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## Educational curriculum for obesity in school aged youth

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EDUCATIONAL CURRICULUM FOR OBESITY  
IN SCHOOL AGED YOUTH

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A Thesis  
Presented to the  
Faculty of  
California State University,  
San Bernardino

---

In Partial Fulfillment  
of the Requirements for the Degree  
Master of Science  
in  
Nursing

---

by  
Carmen Vieyra Kemp  
Melody Ann Mendiola

June 2005

EDUCATIONAL CURRICULUM FOR OBESITY  
IN SCHOOL AGED YOUTH

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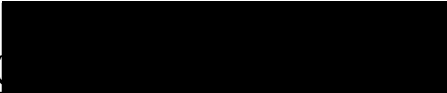
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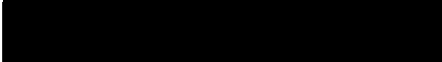
by  
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June 2005

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## ABSTRACT

Obesity has reached epidemic proportions in the United States. It is the fastest rising public health problem in the nation. The concern and need for intervention regarding the obesity epidemic is evident. Schools provide a unique opportunity to provide children and adolescents with the knowledge and skills needed for a healthy lifestyle.

The purpose of the project was to develop an educational program to assist educators in keeping school children healthy. The educational program provides an overview of childhood and adolescent overweight for educators. The program is designed to support professionals who are working to reduce the problem of overweight in children and adolescents in elementary and middle school setting.

It is known by most health care providers that primary prevention and early detection are important aspects of management of childhood obesity. This project seeks to deliver a tool for educators use in addressing obesity among school age children. This program will allow teachers to deliver nutrition and physical activity information to students, which may result in healthy lifestyle choices and change. Through increase education

and awareness, educational tools can be provided for educators to ensure academic success and healthy lifestyles of our students.

## ACKNOWLEDGMENTS

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## CHAPTER ONE

### BACKGROUND

#### Introduction

Obesity has reached epidemic proportions in the United States. It is the fastest rising public health problem in the nation. According to the Center for Disease Control and Prevention (CDC), 15% of today's youth are seriously overweight. Obesity rates have doubled in children and tripled in adolescents since the 1970s (CDC, 2005).

Overweight is defined by the CDC as high body weight in relationship to height compared to some standard of acceptable weight. Obesity is defined as an excessively high amount of body fat or adipose tissue in relation to lean body mass. Body Mass Index (BMI) is a measurement expressing the relationship to height and is determined by calculating weight in kilograms and dividing height squared (CDC, 2005).

Child/adolescent BMI parameters identified by the CDC classify those at and above 85th percentiles as overweight. According to the American Obesity Association, children and adolescents above the 95th percentile are

identified as obese. One in three people are overweight and one in seven children are obese (Ogden, 2002).

In a study led by Igne Lissau, Ph.D. from Denmark, the United States had the highest prevalence of overweight adolescents ages 13-15 years old. The researchers studied the BMIs of 29,242 teenagers from Austria, the Czech republic, Denmark, Flemish Belgium, Finland, France, Germany, Greece, Lithuania, Israel, Portugal, Slovakia, Sweden, and the United States. The researchers found 12.6% of 13 year old males from US were overweight; 10.8% of 13 year old females were overweight; 13.9% of 15 year old males were over weight and 15.1% of 15 year old girls were overweight. Among the 15 countries studied, Untied States had the highest proportion of overweight teenagers with Lithuania having had the lowest proportion (National Institutes of Health, 2004).

In the United States, childhood overweight trend has dramatically increased since 1970s. According to the National Health and Nutrition Examination Survey (NHANES), from 1963 to 2000, the overweight youth ages 6-11 has increased four fold from 4.2% to 15.3% (Stone, 2002). From 1966 to 2000, the overweight youth ages 12-19 has increased form 4.6% to 15.5% (Stone, 2002).

Overweight children are at risk for becoming obese adults and are at risk for cardiovascular disease, cancer, diabetes, orthopedic problems, chronic hypoxemia, poor body image, depression and low self-esteem. Children with healthy body weight are hospitalized less than those who are obese (Stone, 2002).

The national cost of medical treatment related to obesity has increased three-fold from \$35 million to \$127 million (Stone, 2002). Estimated annual health care costs for obesity is \$117 billion (U.S. Department of Health and Human Services, 2001). Federal Medicare and Medicaid costs due to diabetes were \$14.5 billion in 2000 (NIH, 2000). According to the USDA, healthier diets could prevent at least \$71 billion per year in medical costs (Frazao, 1999).

Many students in the US are not getting enough recommended physical activity. More than 30% of youth responding in Youth Risk Behavior Survey (YRBS) did not participate in moderate or vigorous physical activity over the previous week in 2001 compared to 14% in 1996 (Stone, 2002). Only 52% of students in the US were enrolled in a physical education class and only 32% attended a physical education class daily according to the YRBS survey (Stone, 2002). Physical activity lowers the risk for overweight

tendencies and health problems related to overweight (Stone, 2002).

California's epidemic of overweight children mirrors that of the nations. California ranks 23rd for obesity in the nation and has the second highest levels of overweight low-income children ages two to five (Trust for America's Health, 2005). California Teenage Eating, Exercise and Nutrition Survey (CAL TEENS) found 31% of California youth ages 12-17 are overweight or at risk with 35% males and 26% females ages 12-17 who are overweight or at risk. In some California school districts, 40-50% of youth are overweight (Stone, 2002).

Obesity is a factor leading to non-insulin dependent diabetes (NIDD). Eighty percent of children in California who are diagnosed with NIDD are overweight (Healthy Americans, 2005). Forty-five percent of all new childhood diabetes diagnoses are NIDD (Healthy Americans, 2005).

The target population of this project is the students of Mountain View School District. Mountain View School District resides in Ontario, California. The city of Ontario resides in San Bernardino County. Assembly District 62 consists of parts of San Bernardino County. The California Center for Public Health Advocacy (CCPHA) performed an analysis of the 2001 California Physical

Fitness Test of students in fifth, seventh and ninth grade and found epidemic levels of overweight and unfit children in every legislative district in California. Nearly 32% of children residing in assembly district 62 are overweight and is among the highest percentages in the state.

Fifty-one percent are physically unfit which is also one of the highest percentages among the state (CCPHA, 2002).

Numerous factors are causing the rising epidemic of overweight and obesity. Biological, social and environmental factors contribute to this epidemic. Availability of soft drinks and junk food, advertisements for foods high in refined sugars and fat, limited access to healthy foods, and increased portion sizes leads to increased caloric intake. Poor physical activity infrastructures in the schools and communities and lack of funding for nutrition, limited compliance with physical education requirements, and physical activity programs can lead to physical inactivity (Healthy Americans, 2005).

Obesity is one of the greatest health challenges of our time. The concern and need for intervention regarding the obesity epidemic is evident. Schools provide a unique opportunity to provide children and adolescents with the knowledge and skills needed for a healthy lifestyle. More

than 95 percent of all children age 5-17 are in school (VanLandeghem, 2003).

#### Purpose of the Project

The purpose of the project was to develop an educational program to assist educators in keeping school children healthy. Health and education have a reciprocal relationship. The physical and psychosocial ailments associated with overweight can create barriers to academic success.

The educational program provides an overview of childhood and adolescent overweight for educators. The program is designed to support professionals who are working to reduce the problem of overweight in children and adolescents in elementary and middle school setting.

The health and well being of children influence their ability and readiness to learn in the school setting. Overweight children are at risk for physiological and psychological disorders. Those who are overweight are more likely than their peers to become obese adults (VanLandeghem, 2003). One third of obese preschoolers and one half of obese school aged children will be obese in adulthood (Vargas, 2003).



## Scope the Project

The scope of the project includes the following:

1. Assessment of need related to the incidence of overweight and obesity and the need for an educational program for teachers among a population of elementary and middle school students including:
  - a. Census data analysis, surveys of teachers and students, and key informant interviews
  - b. Development of a survey tool designed to assess teachers' perception of childhood obesity
2. Development of an educational program which includes:
  - a. A tool for educators to:
    - i. Increase awareness of childhood obesity
    - ii. Increase knowledge related to benefits of physical activity and good nutrition
  - b. Up to date information on obesity prevention and management guidelines for children and adolescents who are overweight or at risk for becoming overweight

- c. Information which addresses behavior, activity, and nutrition
- 3. Program materials for utilization by educators
  - a. Handouts
  - b. Sample lesson plans
  - c. Physical activity and food guide pyramid
  - d. Sample recipes and classroom party ideas

#### Significance of the Problem

##### Obesity as a Nursing and Public Health Issue

Two-thirds of premature deaths are caused by poor nutrition, physical inactivity and tobacco (Mokdad, 2003). Overweight shortens life expectancy and increases the risk of heart disease, high blood pressure, diabetes and other chronic diseases (Sturm, 2002). Over the past decade, obesity rates have increased by seventy-five percent and diabetes rates by sixty percent (Mokdad, 2003).

Obesity occurs in most of the diagnosed cases of Type II Diabetes. Non-insulin dependent diabetes mellitus (Type II Diabetes) accounts for ninety percent of diagnosed cases of diabetes and is preventable through treatment of obesity. Treatment for obesity involves increasing energy expenditure and decreasing caloric intake (Vargas, 2003).

## Significance of the Project

It is known by most health care providers that primary prevention and early detection are important aspects of management of childhood obesity. The importance of timing interventions for childhood obesity has been identified related to three crucial areas for development of obesity. During infancy, parents need to be informed of identifying hunger and satiety cues, frequency of feeding and quantity, and signs of over feeding. After infancy, the child's BMI decreases and rises again during late preschool years (ages 4-8) and is referred to as adiposity rebound. Adolescence is the last crucial period when puberty plays a role in fat deposition (Frost, 2003).

It is important to design programs to assist elementary and middle school students in making healthful food and activity choices on a daily basis. Students spend a majority of their days in school. The advanced practice nurse (APN) in the school setting has a unique opportunity to influence students and their food and activity choices. It is important for health care professionals such as school nurses to assist educators with the nutritional health of students. The APN has an opportunity to collaborate with members of various disciplines to address childhood overweight and obesity issues. The APN has the

knowledge and background to coordinate an educational program with the goal of increasing awareness and reducing incident of childhood overweight. The APN can further serve as a role model in the community.

Research discusses the relationship between activity and learning, social development and child health as well as related topics that have implications on promoting awareness of obesity awareness (Jerrett & Maxwell, 2000). This program will provide opportunity for physical activity during class time and promotes and encourages on-going, regular physical activity. Students should also be given opportunities to identify and apply healthy food choices.

#### Limitations of the project

During the development of this project, the limitations noted included a lack of availability of resources in a variety of languages, time restraints on program utilization and staff reluctance.

Culture plays a role in childhood obesity. Many parents feel that an overweight child is a healthy child (Frost, 2003). Materials presented may not address cultural differences and tendencies. Sample recipes and

ideas related to the food guide pyramid may not address these ideations.

The No Child Left Behind Act (NCLB) may impose time restraints on program utilization. The NCLB was signed into law in 2002 by President George W Bush with the purpose of ensuring that all students receive a quality education. State standards are higher in an attempt to improve test scores and to make adequate progress. Students in grades 3-8 will be measured in reading and math to assist in identifying weaknesses. The NCLB imposes more pressure on the teachers in meeting state standards of core subjects. Unfortunately, nutrition and other health related topics have been set aside.

A further limitation of the project is the possibility of staff reluctance. Teachers may feel health should be enforced and advocated for by health care professionals and/or families. Time restraints may also lead to staff reluctance.

#### Definition of Terms

The following terms are defined as they apply to the project.

Body Mass Index (BMI) - measurement expressing the relationship of weight to height and is determined by

calculating weight in kilograms and dividing by height squared (CDC, 2005).

Food Guide Pyramid - food guide pyramid is an outline of what to eat each day. It is a general guide that allows individuals to choose a healthful diet. It calls for eating a variety of foods to get the nutrients needed and the right of calories to maintain or improve weight (Food and Nutrition Information Center, 2005).

Physical Activity Guide Pyramid - The physical activity guide pyramid provides suggestions for children's physical activity. It defines and provides examples and defines leisure and playtime, strength and flexibility, aerobic exercises and recreational activities.

Good Nutrition - adequate intake of fruits and vegetables, whole grains, and fat-free or low-fat milk and milk products, protein consumption and decreased intake of low-nutrient-dense foods to control caloric intake (Food and Nutrition Information Center, 2005).

Overweight - high body weight in relation to height compared to some standard of acceptable weight. (CDC, 2005). Children with a BMI between the 85th and 95th

percentile are considered overweight (American Obesity Association, 2003).

Obesity - excessively high amount of body fat or adipose tissue in relation to lean body mass. Children with a BMI at or above the 95th percentile are considered obese because it corresponds with a BMI of 30 in adults (American Obesity Association, 2003). The CDC avoids using the word obese and defines every child/adolescent at or above the 85th percentile as overweight. For the purpose of this project and for simplicity and clarity, the terms overweight and obesity are used interchangeably.

Physical activity - state of being active

School aged children - School aged children are children ages 5-19 years.

## CHAPTER TWO

### REVIEW OF THE LITERATURE

Obesity among our school age children continues to be an ongoing problem. Obesity in children and adolescents is described as weight that places one at a significantly increased risk for health problems. The United States prevalence of childhood obesity has been on the rise for the last 30 years according to the statistics followed by the CDC. The focus on obesity has reached a national level. Obesity rates have doubled in children and tripled in adolescents over the last two decades. One in seven young people are obese and one in three are overweight (Ogden, 2002).

Studies such as those by the AHA, have shown an ethnic identification to obesity. This study has identified specific populations at a higher risk for obesity. The study indicates the rates for obesity are highest among Latino and Native American children.

Adult disease in children, such as high blood pressure and high cholesterol can be attributed to factors such as an increase of saturated fat consumption and physical inactivity. Only two percent of children eat a healthy diet consistent with federal nutrition



recommendation and 35 percent are physically inactive (Munoz, 1997). Autopsy studies of teenagers and young adults have shown that virtually all have fatty streaks in their arteries. One in ten study subjects had advanced fibrous plaques in their arteries (Freedman, 1999). Due to the rising rates among children, Type 2 diabetes can no longer be called Adult onset diabetes. As the number of young people with Type 2 diabetes increases, diabetic complications like limb amputation, blindness, kidney failure and heart disease will develop in people of younger ages.

Despite these alarming facts, it seems student health has taken a back seat to other pressing issues in the educational arena. Promoting student health is an investment in better academic performance. By promoting healthy lifestyle programs schools can decrease risk for children and increase opportunities for achievement.

#### Physiological Effects of Obesity: Chronic Disease

The literature supports the need for reduction of overweight and obesity in children and adolescents. The primary health risk of overweight in children is the probability that it will last into adulthood and result in increased risk of a variety of chronic diseases such as

high blood pressure, Type II diabetes, stroke and heart disease. Very large children need to be screened for a number of medical problems including asthma, high blood pressure, Type II diabetes, and hyperlipidemia. These children must be treated for these conditions as well as for weight (Munoz, 1997).

### Type II Diabetes

It used to be called adult onset diabetes, but that doesn't fit anymore. An alarming number of children are now developing type II diabetes, and many cases are preventable. Type II diabetes can be affected by genetics and certain minority groups are at higher risk according to John Hopkins University. But, the main cause is poor blood sugar metabolism, and that comes from weight gain. According to professors of endocrinology at John Hopkins, many more cases of diabetes in children around the country are a direct result of overeating and lack of physical exercise.

Obesity is linked to diabetes in animal models, and a strong correlation is noted in glucose intolerance and diabetes among the most frequent morbid effects of adult obesity (Chan, 1994). Although few data are available about the frequency of glucose intolerance among obese children and adolescents, the recent observations that non

insulin-dependant diabetes mellitus (NIDDM) accounted for one third of all new cases of diabetes, thus suggesting that the morbid effects of obesity have already begun (Pinhas-Hamiel, 1996).

Acanthosis nigricans describes increased thickness and pigmentation of skin in intertriginous folds; it is associated with glucose intolerance in children and adolescents (Richards, 1985). The prevalence of acanthosis nigricans among obese children is consistent with the findings of obese adults (Neptune, 1994). Based on the contribution of obesity to diabetes in adults and the prevalence of acanthosis nigricans in overweight children and adolescents, measures should be taken to monitor insulin and glucose levels as part of medical examination and weight reduction.

#### Orthopedic Complications

Obesity can cause complications in many organ systems including bones and cartilage. Orthopedic complications include slipped capital femoral epiphysis, which may manifest as hip or knee pain and limited hip range of motion, and Blount's disease (Richards, 1996). Orthopedic conditions related to obesity should be referred to a pediatric obesity specialist.

Among young children, excess weight can lead to bowing of the tibia and femurs similar to the bowing which occurs when downward pressure is exerted on a flexible stick. The resulting overgrowth of the tibial metaphysis is known as Blount disease. Although the prevalence of Blount disease is low, approximately two thirds of patients may be obese (Dietz, 1986).

### Sleep Apnea

Sleep apnea is another complication of childhood obesity for which aggressive therapy is warranted. The prevalence of sleep apnea among obese children and adolescents suggests that sleep apnea occurs in about 7% of obese children (Mallory, 1989). However one third of children whose body weight was above 150% of ideal weight with a history of breathing difficulties during sleep were found to have sleep apnea (Mallory, 1989). The relationship between sleep apnea and the obesity hypoventilation syndrome remains unclear (Riley, 1976).

Children may experience daytime somnolence or the family may describe breathing difficulty during sleep, a study can identify sleep apnea related to obesity hypoventilation syndrome (Silvestri, 1993). Sleep apnea and obesity hypoventilation syndrome are potentially fatal disorders that require rapid weight loss.

### Hyperlipidemia

Increased blood lipids occur among obese children and adolescents. The characteristic pattern observed consists of elevated serum low-density lipoprotein (LDL)-cholesterol and triglycerides and lowered high-density lipoprotein-cholesterol levels (Caprio, 1996). Central fat distribution, perhaps through its effect on insulin levels, appears to be an important variable between lipid levels and obesity (Steinberger, 1995).

### Hypertension

Hypertension occurs with low frequency in children. In the best community-based study of this problem, only less than 1% of more than 6000 school children 5 to 18 years of age had persistently elevated blood pressure (Rames, 1978). However, almost 60% of the children with persistently elevated blood pressure had relative weight above 120% of the median for their sex, height, and age. Based on the estimated prevalence of obesity, elevated blood pressure occurred approximately nine times more frequently among the obese (Dietz, 1998). Childhood blood pressure and change in BMI were consistently the two most powerful predictors of adult blood pressure across all ages and genders (Lauer, 1989).

