups to research and create a poster and mini-presentation about the food group. Direction sheet should be passed out to each group. Computers and art supplies should be provided for students to work during the class.

The last 25 minutes of class, students should share their posters with the class. A note sheet should be provided for students to fill out important information about each food group as each group presents.

As an exit task, have students name 1 thing they learned about a food group on their way out.
FOOD GROUP POSTER AND PRESENTATION

It is the job of you and your group member to gather research about the food group you are assigned using the my pyramid website. Then, you will create an informative and eye appealing poster about the food group. You will be presenting the poster and your information to the class...so become an expert!

To include on your poster:

1. Name of food group
2. List of foods included in the food group (at least 10)
3. How much is needed per day
4. What constitutes a serving size
5. Health benefits/nutrients
6. Tips to help eat nutritious foods from the food group

GRADING:

1. POSTER
   a. Informative- items listed above are included (15 points possible)
   b. Eye-catching/creative (10 points possible)

   TOTAL: 25 POINTS

2. PRESENTATION
   a. All group members involved (5 points possible)
   b. Professional presentation (5 points possible)
   c. Informative (5 points possible)

   TOTAL: 15 POINTS

GRAND TOTAL: 40 POINTS
Day 4: Being a Conscious Consumer: Nutrition Facts and Labels

National Health Standards:

Standard 3: Students will demonstrate the ability to access valid information, products, and services to enhance health.

Standard 4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

Washington Health Standards:

GLE 3.2.1 Evaluates health and fitness information, products, and services.

Student Objectives:

1. Understand the purpose for nutrition labels on food packaging.
2. Read a nutrition label accurately and correctly.
3. Complete Washington's Classroom Based Assessment (CBA) for Health: Cafeteria Choices.

LESSON PLAN:

ENTRY TASK: JOURNAL

As a large group, review the 6 nutrients and the parts of the food guide pyramid.

Introduce today's lesson on nutrition facts, labels and portion sizes. Show the Portion Distortion poster to the class and discuss how portion sizes have gotten out of control over the past few decades. Talk about the importance of knowing portions and how knowing how to read a nutrition label can help. Tell the class the law regarding nutrition labeling and show them some examples of nutrition labels. As a class, go over reading a nutrition label for a common food item.

Hand out the nutrition label worksheet to each student. Have students break into small groups (or form groups with 2-3 people they are sitting near). Hand out a food package to the small groups. In small groups, have students complete the worksheet using math skills to compute servings per container, etc. Walk around the class to help where needed. Math skills always seem to need extra assistance... After groups have completed the worksheet, have a few volunteers share their answers with the class.
Go over the directions and requirements for the CBA for Health. Pass out necessary paperwork and allow students to start working. They should be given the rest of the class period to complete the CBA.
Before students leave, assign homework! By Day 8, students need to bring in a journal log of every item they had to eat and/or drink for 2 days.
Why do some food packages have a short or abbreviated nutrition label?

Foods that have only a few of the nutrients required on the standard label can use a short label format. What's on the label depends on what's in the food. Small- and medium-sized packages with very little label space can also use a short label.

New Label Information
Some label information may be new to you. The nutrient list covers those most important to your health. This information used to be only on some labels; now it is required.

Vitamins and Minerals
Only two vitamins, A and C, and two minerals, calcium and iron, are required on the food label. A food company can voluntarily list other vitamins and minerals.

Label Numbers
Numbers on the nutrition label may be rounded.

Calories Per Gram Footnote
Some labels tell the approximate number of calories in a gram of fat, carbohydrate, and protein.

Nutrition Facts
Serving Size 1 cup (228 g)
Servings Per Container 2

Nutrition Facts Title
The title "Nutrition Facts" signals the label.

Serving Size
Similar food products now have similar serving sizes. This makes it easier to compare foods. Serving sizes are based on amounts people actually eat.

% Daily Value
% Daily Value shows how a food fits into a 2,000 calorie reference diet.

You can use % Daily Values to compare foods and see how the amount of a nutrient in a serving of food fits in a 2,000 calorie reference diet.

Daily Values Footnotes
Daily Values are the label reference numbers. These numbers are set by the government and are based on current nutrition recommendations.

