

Eat, Read and Move

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Overview

Many of the conditions that particularly affect the African-American community such as diabetes (type 2), obesity, hypertension, heart disease and stroke, may be prevented or maintained at a safe level by eating correctly and exercising. This unit will focus on finding the right balance between good nutrition and physical activity for developing a healthful lifestyle for students, then hopefully their families in making healthy food choices, while exercising daily.

The students that this unit will include are sixth, seventh and eighth grade students at Beeber Middle School, located in the Wynnfild section of the city. This unit will revolve around three lessons:

- * The Importance of Breakfast
- * Label Reading Tips and Understanding Nutrition Facts
- * Exercising for Life

And hopefully will develop into a ten week course. The unit will be taught in a science lab and computer lab with connections to the Consumer Education Department in the school. The science lab is a seventy-five minute class, that the students come to when their core curriculum teachers are on prep. It may be divided into intervals to fit the need of the lessons. Some segments may take as little as fifteen minutes while others may require the entire period. Teachers who choose to use this unit should adapt it to fit their schedules.

The students will learn how to make healthy food choices, read nutrition labels, research information on the internet and make exercising a way of life.

Rationale

I am developing this unit to make students aware of how to make healthy food choices and the possibility of making Public Health Nutrition a future career. Many students arrive at school with bags of candy, snacks and sodas. Many are obese and/or not in good physical condition.

The purpose of this unit is to make the students informed consumers, aware of healthy living and the importance of making exercising a way of life.

EAT.RIGHT.NOW. is a nutritional educational program that the School District of Philadelphia offers in conjunction with Drexel University for teachers and students. Many of the lessons and materials have been adapted from this program.

Background Information on Public Health and Nutrition

Public health nutrition is a complex set of programs dedicated to improving the health of the population through improved nutrition, in more detail, public health nutrition primarily exist to:

- * Improve the health of the whole population and teach high risk subgroups within the population improved nutrition
- * Emphasize health promotion and disease prevention through improved nutrition
- * Provide integrated community efforts for improved nutrition with leadership demonstrated by government offices.

(Edelstein 2006).

The relationship of nutrition and diet to the public's health is now being discussed by people in their homes and at their work-sites, by legislative state houses and on Capitol Hill, by those in the media, and by executives managing the food industry, as well as by nutrition scientists and health professionals. (Kaufman 1990)

Nutrition is one of the nation's key areas of disease prevention in public health. The ultimate goal of this unit is to make the students aware of making healthy food choices and the appropriate use of exercise, a way of life, and, for some, a career in the Public Health field.

Researchers investigating today's public health problems deals with multiple interrelated environmental and life style factors with more subtle, long-term effects. Today's list of major public health problems includes low birth weight defects, obesity, heart disease, stroke, cancer, diabetes, osteoporosis, and AIDS.(Kaufman 1990)

As the public becomes more science literate and as nutrient labeling appears on more food products, nutrition education for the public include more scientific concepts and terminology. (Kaufman 1990) In order for the people in the community to benefit from findings of nutrition research, nutrition science must be translated into a language the public can understand.

The Importance of Breakfast

Eating breakfast is considered by many to be the most important meal of the day. Numerous studies link the morning meal to many benefits. The School Breakfast program has allowed investigator to assess the affects on school performance.

Data from evaluations of school breakfast programs have provided support for their benefits (Meyer et. al., 1989). In one study, data on achievement, absenteeism, and tardiness collected before the initiation of school breakfast, as compared to non-participants, children participation regularly in the school breakfast program showed significantly higher performance on the Comprehensive Test of Basic Skills (CTBS) and lower rates of absenteeism and tardiness. Most notably, even after controlling for a large number of potentially confounding variables (e.g., sex, ethnicity, family, size, income, pretest CTBS scores) the school breakfast program continued to show independent effects on the outcomes. (Thies and Travers 2006)

Understanding Food Labels

Looking at food labels is one of the primary goals of this unit. The students will be able to use this information and become informed consumers when making healthy food choices. The U.S. Food and Drug Administration’s “How to Understand and Use the Nutrition Facts Label” will be used.