Hypertension appears to be another consequence of hyperinsulinemia (Jiang, 1993). Hyperinsulinemia produces a significant decrease in renal sodium retention in both obese and nonobese adolescents (Rocchini, 1989). Dietary therapy when accompanied by exercise, effectively decreases blood pressure (Rocchini, 1988).

### Cardiovascular

Obesity is important in the evolution of cardiovascular risk. As children progress with relatively low risk from childhood into adulthood, with higher blood pressure, and higher levels of LDL cholesterol, and lower levels of HDL cholesterol, and increased risk for non-insulin dependent diabetes, the major predictor is excess weight (Wattigney, 1991). Increased left ventricle mass is another independent cardiovascular risk factor, which is associated with the development of increased blood pressure (Urbina, 1995). Coronary atherosclerosis is more likely to be present in young adults with excess adipose tissue of other risk factors (McGill, 1995).

### Nutrition and Obesity

Proper nutrition is an important building block to a child's ability to learn and their overall health status. Hungry Children are more likely to have behavioral,

emotional and academic problems at school (CDC, 2003). Ignoring student health can lead to poor school performance. Numerous studies dating back to the 1980s have shown that healthy kids perform better academically (Benton, 1998).

Skipping breakfast and lunch can lead to binging after school. School food services face numerous challenges in providing significant nutrition and limiting foods high in fat salt and sugar (Munoz, 1997).

Studies indicate children do not eat the recommended 5 or more servings of fruits and vegetables each day (Kahn, 1999). Three out of four children consume more saturated fat than is recommended in the Dietary Guidelines for American according to the USDA. On any given day, 84 percent of school- children exceed the guidelines for saturated fats in their diets, while only 2 percent meet the Food Guide Pyramid's daily recommendations for all five major food groups (VanLandeghem, 2003). It gets worse as youth get older, with teenagers drinking twice as much soda as milk. Vending machines full of fatty chips and candy might be great for a school's bottom line, but hazardous to children's diets (VanLandeghem, 2003).

## Psychological Effects from Obesity

The most serious psychological problems associated with overweight in children are low self-esteem, poor body image and depression (Gortmaker, 1993). Other children tease and torment large children, while well-intentioned adults pressure them to lose weight.

### Low Self Esteem and Body Image

Several studies have shown that children at a young age are sensitized to obesity and have begun to incorporate cultural preferences for thinness (Dietz, 1998). Preference tests have shown that 10 to 11 year old boys and girls prefer as friends other children with a wide variety of handicaps to children who are overweight (Richardson, 1991). Children as young as 6 to 10 years already associate obesity with a variety of negative characteristics such as laziness and sloppiness (Staffieri, 1967).

Despite the negative connotations of obesity, overweight young children do not have a negative self-image or self-esteem (Kaplan, 1986). However, obese adolescents develop a negative self-image that appears to persist into adulthood (Stunkard, 1967). One explanation for this apparent discrepancy between children and adolescents is that self-image is derived from parental



messages in young children and increasingly from the culture as children become adolescents. Early maturation is associated with an increase in body fatness. Children who mature early tend to have lower self-esteem (Brooks-Gunn, 1988).

### Depression

Children who suffer from low self-esteem due to poor body image are at risk for eating disorders. Dysfunctional eating can include irregular, chaotic eating. A usual pattern of overeating or under eating much more or much less than body want or needs can result in bingeing, anorexia or bulimia. Thus, increased preoccupation and concern with body image can result in mood instability and functional depression (Strauss, 2000). The cycle can continue as the depression results in eating to numb pain and relieve stress.

Weight status is associated with impaired social relationships, school experiences and psychological well-being (Falkner, 2001). The most immediate consequence of being overweight is social discrimination. A recent study examined friendship networks of overweight adolescents and confirmed that they were socially marginalized by their peers (Latner, 2003). This is associated with poor self-esteem and depression. A recent

study reported that obese children and their parents felt the child's quality of life was similar to that of children with cancer (Schwimmer, 2003). The association between weight and psychological well-being appears to be true not only for Caucasian children and adolescents but also for African American and Hispanic populations (Strauss, 2003).

#### Behavior and Environmental Factors of Obesity

Childhood overweight is at an all-time high in the United States, up 50 percent since 1991 (Struss, 2001). The problem of overweight is multi-factorial and thought to be related to an imbalance between energy consumed and energy expended (Hill, 1998). Complex social and environmental factors contribute to this imbalance, including changing food habits, declining physical activity, and increasingly sedentary lifestyles.

#### Energy Imbalance

Overweight and obesity result from an energy imbalance over a long period of time. The cause of energy imbalance for each individual may be due to a combination of several factors. This involves eating too many calories and not getting enough physical activity (Hill, 1998).

Children and adolescents spend more free time in sedentary activities while the number of schools requiring physical education has declined according to Healthy People 2010. Widespread and profound societal changes during the last several decades have affected child rearing, which in turn has affected childhood patterns of physical activity as well as diet (AAP, Policy Statement, 2003). National survey data indicate that more than 25% of US children 8 to 16 years of age reported watching television at least 4 hour per day (Anderson, 1998). Children who watched 4 hour or greater of television per day had significantly greater BMI, compared to those watching fewer than 2 hours per day (Anderson, 1998). Furthermore, in 2003, 38 percent of students in grades 9 to 12 viewed television 3 or more hours per day (YRBSS, 2003).

### Activity

The benefits of physical activity can include reduced risk for heart disease, high blood pressure and developing diabetes. Physical activity stimulates the immune system to fight infections (CDC, 2000).

All types of physical activity yield significant health benefits. The 1996 Surgeon General's Report on Physical Activity and Health recommends that every

American participate in moderate amounts of physical activity most days of the week. An example of moderate physical activity is to walk briskly for 30 minutes. Physical fitness is a lifelong process. Physically active children are more likely to grow up to be physically active adults. Inactive children and youth are much more inclined to be sedentary adults, who in turn are at higher risk for chronic disease. Only 29% of U.S. children have daily physical education class, and 50% report no regular physical activity (Ogden, 2002).

Encouraging children to be physically active and teaching them how to make nutritious food choices provides a solid foundation for lifelong good health (CDC, 2000). Physical activity enhances not only physical health, but can help improve mental and emotional health as well. A major component of physical activity is that it helps reduce stress according to many researchers (Ganley & Sherman, 2001). Encouraging children to be physically active and teaching them how to make nutritious food choices provides a solid foundation for lifelong good health. The research that is available indicates that family-based programs that begin in early years and emphasizes behavioral modification of diet and activity are effective in reducing obesity (Edmunds, 2001). The

education system is the ideal setting for a healthy lifestyle program addressing obesity.

### Food Habits

In the United States, the environment affects the eating habits and food choices of children. Marketing of many low-nutrient, high calorie foods is aimed at children and youth. As children get older and eat more with their peer group, they are less likely to eat healthy foods than when they eat with their families (Videon & Manning, 2003). Fast foods are now an important component of the youth culture, with portions increasing, children will eat more when served larger portions (Fisher, Rolls, & Birch, 2003).

Parental food choices influence child food preferences, and degree of parental adiposity is a marker for children's food preferences (Fisher & Birch, 1995). Children of lower socioeconomic status have been reported to be less likely to eat fruits and vegetables and to have a higher intake of total and saturated fat (Kennedy & Powell, 1997). Absence of family meals is associated with lower fruit and vegetable consumption as well as consumption of more fried food and carbonated beverages (Klesges et al., 1991).

## Theoretical Framework

Overweight is a problem with which many people of all ages are battling. The need for change in dietary patterns and increase of physical activity requires one to acquire new tools. However, the message is only the beginning step for effective lifestyle change intervention. Centers for Disease Control, National Cancer Institute, and the American Lung Association use a transtheoretical model to assist clients in moving into new behaviors. According to the field of psychotherapy the common principles of change can be applied to the level of either the individual's experience or environment to produce the change in behavior.

The transtheoretical model developed by Prochaska and DiClemente (1983), proposes that health related behavior changes progress through stages, regardless of whether the person is trying to quit a health-threatening behavior or adopt a healthy behavior. This project seeks to deliver a tool for educators use in addressing obesity among school age children. This program will allow teachers to deliver nutrition and physical activity information to students, which may result in healthy lifestyle choices and change.

The transtheoretical model proposes 5 stages of change (the phases people go through) individuals used to

change their behavior: precontemplation, contemplation, preparation or determination, action, and maintenance.

Precontemplation: has no intention to take action within the next 6 months.

Contemplation: intends to take action within the next 6 months.

Preparation: intends to take action within the next 30 days and has taken some behavioral steps in this direction.

Action: has changed overt behavior for less than 6 months.

Maintenance: has changed overt behavior for more than 6 months.

Research has shown that individuals work through these 5 stages of change. Nine distinct processes help people move from one stage to the next.

#### Processes of Change

Covert and overt activities that people use to progress through the change stages:

1. Consciousness raising (increasing awareness)
2. Dramatic relief (emotional arousal)
3. Environmental reevaluation (social reappraisal)
4. Social liberation (environmental opportunities)
5. Self-reevaluation (self reappraisal)

6. Stimulus control (re-engineering)
7. Helping relationship (supporting)
8. Counter conditioning (substituting)
9. Reinforcement management (rewarding)

The change model is widely accepted as an effective tool for lifestyle change intervention. This can be seen as a commitment thus also self-liberating for individuals. The change model is widely accepted as an effective tool for lifestyle change intervention.

The use of Bandura's Social Learning Theory (1986, 1997) offers an explanation of human behavior using the concepts of self-efficacy, outcome expectations, and incentives. Self-efficacy expectations are focused on peoples' belief in their own capacity to carry out particular behaviors (e.g., weight loss). Bandura identified four factors that influence a person's cognitive appraisal of self-efficacy: (1) their own mastery experience; (2) verbal persuasion; (3) vicarious experience; and (4) anxiety. The role of self-efficacy has been studied in relation to numerous health behaviors such as weight control, self-management of chronic illness and smoking. Using a social cognitive constructs, Resnick (2001) tested a model of factors that influence the exercise behavior of adults.



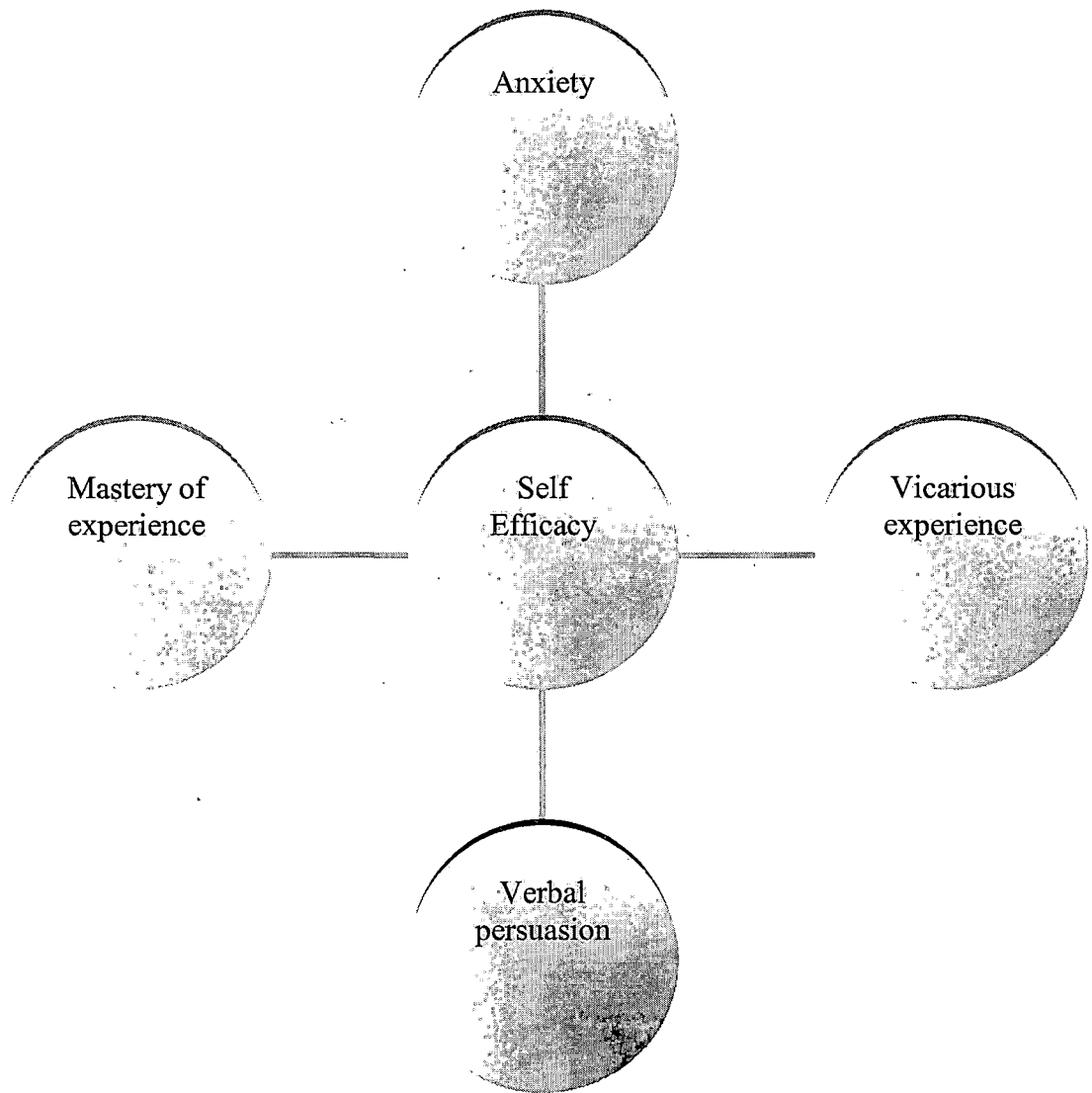


Figure 1. Diagram of Bandura's Social Learning Theory

The use of both Bandura's social learning theory and Prochaska and DiClemente's stages of change model have had major effects on the design and delivery of individual health promotion interventions. Effective short-term changes have occurred as a result of cognitive-behavioral intervention (Orleans, 2000). Because both this theory and

model include maintenance as a stage for change they are well suited for application to school age children. This project seeks to strengthen teachers with tools to impact obesity through an educational program which address nutrition, activity, and environmental obstacles.

### Theory Application

An existing theory that addresses obesity in school age children does not exist. The theoretical framework used to guide this project integrates different levels of change as a state of individuality as defined by Prochaska and DiClemente and an interaction model of causation in which environmental events, personal factors, and behavior act as reciprocal determinants of each other.

The authors developed an educational program based on the previously discussed theoretical frameworks, which deliver activities to promote healthy lifestyles. The process will include addressing the various stages of readiness to change or incorporate new behaviors.

### Literature Review Summary

The literature supports that obesity continues to be a problem. This becomes problematic in that the risk for an increased longevity is potentially compromised. Overweight shortens the life expectancy of a 40-year-old

adult by three years. Obesity shortens women's lives by seven years and men's lives by six years (Peters, 2003). Obesity increases the risk of heart disease, high blood pressure, diabetes, and other chronic diseases as much as does 20 years of aging. Both obesity and overweight increase the numbers of chronic conditions by more than 50 percent (Stum, 2002). According to a study by Harvard Medical School, obesity is a complex health issue to address. Overweight and obesity have multiple factors, which include energy imbalance, behaviors, environmental factors, and genetics.

Many journals take the position of exercise as the problem to obesity. More exact is the lack of activity. Physical inactivity is a major risk factor for obesity. The recommendation is for children to receive at least 60 minutes of moderate to vigorous activity every day (Freedman, 1999). Increased activity has been associated with an increase in life expectancy and decreased risk of disease related to cardiovascular origin.

Given the current national emphasis on research-based decisions on education, the question of what research says and infers about activity is important. Research discusses the relationship between activity and learning, social development, and child health, as well as related topics

that have implications on promoting awareness of obesity prevention (Jarrett & Maxwell, 2000). Therefore the Advanced Practice Nurses in the school setting have an opportunity to impact students and their choices for healthy lifestyle habits. Therefore, an educational program targeted at school age children for use by educators is warranted.

## CHAPTER THREE

### METHODOLOGY

The purpose of this assessment was to determine what factors have contributed to the overweight and obesity situation of the students of Mountain View School District (MVSD). Furthermore, the assessment process included conducting a survey and establishing parameters, which based on the results, may lead to healthy lifestyle changes. In order to understand any factors linked to obesity we utilized archival data, a survey related to knowledge on elevated BMI readings, and interviews with key informants. We referred to data provided by the CDC on trends across the nation for students of similar background. We discovered that our targeted population was very similar to others across the nation. Based on the results of the assessment, it will provide a community diagnosis with plans for intervention to benefit the students of MVSD community.

The first step in assessing the need for an intervention to promote healthy lifestyles among the Mountain View School District was to review archival data of the school community. Several data collection methods were used. The assessment process included: 1) censuses

data analysis, 2) key informant interviews, 3) surveys of teachers and students, 4) development of a survey tool designed to assess teachers' perception of childhood obesity.

The population assessed was the students of Mountain View School District. There are four schools in the Mountain View District, one which received recognition as a Distinguished School in 2003. Three are elementary schools, and one middle school. The student body profile, ethnic diversity, and multi cultural flavor are reflective of the district and city in which it resides. The demographic breakdowns of all students reveal 46% Hispanic, 30% Caucasian, 15% African American, 4% Asian, and 5% other. The average age for eighth graders is 13.6 years (School Acc Report-Mt. View District, 2002-03).

#### Census Data Analysis

Historically the fifth and seventh grade students of Mountain View District had scored in the 40% of the Healthy Fitness Zone on the California Physical Fitness Test. The HFZ measures each student's ability to perform a fitness task in six major areas. The BMI is calculated as part of the measurement for HFZ. In the past five years the percent of students in the HFZ have declined. The

results of the California Physical Fitness Test of spring 2003 revealed that only 10% of the MVSD students tested were in the HFZ. The County of San Bernardino averaged 20% in the HFZ, while the state of California overall average was 24%. With these facts, it is apparent that the students of MVSD are falling into an unhealthy fitness zone.