Some labels list the Daily Values for a daily diet of 2,000 and 2,500 calories. Your own nutrient needs may be less than or more than the Daily Values on the label.
## Nutrition Facts Worksheet

<table>
<thead>
<tr>
<th>Nutrition Facts</th>
<th>Amount Per Serving</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Serving Size</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Servings Per Container</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Amount Per Serving</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Calories</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Calories from Fat</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Amount</strong></td>
<td>% Daily Value</td>
</tr>
<tr>
<td><strong>Total Fat</strong></td>
<td>g</td>
</tr>
<tr>
<td><strong>Saturated Fat</strong></td>
<td>g</td>
</tr>
<tr>
<td><strong>Cholesterol</strong></td>
<td>g</td>
</tr>
<tr>
<td><strong>Sodium</strong></td>
<td>mg</td>
</tr>
<tr>
<td><strong>Total Carbohydrate</strong></td>
<td>g</td>
</tr>
<tr>
<td><strong>Dietary Fiber</strong></td>
<td>g</td>
</tr>
<tr>
<td><strong>Sugars</strong></td>
<td>g</td>
</tr>
<tr>
<td><strong>Protein</strong></td>
<td>g</td>
</tr>
<tr>
<td><strong>Vitamin A</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Vitamin C</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Calcium</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Iron</strong></td>
<td>-</td>
</tr>
</tbody>
</table>

Calories per gram: Fat 9 Carbohydrate 4 Protein 4
Cafeteria Choices

Directions for Administering the Washington Classroom-Based Assessment in Health and Fitness

Introduction
This document contains information essential to the administration of the Washington Classroom-Based Assessment (CBA) in Health and Fitness.

Please read this information carefully before administering the performance assessment.

Description of the Classroom-Based Assessment
Students will perform this assessment by responding to a prompt and executing several tasks. Performance prompts ask the students to perform according to the criteria outlined in the prompt. Student responses may vary and include oral, visual, and written products or a combination of these types of products. This assessment could be used as part of a student's grade.

Materials and Resources

“Before” Checklist

Teacher checklist before administration of Cafeteria Choices CBA.

☐ Reproduce one Student Copy of Cafeteria Choices CBA for each student, pages 17-21.


☐ Read Scoring Notes, page 27-29.

☐ Read Exemplars & Annotations, pages 30-62.

☐ Read Glossary, pages 63-66.

☐ Read Teacher Resources, Cafeteria Choices CBA, page 67.

☐ Remind students to bring other materials if they finish the CBA early.

☐ All students are eligible for certain accommodations. For example, students may have as much time as they need to complete the assessment.

☐ Plan to provide for students with special needs or students with limited writing skills since they may be assessed separately or grouped with students of similar abilities for the CBA. While the flexibility of the CBA allows for accommodations to be made
Introduction
This document contains information essential to the administration of the Washington Classroom-Based Assessment (CBA) in Health and Fitness.

Please read this information carefully before administering the performance assessment.

Description of the Classroom-Based Assessment
Students will perform this assessment by responding to a prompt and executing several tasks. Performance prompts ask the students to perform according to the criteria outlined in the prompt. Student responses may vary and include oral, visual, and written products or a combination of these types of products. This assessment could be used as part of a student's grade.

Materials and Resources

"Before" Checklist

Teacher checklist before administration of Cafeteria Choices CBA.

☐ Reproduce one Student Copy of Cafeteria Choices CBA for each student, pages 17-21.


☐ Read Scoring Notes, page 27-29.

☐ Read Exemplars & Annotations, pages 30-62.

☐ Read Glossary, pages 63-66.

☐ Read Teacher Resources, Cafeteria Choices CBA, page 67.

☐ Remind students to bring other materials if they finish the CBA early.

☐ All students are eligible for certain accommodations. For example, students may have as much time as they need to complete the assessment.

☐ Plan to provide for students with special needs or students with limited writing skills since they may be assessed separately or grouped with students of similar abilities for the CBA. While the flexibility of the CBA allows for accommodations to be made...
Recommendation for Time Management

Teachers may administer the CBA in the way that is most practical for their classroom and the allotted time periods. The CBA should be administered in one or two days. A two-day model could follow these suggested guidelines.

**Day One:**
- **15 minutes:** The teacher provides the class with the *Student Copy* of the CBA and reads it aloud. The students may ask any questions needed. The teacher answers any questions asked.  
  *Reminder: This is not a time for teaching or re-teaching. This is an individual assessment not a group assessment.*

- **35 minutes:** The students analyze the prompt and create their response.  
  *Please walk around the classroom and monitor student progress.*

- **5 minutes:** The teacher collects all materials at the end of Day 1.  
  *If students complete the CBA early, please have them work on other materials quietly.*

**Day Two:**
- **5 minutes:** The teacher distributes materials to the students.

- **45 minutes:** The students continue to write their response to the prompt.