Most of foods undergo some form of processing between the time they are made and the time they reach the shelves of the supermarkets. Food additives and preservatives will be observed. Food additives include agents for preserving, flavoring, coloring, sweetening, crisping, gelling emulsifying, stabilizing, bleaching, coating, preventing oxidation, and enhancing taste, texture and smell.

Many consumers are concerned about food additives and preservatives because most of them are unfamiliar with their names and functions when they are included on ingredient labels. The Food and Drug Administration defines food additives as any substance or mixture or substances other than the basic foodstuff which is present in food as a result of any phase of production, processing, packaging or storage.

The FDA regulates the type of food an additive can be used in, the maximum quantity that can be used and the information that must appear on the label. Food additives are never given permanent approval but are constantly modified, reviewed or discarded as necessary. (North Central Regional Publication 438)

Preservatives are used by manufactures to give foods a longer shelf-life or to improve appearance, taste, nutritious value or texture. They are also used to prevent chemical reactions that cause rancid fats, they also reduce the growth of bacteria and mold.

Eating all organic foods would be an idealistic situation, however, the reality is most consumers can not afford to, even though we know they are more nutritious and less toxic and probably easier for the body to process. With that in mind we also know that most consumers are subject to eat the foods with additives and preservatives because of economics, time, and many other related factors.

Physical Growth and Obesity

Physical growth is the increase in the mass of body tissues that occur in set patterns, but at different rates and ages as an infant becomes an adult. Good nutrition and exercise are necessary for growth and maturation. Normal, healthy children grow and mature with few problems; however, society is presently faced with an epidemic of obesity that affects growth and the current and further health of children. (Samour and King 2006)

Body measurements that are accurate and reliable describe a child's growth status. Weight and stature are important measures, but weight indexed for stature is a descriptive of the level of overweight for obesity.

The body mass index or BMI is an indicator of the degree of overweight or obesity in children. BMI is weight divided by stature squared with all measures in the metric system ($\text{Kg/m}^2 \times 10,000$) (Samour and King 2006).

When a person is overweight or obese is determined by the ration of weight to height, or the body-mass index (BMI). A healthy weight is one that equates to a BMI of less than 25. From 25 to 29.9, a person is considered overweight; and person with a BMI of 30 or more is considered obese. Children (boys 10 years) old with a BMI of 23 would be in the overweight category, a BMI of 21, would be at risk, a BMI of 18 would be healthy and , a BMI of 13 would be underweight.

*** Obesity (Recommendations for students)**

About one in four kids and teens are overweight (or are at risk of being overweight). Being overweight is not a cosmetic issue. It can lead to health problems like heart disease, diabetes, high blood pressure, high cholesterol and stroke. Health experts generally do not recommend dieting for kids (if you are considering going on a diet, you should see a doctor or other health-care provider). However, healthy eating and learning to balance the amount of food you eat with the amount of energy you use through physical activity are healthy habits worth learning,

Being physically active is important in maintaining a health weight (and to preventing serious diseases that can show up when you become an adult). Health experts recommend at least 60 minutes of physical activity a day for kids and teens. But don't think of it as exercise, just think of it as fun. Rollerblade, play soccer, dance, ski, swim, play basketball, or go for a walk with a friend. Remember that activities like walking up stairs, walking the dog, shoveling snow, or cleaning your room count as physical activity (they burn calories and are good for your health). Limit the amount of time you watch TV; watching too much TV is linked to overweight. (Dosani, Talent Search Curriculum)

Children and Exercise

Children and adults perceive exercising differently. When most adults think of exercising they think of going to the gym, running, walking, lifting weights, aerobics, something that is very structured. Children think of exercising as playing, dancing, the things they do at recess, gym class, riding bikes, playing games and just being physically active, When children and adults

exercise there are several elements of fitness that come into play. Endurance, strength and flexibility are three of them.