Surprisingly, the data from the CPFT indicated the BMI and the HFZ relationship was not always a factor in a student's ability to exceed in physical performance. The BMI is a mathematical formula relating to height and weight to determine whether a person is a healthy weight for their height. When the BMI score is in the 85<sup>th</sup> percentile or greater, students are considered to be overweight and at risk for becoming obese. The HFZ is a measurement of a student's ability to perform a particular fitness task in a given time or specified number. The findings at MVSD indicated that about 7% of the students with elevated BMI, scored in the highest HFZ for the aerobic one mile run and within or exceeded the task associated with muscle strength, endurance and flexibility. This was considered a significant finding in the development of a plan to address students who are active yet are overweight.

## Key Informant Interviews and Surveys

Middle school PE teachers, middle school administrators, district level administrator and random selection of students in fifth-eighth grade, were interviewed. A survey, addressing healthy lifestyle choices, were distributed in PE class to the eighth graders. The majority of students participated in the survey. The return rate was in the ninety-sixth percent, which should measure a fair balance of students. Next, the cafeteria workers were interviewed. It became apparent from the interviews that obesity control was an area of concern for the majority. The health logs were studied at both the elementary and middles schools to relate visits prior to PE, resulting in an excuse from participating in activities.

It was noted that a higher increase of visits to the health office were noted prior to days where running was the scheduled activity in PE. The U.S. Surgeon General's Report on Physical Activity, Centers for Disease Control and Prevention Guidelines for School and Community Programs, and Healthy People 2010 indicate consensus on the importance of regular quality physical education, and daily physical activity for all students in kindergarten through the 12th grade. The research goes on to describe



the number of students who attend daily PE classes to on the decline, while the percentage of children who are overweight or obese has more the doubled in the last 30 years.

### Survey Tool

A survey tool was designed to address the perceptions of teachers related to childhood obesity. The survey elicited teachers feelings and perceptions of the problems associated with childhood obesity. Interestingly, the majority of the teachers surveyed felt childhood obesity is a multifaceted problem and affects academic performance and self-esteem. Thirty teachers from Mountain View School District participated in the survey.

Teachers surveyed felt nutrition was a contributing factor to obesity, while the majority felt inactive lifestyle contributed to obesity. The majority also agreed a correlation existed between academic achievement and obesity. The majority of teachers reported they felt obesity affects self-esteem negatively. Finally, the teachers surveyed supported the need for an educational program addressing obesity should be available in the schools.

Few of the students surveyed knew the term BMI. Another factor became apparent in the survey, was the lack of daily physical activity. The windshield type survey of observation in PE classes left us with the following conclusions; overweight girls were more apt to find excuses for not participating in PE, while overweight boys made a fair attempt to participate in all activities. In some events the overweight boys faired better than their more fit counterparts. It was determined that a greater motivation from the overweight boys to be successful existed. There appeared to be a lot of antagonistic kidding among all the boys. The inference was not on level of skill and completion of the task on hand, but about who was the first to be eliminated.

#### Observations

Observations were reported from both the cafeteria and the snack bar, and concluded that students prefer high fat, high sugar foods and drinks, versus the healthier choices. Middle school students were observed during each of their lunch periods at GYS. The observations were conducted inside the snack bar sales area, and in the cafeteria food line.

It was determined that drinks sold were at a 5 to 1 ratio of soda over water. When the choice was juice flavored drink versus low-fat milk, the findings were similar. The choices of foods at lunch-time exceeded the recommendations of less than 30% of calories from fat, but it is more in line with findings of school lunch providing 37 to 40% of calories from fat (Franzo, 1999).

#### Assessment Theoretical Framework

The Epidemiological Triangle framework was used for the assessment. The Epidemiological Triangle is a model comprised of 3 components; host, agent and environment. The students of MVSD with elevated BMI can be viewed as the host, who is susceptible to disease, in this case potential to obesity. The agent is considered the infectious organism (Ervin, 2002). The agent is not necessarily present at birth, but can develop into an-over accumulation of fat cells, or expanded stomach resulting from overeating. The environment includes the physical and social surroundings and the biological conditions that are needed to result in disease in a person (Mausner & Kramer, 1985). There are multiple factors within the environment, which can contribute and lead to obesity. Factors such as genetics, culture and ethnic components may be present.

The Wheel Model, which is concerned with disease and injury that focus in the maintenance of health through prevention will also be used (Ervin, 2002). The hub of the wheel is the host. Surrounding the host are the biological, social, and physical environment. The host is the students. The biological environment can be genetics, which can be directly linked to overweight and obesity. The social environment is the influence presented by peers and media related to unhealthy choices. The physical environment is the availability of convenient pre packaged foods, sedentary lifestyle, and fast foods. With the wheel model, the collected data was organized, enabling the identification of multiple factors between the host and the environment, which can lead to obesity.

In the world today, the adolescent is surrounded by many options, unlimited choices, and varied opportunities for activity. Not all activity results in optimal energy expenditure. At this time in an adolescent's life, the first opportunity to make choices may arise. The adolescent who has an understanding of making choices with an impact on a healthy life will fare much better. The adolescent is a complex individual at this period of his life cycle, while younger children are looking for

guidance. It is for this reason that a multiple approach to obesity prevention needs to be address

### Community Diagnosis

It is clear, based on the results of all the gathered data, a plan to control obesity among the students of MVSD is needed. In reaching a community diagnosis, the Community -as-Partner Model was used (Anderson and McFarlane, 2000). The diagnosis reached was: All students are vulnerable to environmental exposures which can put them at risk for obesity. This risk is related to:

- Lack of information for healthy lifestyle choices
- Lack of motivation to increase physical activity
- Limited resources for teacher to incorporate in daily lesson plans

### Development of Program

#### Development of Educational Program

Based on the review of literature and the significance of activity and nutrition on childhood obesity, and educational program was developed. This program is designed as a tool for educators to 1) increase awareness of childhood obesity 2) increase knowledge

related to benefits of physical activity and 3) increase knowledge related to benefits of adequate nutrition.

Up to date information on obesity prevention and management guidelines for children and adolescents who are overweight or at risk for becoming overweight are provided in the program. Information which will address behavior, activity, and nutrition will also be provided. Program materials for educators to use include handouts, sample lesson plans, physical activity and food guide pyramids, and sample recipes and classroom party ideas.

#### Program Evaluation

Program will be available to all teacher of the MVSD who teach fifth through eighth grade. This tool will be available in fall of 2005. Multiple copies of the program materials will be available in each school sites library for check out by educators. Librarians check-out log will allow monitoring of frequency of utilization of tool.

Check-out log will be accessed monthly to assist in obtaining feedback from educators use of program. An evaluation form will be included in the program materials, which will be reviewed monthly (appendix ).

## CHAPTER FOUR

### CONCLUSIONS AND RECOMMENDATIONS

#### Conclusions

The assessment of the population demonstrated a need for overweight awareness and education tools. Currently, resources addressing overweight and obesity in school age children are limited and not easily accessible for educators.

Students spend a majority of their time in the school setting. Thus, creating an opportunity for the Advanced Practice Nurse (APN) to intervene through increase awareness of healthy lifestyle choices. The APN has an opportunity to collaborate with members of various disciplines to address childhood overweight and obesity issues. The APN has the knowledge and background to coordinate an educational program with the goal of increasing awareness and reducing incident of childhood overweight. The APN can further serve as a role model in the community.

#### Recommendations

The educational program presented in this project is available for use in all the schools of the Mountain View District. It is recommended that the educators integrate

this program into daily curriculum. However, this program can be used with a sole focus on health education or integrated with core curricula. Activities are designed to require minimal preparation.

A significant limitation of this program is the unavailability of resources in second languages. The material presented may not address cultural differences. Currently, the No Child Left Behind Act may impose time restraints on program utilization by educators. Lack of staff interest and reluctance may also act as a barrier to program utilization.

It is recommended that this program be presented and advocated for by the APN throughout the school year to district board members, administrators, and educators. It is recommended that the APN monitor the evaluation feedback from educators to revise and edit program as appropriate. It is recommended that a needs assessment be performed annually. Further examination of other variables leading to marginalization of overweight children is warranted. Through increase education and awareness, educational tools can be provided for educators to ensure academic success and healthy lifestyles of our students.



## Implications for Nursing

With the obesity epidemic more clearly defined, the challenge is now to implement effective programs designed to prevent the problem. Given the significant environmental barriers to lifestyles change and the amount of time youth are in school, school based programs are important. Working with students and families in their school communities is a possible solution to limiting obesity in children. Nurses are called to advocate for the needs of the overweight students, including ensuring that planned programs are implemented. Clearly, prevention rather than intervention is the better choice. School nurses are in a unique position to join the community in planning effective lifestyle changes to ensure students enjoy a healthy future.

The nature of school nursing has changed dramatically over the past few years. School nursing is becoming a practice specialty that has great potential for meeting the health care needs of school-age population, thus setting the course for a healthy adulthood. In confronting the epidemic of childhood obesity, school nurses should be first-line responders.

### Implications for Further Research

The role of the school nurse has been largely overlooked in the prevention of childhood obesity. School nurses, by virtue of their access to the majority of the nation's children, have the potential to provide preventative education, as well as refer children who are obese. Because school nurses play such a key role, further research to identify and prioritize strategies for school nurses to effectively impact and meet the challenges of childhood obesity should be conducted.

APPENDIX A  
NUTRITION

# Educational Curriculum: Overweight Youth in California

## Resource Guide for Educators Grades 5<sup>th</sup> – 8<sup>th</sup>

Developed by:

Carmen Kemp, R.N.  
Melody Mendiola, R.N.

## **Educational Curriculum: Overweight Youth in California**

### **Course Description**

The purpose of the Overweight Youth in California educational curriculum is to provide an overview of childhood and adolescent overweight for educators of students grade 5-8. It offers tools to assist educators in integrating health education and fitness activities into the daily curriculum.

#### **Overview: Overweight Youth in California**

Poor nutrition and inactivity are putting today's youth at risk at developing life-threatening disease as they age. According to the American Obesity Association, approximately 30.3% of children ages, 6-11 are overweight (at or above the 85th percentile of BMI) and 15.3% are obese (at or above the 95th percentile of BMI). For adolescents ages 12-19, 30.4% are overweight and 15.5% are obese. Obesity prevalence has quadrupled over the past 25 years.

It is important for children to learn about the dangers of overweight and obesity. Children should continue to enjoy physical activities and recognize moderate physical activity can help prevent obesity and heart disease. Students should be able to use the USDA food pyramid to assist in making healthy food choices and understand the effects food choices have on body composition. Some of the components of this program are correlated to the State of California Department of Education Health Framework.

Although the activities are presented in an independent fashion, you can integrate the activity concepts into your existing curricula. Your creativity for integration of this program is endless. This program is ideal for use during inclement weather, minimum days and/or prior to holiday vacations.

Thank you for your support and dedication in the battle against childhood obesity!

### **Curriculum Objectives**

1. Students will gain more knowledge regarding healthy food choices
2. Students will gain more knowledge regarding the importance of being physically active.
3. Students will increase knowledge related to the effect food choices has on body composition and energy levels.

# Curriculum Outline

## Healthy Eating

### Lesson 1

- Understand the Food Guide Pyramid and how to use the Food Guide Pyramid
- Activity: Move and Groove as You Eat to Win
- Activity: Fruit and Vegetable Scrambler
- Homework: Power Search

### Lesson 2

- Food List: Review food list. Identify which food group the foods belong in and the suggested servings
- Activity: Record Foods and identify which group they belong in and the serving size
- Homework: Interview Power

### Lesson 3

- Cut the Fat Handout
- Cut the Fat Worksheet
- What are my options? and the Options I Choose Worksheet

### Lesson 4

- Power Advertising

### Lesson 5 (for students in 7th and 8th grade)

- When Food Becomes More Than Something You Eat (use handout to open discussion)

## Physical Activity

### Lesson 1

- Pledge
- Kids Activity Pyramid
- Activity: Move and Groove as You Eat to Win

### Lesson 2

- Heart Smart Kids on the Liquid Lookout
- Activity: \*\*\*\*\*

### Lesson 3

- Walk This Way Handout
- Activity: Unscramble Worksheet

### Lesson 4

- Mission Possible (activity)
- Activity Record

## Handouts

Serving Sizes for Children and Adolescents

Do You Know What Is In Your Soda?

Classroom Party Ideas

Family Recipe Ideas

Easy to Follow Tips

10 Tips for healthy eating and physical activity





## Lesson 1 – Move & Groove As You Eat To Win

### Part 2 – Eat to Win

Estimated time: 30–40 minutes

**Expectation 1:** Students will demonstrate ways in which they can enhance and maintain their health and well-being.

#### Content Area – Food Choices (FC)

FC1 – Students should continue to learn about food classification systems and begin to learn about the nutrients in foods.

FC2 – Students should be able to use the USDA Food Pyramid to assist in making healthy food choices.

FC3 – Students should understand the effects food choices have on body composition.

**Goal:** To have students understand the various types of foods contained in the Food Guide Pyramid as well as understand what types of foods will provide greater health and fitness benefits.

#### Objectives

The students will be able to:

- Identify at least two foods from each of the food groups represented on the Food Guide Pyramid.
- Identify at least two foods kids should cut down on or eat sparingly.
- Explain why kids should cut down on foods at the top of the Food Guide Pyramid.
- Identify at least two foods kids should eat in greater quantities.
- Explain why kids should increase their consumption of foods from the bottom of the pyramid.

**Think & Sink:** Write the “Think & Sink” message on the board in the front of the classroom and in student journals. Ask students to think about the message and let it sink into their brains.

*Let's hear your voices for healthy food choices*

#### On Your Mark

Items needed:

- One copy of the FOOD GUIDE PYRAMID HANDOUT for each student
- One copy of the FOOD GUIDE PYRAMID WORKSHEET for each student
- Pictures of food items from magazines, recipe books, etc.

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## Lesson 1 — Move & Groove As You Eat To Win

**Vocabulary:** (Write on the board and discuss prior to the lesson.)

Nutrients – Any substance that provides nourishment for the maintenance of life and health

High Nutritional Value – Any substance having high levels of nourishment for the maintenance of life and health

Low Nutritional Value – Any substance having low levels of nourishment for the maintenance of life and health

Consumption – The act of eating or drinking

**Initiating Questions/Lesson Introduction:** (Display FOOD GUIDE PYRAMID)

1. Who can tell me what shape we are looking at? *Pyramid*
2. Who can tell me how this pyramid is similar and different than the previous one we studied? *They are similar in that they are the same geometric shape and also have the frequent items at the bottom and those that should be less frequent at the top. They are different because one focuses on physical activities and the other on foods to eat.*
3. What types of foods do you see at the bottom of this pyramid? *Fruits, vegetables, and grains.*
4. What types of foods do you see at the top of the pyramid? *Candy, cookies, chips, and cakes.*
5. Why do you think some foods are at the bottom and others are at the top? *The ones at the bottom should be consumed more often as they are higher in nutritional value than the ones at the top, which are lower in nutritional value and should be eaten less often.*



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## Lesson 1 — Move & Groove As You Eat To Win

### Learn It!

In part two of this lesson, we'll be using the Food Guide Pyramid to learn about foods that have high nutritional values versus ones that have low nutritional values. We'll be taking a look at foods we eat and where they are located on the Food Guide Pyramid. We'll also be discussing ways we can improve our eating habits to get more nutrition from our food consumption.

The Food Guide Pyramid was designed to show the groups or types of food that make up a healthy diet. The foods that make up the base of the pyramid are grains, vegetables, and fruits. These food items contain many important nutrients and should provide the biggest part of your daily diet. You need six to 11 servings of food items from the grains group. The grains group is loaded with carbohydrates, which give you energy. Fruits and vegetables are also carbohydrates and give you energy, but also provide lots of important vitamins, minerals, and fiber. You need at least five servings of fruits and vegetables each day. The dairy group (milk, yogurt, cheese) is important because it helps build strong bones and teeth and gives you calcium. You need at least two to three servings daily. Protein found in lean meats (chicken, turkey, etc.) helps build your muscles. You need two to three servings each day. At the very top of the pyramid, you'll find your "once-in-a-while" foods. These foods (cakes, cookies, snacks, candy, etc.) are high in fat and sugar and low in nutrients.

### Let's Go!

Pass out the FOOD GUIDE PYRAMID HANDOUT to each student and read over the handout as an entire class. Ask questions regarding foods that occur at the bottom of the pyramid that should be eaten more frequently than those at the top. Give students food photos (for example, potato, corn, bread, crackers, milk, etc.) and have them categorize them according to the Food Guide Pyramid. (Be sure to include photos from all levels of the pyramid.) Ask students to list at least two foods they should eat sparingly and explain why. Then, ask students to list at least two foods they should increase consumption of and explain why. Ask students to discuss one way they can improve their nutrition this week.



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## Lesson 1 — Move & Groove As You Eat To Win

### Check It!

Draw a blank Food Guide Pyramid on the board. Select student to label food pyramid categories and recommended daily servings. Using photos of food items students have cut out of old magazines, ask additional students to tape their food item to the appropriate food category. Remaining students are asked to be the Nutrition Judges and assess the finished product for accuracy.