- **5 minutes:** The teacher collects all materials at the end of Day Two.  
  *If students complete the CBA early, please have them work on other materials quietly.*
CBA — Cafeteria Choices

REPORT

Part 1:
Identify **positive** nutritional facts from the food label.

1. Identify **two reasons** why your school should choose Bagel-Brand A over Bagel-Brand B.

2. Explain why each of the two reasons is a **positive** health benefit.

<table>
<thead>
<tr>
<th>First reason for choosing Bagel-Brand A over Bagel-Brand B:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Positive health benefit:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second reason for choosing Bagel-Brand A over Bagel-Brand B:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Positive health benefit:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Say: *Are there any questions about Part 1?* (pause for questions) *Follow along as I read Part 2.*
CBA — Cafeteria Choices

Teacher Copy

Part 2:

Identify the negative nutritional facts on the food label.

1. Identify two reasons why your school should not choose Bagel-Brand A over Bagel-Brand B.

2. Explain why each of the two reasons is a negative impact on health.

First reason for not choosing Bagel-Brand A over Bagel-Brand B:

Negative impact on health:

Second reason for not choosing Bagel-Brand A over Bagel-Brand B:

Negative impact on health:

Say: Are there any questions about Part 2? (pause for questions) Follow along as I read Part 3.
CBA — Cafeteria Choices

Teacher Copy

Part 3:

1. Identify two additional foods that your school could serve with Bagel-Brand B that would compensate for two nutrients that Bagel-Brand B lacks or provides in small amounts.

2. Explain one nutritional benefit that is present in each food that you have identified.

<table>
<thead>
<tr>
<th>Additional food item:</th>
<th>One nutritional benefit:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Second additional food item:</td>
<td>One nutritional benefit:</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Say: Are there any questions about Part 3? (pause for questions) Follow along as I read Part 4.

Part 4:

Using the information you have analyzed, write your recommendation for the cafeteria director supporting your choice of bagel. Using specific data in the Nutrition Facts label (example: percentages, number of grams, etc.), provide two supporting details for your choice.

Circle recommended bagel:  A  B

[Blank lines for additional details]
Teacher Copy

Say: Are there any questions about what you are to do? (pause for questions) You will be given the time you need to complete the assessment. I will check with you at the end of class to see if anyone needs additional time. Please begin.

Bagel – Brand A

Nutrition Facts
Serving size 1 bagel (104g)
Servings per container 5

Amount Per Serving
Calories 290
Calories from Fat 30
% Daily Value*
Total Fat 3.5g
Saturated Fat 2.5g
Trans Fat 0g
Polyunsaturated Fat 1g
Monounsaturated Fat 0g
Cholesterol 20g
Sodium 460mg
Total Carbohydrate 58g
Dietary Fiber 4g
Sugars 11g
Protein 7g

Vitamin A 0%  
Vitamin C 0%
Calcium 15%  
Iron 10%
Thiamin 25%  
Riboflavin 10%
Niacin 15%  
Folate 20%

*Percent(%) Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower based on your calorie needs:
Calories 2,000  
2,500
Total Fat Less than
Saturated Fat Less than
Trans Fat Less than
Cholesterol Less than
Sodium Less than
Total Carbohydrate
Dietary Fiber
Calories per gram:
Fat 9  
Carbohydrate 4  
Protein 4

Bagel – Brand B

Nutrition Facts
Serving size 1 bagel (104g)
Servings per container 6

Amount Per Serving
Calories 290
Calories from Fat 10
% Daily Value*
Total Fat 1.5g
Saturated Fat 0.5g
Trans Fat 0g
Polyunsaturated Fat 1g
Monounsaturated Fat 0g
Cholesterol 0g
Sodium 620mg
Total Carbohydrate 61g
Dietary Fiber 2g
Sugars 5g
Protein 9g

Vitamin A 0%  
Vitamin C 0%
Calcium 15%  
Iron 10%
Thiamin 25%  
Riboflavin 10%
Niacin 15%  
Folate 20%

*Percent(%) Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower based on your calorie needs:
Calories 2,000  
2,500
Total Fat Less than
Saturated Fat Less than
Trans Fat Less than
Cholesterol Less than
Sodium Less than
Total Carbohydrate
Dietary Fiber
Calories per gram:
Fat 9  
Carbohydrate 4  
Protein 4

Cafeteria Choices, High School Health CBA
In response to the student council's request for more input into school cafeteria food choices, the cafeteria director has asked you, Student Council President, to select an additional item to be included on the Healthy Choice Lunch menu.