Everyone can benefit from regular exercise. A child who is active will:

- * have stronger muscles and bones
- * have a leaner body because exercise helps control body fat
- * be less likely to become overweight
- * decrease the risk of developing type 2 diabetes
- * possibly lower blood pressure and blood cholesterol levels
- * have a better outlook on life

In addition to health benefits of regular exercise, kids who are physically fit, sleep better and are better to handle the physical and emotional challenges that a typical day presents - be that running to catch a bus, bending down to tie a shoe, or studying for a test. (Kidshealth 2006)

Objectives

The students of Beeber Middle School will recognize the importance of utilizing healthy eating habits and lifestyle changes by making healthy food choices, good nutrition and exercise.

The goals of this unit is to incorporate math, science, language arts, consumer science education and the objectives of the Pennsylvania Nutrition and Education Program, (PA NEP)

- * Students will be able to identify a variety of healthy snacks
- * Students will recognize strategies for sales versus health
- * Students will understand the importance of breakfast
- * Students will become informed label readers
- * Students will research information utilizing the internet
- * Students will explore fact about the different types of fats
- * Students will investigate the ingredients, preservatives, additives and dyes in food and drink
- * Students will become aware of the amount of food and the types of exercise needed for individual lifestyles.

Strategies

The students will engage in a hands-on program which lets them participate in activities promoting healthy food choices, healthy body image and increased physical activity.

Classroom Activities

The class time for the science lab is seventy minutes. The lessons will vary and the time spent on the internet will also vary. I have five computers in the lab and a white board. The time that the students will have to spend on the internet will also vary. Please detail the lessons to fit your particular needs.

Lesson One: The Importance of Breakfast

I. NEP Objectives: (Pennsylvania Nutrition Education Program)

- A. SBO3 Use to 2005 Dietary Guidelines for Americans
My Pyramid to make healthy choices
- B. SB22 Eat a healthy breakfast most days

II. Educational Standards:

- A. 1.3 Reading, Analyzing and Interpreting Literature
- B. 1.6 Speaking and Listening
- C. 11.3 Food Science and Nutrition
- D. 10.2 Healthful Living

III. Content:

- A. Importance of eating a healthy breakfast
- B. Students understand health benefits of eating a well balanced breakfast
- C. Students will understand how to choose a breakfast consistent with dietary guidelines

IV. Materials

- A. Current Events: “Breakfast is a Bright Idea”
- B. Worksheet: “Comprehension Questions for Breakfast is a Bright Idea”
- C. Worksheet: Breakfast Wordsearch: “A High Energy Day Starts With Breakfast”
- D. Worksheet: Fruits and Vegetables
- E. Recipe: Fruit and Yogurt Parfaits and Vegetable Pizza

V. Activities

- A. Current Event Article, “Breakfast is a Bright Idea:
 - 1. Distribute a copy of the article and a comprehension questions worksheet to each student
 - 2. Adapt the reading and answering of the worksheet to class time or homework.
- B. Wordsearch: “A High Energy Day Starts with Breakfast
 - 1. Give students a copy to be done after current events article is completed.
- C. Recipe: Fruit and Yogurt Parfaits and Vegetable Pizza
 - 1. These recipes can be completed at home or in class.

VI. Additional Lesson Ideas

- A. Research Question
 - 1. Research breakfast habits of other cultures or countries
- B. Fruit and Vegetables

1. Name the fruits and vegetables: Divide the class into groups or pairs and each pair or group will receive a worksheet. Have each participant name as many fruits and vegetables as they can. Have the students group them by color. Students may be given a time limit.