Ask the students the following questions:

1. Who can explain why kids should decrease consumption of foods at the top of the Food Guide Pyramid? *They have low nutritional value. They are high in sugar, salt and/or fat.*
2. Who can explain why kids should increase consumption of foods at the bottom of the Food Guide Pyramid? *They are high in nutrients. They can help keep kids healthy and strong.*



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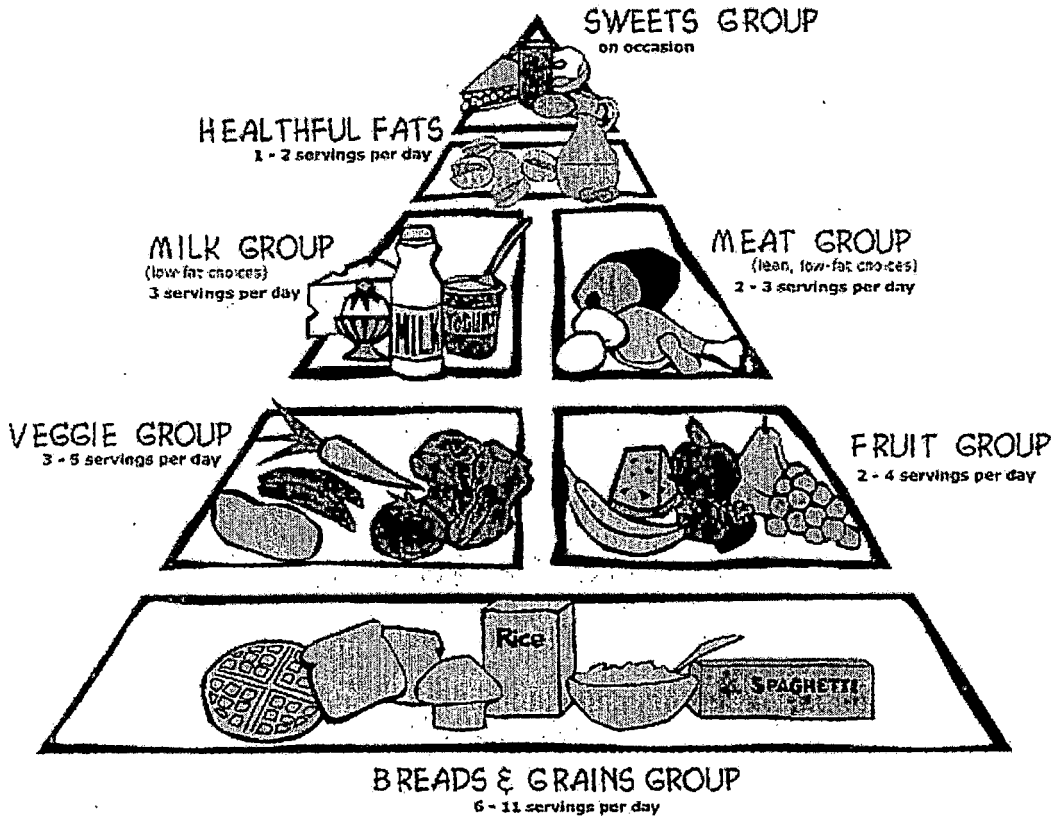
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# Food Guide Pyramid

# Handout



- [Pyramid -- English \(solid drawing\)](#) (PDF 98 KB)
- [Pyramid -- Spanish \(line drawing\)](#) (PDF 96 KB)
- [Pyramid -- Spanish \(solid drawing\)](#) (PDF 96 KB)

[USDA's Food Guide: Background and Development](#) (PDF 2 MB)

### **Food Guide Pyramid Images**

- [A Scalable Image of the Food Guide Pyramid with Labels](#) (High resolution format)
- [A Large Image of the Food Guide Pyramid with Labels](#) (gif format)
- [A Large Image of the Food Guide Pyramid with Labels](#) (High resolution)
- [A Small Image of the Food Guide Pyramid \(one page\)](#) (gif format)

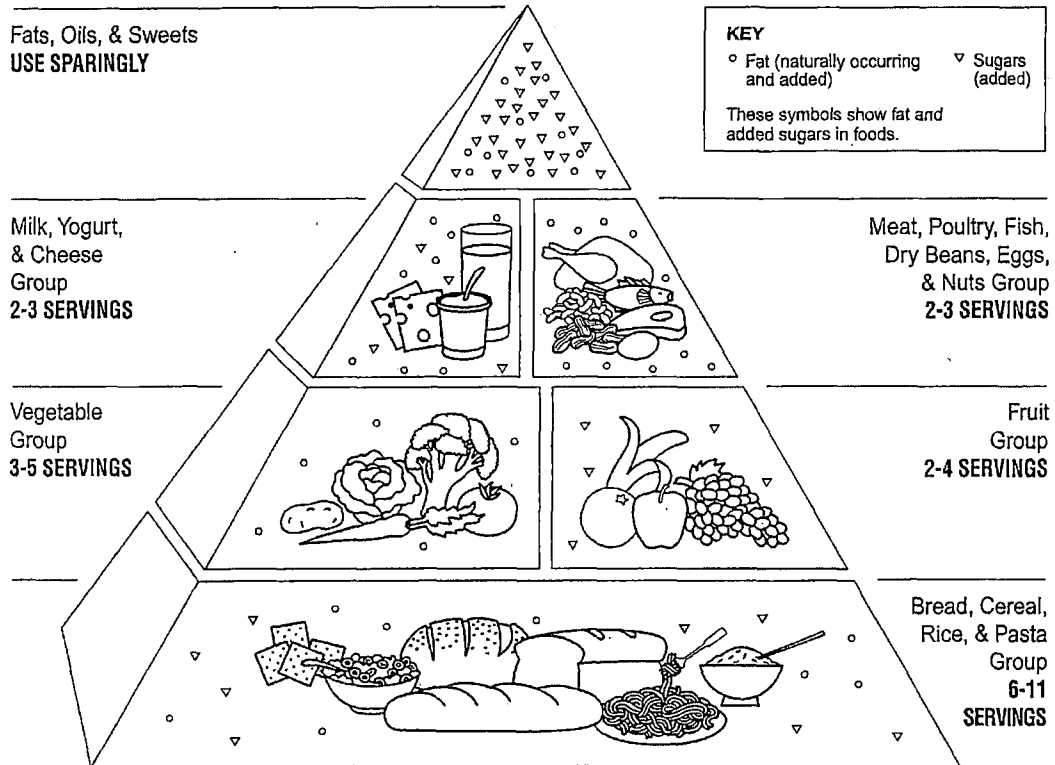
[More Pyramids](#) at Food and Nutrition Information Center

### **Permission To Use The Food Guide Pyramid Graphic**

The Food Guide Pyramid is in the public domain, and as such is not subject to copyright or trademark restrictions. Written permission to use the Food Guide Pyramid graphic is not required. We request that the Pyramid graphic be used as originally designed and that the image not be altered. If used as originally designed, we request that the graphic be credited to the U.S. Department of Agriculture and the U.S. Department of Health and Human Services or USDA and DHHS. If you have questions about the use of the Food Guide Pyramid graphic, please contact John Webster, Director of Public Information, at (703) 305-7600 or by e-mail at [john.webster@cnpp](mailto:john.webster@cnpp)

# Food Guide Pyramid

## A Guide to Daily Food Choices



Source: U.S. Department of Agriculture/U.S. Department of Health and Human Services, August 1992

Use the Food Guide Pyramid to help you eat better every day...the Dietary Guidelines way. Start with plenty of Breads, Cereals, Rice, and Pasta; Vegetables; and Fruits. Add two to three servings from the Milk group and two to three servings from the Meat group.

Each of these food groups provides some, but not all, of the nutrients you need. No one food group is more important than another—for good health you need them all. Go easy on fats, oils, and sweets, the foods in the small tip of the Pyramid.

## How to Use the Daily Food Guide

### What counts as one serving?

#### Breads, Cereals, Rice, and Pasta

- 1 slice of bread
- 1/2 cup of cooked rice or pasta
- 1/2 cup of cooked cereal
- 1 ounce of ready-to-eat cereal

#### Vegetables

- 1/2 cup of chopped raw or cooked vegetables
- 1 cup of leafy raw vegetables

#### Fruits

- 1 piece of fruit or melon wedge
- 3/4 cup of juice
- 1/2 cup of canned fruit
- 1/4 cup of dried fruit

#### Milk, Yogurt, and Cheese

- 1 cup of milk or yogurt
- 1-1/2 to 2 ounces of cheese

#### Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts

- 2-1/2 to 3 ounces of cooked lean meat, poultry, or fish
- Count 1/2 cup of cooked beans, or 1 egg, or 2 tablespoons of peanut butter as 1 ounce of lean meat (about 1/3 serving)

#### Fats, Oils, and Sweets

LIMIT CALORIES FROM THESE especially if you need to lose weight

The amount you eat may be more than one serving. For example, a dinner portion of spaghetti would count as two or three servings of pasta.

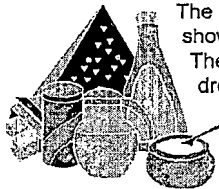
### How many servings do you need each day?

	Women & some older adults	Children, teen girls, active women, most men	Teen boys & active men
Calorie level*	about 1,600	about 2,200	about 2,800
Bread group	6	9	11
Vegetable group	3	4	5
Fruit group	2	3	4
Milk group	**2-3	**2-3	**2-3
Meat group	2, for a total of 5 ounces	2, for a total of 6 ounces	3, for a total of 7 ounces

\*These are the calorie levels if you choose lowfat, lean foods from the 5 major food groups and use foods from the fats, oils, and sweets group sparingly.

\*\*Women who are pregnant or breastfeeding, teenagers, and young adults to age 24 need 3 servings.

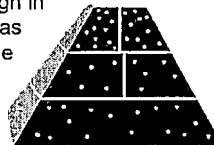
### A closer look at fat and added sugars



The small tip of the Pyramid shows fats, oils, and sweets. These are foods such as salad dressings, cream, butter, margarine, sugars, soft drinks, candies, and sweet desserts. Alcoholic beverages are also part of this

group. These foods provide calories but few vitamins and minerals. Most people should go easy on foods from this group.

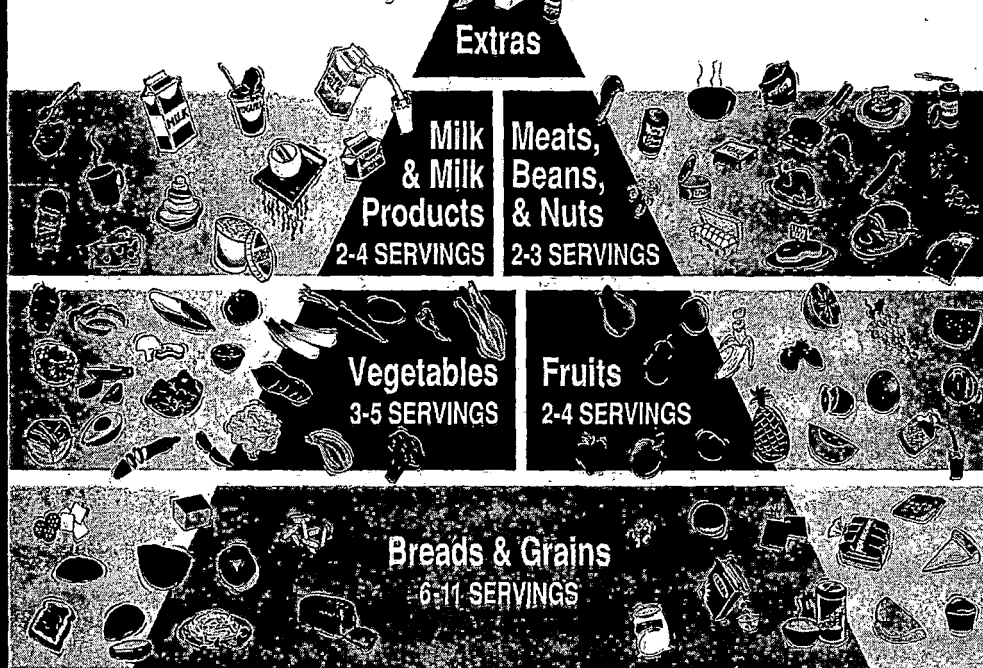
Some fat or sugar symbols are shown in the other food groups. That's to remind you that some foods in these groups can also be high in fat and added sugars, such as cheese or ice cream from the milk group, or french fries from the vegetable group.



When choosing foods for a healthful diet, consider the fat and added sugars in your choices from all the food groups, not just fats, oils, and sweets from the Pyramid tip.



# FOOD POWER



## How do I count combination foods?



- Cheese - 1 Serving
- Meat - 1 Serving
- Lettuce & Tomato - 1/2 Serving
- Hamburger Bun - 2 Servings



- Milk - 1/2 Serving
- Strawberries - 1/2 Serving
- Cereal - 1 Serving

## What counts as one serving?

### Milk & Milk Products

- 1 cup of milk or yogurt
- 1/2 to 2 ounces of cheese

### Meats, Beans, & Nuts

- 2 1/2 to 3 ounces of cooked lean meat, poultry, or fish
- Count 1/2 cup of cooked beans, or 2 eggs, or 2 tablespoons of peanut butter, or 1 ounce of lean meat (about 1/2 serving)

### Fruits

- 1 piece of fruit or melon wedge
- 1/4 cup of juice
- 1/2 cup of canned fruit

### Vegetables

- 1/2 cup of chopped raw or cooked vegetables
- 1 cup of leafy raw vegetables

### Breads & Grains

- 1 slice of bread
- 1/2 cup of cooked rice or pasta
- 1/2 cup of cooked cereal
- 1 ounce of ready-to-eat cereal

### Extras

LIMIT CALORIES FROM THESE

The amount you eat may be more than one serving. For example, a dinner portion of spaghetti would count as two or three servings of pasta.

## Good nutrition improves academic achievement...

- Research shows that well-fed children learn better than poorly nourished children do.
- On any given school day, hunger affects up to 50% of children.
- Studies have shown that children who consume a nutritious breakfast have improved concentration, make fewer errors in problem solving activities, & perform complex tasks with greater ease.
- By including nutrition education in your curriculum, your students will have the tools to make healthy choices!



\*Source: Tufts University, "The Link Between Nutrition & Cognitive Development in Children."

## Eat Healthy!

- Follow the USDA Food Guide Pyramid.
- Choose food low in fat & sugar.
- Drink plenty of water.
- Remember *variety & moderation* is key!
- Eat breakfast, lunch, & dinner. Don't skip on meals.
- *Get the recommended calcium intake* (1000 mg or 3 servings of dairy products) for stronger bones.

\*Source: U.S. Dept. of Agriculture, American Dietetics Assoc.

## Exercise Regularly!

- Exercise for at least 60 minutes/day & at least 3 times/week.
- Choose an activity you like or try a new one.
- Exercise gives you more energy.
- Set goals for yourself & reward yourself when you reach them.



\*Source: Center for Disease Control

## Support Tools for Educators

[www.dairycouncilofca.org](http://www.dairycouncilofca.org)

### **Download: Eat Well and Be Active**

[www.dairycouncilofca.org/edu/edu\\_down\\_main.htm](http://www.dairycouncilofca.org/edu/edu_down_main.htm)

A handout to help children develop healthy attitudes toward food & eating.

### **Lessons: Connecting Across the Curriculum**

[www.dairycouncilofca.org/edu/edu\\_conn\\_main.htm](http://www.dairycouncilofca.org/edu/edu_conn_main.htm)

Instructional activities focused on standards for core subjects & featured nutrition lessons.

### **Interactive: My Very Own Pizza**

[www.dairycouncilofca.org/activities.mvop/mvop\\_main.htm](http://www.dairycouncilofca.org/activities.mvop/mvop_main.htm)

A tool that allows students to design their very own pizza in a virtual kitchen.



### **Virtual Teacher's Lounge**

[www.virtualteacherslounge.org](http://www.virtualteacherslounge.org)

This web tool gives educators a place to build communities among peers through networking, problem solving, sharing & discussing. Through specific activities such as building personal web pages, posting lesson plans, chat rooms & discussion boards, teachers will also enhance their technology skills!



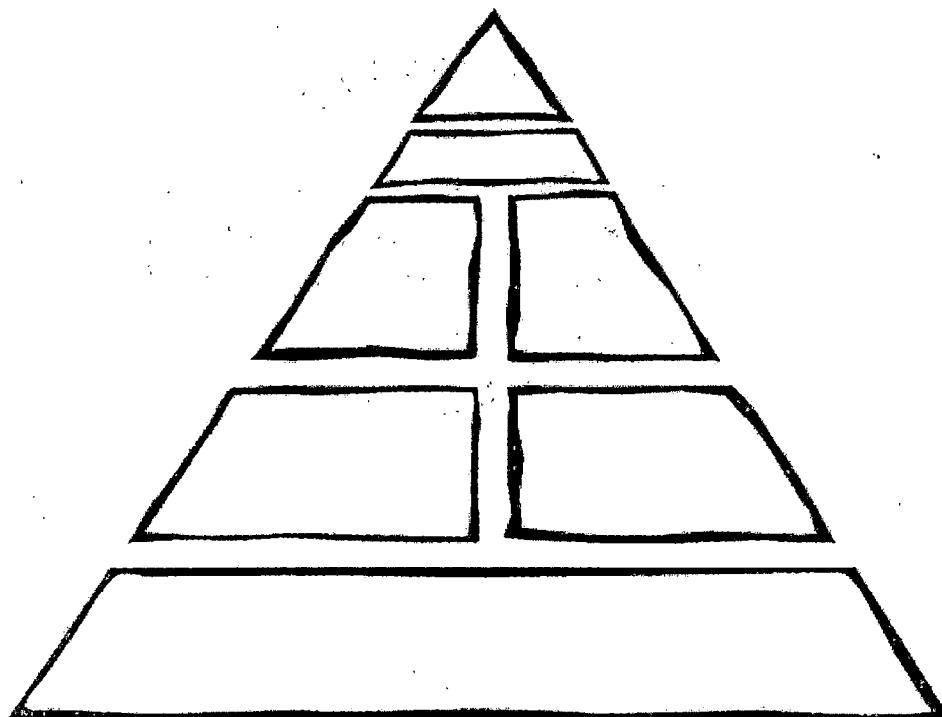


# Food Guide Pyramid

# Worksheet

Name \_\_\_\_\_

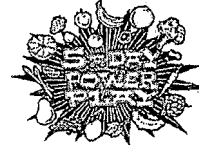
**Directions:** Label each part of the Food Guide Pyramid, including at least two foods in each category. Write the recommended daily servings under each category.



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## 5 a Day—Power Play! Activities

Eating right and being physically active is a daily commitment. Spring Into Health! Day is designed to introduce the *5 a Day - Power Play!* campaign to students age 9 - 11 and their caretakers. Caretakers can include but are not limited to teachers, parents, extended family and friends.

The following five activities are based on prevention research with children and designed to develop protective factors that help children prevent or avoid negative health behaviors. These activities will enable teachers and child nutrition staff to work closely together. Also included is the California curriculum framework links which indicate the components (Health, English/Language Arts, History/Social Science, Math, Physical Education, Science, Visual and Performing Arts) that each activity meets.



## 5 a Day—Power Play!

### School Idea & Resource Mini Kit Curriculum Links

As educators, it's important to encourage students to eat 5 servings of fruits and vegetables every day for good health, as part of a low-fat, high-fiber diet and an active lifestyle. This chart will assist you in incorporating the activities in the *5 a Day—Power Play! School Idea & Resource Mini Kit* while teaching the fourth and fifth grade Reading/Language Arts, Mathematics and Science Content Standards for California Public Schools.