The item chosen must adhere to strict nutritional requirements, so you decide to recommend that bagels be added. You have narrowed the choice to two different brands. The cafeteria director asks you to provide a report in support of your choice. The information provided in your report will help your cafeteria director select the healthiest brand.

Pre-writing

Compare the Nutrition Facts labels for Bagel-Brand A and Bagel-Brand B.
CBA — Cafeteria Choices

REPORT

Identify positive nutritional facts from the food label.

1. Identify two reasons why your school should choose Bagel-Brand A over Bagel-Brand B.

2. Explain why each of the two reasons is a positive health benefit.

First reason for choosing Bagel-Brand A over Bagel-Brand B:

Positive health benefit:

Second reason for choosing Bagel-Brand A over Bagel-Brand B:

Positive health benefit:

Score   /  4
CBA — Cafeteria Choices

Student Copy

Part 2:

Identify the negative nutritional facts on the food label.

1. Identify two reasons why your school should not choose Bagel-Brand A over Bagel-Brand B.

2. Explain why each of the two reasons is a negative impact on health.

First reason for not choosing Bagel A over Bagel B:

Negative impact on health:

Second reason for not choosing Bagel A over Bagel B:

Negative impact on health:

Score / 4
CBA — Cafeteria Choices

Part 3:

1. Identify two additional foods that your school could serve with Bagel-Brand B that would compensate for two nutrients that Bagel-Brand B lacks or provides in small amounts.

2. Explain one nutritional benefit that is present in each food that you have identified.

<table>
<thead>
<tr>
<th>Additional food item:</th>
<th>One nutritional benefit:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Second additional food item:</td>
<td>One nutritional benefit:</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Score  /  4

Part 4:

Using the information you have analyzed, write your recommendation for the cafeteria director supporting your choice of bagel. Using specific data in the Nutrition Facts label (example: percentages, number of grams, etc.), provide two supporting details for your choice.

Circle recommended bagel: A   B

Score  /  2
Bagel — Brand A

Nutrition Facts
Serving size 1 bagel (104g)
Servings per container 6

Amount Per Serving
Calories 290  Calories from Fat 30
% Daily Value*:
Total Fat 3.5g  5%
Saturated Fat 2.5g  15%
Trans Fat 0g
Polyunsaturated Fat 1g
Monounsaturated Fat 0g
Cholesterol 20g  7%
Sodium 460mg  19%
Total Carbohydrate 58g  19%
Dietary Fiber 4g  12%
Sugars 11g
Protein 7g

Vitamin A 0%  Vitamin C 0%
Calcium 15%  Iron 10%
Thiamin 25%  Riboflavin 10%
Niacin 15%  Folate 20%

*Percent (%) Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower based on your calorie needs:

Calories 2,000  2,500
Total Fat 20g  25g
Saturated Fat 10g  12.5g
Cholesterol 300mg  375mg
Sodium 2,400mg  2,900mg
Total Carbohydrate 250g  300g
Dietary Fiber 25g  30g

Calories per gram:
Fat 9  Carbohydrate 4  Protein 4

Bagel — Brand B

Nutrition Facts
Serving size 1 bagel (104g)
Servings per container 6

Amount Per Serving
Calories 290  Calories from Fat 10
% Daily Value*:
Total Fat 1.5g  2%
Saturated Fat 0.5g  0%
Trans Fat 0g
Polyunsaturated Fat 1g
Monounsaturated Fat 0g
Cholesterol 0g  0%
Sodium 620mg  26%
Total Carbohydrate 61g  20%
Dietary Fiber 2g  6%
Sugars 5g
Protein 9g

Vitamin A 0%  Vitamin C 0%
Calcium 15%  Iron 10%
Thiamin 25%  Riboflavin 10%
Niacin 15%  Folate 20%

*Percent (%) Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower based on your calorie needs:

Calories 2,000  2,500
Total Fat 25g  30g
Saturated Fat 12.5g  15g
Cholesterol 300mg  375mg
Sodium 2,400mg  2,900mg
Total Carbohydrate 300g  375g
Dietary Fiber 25g  30g

Calories per gram:
Fat 9  Carbohydrate 4  Protein 4
Rubrics
CBA — Cafeteria Choices

Rubric—a tool used to score assessments

Used to score Part 1 of Cafeteria Choices

RUBRIC 1

(EALR 1.0) The student acquires the knowledge and skills necessary to maintain an active life: Movement, physical fitness, and nutrition.