Lesson Two: Be a Label Reader

I. NEP Objectives

- A. Students will be able to identify a variety of healthy snacks

II. Educational Standards

- A. Concepts of Health
- B. 11.3 Food Science and Nutrition
- C. 2.6 Statistics and Data Analysis

III. Content:

- A. The purpose of this lesson is to introduce the students to label reading
- B. Reading the nutrition label can help children make healthy choices

IV. Materials:

- A. Empty snack bags (Potato chip, popcorn, Chex Mix, Cheez-it, Cookies etc.)
- B. Worksheet: Make up a worksheet with all the information on a nutrition label, with at least three columns.

V. Activities

- A. Divide the class into pairs or groups
 1. Give each group or pair three or more empty snack bags or wrappers to compare and contrast.
 2. Have each group report their findings
 3. Students may make a chart or graph listing the snacks with the nutritional information for each one.
- B. Internet Lesson: go to : <http://.cfsan.fda.gov/~dms/lab-grenhtml> and click on Food Label Ed. Tools and General Information, then click on The Food Label: How to “Understand and Use the Nutrition Facts Label.”
 1. Students can learn how to use the nutrition label more easily.

Lesson Three: Exercising for Life

I. NEP Objective

- A. Analyze factors that impact on human growth and

development.

II. Educational Standard:

A. 10.2 Healthful living

III. Content

- A. Achieve and maintain a healthful level of physical fitness
- B. Lifelong physical activity, exhibit a physical active way of life and understand that physical activity provides opportunity for enjoyment, challenge, self-expression, stress-reduction and employment.

IV. Materials

1. Timers
2. Pencil and paper to record
3. Jump rope
4. Mats and rugs
5. Kick or soccer ball

V. Activities

- A. Set up stations for physical activities (May be done indoors or outside)
- B. Stations:
 1. sit-ups, running in place, jumping rope, jumping jacks, push-ups etc.
 2. Divide students into small groups
 3. Have students stretch and bend to loosen up before exercising
 4. Students can start at 30 second intervals and increase to a two minute drill as they workout at each station
 5. Students may record the number of repetitions of each event and they may also record heart pulse after each exercise. They should rest between events.
- C. Mat-Ball (Played outside or in gym)
 1. Divide the class into two teams
 2. Place mats (4) around like a baseball field
 3. One team is at home plate, while the other team takes the field.
 4. Each team member gets a chance at kicking the ball until there are three outs. As many students can fit on a mat as possible. (they don't have to run the mats in order)
 5. Students may be tagged out or a ball caught on the fly, or student may be hit with the ball between mats.
 6. Each student that gets to home base scores a run.

Annotated Bibliography for Teachers

Edelstein, Sari (2006) *Nutrition in Public Health: A Handbook for Developing Programs and Services*, Second Ed. Jones and Bartlett Publishers, Sudbury MA. The subjects discussed in this book are timely and significant and make this text a must-have for both students and practitioners of public health nutrition)

Kaufman, Miildred (1990) *Nutrition in Public Health: A Handbook for Developing Programs and Services*. Aspen Publishers Inc., Rockville MD. The author provides a broad overview of key concepts in many areas important to the successful practice of public health nutrition.

Natow, Annette and Jo-Ann (1988) *The Cholesterol Counter*, Pocket Books, New York. Cholesterol and calorie values for over 8,000 items, including fast food, take-out, packaged and processed foods.

Samour, Patricia Queen and Kathy King, (2006) *Handbook of Pediatric Nutrition, Third Ed.* Jones and Bartlett Publishers, Sudbury MA. This handbook is practical and detailed, while providing cutting edge research and resources on the most important pediatric issues and therapies.

Thies, Kathleen M. and John R. Travers (2006) *Handbook of Human Development for Health Care Professionals*. Jones and Bartlett Publishers, Sudbury M. Includes topics such as relationship between food and behavior in children and motor development according to exercise physiologist.

Helping Kids and Families Eat Right and Keep Fit. www.hsph.harvard.edu. HSPH supporters take on the childhood obesity epidemic.

Lessons in Good Eating. www.hsph.harvard.edu School breakfast can be good for kids and tasty too.