Activity	Grade 4 Content Standards	Grade 5 Content Standards
4. Fruit & Vegetable Scrambles	Science Life Sciences: 2, 3c	
6. Power Advertising	Reading/Language Arts Reading: 2.2, 2.6 Writing: 1.10, 2.3 Written and Oral English Language Conventions: 1.1 Listening and Speaking: 1.10	Reading/Language Arts Reading: 2.5 Writing: 1.6, 2.4 Written and Oral English Language Conventions: 1.0 Listening and Speaking: 1.7, 1.8
9. Power Search	Reading/Language Arts Written and Oral English Language Conventions: 1.1* Listening and Speaking: 1.8*  Science Life Sciences: 2, 3, 3c	
10. Interview Power	Reading/Language Arts Reading: 1.1 Writing: 1.5 Listening and Speaking: 1.5  Mathematics Statistics, Data Analysis, and Probability: 1.0*, 1.1*  Science Life Sciences: 2, 3, 3c	Reading/Language Arts Reading: 1.1 Written and Oral English Language Conventions: 1.0 Listening and Speaking: 1.3, 1.5  Mathematics Statistics, Data Analysis, and Probability: 1.2* Mathematical Reasoning: 2.3*  Science Investigation and Experimentation: 6e*, 6g*

## READY

FRUIT & VEGETABLE SCRAMBLES is an independent activity that gives students an opportunity to build their awareness of many different kinds of fruits & vegetables while figuring out SCRAMBLE solutions.

**Background Information:** The 5 A Day research clearly indicates that students of this age like puzzles. Discuss whether or not any of the fruits or vegetables on this list were new to your students.

## SET

►Run off copies of the FRUIT & VEGETABLE SCRAMBLES student activity sheet from this Kit.

**Healthful Hint:** Be sure to run off some extra copies so that children can share this activity with friends and family members.

**Healthful Hint:** Show students pictures of fruits and vegetables.

## GO

►Have each student work independently on this activity. (Some students may benefit from working in small groups.)

**Extension Ideas:** You can be a resource to help students learn more about those fruits and vegetables that are new to them. Try bringing samples into the classroom for tastings. Students may wish to develop their own scrambles for their classmates. Encourage children to include fruits and vegetables from other cultures. Share student scrambles with the child nutrition/food service staff for use with menus and point-of-purchase advertising.

**Extension Ideas:** Have students take blank activity sheets home and share with their families. Using cooperative groups, have students research a fruit or a vegetable and present a report to the class. Schedule a field trip to a supermarket, a certified farmers' market, or a restaurant. This activity supports the POWER ADVERTISING (#6) activity in this Kit.

**Extension Ideas:** Get kids up and moving by turning FRUIT & VEGETABLE SCRAMBLES into a class activity. Use the different fruit and vegetable names as a basis for *ictionary*, *hangman* or *charades*. Or, hand a single letter to each student in a group and ask them to unscramble themselves to form the name of a fruit or vegetable.

**Framework Links:** Health, English-Language Arts

Protective Factors:



# Fruit & Vegetable Scrambles

4

Student Power

## Materials Needed:

- FRUIT & VEGETABLE SCRAMBLES student activity sheet
- pencil

# Answers

## Vegetables

1. cabbage
2. broccoli
3. lettuce
4. asparagus
5. kale
6. jicama
7. onion
8. celery
9. corn
10. spinach
11. carrots
12. artichoke

## Fruits

1. avocado
2. kiwifruit
3. mango
4. fig
5. prune
6. apple
7. pear
8. grape
9. strawberry
10. cherries
11. raisins
12. date

name: \_\_\_\_\_

date: \_\_\_\_\_

**DIRECTIONS:** How many of these fruits and vegetables can you unscramble? Go ahead, give it a try!

**VEGETABLES:**

1. bagcabe \_\_\_\_\_
2. cribcool \_\_\_\_\_
3. cuteelt \_\_\_\_\_
4. graspusaa \_\_\_\_\_
5. lake \_\_\_\_\_
6. macija \_\_\_\_\_
7. nooni \_\_\_\_\_
8. reelcy \_\_\_\_\_
9. rocn \_\_\_\_\_
10. sciahnp \_\_\_\_\_
11. starorc \_\_\_\_\_
12. trackhoie \_\_\_\_\_

**FRUITS:**

1. doovaac \_\_\_\_\_
2. fwiikrtui \_\_\_\_\_
3. gamno \_\_\_\_\_
4. ifg \_\_\_\_\_
5. penur \_\_\_\_\_
6. plape \_\_\_\_\_
7. prae \_\_\_\_\_
8. prage \_\_\_\_\_
9. rwaryrbste \_\_\_\_\_
10. sheerric \_\_\_\_\_
11. snisiar \_\_\_\_\_
12. tead \_\_\_\_\_

**Word list:**

- |           |          |           |            |
|-----------|----------|-----------|------------|
| Apple     | Carrots  | Grape     | Onion      |
| Artichoke | Celery   | Jicama    | Pear       |
| Asparagus | Cherries | Kale      | Prune      |
| Avocado   | Corn     | Kiwifruit | Raisins    |
| Broccoli  | Date     | Lettuce   | Spinach    |
| Cabbage   | Fig      | Mango     | Strawberry |



## READY:

POWER SEARCH is an at-home activity that gives students and their families an opportunity to build their awareness of many different kinds of fruits and vegetables while completing a word search.

**Background Information:** Students and parents in Power Play! focus groups responded positively to this activity, saying it was fun and challenging.

## SET:

- ▶ Run off copies of POWER SEARCH student activity sheet from this Kit.

**Healthful Hint:** Let students know that the words may appear in horizontal, vertical or diagonal lines and may read forward or backward. Students will write the unused letters into the "Secret Message" grid, working from left to right, top to bottom. The "Secret Message" is My family met our goal of five a day, today!!

## GO:

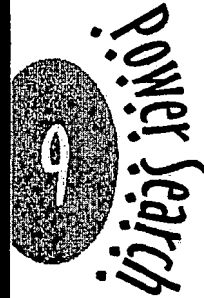
- ▶ Have students complete the POWER SEARCH as a homework assignment.

**Extension Ideas:** As a class, discuss those fruits and vegetables that were unfamiliar to the students. Could others in their family tell them about those fruits and vegetables? Were there fruits and vegetables with which no one in the family was familiar? Have students gather information about unfamiliar fruits and vegetables.

**Extension Ideas:** Have the class make a list of fruits and vegetables that are not included in this POWER SEARCH. Students can use these new words to design their own POWER SEARCH to share with another class.

**Framework Links:** Health, English-Language Arts

Protective Factors:



Family  
Power

Materials  
Needed:

- POWER SEARCH student activity sheet

# POWER SEARCH

A	M	I	L	T	N	I	S	I	A	R
S	M	B	R	O	C	C	O	L	I	E
P	Y	F	I	C	P	E	A	C	H	P
A	A	N	L	I	M	I	L	C	A	P
R	O	Y	E	R	M	E	A	O	V	E
A	R	A	E	P	T	N	O	R	O	P
G	A	P	K	A	I	F	U	N	C	R
U	N	L	S	P	G	O	I	A	A	L
S	G	U	S	P	O	F	N	G	D	O
F	E	M	I	L	C	A	R	R	O	T
I	K	A	L	E	E	T	A	D	V	A
Y	R	R	E	B	A	N	A	N	A	T
G	R	A	P	E	T	O	M	A	T	O
E	A	D	A	E	N	U	R	P	K	P
E	C	U	T	T	E	L	Y	R	E	T
M	E	L	O	N	O	D	A	A	A	Y

Secret Message

-----  
----- !!

# FOOD

## MILK & MILK PRODUCTS (CALCIUM)

4 SERVINGS

- Lowfat or nonfat milk
- Lowfat or nonfat chocolate milk
- Lowfat or nonfat yogurt
- Mozzarella or string cheese
- Cottage cheese
- Ice milk or frozen yogurt
- Whole milk
- Milkshake
- Hot chocolate
- Pudding, custard, or flan
- Cheese
- Ice cream

## MEATS, BEANS, & NUTS (PROTEIN)

2 SERVINGS

- Dry beans
  - Pinto
  - Red
  - Lima
  - White
- Fish or shrimp
- Refried beans
- Tofu
- Chili
- Egg
- Chicken or turkey
- Hamburger
- Beef steak
- Pork chop
- Ham
- Fried chicken or fried fish
- Lunch meat
- Tuna or chicken salad
- Hot dog or corn dog
- Peanut butter
- Nuts or seeds
- Sausage, pepperoni, or chorizo

## VEGETABLES (VITAMIN A)

4 SERVINGS (GIRLS)  
5 SERVINGS (BOYS)

- Fresh, frozen, or canned vegetables
- Bok Choy
- Broccoli
- Cabbage
- Cactus
- Carrots
- Cauliflower
- Celery
- Corn
- Green beans
- Mushrooms
- Vegetable juice
- Vegetable soup
- Salsa
- Lettuce or salad
- Tomato sauce or pizza sauce
- Oven-baked fries
- Avocado
- Hash browns
- Potato salad
- Okra
- Peas
- Peppers
- Potato
- Spinach
- Squash
- Sweet potatoes or yams
- Tomato
- Zucchini

## EXTRAS

- Cream cheese or sour cream
- Whipped cream
- Butter or margarine

- Bacon
- Beef jerky
- Gravy

- Fast food french fries
- Pickles, olives, or relish
- Potato or corn chips

**FRUITS**  
(VITAMIN C)

**3 SERVINGS (GIRLS)**  
**4 SERVINGS (BOYS)**

Fresh, frozen, or canned fruits

Apple	Papaya
Apricot	Peach
Banana	Pear
Cantaloupe	Pineapple
Grapefruit	Plum
Grapes	Strawberries
Kiwi	Tangerine
Orange	Watermelon

100% fruit juice

Mixed fruit

Raisins or dried fruit

Creamy fruit salad

**BREADS & GRAINS**  
(VITAMIN B)

**9 SERVINGS (GIRLS)**  
**11 SERVINGS (BOYS)**

Bread (whole wheat or white)

Roll

Rice or grits

Spaghetti, macaroni or other noodles

Oatmeal

Cereal

Rice sticks

Saltine or graham crackers

Tortilla (flour or corn)

Pizza crust

Bagel or English muffin

Pita bread

Hamburger or hot dog bun

Pancake or waffle

French toast

Cornbread or biscuit

Mexican sweet bread

Muffin

Granola

Snack crackers

Pasta salad

**WHAT ABOUT WATER?**

Water does not belong in any food group, but next to air (oxygen), it is the most important substance you need to survive.

Water plays many roles to help keep you healthy. It helps you digest food; it carries nutrients from foods throughout your body; and it helps to regulate your body temperature through perspiration.

Most of the water you need comes from the beverages you drink—water, milk, soda. But you also get water from some of the foods you eat. Some fruits, for example, are as much as 80% water! To be sure to get the water you need, the recommendation is to drink six to eight glasses of water every day.

Jam or jelly

Fruit rolls or fruit snacks

Fruit drink or punch

Fruit gelatin

Pretzels or popcorn

Granola bar

Cookies, cakes, or pie

Toaster pastry

Danut or pastry

Soft drinks

Syrup, honey, sugar

Mustard or ketchup








Candy

Salad dressing or mayonnaise

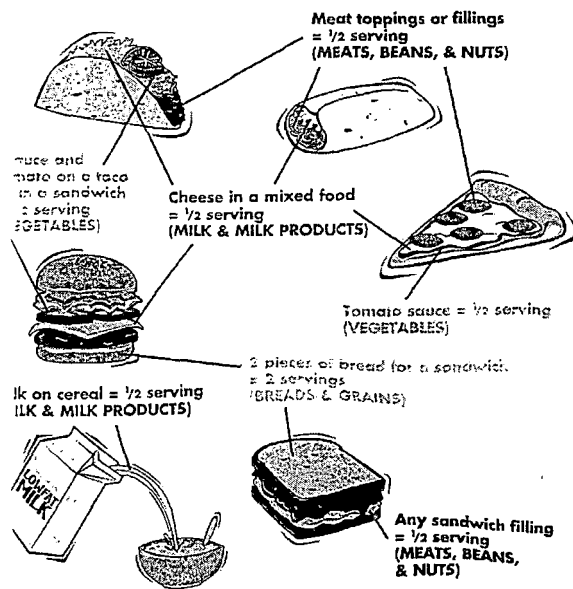
# HOW MUCH IS A SERVING?

Two "rules" to remember:

## ▲ Most foods you eat count as one serving

-  Glass of milk
-  Piece of meat, chicken, or fish (about the size of a deck of cards)
-  Piece of fruit like an apple, orange, or banana
-  1/2 cup of cooked vegetables
-  Slice of bread
-  Bowl of cereal
-  1/2 cup of rice or pasta

## ▲ ...except when foods are combined with other foods, they often count as "1/2" or "2" servings.



# FOOD RECORD 1

DATE \_\_\_\_\_

List everything you eat and drink in one day. Be sure to include the amounts. Later you'll indicate the number of servings you had in each food group.

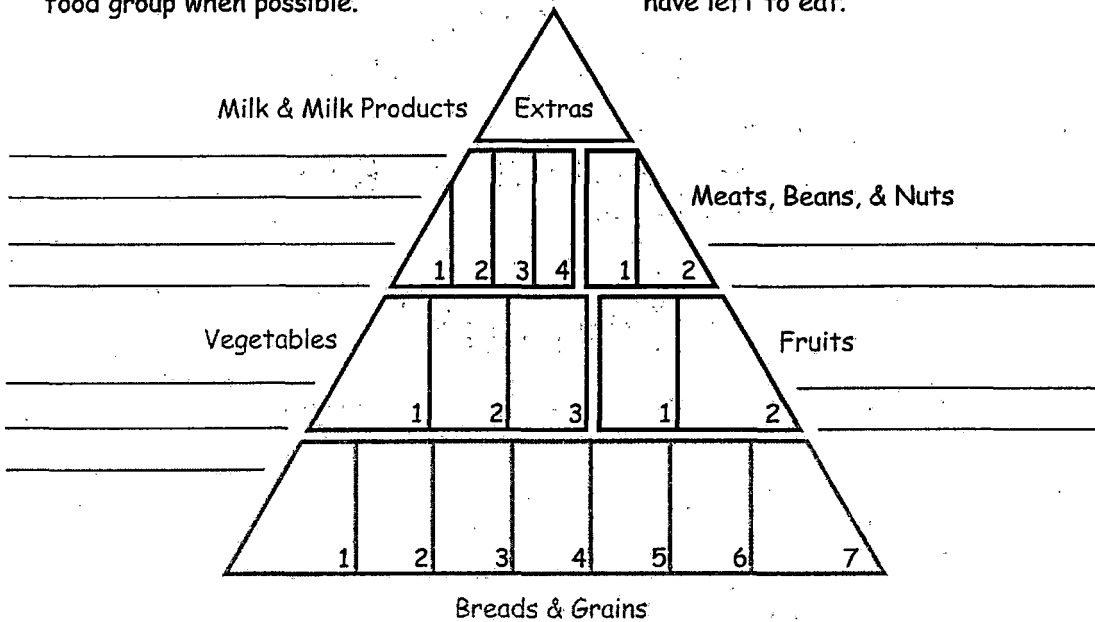
	FOODS (INCLUDE THE AMOUNTS YOU ATE)	MILK & MILK PRODUCTS	MEATS, BEANS, & NUTS	VEGETABLES	FRUITS	BREADS & GRAINS	EXTRAS
	EXAMPLE: 2 slices of cheese pizza						
BEFORE SCHOOL							
AT SCHOOL							
AFTER SCHOOL							
AFTER DINNER							
<b>TOTAL SERVINGS</b>							

# **FOOD RECORD**

**Remember:**

- Choose foods to fill my food group pyramid each day.
- Trade "Extras" for food-group foods.
- Include lower-fat foods from each food group when possible.

Write the names of the foods you have eaten today on the blank lines. Then, for each food group, write the number of servings you have eaten and the number of servings you still have left to eat.



**Milk & Milk Products**

I need **4** servings.  
 I had \_\_\_\_ servings.  
 I still need \_\_\_\_ servings.

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**Meats, Beans, & Nuts**

I need **2** servings.  
 I had \_\_\_\_ servings.  
 I still need \_\_\_\_ servings.

**Vegetables**

I need **3** servings.  
 I had \_\_\_\_ servings.  
 I still need \_\_\_\_ servings.

**Fruits**

I need **2** servings.  
 I had \_\_\_\_ servings.  
 I still need \_\_\_\_ servings.

**Breads & Grains**

I need **7** servings.  
 I had \_\_\_\_ servings.  
 I still need \_\_\_\_ servings.

## READY

INTERVIEW POWER is an awareness activity in which students ask family members about their vegetable, fruit and physical activity preferences. It serves as a wonderful way to open a conversation at home about those fruits and vegetables a student really prefers.

**Background Information:** Family communication about fruit and vegetable preferences is the first step in creating more 5 A Day options for students at home. Information from the 5 A Day student focus groups revealed that students frequently have food preferences that are not expressed or honored at home. Emphasize the importance of making personal food requests known to family members. Physical activity questions open communication and help families discover active and fun ways to spend time together.

## SET

- ▶ Reproduce and distribute INTERVIEW POWER student activity sheet.

**Healthful Hint:** Be sure to run off extra sheets for students who want to interview additional family members or friends.

## GO

- ▶ Discuss with your class the importance of talking to family members about their 5 A Day food preferences and their physical activity preferences.
- ▶ Explain to students that for this activity they will be interviewing family members.

**Healthful Hint:** Provide students with the opportunity to practice interviewing other students.

**Healthful Hint:** Be sure to discuss the importance of finding a time that is convenient for the person(s) they are interviewing. Give students enough time to complete their interviews.

- ▶ Allow students an opportunity to discuss their results in cooperative groups.

**Healthful Hint:** Find out whether students discovered anything new. Inquire whether or not anyone took the opportunity to ask for a particular fruit or vegetable. If so, what happened? Explain that taste preferences often expand and change over time.

**Extension Ideas:** Have students compile INTERVIEW POWER results and post in the classroom or cafeteria. Graph responses. Interview someone older and someone younger and compare results.