<table>
<thead>
<tr>
<th>Score</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>A 4-point response: The student identifies, using information from the product labels, two reasons for choosing Bagel-Brand A over Bagel-Brand B. Explain why each reason is a positive health benefit. Example:</td>
</tr>
<tr>
<td></td>
<td>First reason for choosing Bagel-Brand A over Bagel-Brand B:</td>
</tr>
<tr>
<td></td>
<td>Bagel-Brand A has more fiber than Bagel-Brand B.</td>
</tr>
<tr>
<td></td>
<td>Positive health benefit:</td>
</tr>
<tr>
<td></td>
<td>Fiber plays a key role in digestive health.</td>
</tr>
<tr>
<td></td>
<td>Second reason for choosing Bagel-Brand A over Bagel-Brand B:</td>
</tr>
<tr>
<td></td>
<td>Bagel-Brand A has less sodium than Bagel-Brand B.</td>
</tr>
<tr>
<td></td>
<td>Positive health benefit:</td>
</tr>
<tr>
<td></td>
<td>Reduces chances of high blood pressure.</td>
</tr>
<tr>
<td>3</td>
<td>3-point response: The student identifies, using information from the product labels, two reasons for choosing Bagel-Brand A over Bagel-Brand B and explains why one reason is a positive health benefit.</td>
</tr>
<tr>
<td>2</td>
<td>2-point response: The student identifies, using information from the product labels, two reasons for choosing Bagel-Brand A over Bagel-Brand B but does not explain why either reason is a positive health benefit. OR identifies, using information from the product labels, one reason for choosing Bagel-Brand A over Bagel-Brand B and explains why the reason is a positive health benefit.</td>
</tr>
<tr>
<td>1</td>
<td>1-point response: The student identifies, using information from the product labels, one reason for choosing Bagel-Brand A over Bagel-Brand B but does not explain why the reason is a positive health benefit.</td>
</tr>
<tr>
<td>0</td>
<td>0-point response: The student identifies no benefits of choosing Bagel-Brand A over Bagel-Brand B.</td>
</tr>
</tbody>
</table>
CBA — Cafeteria Choices

Used to score Part 2 of Cafeteria Choices

RUBRIC 2

(EALR 1.0) The student acquires the knowledge and skills necessary to maintain an active life: Movement, physical fitness, and nutrition.

<table>
<thead>
<tr>
<th>4</th>
<th>A 4-point response: The student identifies, using information from the product labels, two reasons for not choosing Bagel-Brand A over Bagel-Brand B. Explains why each reason is a negative impact on health. Example:</th>
</tr>
</thead>
<tbody>
<tr>
<td>First reason for not choosing Bagel-Brand A over Bagel-Brand B:</td>
<td></td>
</tr>
<tr>
<td>Brand A has more saturated fat than Brand B.</td>
<td></td>
</tr>
<tr>
<td>Negative impact on health:</td>
<td></td>
</tr>
<tr>
<td>Saturated fat may lead to heart disease.</td>
<td></td>
</tr>
<tr>
<td>Second reason for not choosing Bagel-Brand A over Bagel-Brand B:</td>
<td></td>
</tr>
<tr>
<td>Bagel Brand A has more sugar than Brand B.</td>
<td></td>
</tr>
<tr>
<td>Negative impact on health:</td>
<td></td>
</tr>
<tr>
<td>More sugar may lead to tooth decay.</td>
<td></td>
</tr>
</tbody>
</table>

| 3 | 3-point response: The student identifies, using information from the product labels, two reasons for not choosing Bagel-Brand A over Bagel-Brand B and explains why one reason is a negative impact on health. |

| 2 | 2-point response: The student identifies, using information from the product labels, two reasons for not choosing Bagel-Brand A over Bagel-Brand B but does not explain why either reason is negative. OR Identifies, using information from the product labels, one reason for not choosing Bagel A over Bagel B and explains why the reason is a negative impact on health. |

| 1 | 1-point response: The student identifies, using information from the product labels, one reason for not choosing Bagel-Brand A over Bagel-Brand B but does not explain why the reason is a negative impact on health. |

| 0 | 0-point response: The student identifies no negative impact of choosing Bagel-Brand A over Bagel-Brand B. |
CBA — Cafeteria Choices

Used to score Part 3 of Cafeteria Choices

RUBRIC 3

(EALR 1.0) The student acquires the knowledge and skills necessary to maintain an active life: Movement, physical fitness, and nutrition.