Trans Fats: The Story Behind the Label www.hsph.harvard.edu It took 50 years of research to get the dangers into print. Now nutrition labels in the United States list harmful trans fatty acids.

Annotated Bibliography for Students

Buono, Anthony, Roy Nemerson, and Brian Silberman, (1999)*The Race Against Junk Food (Adventures in Good Nutrition)* , This book is designed satisfy kids love for food and their curiosity of how their body works, illustrated.

Deal, Darlene (2004) *Play With Your Food and Learn How to Eat Right*, Darlene Deal Publisher. This book deals with children's nutrition.

Douglas , Ann , Julie Douglas and Claudia Davila. *Body Talk: The Straight Facts on Fitness, Nutrition and Feeling Great About Yourself (Girl Zone)* Maple Tree Publishers. This book teaches about nutrition and the effects of eating healthy, illustrated.

Rockwell, Lizzy (1999) *Good Enough to Eat: A Kid's Guide to Food and Nutrition*. Harper Collins Publishers. This book offers all the basics found in the adult nutrition guide designed for kids.

Silverstein, Alvin, Virginia B. Silverstein and Laura Silverstein Nunn. (2002) *Physical Fitness (My Health Series)*. Scholastic Library Publishers. Explores how children feel when they exercise.

VanCleave, Janice *Food and Nutrition for Every Kid: Activities That Make Learning Science Fun (Science for Every Kid Series)* Wiley Publishers. This book can be used by both the teacher and the students, fun type science experiments.

Appendices

PA NEP (Pennsylvania Nutritional Education Program)

- A. 10.1 Concepts of Health
- B. 10.2 Healthful Living
- C. 11.3 Food Science and Nutrition
- D. 2.5 Mathematical Problem Solving and Communication
- E. 1.6 Speaking and Listening

National Standards for Family and Consumer Sciences

Comprehensive Standards

- A. Career, Community, and Family Connections
 - 1.0 Integrate multiple life roles and responsibilities in family, work and community settings.
- B. Consumer and Family Resources
 - 2.0 Evaluate management practices related to the human, economic, and environmental resources.
- C. Food Science, Dietetics, and Nutrition
 - 9.0 Integrate knowledge, skills and practices required for careers in food science, dietetics and nutrition.
- D. Human Development
 - 12.0 Analyze factors that impact human growth and development
- E. Nutrition and Wellness
 - 14.0 Demonstrated nutrition and wellness practices that enhance individual and family well-being

Content Standards

- A. Early Childhood, Education and Services

4.0 Integrate knowledge, skills and practices required for careers in early childhood, education and services.

Other Resources

The Food Pyramid (Nutrition) by Kristin Petrie (Library Binding)

Body Adventure: The Science of Your Body and Nutrition (Kidzup Interactive Learning Kits) by Wende Wiseman, Sari Dajani, and Jennifer Jesse (Paperback)

Healthy Snack and Fast-Food Choices (Nutrition and Fitness for Teens) by Mary Turck (Library Binding)

Vegetarianism for Teens (Nutrition and Fitness for Teens) by Jane Duden (Library Binding)

Zootrition: An Adventure in Health and Nutrition by Amy Schoelwer MEd, RD, LD and Mark Schoelwer (Paperback)

Diet Information for Teens: Healthe Tips About Diet and Nutrition: Including Facts about Dietary Guidelines, Food Groups, Nutrients, Healthy Meals, Snacks, Weight Control, Medical(Teen Health Series) by Karen Bellnenir (Hardcover)

For in-depth information about My Pyramid Healthful eating and Physical activity, visit: <http://www.MYPyramid.gov>

For tips on fitting healthful eating and physical activity into your lifestyle see: IT'S ALL ABOUT YOU OWNERS MANUAL FOR YOUR BODY at: <http://ifc.org/publications/other>

For tips on raising a healthy family visit: <http://www.kidnetic.com>

For additional food safety information visit: <http://www.fightbac.org>