**Framework Links:** Health, English-Language Arts, Mathematics, Physical Education

**Protective Factors:**



# 10 Interview Power

## Family Power

## Materials Needed:

- INTERVIEW POWER student activity sheet
- pencil





# INTERVIEW POWER

name: \_\_\_\_\_

date: \_\_\_\_\_

I interviewed: \_\_\_\_\_

1. What fruit is your favorite? \_\_\_\_\_  
What do you like best about it? \_\_\_\_\_
2. What is your favorite vegetable? \_\_\_\_\_  
What do you like best about it? \_\_\_\_\_
3. What is your favorite kind of juice? \_\_\_\_\_
4. What is your favorite dried fruit? \_\_\_\_\_
5. What is your favorite canned or frozen vegetable? \_\_\_\_\_
6. How many servings of fruits and vegetables have you eaten today? \_\_\_\_\_
7. Is there a fruit or vegetable that you like now that at first you didn't like?  
 Yes  No  
What made you decide that you like it? \_\_\_\_\_
8. What new fruit or vegetable would you like to try? \_\_\_\_\_  
Why haven't you tried it? \_\_\_\_\_
9. Why do you think that fruits and vegetables are good for you? \_\_\_\_\_  
\_\_\_\_\_
10. What is your favorite way to be physically active?  
What do you like about it? \_\_\_\_\_
11. What sport or activity have you always wanted to learn? \_\_\_\_\_  
Why do you want to learn it? \_\_\_\_\_
12. Why do you think its important to be physically active? \_\_\_\_\_  
\_\_\_\_\_



# Cut the Fat

# Handout

Sometimes, especially if you're in a hurry, fast food may seem like a good idea. It's OK once in a while, but most fast foods have a lot of fat and calories and not many vitamins and minerals. Check out this table below and see how much fat and calories some fast food items have per serving.

ARBY'S	CALORIES	FAT (grams)
Roast Beef Sandwich	353	15
Jr. Roast Beef Sandwich	218	9
BURGER KING	CALORIES	FAT (grams)
Hamburger	275	12
Cheeseburger	317	15
Whopper Jr.	322	17
Chicken Tenders (6 pieces)	204	10
MCDONALD'S	CALORIES	FAT (grams)
Hamburger	255	9
Cheeseburger	305	13
Quarter Pounder	414	21
Quarter Pounder w/cheese	510	28
Big Mac	500	26
Chicken Nuggets (6 pieces)	288	16
TACO BELL	CALORIES	FAT (grams)
Tostada	243	11
Burrito Supreme	422	19
Taco	184	11
WENDY'S	CALORIES	FAT (grams)
Hamburger	350	16
Chicken Breast on Bun	340	12
Chili (Large)	360	12

Kids 10-12 yrs of age should eat no more than 75 grams of fat each day.

### Fast Food Serving Sizes

Small Fries = 160 calories/8 grams of fat

Large Fries = 540 calories/26 grams of fat

Serving sizes have gotten much BIGGER, so people are eating MORE than they used to.

Beware of the SUPER-SIZE gimmick... BE WISE, DON'T SUPER-SIZE!

### IF YOU HAVE TO EAT FAST FOOD, TRY TO MAKE BETTER CHOICES:

- Choose a baked potato instead of fries.
- Choose ketchup, mustard, lettuce, pickles, onions, etc. instead of mayonnaise.
- Try a grilled chicken sandwich instead of fried chicken or burgers.
- Drink water, low-fat milk, or 100% fruit juice instead of soda.
- Add veggies like lettuce, pickles, onions, and tomatoes to your burger or chicken.
- Don't SUPER-SIZE ANYTHING. Choose small single servings instead!

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# Cut the Fat

# Worksheet

Name \_\_\_\_\_

Use the "Cut the Fat" handout to complete this worksheet. Circle the best choice (least fat grams and lower in calories) from each restaurant:

ARBY'S	CALORIES	FAT (grams)
Roast Beef Sandwich	353	15
Jr. Roast Beef Sandwich	218	9
BURGER KING	CALORIES	FAT (grams)
Hamburger	275	12
Cheeseburger	317	15
Whopper Jr.	322	17
Chicken Tenders (6 pcs)	204	10
MCDONALD'S	CALORIES	FAT (grams)
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Taco	184	11
WENDY'S	CALORIES	FAT (grams)
Hamburger	350	16
Chicken Breast on Bun	340	12
Chili (large)	360	12

### IF YOU HAVE TO EAT FAST FOOD, TRY TO MAKE BETTER CHOICES:

- Choose a \_\_\_\_\_ instead of fries.
- Choose \_\_\_\_\_ or \_\_\_\_\_ instead of mayonnaise.
- Try a \_\_\_\_\_ sandwich instead of fried chicken or burgers.
- Have \_\_\_\_\_ or \_\_\_\_\_ instead of soda.
- Add veggies like \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ or \_\_\_\_\_ to your burger or chicken.
- Have a \_\_\_\_\_ instead of fries.

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# WHAT ARE MY OPTIONS?

To figure out what your best OPTIONS are to build your pyramid, keep in mind the questions you answered on the bottom of page 9. Then complete each section below.

## TRADE EXTRAS

Is your pyramid "top-heavy?" Do you eat a lot of Extras instead of food-group foods? If so, you could TRADE some of the Extras you eat for food-group foods, especially in groups where you need more servings. Say, for example, you need another serving of Milk & Milk Products. You could trade the soda or iced tea you drink at dinner for a glass of lowfat milk—an easy trade to help build your pyramid!

Example: I could trade cola for lowfat milk (when?) at dinner.  
I could trade donut for toast (when?) at breakfast.  
I could trade \_\_\_\_\_ for \_\_\_\_\_ (when?) \_\_\_\_\_.  
I could trade \_\_\_\_\_ for \_\_\_\_\_ (when?) \_\_\_\_\_.  
I could trade \_\_\_\_\_ for \_\_\_\_\_ (when?) \_\_\_\_\_.

## ADD SERVINGS

Another option to help build your pyramid is to ADD foods to the groups in which you need more servings. You could:

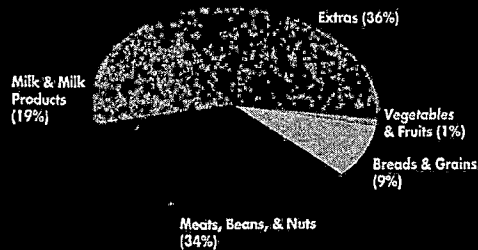
- ▲ eat more servings of foods you're already eating (for example, have 2 helpings of rice for dinner instead of 1)
- ▲ add to foods you're already eating (for example, add cheese on a hamburger)
- ▲ add or try new foods (for example, add a banana at breakfast)

Take another look at your food record to give you some ideas.

Example: I could add a banana (when?) at breakfast.  
I could add cheese on my hamburger (when?) at lunch.  
I could add \_\_\_\_\_ (when?) \_\_\_\_\_.  
I could add \_\_\_\_\_ (when?) \_\_\_\_\_.  
I could add \_\_\_\_\_ (when?) \_\_\_\_\_.

## WHERE'S THE FAT?

Percent of fat in the American diet  
from each food group



Journal of the American Dietetic Association, 1990

Trading Extras for food-group foods provides you with more of the nutrients you need but there's another bonus—trading Extras can lower the amount of fat you consume! That's right. As the chart on the left shows, most of the fat we eat comes from Extras. So "trading in" an Extra food for a food-group food can really make a difference!

The Food List on pages 6 and 7 can also help you lower the fat in your food choices. In each group, the foods are listed according to fat content—the foods at the top of each list have less fat per serving than foods at the bottom.

So, where's the fat? In the Extras at the TOP of the pyramid and in the food groups at the BOTTOM of each list!

## THE OPTIONS I CHOOSE...

So...you know what you **could** do to help build your pyramid. NOW, what are you really going to do?

From the **OPTIONS** you listed on page 10, choose two or three things that you will do to improve your food choices. Remember, you can **TRADE** Extras and you can **ADD** servings.

1. I will \_\_\_\_\_  
(when?) \_\_\_\_\_
2. I will \_\_\_\_\_  
(when?) \_\_\_\_\_
3. I will \_\_\_\_\_  
(when?) \_\_\_\_\_



## READY:

POWER ADVERTISING builds student awareness by having students use their creativity to design an advertisement for a fruit, vegetable or fruit or vegetable product that they have learned more about through the 5 A Day Campaign.

**Background Information:** Use this activity as an opportunity to discuss the POWER of advertising with your class. Examine the importance of big, bold graphics and catchy, persuasive slogans. Explore advertising techniques, such as the following:

- *Appeal to health and happiness (it makes you healthier and happier)*
- *Appeal to your senses (it tastes good, looks good, smells good, or feels good)*
- *Appeal to your pocketbook (it saves you money)*
- *Bandwagon (everybody loves it and wants it)*
- *Testimonial (a famous person says they like it)*
- *Comparison (it is the better choice)*

## SET:

- ▶ Ask students to bring in examples of advertising from local newspapers and popular magazines.

**Healthful Hint:** Let them explore what advertising techniques motivate them to purchase a particular product.

## GO:

- ▶ As motivation, discuss advertising techniques as exemplified by the samples students bring in.
- ▶ Have each student or small groups of students develop an ad for a fruit, a vegetable, or a fruit or vegetable product.

**Healthful Hint:** Have students write up the rationale used to support their advertisement.

**Extension Ideas:** When ads are completed, consider featuring them in a special classroom display, in the school cafeteria, in a supermarket or at a local certified farmers' market. Students can vote on their favorite ad. Contact a local newspaper representative and offer to share some of your students' work. The newspaper may be interested in using some of the slogans or graphics in an upcoming newspaper edition.

**Framework Links:** Health, History-Social Science, Visual and Performing Arts, English-Language Arts

Protective Factors:



Power Advertising  
6

Student  
Power

Materials  
Needed:

- samples of local advertising
- construction paper
- crayons
- felt markers
- colored pencils

## WHEN FOOD BECOMES MORE THAN SOMETHING TO EAT

American society seems to be obsessed with appearance—and particularly with body shape and size. It's hard not to be with what we see every day. TV programs feature good-looking, lean females and males. High-fashion models—tall, skinny, and beautiful—are plastered in every magazine we look at. Sports figures, who are often thought of as role models and stars, are often extremely muscular and well-proportioned. And then there are the advertisements, which tell us that we, too, can have the "perfect" body if we would just "use this, drink this, eat this, read this, buy this, send for this..."

This image of the "perfect" body ignores the fact that human beings come in a wide variety of sizes and shapes. It ignores the fact that gaining weight and changing body shape are normal and healthy for teenagers. Yet the images on television, in movies and in magazines can lead young people to believe that any body size or shape that is "less-than-ideal" is unacceptable.

This obsession with the ideal body sometimes motivates young people to take drastic steps; they overly restrict their calorie intake; they vomit or abuse laxatives; they take dangerous drugs; or they exercise obsessively—all to the point that they damage their health. Many researchers believe that as a result of striving to attain society's ideals, some young people develop eating disorders.

### Anorexia Nervosa

People with the eating disorder called anorexia nervosa severely limit their food intake. People with this eating disorder say they feel fat, even if they weigh much less than is normal or healthy. The picture of themselves they see in the mirror is often very different from what the rest of the world sees. Anorexics are obsessed with food, weight, and body image. They often count calories, weigh themselves many times a day, and exercise excessively. They feel uncomfortable after eating even the smallest of meals.

Anorexics are literally starving themselves—sometimes, to death. During periods of extreme weight loss, the body responds by slowing down certain body functions (e.g., body temperature falls, blood pressure drops). Changes occur in the skin, hair and nails. Extreme losses of body fat make sitting or lying down uncomfortable, so resting and sleeping are difficult.

### Bulimia

People with the eating disorder called bulimia alternate between eating larger amounts of food than is "normal" (e.g. an entire chocolate cake) then trying to get rid of the food by vomiting or using laxatives. Between these "binges," bulimics may eat normally.

Like anorexia nervosa, bulimia is also characterized by an obsession with weight and body image. Bulimics may not look excessively overweight or underweight but they are harming their bodies. Repeated vomiting damages the stomach and it can erode the teeth. It can upset the body's chemical balance which can lead to fatigue or heart irregularities.

### Causes and cures

The reasons for these life-threatening eating disorders are not completely clear. It seems that many young people with these disorders think: "If I am thin, I will be happy, popular, successful." Thus they may go on strict diets to help them feel in control of something in their lives.

We know that obesity, being extremely overweight, is not healthy; but neither is being too thin. And thinness and weight loss are not the solutions for other problems in life.

Most people find it difficult to stop their anorectic or bulimic behavior without professional help. Getting that help is important because if untreated, the disorders can lead to serious health problems and even to death. If you have a friend you think might have an eating disorder, encourage them to get help.

Each of us is unique yet there is a feeling in our society that a "perfect" body image really does exist. Why do you think that occurs? How could the search for an "ideal" body image lead to an eating disorder?



## SERVING SIZES for Children & Adolescents

Food Group	Number of Servings Recommended	1-3 years	4-5 years	6-12 years	12 years + Adults
Breads, Cereals, Pasta & Grains	6-11	½ slice or 1/4 cup	½ slice or 1/3 cup	1 slice or ½ cup	1 slice or ½ cup
Vegetables	3-5	1/4 cup	1/3 cup	½ cup	½ cup
Fruits	2-4	1/4 cup	1/3 cup	½ cup	½ cup
Milk & Milk Products	2-3	½ cup	¾ cup	1 cup	1 cup
Meat & Meat Alternates	2-3	1 oz or 1/4 cup	1 ½ oz or 1/3 cup	2 oz or ½ cup	2-3 oz or ½ cup

### Meal Planning Tips for Healthy Eating

**What is a Serving?** A serving is the amount of food typically eaten. Serving sizes change based on a child's age. Offering children too many servings or servings that are too large for them can lead to overeating. Try eating the suggested number of servings in the amount or size recommended on most days.

#### Understanding Serving Sizes

- Measure food with a measuring cup or kitchen scale to get an idea of how much to eat.
- If a serving is larger, it might equal two servings of that food group. (1 cup of fruit is 2 servings for a 6 year old.)
- If a serving is smaller, it might equal one-half serving. (½ slice of bread is ½ serving for a 10 year old.)

**Meal Planning:** Healthy eating requires meal planning. Lack of planning can lead to fewer healthy food choices at meals, increased snacking, and more fast food meals.

#### Time Saving Tips

- ◆ If there is little time to prepare food during the week, try cooking and freezing foods on the weekend, make one pot meals or stews. These healthy meals can be heated quickly for everyone to enjoy.
- ◆ Prepare fruits and vegetables in advance. Keep them in your refrigerator so they are ready-to-eat as snacks or easy to pack in lunches.

#### Money Saving Tips

- ◆ When buying meat, each pound of raw, boneless meat or poultry yields about four 3 ounce servings when cooked.
- ◆ For delicious low cost main dishes, try using dry beans, peas, or lentils. They make perfect vegetarian entrees and can be flavored with additional seasonings and/or spices.
- ◆ Add a small amount of meat to flavor casseroles or soups. Adding a little meat will increase iron in your diet.
- ◆ Use coupons, buy store brands, and take advantage of grocery store sales whenever you can.

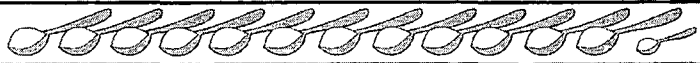

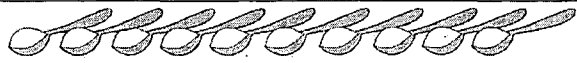



#### Eating Smart

- Keep a food diary to learn more about your personal eating habits. Include time, place, and your feelings or mood.
- A food diary will help to identify and correct nutritional problems. Do this for several days or more often as needed.
- Eating should take place when you are hungry and not when you are bored or depressed.

#### General Nutrition Tips

- Eat 5 or more servings of fruits and vegetables every day for good health.
- Drink milk or eat other foods (like yogurt or cheese) high in calcium for strong bones.
- Limit juice and soda. Drink water when thirsty.
- Limit snacks and fast foods that are high in fat, sugar, and calories.
- Eat breakfast every day. Eating breakfast is essential to better concentration and learning in school.
- All foods can fit into a healthy diet. Limit, but do not eliminate, less desirable foods and snacks.

## Do You Know What Is In Your Soda?

Soda	Cals.		Teaspoons of sugar in 12 oz.
ORANGE CRUSH™	200	12 1/2	
MOUNTAIN DEW™	179	11	
PEPSI COLA™	160	10	
COCA-COLA™	154	9 1/2	
DR. PEPPER™	144	9	
7-UP™	144	9	
ICED TEA	1	0	
DIET COKE™	0	0	



### DO THE MATH!

A Double Big Gulp contains 64 ounces of soda.  
 Each ounce of Coca-Cola™ has 13 calories.  
 That doesn't sound like much, but...

13 calories
X 64 ounces
832 calories

### A BETTER CHOICE

1 cup of nonfat milk has 90 calories.  
 1 cup of 1% milk has 100-120 calories.  
 1 cup of orange juice has 112 calories.  
 Plain water has 0 calories.

## Quick Snack Ideas

- Popcorn
- Pretzels
- Baked chips and salsa
- Fresh fruit (topped with yogurt)
- Veggie sticks

## Classroom Party Ideas:



### Halloween

- Roasted Pumpkin Seeds
- Pumpkin Bread Muffins
- Witch's Brew: Mix 1 gallon cranberry juice with 1 gallon of apple cider and 12 oz. frozen orange juice (unprepared) in a large pitcher
- Abracadabra Wands:

#### **Ingredients:**

10 red apples

5 cups red grapes

8 oz. nonfat or lowfat cheddar cheese, cut 64 chunks

2 avocados, cut into 64 chunks

64 long, thin pretzel (or wooden) sticks

#### **Preparation (20 minutes):**

1. Use a wooden skewer to pole holes in center of each piece of food
2. Thread pieces onto pretzel
3. Serve leftover pieces of fruit



### Thanksgiving

- Nut & Dried Fruit Trail Mix (be cautious and aware of those with nut allergy)
- Corn Bread



### Valentine's Day

- Angel Food Cake with Fresh Strawberries Topped with Whipped Topping

- **Cherry Tomato Fillers:**

**Ingredients:**

- 64 large cherry tomatoes,
- 1 1/2 cups lowfat cottage cheese
- 1 cup sunflower seeds

**Preparation:**

1. Cut tops and scoop seeds and the pulp out of each tomato.
2. Fill with 1 tsp of cottage cheese.
3. Sprinkle with sunflower seeds.



End of the Year or Summer

- **Banana Splits**

**Ingredients:**

- 16 small bananas, peeled
- 8 cups fresh berries
- 16 cups low fat vanilla yogurt
- 2 cups lowfat granola

**Preparation:**

1. Cut banana in half, share between 2 students.
2. Scoop 1/2 cup of yogurt onto banana.
3. Top with berries and granola.

- **Fresh Fruit Kabobs**

- **Veggie Sticks with Lowfat or Nonfat Dip**

- **Hooray for Red, White and Blue**

**Ingredients:**

- 5 baskets of strawberries (about 64)
- 4 containers of blueberries
- 1-12 oz. container of lowfat whipped topping

**Preparation:**

1. Wash fruit. Remove tops from the strawberries.
2. In small cup, place 2 strawberries, a dollop of whipped topping and sprinkle with about 5 blueberries.