4 4-point response: The student identifies two additional foods that the school could serve with Bagel-Brand B that would compensate for two nutrients that Bagel-Brand B lacks or provides in small amounts.

Example:

<table>
<thead>
<tr>
<th>Additional food item: Milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>One nutritional benefit: Milk adds calcium.</td>
</tr>
</tbody>
</table>

Second additional food item: Fruit cup

| One nutritional benefit: Fruit cup will add more fiber. |

3 3-point response: The student identifies two additional foods that the school could serve with Bagel-Brand B that would compensate for two nutrients that Bagel-Brand B lacks or provides in small amounts. The student explains one benefit of one of the foods identified.

2 2-point response: The student identifies two additional foods that the school could serve with Bagel-Brand B that would compensate for two nutrients that Bagel-Brand B lacks or provides in small amounts. The student does not explain a benefit of the foods identified.

OR

Identifies one additional food that the school could serve with Bagel Brand B that would compensate for a nutrient that Bagel-Brand B lacks or provides in small amounts. The student explains one benefit of one of the foods identified.

1 1-point response: The student identifies one additional food that the school could serve with Bagel-Brand B that would compensate for a nutrient that Bagel Brand B lacks or provides in small amounts. The student does not explain a benefit of the food identified.

0 0-point response: The student identifies no additional foods that could be served with Bagel-Brand B.
CBA — Cafeteria Choices

**Used to score Part 4 of *Cafeteria Choices***

**RUBRIC 4**

(EALR 1.0) The student acquires the knowledge and skills necessary to maintain an active life: Movement, physical fitness, and nutrition.

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>A 2-point response: The student identifies two supporting details for the recommended bagel using specific data in the food label (example: percentages, number of grams, etc.).&lt;br&gt;<strong>Example:</strong>&lt;br&gt;First, I would recommend Bagel B because it has 1.5 grams of fat compared to Bagel A which has 3.5 grams of fat. Second, Bagel B has less sugar (5 grams of sugar) compared to Bagel A (11 grams of sugar).</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>A 1-point response: The student identifies one supporting detail for the recommended bagel.</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>A 0-point response: The student identifies no supporting details for the recommended bagel.</td>
<td></td>
</tr>
</tbody>
</table>
Day 5: Energy Drinks: Friend or Foe?

National Health Standards:

Standard 3: Students will demonstrate the ability to access valid information, products, and services to enhance health.

Standard 4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

Washington Health Standards:

GLE 3.2.1 Evaluates health and fitness information, products, and services.

Student Objectives:

1. Work collaboratively to complete a case study with a classmate.
2. Read nutrition labels to complete a case study.
3. Write a statement with at least 5 supporting details to support one’s opinion of energy drinks relating to human health.

LESSON PLAN:

ENTRY TASK: JOURNAL

Review key concepts from previous days. Have students Think, Pair, Share or review as a large group.

Introduce the assignment for the day. Remind students to use their knowledge of the nutrients necessary for life, the food guide pyramid recommendations, and their knowledge on how to read a nutrition label. All will be important to complete the case study for the day. Allow students to choose a partner to work with for the class period. Allow students the rest of class to complete the case study on energy drinks. Empty cans of assorted energy drinks should be provided for the class, as well as digital scales, sugar, and salt. Remind students the bulk of their grade will be from their opinion statement at the end of their research.
ENERGY DRINKS: FRIEND OR FOE?

Do you buy the claims on popular energy drink bottles? Are the claims accurate? Are the ingredients all they're cracked up to be? There are your questions...you need to find the answers, formulate your opinion on these popular drinks and find out: Energy drinks: friend or foe to the human body?

1. What is the name of the product?

2. What are some of the claims on the bottle or can?

3. Are the claims they make measurable? (Could you test them?) How would you go about testing the claims?

4. What are the ingredients of the product?

5. Research the ingredients- what are they and why do they help or hurt the body?
6. How many calories are in the entire container?

7. Measure the amount of sugar and salt in the product using the scales and ingredients provided. How do you feel about your results?