## 10 Tips to healthy eating and physical activity for you

### 1. Start your day with breakfast.

Breakfast fills your "empty tank" to get you going after a long night without food. It can help you focus, increase your energy and help you to do better in school.

### 2. GET MOVING!!!

It's easy to fit physical activity into your day. Walk, bike, or jog to see your friends! Take a 10 minute activity break every time hour while you read, do homework or watch TV. Climb stairs instead of taking the elevator. Try to do these things for a total of 30-60 minutes every day.

### 3. Snack smart.

Snacks are a good way to refuel. Choose snacks from different food groups- a glass of low fat milk and a few graham crackers, apple slices with peanut butter, banana dipped in yogurt mixed with nuts, cheese sticks, or some dry cereal.

### 4. Work up a sweat.

Vigorous work outs - when you're breathing hard and sweating - help your heart pump better, give you more energy and help you look and feel your best. Start with a warm up that stretches your muscles. Include 20 minutes of aerobic activity, such as running, jogging, or dancing. Follow up with activities that help make you stronger such as push ups or lifting weights. Cool down with more stretching and deep breathing. Work out with a buddy!

### 5. Balance your food choices!

You don't have to give up foods like hamburgers, French fries and ice cream to eat healthy. You just have to be smart about how much and how often you eat them! Your body needs nutrients like protein, carbohydrates, fat and many different vitamins and minerals. Balancing food choices from the Food Guide Pyramid and checking the Nutrition Facts Panel on food labels will help you get all these nutrients.

6. Get fit with friends or family.

Encourage others to join you to make your fitness routine more enjoyable!

7. Eat more grains, fruits and vegetables.

These foods give you carbohydrates for energy, plus vitamins, minerals and fiber and they taste GREAT! Try whole wheat breads, bagels and pita. Spaghetti and oatmeal are also in the grain group.

8. Join in physical activities at school.

Structures activities are a great way to incorporate physical activity into your fitness routine!

9. Foods are not good or bad.

Each part of food is different. Some may have more fat, sugar or salt while others may have more fiber and vitamins. There is a place for all of these foods. Fit in a high fiber food, like pepperoni pizza, at dinner by choosing lower fat foods at other meals. Don't forget about moderation. If two pieces fill you up, you don't need a third.

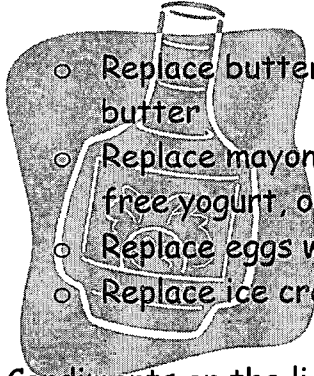
10. Make healthy eating and physical activity fun.

Take advantages of physical activities you and your friends enjoy doing together and eat the foods you like. Try new sports, games and other activities as well as new foods. Stay realistic - don't try changing too much at once.

Adapted from The American Dietetic Association  
International Food Information Council Foundation  
President's Council on Physical Fitness and Sports

## Easy to Follow Tips

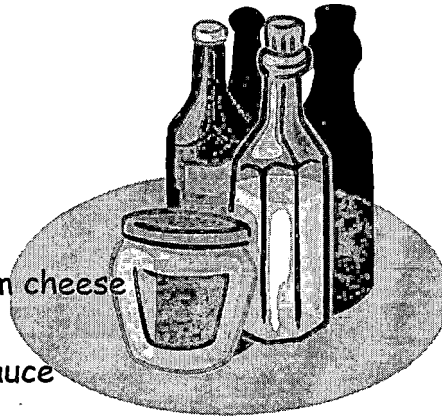
### Simple substitutions



- Replace butter or margarine with apple sauce, prune puree or apple butter
- Replace mayonnaise or salad dressing with fat free varieties, fat free yogurt, or vinegar (flavored or balsamic)-no oil
- Replace eggs with egg whites (1 egg = 2 egg whites)
- Replace ice cream with frozen yogurt, ice milk, fruit juice popsicle

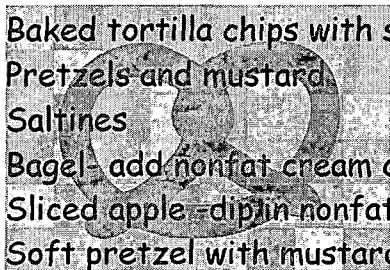
### Condiments on the lighter side

- BBQ sauce
- Seafood cocktail
- Ketchup
- Teriyaki sauce
- Mustard
- Salsa
- Pickle relish
- Nonfat/light cream cheese
- Soy sauce
- Worcestershire sauce
- Chili sauce



### Low fat ideas

- Baked tortilla chips with salsa
- Pretzels and mustard
- Saltines
- Bagel- add nonfat cream cheese or fruit toppings
- Sliced apple- dip in nonfat yogurt
- Soft pretzel with mustard
- Fruit yogurt shake

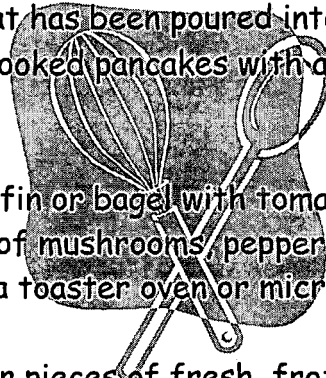


Adapted from <http://powerplaymd.com/substitutes>

## Family Recipe Ideas:

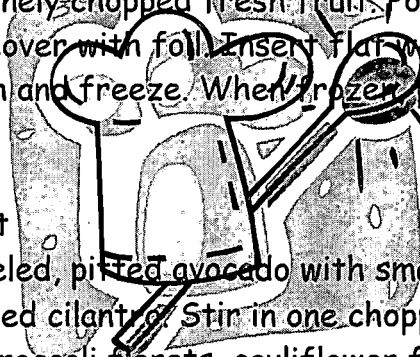
### Breakfast

- **Flapjack Fruit Stack**  
Arrange chopped bananas, nectarines, strawberries, or peaches into pancake batter that has been poured into a nonstick or lightly greased pan. Top cooked pancakes with additional fruit or fruit sauces.
- **Pizza Power**  
Top an English muffin or bagel with tomato sauce, lowfat mozzarella cheese, and slices of mushrooms, peppers, artichoke hearts, or pineapple. Heat in a toaster oven or microwave.
- **Power Parfait**  
In a tall glass, layer pieces of fresh, frozen, canned, or dried fruit; nonfat or lowfat yogurt; and lowfat granola cereal.



### Snacks

- **Trail Mix**  
Combine chopped apricots, prunes, dates, raisins, or other dried fruit with almond slices and lowfat granola cereal.
- **Lemon-Chili Veggies**  
Chop cucumber, jicama, or your favorite vegetables into bite sized pieces. Squeeze fresh lemon juice onto each piece and then lightly sprinkle with chili powder and salt.
- **Juicy Pops**  
Combine one cup of orange or apple juice and one cup of cranberry juice. Add 1 cup of finely chopped fresh fruit. Pour the mixture into paper cups and cover with foil. Insert flat wooden sticks or plastic spoons in each and freeze. When frozen, peel away the paper and enjoy!



### Lunch

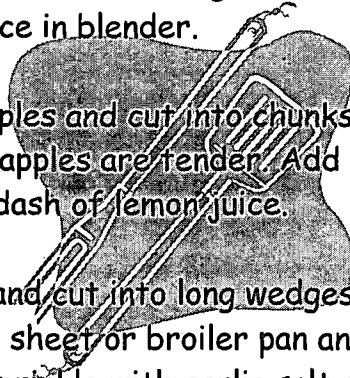
- **Guacamole Dunk Shot**  
In a bowl, mash a peeled, pitted avocado with small amounts of lime juice, salt, and chopped cilantro. Stir in one chopped tomato. Dip fresh green beans, broccoli florets, cauliflower florets, and jicama sticks into the guacamole. To pack for lunch, put guacamole and veggies into separate containers.



- **PB and B Sandwich**  
Add sliced bananas and a sprinkling of raisins to your peanut butter sandwich.
- **Build Your Own Wrap**  
Place lean deli meat, lowfat cheese, and lots of vegetables in the center of a tortilla. Roll the tortilla up and eat. You may want to try lettuce, spinach, tomatoes, onion, cucumber and sprouts.

### Side Dishes

- **Power Pasta**  
Add frozen, mixed vegetables or chopped bell peppers to pasta or rice dishes 5-10 minutes prior to the completion of cooking. Add finely chopped or shredded vegetables to pasta sauce or puree veggies with sauce in blender.
- **Applesauce**  
Peel and core apples and cut into chunks. Sprinkle with water. Microwave until apples are tender. Add sugar, cinnamon, and vanilla to taste. Add a dash of lemon juice.
- **Oven Fries**  
Wash potatoes and cut into long wedges. Place potato wedges on a nonstick cooking sheet or broiler pan and spray a light coat of cooking spray. Sprinkle with garlic salt or Italian seasoning. Bake until the potatoes are soft. Switch the oven to broil for the last few minutes to brown the potatoes. Be careful not to burn!



*Children need at least 5 servings of fruit and vegetables every day for good health! Fruits and vegetables help kids grow, develop and do well in school and sports. A healthy diet helps adults lessen their chances of serious health problems. Start your kids off right-teach them to eat 5 A Day!*

Adapted from California Children's 5 A Day Campaign  
Cancer Prevention and Nutrition Section  
California Department of Health Services

APPENDIX B  
PHYSICAL ACTIVITY



## Lesson 1 — Move & Groove As You Eat To Win

### I Pledge To...

Using a blank piece of paper, ask students to complete this sentence:

This week, I PLEDGE TO eat one less serving of \_\_\_\_\_, which is low in nutritional value and have one more serving of \_\_\_\_\_, which is higher in nutritional value.

- o Students must be specific (for example, one less serving of potato chips and one more serving of fruit).
- o Have students sign their name and tape to the front of their desk as a visible reminder to eat healthier this week.
- o At the end of week, students see if they reached their "pledge goal." If not, they must use the back of the paper to write what stopped them from meeting their goal, adjust the goal (if needed), and write what they'll do next week to try again. If students are having difficulty meeting their goal, design an incentive program (for example, earn a ticket good toward no homework or extra recess) to help them.

### Apply It!

Pass out the FOOD-GUIDE PYRAMID WORKSHEET. Have students fill in words from their personal food choices to complete all levels of the pyramid. Ask students to set both a weekly activity goal and a nutritional goal using the "I Pledge" format in their Student Journals.

### Sample Journal Entry

#### Activity Goal

I pledge to \_\_\_\_\_  
for \_\_\_\_\_ minutes \_\_\_\_\_ days this week.

\_\_\_\_\_  
Initials Date

#### Nutrition Goal

This week I pledge to eat \_\_\_\_\_  
\_\_\_\_\_ times to improve my nutrition.

\_\_\_\_\_  
Initials Date



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# The Kids' ACTIVITY PYRAMID

Have fun and be active each week!

Try some of these activities:

PENNSTATE



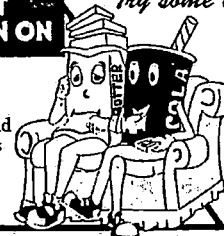
College of Agricultural Sciences  
Cooperative Extension

## WITH YOUR FAMILY

- Go bicycling
- Take a walk
- Play at a park

## CUT DOWN ON

- Watching TV
- Playing video and computer games
- Sitting for more than 30 minutes at a time

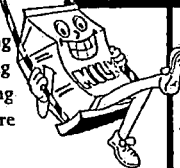


## WITH FRIENDS

- Play games like dodge ball or tag
- Dance to your favorite music
- Play a team sport at school or at a park

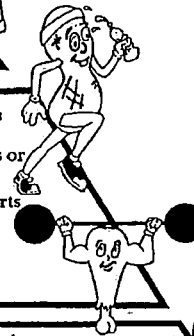
## 2-3 TIMES A WEEK

- ### Leisure & Playtime
- Swinging
  - Canoeing
  - Tumbling
  - Miniature golf



### Strength & Flexibility

- Push-ups or pull-ups
- Martial arts
- Dancing
- Rope climbing



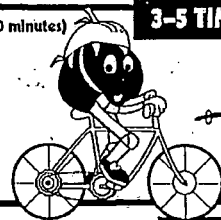
## BY YOURSELF

- Jump rope
- Fly a kite
- Do cartwheels
- Shoot baskets

## 3-5 TIMES A WEEK

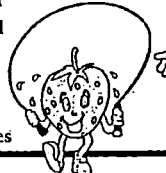
### Aerobic (at least 20 minutes)

- Rollerblading
- Bicycling
- Skateboarding
- Rope jumping
- Swimming
- Running



### Recreational (at least 20 minutes)

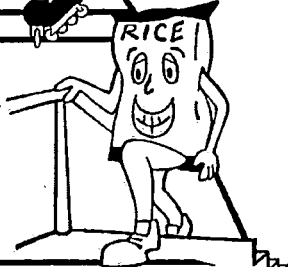
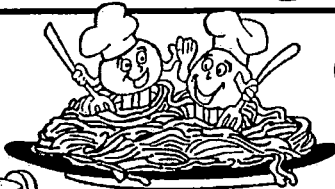
- Volleyball
- Basketball
- Soccer
- Skiing
- Kickball
- Relay races



## EVERY DAY

### (as often as possible)

- Play outside
- Take the stairs instead of the elevator
- Help around the house or yard
- Bathe your pet
- Pick up your toys
- Walk to the store
- Go for a walk





## Lesson 1 – Move & Groove As You Eat To Win

### Part 1 – Move & Groove

Estimated time: 30-40 minutes

**Expectation 1:** Students will demonstrate ways in which they can enhance and maintain their health and well-being.

#### Content Area – Physical Activity (PA)

PA1 – Students should continue to enjoy physical activities and learn to set and use *personal goals for developing or maintaining physical fitness, recognizing that even moderate physical activity can help prevent obesity and heart disease.*

**Goal:** To have students understand the various types of activities that are contained in the KID'S ACTIVITY PYRAMID, and what types of activities will bring about greater health and fitness benefits.

#### Objectives

The students will be able to:

- Define exercise.
- Identify at least two activities kids should participate in sparingly.
- Identify at least two activities kids should do two to three times a week.
- Identify at least two activities kids should do three to five times a week.
- Identify at least two activities kids should try to do everyday.

**Think & Sink:** Write the "Think & Sink" message on the board in the front of the classroom and in student journals. Ask students to think about the message and let it sink into their brains.

*Get in the groove, you've got to move*

**Vocabulary:** (Write on the board and discuss prior to the lesson.) Students can enter vocabulary words in their journal.

Exercise – Any activity that requires physical movement

#### On Your Mark

Items needed:

- One copy of the KID'S ACTIVITY PYRAMID HANDOUT for each student
- One copy of the KID'S ACTIVITY PYRAMID WORKSHEET for each student



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## Lesson 1 — Move & Groove As You Eat To Win

**Initiating Questions/Lesson Introduction:** (Display KID'S ACTIVITY PYRAMID)

1. Who can tell me what shape we are looking at? *Pyramid*
2. What types of things do you see at the bottom of the pyramid? *Walking, playing, etc.*
3. What types of things do you see at the top of the pyramid? *Watching TV, playing video games, etc.*
4. Why do you think some activities are at the bottom and others are at the top?  
*The ones at the bottom should be done more frequently than the ones at the top.*

In Part I of this lesson, we'll learn about different activities we can do to get and stay fit, and how often kids should be doing the various activities. We'll be using the KID'S ACTIVITY PYRAMID as our guide.

### Learn It!

Pass out the KID'S ACTIVITY PYRAMID HANDOUT. Tell the students that the Kid's Activity Pyramid is a visual reminder of the types of activities kids should cut down on and those they should be doing more frequently.

Let's take a look at the top of the pyramid. You will find the following activities at this level: Watching TV, playing video and computer games, as well as sitting more than 30 minutes at a time. At the next level, you'll find activities you should be doing two to three times a week. Who can look at that level and tell me what things are recommended? *Leisure and playtime as well as strength and flexibility.*

Activities like rollerblading, swimming, running, volleyball, basketball, etc., are all listed in the three to five times a week category. These types of activities should be done for at least 20 minutes. Finally, look at the activities you should be doing daily. What kinds of things should you do as often as you can, every day? *Playing, picking up toys, going for a walk, helping around the house.*

What would happen if all activities were from the "top" of the pyramid? *Increased risk of obesity, heart disease, diabetes, high blood pressure, etc.*

Many of these diseases were previously only be seen in adults, but due to the decreased fitness activities and over consumption of calories in today's youth, these diseases are showing up in kids.

### Let's Go!

Pass out the KID'S ACTIVITY PYRAMID WORKSHEET. Instruct the students to use the handout to complete the worksheet.



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## Lesson 1 — Move & Groove As You Eat To Win

### I Pledge To...

Using a blank piece of paper, ask students to complete this sentence:

This week, I PLEDGE TO eat one less serving of \_\_\_\_\_, which is low in nutritional value and have one more serving of \_\_\_\_\_, which is higher in nutritional value.

- o Students must be specific (for example, one less serving of potato chips and one more serving of fruit).
- o Have students sign their name and tape to the front of their desk as a visible reminder to eat healthier this week.
- o At the end of week, students see if they reached their "pledge goal." If not, they must use the back of the paper to write what stopped them from meeting their goal, adjust the goal (if needed), and write what they'll do next week to try again. If students are having difficulty meeting their goal, design an incentive program (for example, earn a ticket good toward no homework or extra recess) to help them.

### Apply It!

Pass out the FOOD GUIDE PYRAMID WORKSHEET. Have students fill in words from their personal food choices to complete all levels of the pyramid. Ask students to set both a weekly activity goal and a nutritional goal using the "I Pledge" format in their Student Journals.

### Sample Journal Entry

#### Activity Goal

I pledge to \_\_\_\_\_ minutes \_\_\_\_\_ days this week.

Initials \_\_\_\_\_ Date \_\_\_\_\_

#### Nutrition Goal

This week I pledge to eat \_\_\_\_\_ times to improve my nutrition.