8. Have there been studies or tests done on the product? If so, what has been done?

9. Do you think the studies done have bias? Why or why not?

10. Are you biased about the product? Why/how?

11. Have you come across any other interesting information while you’ve been researching? List it here.

12. Do you have all of the necessary information to formulate an educated opinion about the product? If not, what else do you need to know?
13. What is your opinion of the beverage? Include your research findings to back up your opinion. You need to have well thought out, well researched answers. Where you think the beverage is friend or foe, you need to back your opinion with at least 6 facts you discovered. Your essay must also contain an introduction, body, and conclusion.
WEBSITES THAT MAY BE HELPFUL:
www.beveragesdirect.com
www.drugstore.com/products
www.cstorewarehouse.com
www.ironfuel.com
www.fda.gov
www.redbull.com
www.redstallionbev.com/product.php
Day 6: The Diet: Health Benefits of Healthy Eating

National Health Standards:

Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health.

Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.

Washington Health Standards:

EALR 3: The student analyzes and evaluates the impact of real-life influences on health.

Student Objectives:

1. Define BMI and body fat percentage.
2. Comprehend the importance of healthy eating.
3. Describe 5 ways one can eat healthy on a regular basis.
4. Describe at least 5 benefits of healthy eating and regular exercise.
5. Find one’s BMI and body fat percentage using tools provided in the classroom.

LESSON PLAN:

ENTRY TASK: JOURNAL

Review, review, review previous nutrition lessons!

Introduce learning stations for the day. Have students split into three large groups and rotate them through the stations as the class period progresses.

Station 1: Finding BMI and body fat percentage. Have students as a small group read the assigned reading out of the Health textbook. Have them define BMI and body fat percentage in their notes. Have directions printed on how to use electronic scale and hand held BMI finders. Allow time for students to use both. They should report their findings in their journals or notes.

Station 2: Video: Healthy eating. Have a short video clip of a famous chef cooking an easy snack that is healthy. (Think Jaime Oliver) Have ingredients set out for students to make their own versions of the healthy snack. Then, have students in the group...
brainstorm a list of 20 healthy foods they could eat and enjoy. Remind them they should abide by the food guide pyramid recommendations as well as the recommended daily allowances, etc...

Station 3: Magazine article: Have group split up into pairs. Each pair should take turns reading article on benefits of exercise and healthy eating. They should then write a short summary and reaction on their reading.

If time remains and weather is nice, take students on a brisk power walk.

With 5 minutes remaining, stations should clean up and as an exit task, students need to find 2 people to share what they learned for the day.
LEARNING STATION #1
1. Read chapter in Health textbook with a partner on BMI and Body Fat Percentage. (PAGE #s are __________ to __________).
2. Include a definition of BMI and Body Fat Percentage in your journals.
3. After you are finished reading, open the box for the electronic scale and hand-help body fat analyzers.
4. Follow the directions included in the box and find YOUR BMI and Body Fat Percentage.
5. Write your results in your journal.

LEARNING STATION #2
1. Watch the video loaded on the computer screen. DO NOT EXIT OR CLOSE THE VIDEO WHEN YOU ARE DONE WATCHING!
2. Wash your hands with soap and water.
3. Create your own healthy snack with the ingredients provided.
4. Watch the video again if you have forgotten what to do!
5. Enjoy your snack.
6. With your small group, create a list of 20 healthy foods you would all enjoy eating.

LEARNING STATION #3
1. On the computer, go to the library website and enter EbscoHost, ProQuest, or ELibrary.
2. Find an article relating to exercise or healthy eating written within the last 5 years.
3. Read it with a partner.
4. On your own, write a short summary of the article. Also, include a brief reaction (what did you think?) of what you read.
Day 7: The Diet: Health Risks of Unhealthy Eating

National Health Standards:

Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health.

Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.

Washington Health Standards:

EALR 3: The student analyzes and evaluates the impact of real-life influences on health.

Student Objectives:

1. Define overweight, obese, underweight, anorexia, and bulimia.
2. Recognize 5 risk factors associated with a poor diet and lack of exercise.
3. Describe effects on the body from a poor diet and lack of exercise.

LESSON PLAN:

ENTRY TASK: JOURNAL

Have students complete a KWL chart relating to nutrition. Tell them the Want to Know part should only include items relating to a poor diet, fast food, and eating disorders today. Have them share their lists with people sitting near them.

Begin class with clips from the movie, Super Size Me. Show about ½ hour of the film, highlighting the negative effects the McDonald’s diet had on the host, Morgan Spurlock. As the class is progressing through the scenes, discuss what is happening. After the film, discuss that these health risks don’t just come from McDonald’s, but it can be from ANY fast food restaurant and many other foods you probably buy on a regular basis!

Have students split into pairs and choose their favorite meal from a restaurant. Using classroom computers, have pairs go to the restaurants’ websites and find the nutrition information. Have them write down their findings and journal their reactions.

Next, read students a chapter from a health related book about the negative effects of a poor diet. Make sure the book chapter of your choice talks about being overweight, obese, and malnourished. Suitable books to find information might be The Omnivore’s
Dilemma, Skinny Bitch, Super Foods, etc... Have a brief discussion on students' thoughts relating to health risks and obesity.

If time permits, have students in the same pairs as earlier use their computers to check the progress of their Biggest Loser contestants they chose to track the first day of class. Allow them to look at 2 minute clips of the show and the before and after photos posted on www.nbc.com.

Have students fill out the Learned part of their KWL charts and have them turn them in on their way out of class.
Day 8: Assessing One’s Diet: My Pyramid Tracker

National Health Standards:

Standard 3: Students will demonstrate the ability to access valid information, products, and services to enhance health.

Washington Health Standards:

EALR 3: The student analyzes and evaluates the impact of real-life influences on health.

GLE 3.2.1 Evaluates health and fitness information, products, and services.

Student Objectives:

1. Accurately use an online tool to assess one’s dietary intake.
2. Evaluate one’s dietary intake for a two day span.
3. Reflect on one’s diet versus the food guide pyramid recommendations.
4. Review previously learned nutrition curriculum for the final assessment.

LESSON PLAN:

Welcome students and make sure students have their food logs that have been assigned previously with them for their assignment today.

Give direction sheets to each student and briefly describe what students will be completing in class. If students have time, encourage them to find an update on the Biggest Loser contestant they have chosen to keep track of or search different parts of the My Pyramid Tracker website.

Towards the end of class, pass out a study guide for students to complete in preparation for the final test.
My Pyramid Tracker Directions
"You are what you eat!"


2. On the left column, click “My Pyramid Tracker.”

3. Scroll down to the bottom of the page and click “New User Registration.”

4. Fill in a user name and password suitable for school.

5. Click “Submit.”

6. Fill in your age, gender, height, and weight to the best of your knowledge. No one else will see this information, so be honest or the program won’t be accurate or work right for you!

7. Click “Proceed to Food Intake.”

8. Enter the first food item you listed in your food log and click “Search.”

9. Scroll down the list and find the description that best suits what you ate. Click “Add.”

10. On the right side of your screen, click “Select Quantity.”

11. Select the correct serving size and amount of servings. Use your best judgment. Click “Enter Foods.”

12. Repeat steps 8-10 until you have your entire food log entered.

13. On your last food item, click “Save and Analyze.”


15. Click “Maintain Current Weight.”

16. Print this page. It should have smiley and/or sad faces.

17. Go back to the page with the blue boxes. You may need to click “Refresh.”

19. Examine your results.

20. Write a 1 page summary and reaction to your results. (What surprised you? How did you decide what to eat for the day? Were you happy with your results? What would you change or leave the same? Etc...)

21. If you have extra time, try out some of the other features on the website!
Day 9: Conclusion: Nutrition and Healthy Eating Assessment

National Health Standards:

Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health.

Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.

Standard 3: Students will demonstrate the ability to access valid information, products, and services to enhance health.

Washington Health Standards:

EALR 2: The student acquires the knowledge and skills necessary to maintain a healthy life: Recognizes dimensions of health, recognizes stages of growth and development, reduces health risks, and lives safely.

EALR 3: The student analyzes and evaluates the impact of real-life influences on health.

GLE 3.2.1 Evaluates health and fitness information, products, and services.

Student Objectives:

1. List the 6 nutrients and their functions.
2. Label the parts of the food guide pyramid.
3. Read a nutrition label correctly.
4. Describe the importance of eating healthy and getting regular physical activity.
5. List risk factors associated with a poor diet and lack of physical activity.

LESSON PLAN:

Briefly preface the test for the nutrition unit. Correct study guide if desired.

Have students complete the test. Turn in.

Show the finale of the Biggest Loser season the class has been watching over the course of the unit. If time, have students write a reflection about the contestant they have been
tracking over the unit. The finale may take part of the class period the following day, depending on how much time was needed for the test.
NUTRITION ASSESSMENT

1. In the space below, to the best of your ability, draw the My Food Guide Pyramid and label each of its parts.

2. On your food pyramid diagram, list 2 foods for each of the food groups.

3. List each of the food groups and give a brief description of why the food group is important for the body.

4. What are 3 reasons the human body needs regular exercise?
5. What are 3 health risks associated with a poor diet or lack of regular exercise?

6. What is the most important piece of information you've learned during the nutrition unit? Why has it been important to you?