Initials \_\_\_\_\_ Date \_\_\_\_\_



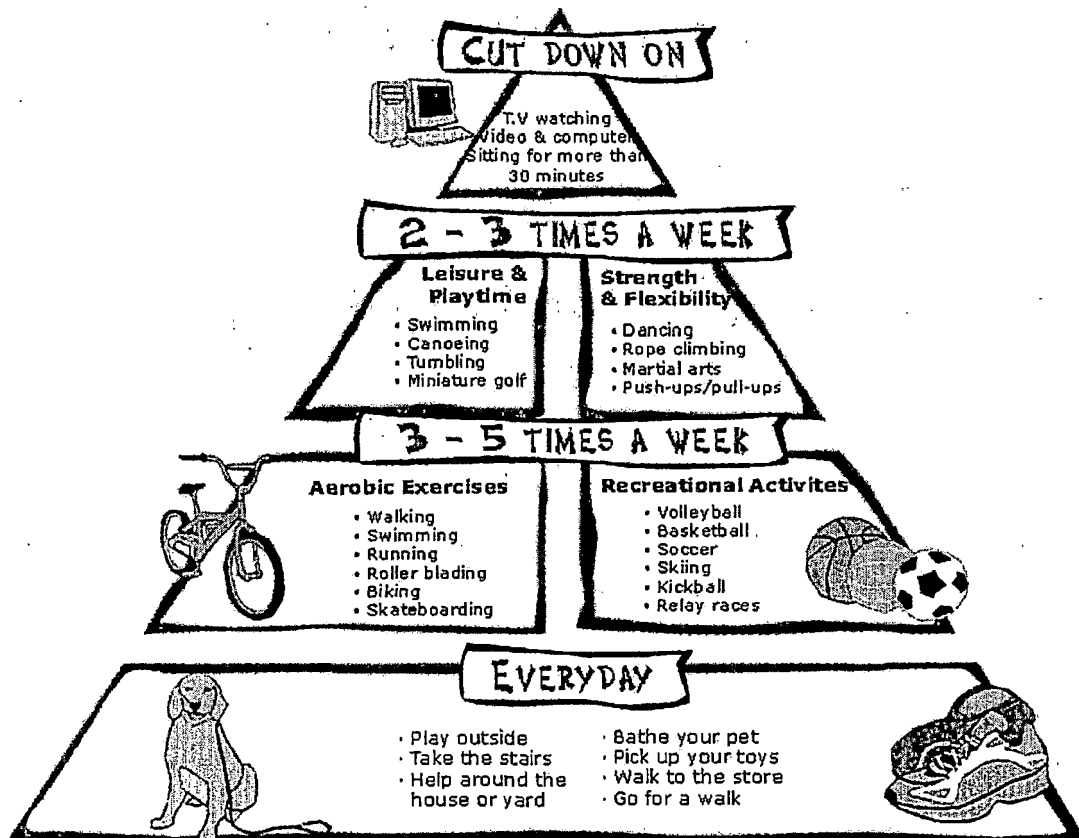
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# Kid's Activity Guide Pyramid

Handout



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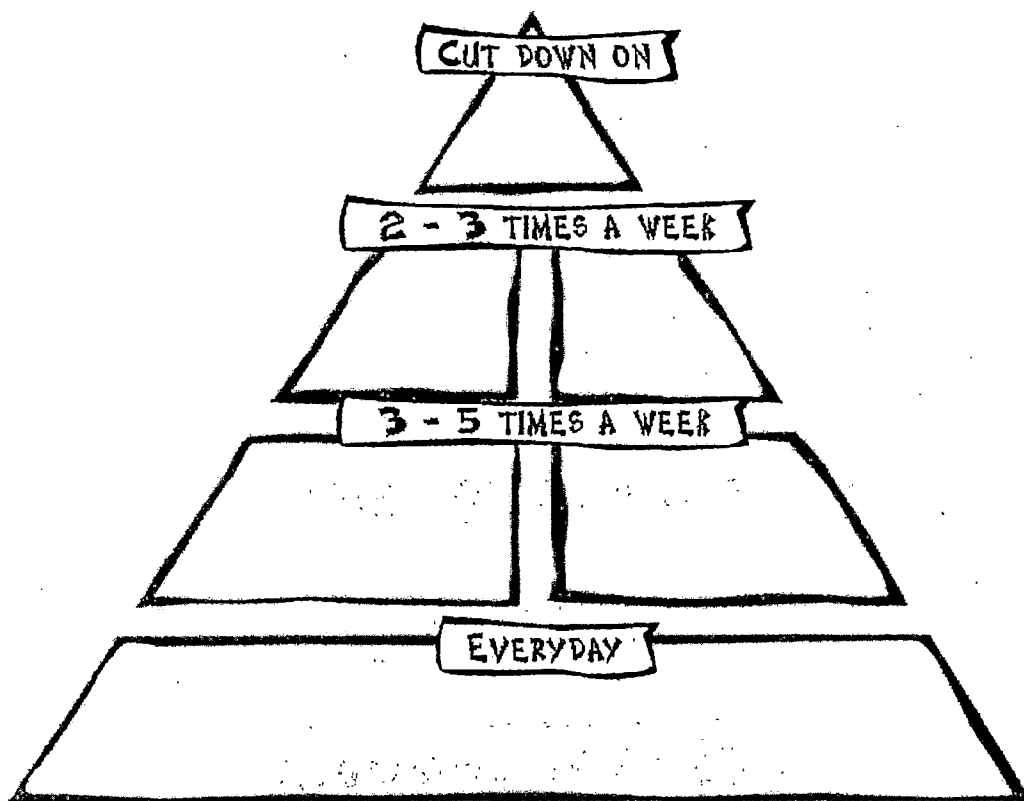


# Kid's Activity Guide Pyramid

# Worksheet

Name \_\_\_\_\_

**Directions:** Using the Kid's Activity Guide Pyramid Handout, complete each level of the pyramid below with activities from your life.

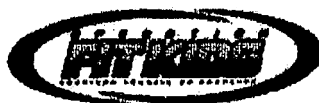


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### Lesson 2 — Heart Smart Kids on the Liquid Lookout

#### Part 1 - Heart Smart Kids

Estimated time: 30-40 minutes

**Expectation 1:** Students will demonstrate ways in which they can enhance and maintain their health and well-being.

#### Content Area - Physical Activity (PA)

PA2 - Students should investigate the relationships involving aerobic endurance, body composition, flexibility, muscular strength and endurance, and self-image.

**Goal:** To have students understand the FITT Principle (Frequency, Intensity, Time, and Type) and the importance of the circulatory system, as well as how to take their pulse and use an RPE (rating of perceived exertion scale).

#### Objectives

The students will be able to:

- Briefly explain the role and function of the circulatory system.
- Demonstrate at least one way to take a pulse.
- Explain the Youth RPE scale and its importance.
- Define the FITT Principle.

**Think & Sink:** Write the "Think & Sink" message on the board in the front of the classroom and in student journals. Ask students to think about the message and let it sink into their brains.

*Do your part, be heart smart*

**Vocabulary:** (Write on the board and discuss prior to the lesson.)

**Circulatory System** - The system by which blood, oxygen, and nutrients are delivered to, and returned from, the body via arteries and veins

**Heart** - Your body's pump, responsible for pumping blood, oxygen, and nutrients to your body

**Oxygenated** - Full of oxygen

**Unxygenated** - Without oxygen

**Lungs** - The basic respiratory organ for breathing





## Lesson 2 — Heart Smart Kids on the Liquid Lookout

### Vocabulary (cont.):

**Veins** – Blood vessels that carry blood, usually unoxygenated, from the tissues to the heart

**Pulse** – A number that represents how many times your heart beats in a minute

**Ratings of Perceived Exertion** – A scale used to measure how easy or hard (intensity) you're exercising (use Youth RPE chart to teach this concept)

**Frequency** – How often you're exercising

**Intensity** – How easy or hard you're exercising

**Time** – The length of your workout

**Type** – What type of workout you are doing (for example, biking or running)

**Aerobic Exercise** – Exercise that requires oxygen at the cellular level and is of a low-to-moderate intensity level that can be done for an extended period of time (for example, walking, biking, or swimming)

**Anaerobic Exercise** – Exercise that does not require oxygen at the cellular level and is of a high intensity level that can only be done for short amounts of time (for example, sprints or weight lifting)

**Cardiovascular System** – The circulatory system including the heart and blood vessels (i.e., arteries and veins).

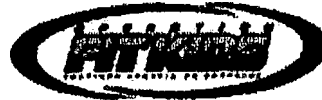
**Respiratory System** – The group of organs responsible for carrying oxygen from the air to the bloodstream and for expelling carbon dioxide.

**Arteries** – Blood vessels that carry oxygenated blood from the heart to the tissues



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## Lesson 2 – Heart Smart Kids on the Liquid Lookout

### Previous Lesson Review: (Display ACTIVITY and FOOD PYRAMIDS)

Who can tell me one thing we learned in our last lesson about the types of foods we should be eating more frequently? *Eat more fruits, vegetables, and grains.*

Why are these food items located at the bottom of the pyramid? *They are more nutritious than those at the top and should be eaten more often.*

Who can tell me one thing we learned in our last lesson about the types of food we should be eating less frequently? *Eat less chips, cookies, candies, cakes, and snacks.*

Why are these food items located at the top of the pyramid? *They are less nutritious than those at the bottom and should be eaten less often.*

Looking at the other type of pyramid we learned about, who can tell me why there are different activities at the different levels? *The activities at the bottom of the pyramid should be done every day, like playing. The activities at the top of the pyramid, like watching TV and playing video games, should be done less often.*

### On Your Mark

Item needed:

- One copy of the KID'S RATINGS OF PERCEIVED EXERTION HANDOUT for each student.

### Initiating Questions/Lesson Introduction:

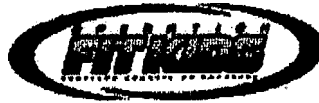
1. Let's imagine we're sitting at home, watching TV. Who can tell me how we're feeling? *Relaxed, calm, restful.*
2. More specifically, if you close your eyes and imagine there's an invisible window in the center of your chest that'll allow you to look at your heart and the way it is beating, what would you see? *It would be beating slowly.*
3. That's right, when sitting around, not moving very much, your heart beats slowly. Now, if I asked you to stand up and run in place as fast as you can, how do you think your heart would respond? *It would beat faster.*

That's right it would beat faster to bring more blood and oxygen to the muscles that are being used.



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## Lesson 2 — Heart Smart Kids on the Liquid Lookout

### Learn It!

In part one of this lesson, we're going to learn about our *cardiovascular system* as well as our *respiratory system*, and how these important systems influence our health and physical performance.

Our *heart* and *blood vessels* (arteries and veins) make up our cardiovascular system. Our lungs and airways make up our respiratory system. These systems bring blood, oxygen, and nutrients to our bodies as well as take waste products away. Oxygen is contained in our blood. Without it, we cannot live or function.

Think for a moment about how gas stations get gasoline. Fuel trucks travel the country's freeways (or highways) to deliver gasoline to gas stations. Once there, they drop off the fuel and then go back to their "central" location for refueling. Imagine that our circulatory system is a powerful freeway and our oxygenated blood, the full fuel trucks. In our body, *oxygenated* blood travels down the "A" freeway (A = arteries), taking blood away from our heart, delivering it to the gas stations (i.e., organs, muscles, brain, etc.). Once our body uses the oxygenated blood, it becomes *unoxygenated*. The unoxygenated blood (empty fuel trucks) needs to get back to the lungs (central fuelling location), via the "V" freeway (V=veins) to get re-fueled.

To keep the circulatory system healthy and oxygenated blood getting to its destination in a healthy, efficient manner, the heart needs to be strong and powerful. Exercise is one thing we can do to make our heart strong. When we exercise, our heart pumps blood, oxygen, and nutrients to our working muscles. The harder we exercise, the faster our heart beats. The number of times our heart beats in a minute is referred to as our *pulse*. Let's try and find our pulse.... There are a number of sites we can use to locate our pulse; our brachial pulse can be found at the brachial artery in our arm, near the inside of the elbow; our carotid pulse can be found at one side of our neck directly down from the corner of our eye, beneath our jaw; the radial pulse can be found at the underside of our wrist, using your first, middle, and ring fingers as you gently press along the radial artery directly aligned upward from your thumb.

When we exercise, our pulse rate increases. We can use a chart called the "Rate of Perceived Exertion Chart" to tell how hard or easy our exercise feels. Distribute **KID'S RATINGS OF PERCEIVED EXERTION HANDOUT**. Who can read and explain this chart to me? *Select a few children to explain what the numbers on the chart mean.*

So, let's go back to imagining sitting on the couch watching TV. If you had to assign a "number" to that activity, using this chart, which number would you choose and why?

A "1" because watching TV doesn't require much work or effort and your heart doesn't have to beat quickly—low pulse rate—low intensity.

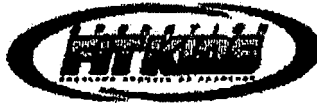
Now, let's run in place as fast as we can for 30 seconds. *Children run in place. STOP!*



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**Lesson 2 — Heart Smart Kids on the Liquid Lookout**

**Learn It! (cont.)**

Now, using this chart, what number would you give to that activity? *Children share responses.*

Why is the number higher during the running in place activity? *Because it requires more energy; our heart has to work harder to pump blood, oxygen, and nutrients to our working muscles, it is more intense.*

How did your pulse respond to both of these activities? *It was slower during the sitting and faster during the running.*

Which activity would you consider "aerobic" and why? *The lower-intensity activity because it could be done for a long time.*

Which one would you consider "anaerobic" and why? *The high-intensity activity because it can only be done for a short time at that intensity before tiring out.*

Great job... So far we've learned about our circulatory system, and how we can check our pulse and rate how hard we're working using the Ratings of Perceived Exertion Chart.

When we're exercising, we need to keep a special acronym in our mind: FITT.

- FITT stands for:
- F = Frequency (how often)
- I = Intensity (how easy or hard)
- T = Time (how long did you do it)
- T = Type (what type of exercise did you do)

So, if Sam (use one of your student's names) plays baseball for one hour, three times per week and rates his intensity a "5," let's see how we can apply the FITT principle:

- What is the frequency of Sam's workouts? *Three times a week.*
- What is his intensity, according to the Perceived Exertion Chart? *Pretty hard, a "5."*
- What type of exercise was Sam doing? *Playing baseball.*
- How much time does Sam spend working out each day he plays baseball? *One hour.*





## Lesson 2 — Heart Smart Kids on the Liquid Lookout

### Let's Play

Divide students into teams or partners. Each team/set of partners is given one die (younger grades) or two dice (older grades) and five index cards. Decide on a multiplier (for example, 5) and write this number on the board. All index cards are turned face down on the floor or desk area. One team member flips over a card (to indicate activity to be done). A second team member rolls the die/dice. Team members use the number on the die/dice, multiplied by the multiplier (written on the board) to determine the duration (time in seconds) of the activity. Students can use the second hand on a clock or count aloud in unison while completing the activity. The teacher or other student in the group can determine the intensity.

Note: For younger students, use an addend instead of a multiplier to determine the duration of the activity.

### Check It!

1. Who can tell me the purpose of the circulatory system? *To deliver blood, oxygen and nutrients to and from the body via arteries and veins.*
2. Who can show me one way to take your pulse?
3. Who can tell me what the Ratings of Perceived Exertion scale is? Why is it important? *It is an important tool for helping kids identify how hard they are exercising.*
4. Who can define the FITT Principle and give me an example? *F=Frequency (How often? e.g., twice/week), I=Intensity (How hard? e.g., numbers on the RPE chart), T=Time (How long? e.g., 30 minutes), T=Type (What kind of exercise? e.g., walking)*

### Journal Entry

Draw a picture of your favorite aerobic activity with a fun caption that could be used in an ad campaign to promote physical activity. For example, you could draw a picture of someone skating with the caption, "Make a date to get out and skate!"



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# KID'S RATINGS OF PERCEIVED EXERTION CHART

# Handout

Name \_\_\_\_\_

### Ratings of Perceived Exertion Chart

Measure of how hard you think you are moving (heart is racing, face feels sweaty, out of breath, legs feel tired, etc.)

**0 = SLEEPING**

**1 = SITTING AT YOUR DESK**

**2 = WALKING THROUGH THE HALLS**

**3 = WALKING/PLAYING DURING RECESS**

**4 = DOING RELAYS IN GYM**

**5 = RUNNING AS FAST AS YOU CAN**

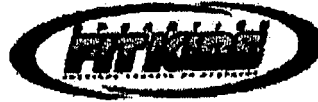


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### Lesson 2 – Heart Smart Kids on the Liquid Lookout

#### Part 2 – Liquid Lookout Estimated time: 30-40 minutes

**Expectation 1:** Students will demonstrate ways in which they can enhance and maintain their health and well-being.

#### Content Area – Food Choices (FC)

**FC1** – Students should continue to learn about food classification systems and begin to learn about the nutrients in foods.

**FC3** – Students should understand the effects food choices have on body composition.

**Goal:** To have students understand what to drink for proper hydration.

#### Objectives

The students will be able to:

- Identify at least two facts about milk.
- Identify at least two facts about water.
- Identify at least two facts about juice.
- Identify at least two facts about soda.
- Give one reason why water, juice, and milk are better to drink than soda.

**Think & Sink:** Write the "Think & Sink" message on the board in the front of the classroom and in student journals. Ask students to think about the message and let it sink into their brains.

*Low-fat milk, 100% fruit juice, and water are healthy liquids to drink*

**Vocabulary:** (Write on the board and discuss prior to the lesson.)

Dehydration – Excessive loss of water from the body

Nutrients – Any substance that provides nourishment for the maintenance of life and health

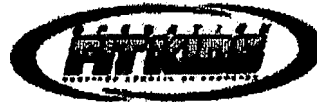
Calorie – A unit of energy

Dehydration – An abnormal depletion of body fluids



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### Lesson 2 — Heart Smart Kids on the Liquid Lookout

#### Previous Lesson Review:

Who can tell me what types of foods are at the bottom of the food pyramid?  
*Fruits, vegetables, and grains.*

Why are they there? *They are high in nutrition and should be eaten more often.*

Who can tell me what types of food are at the top of the food pyramid? *Cookies, cakes, candy, and snacks.*

Why are they there? *They are low in nutrition and should be eaten less often.*

#### Initiating Questions/Lesson Introduction:

##### On Your Mark

Items needed:

- One copy of the LIQUID LOOKOUT HANDOUT per student
- One copy of the LIQUID LOOKOUT WORKSHEET per student
- One container of low-fat milk
- One bottle of water
- One 12-ounce can of soda pop
- Ten teaspoons of granulated sugar
- One bottle of 100% juice (any size)
- One bottle of a juice drink (same size as 100%)

Last lesson we learned about the Food Pyramid and what types of foods should be consumed for higher nutrition as well as those that would be categorized as low-nutrition foods. Not only do we have to be concerned with the foods we eat, but also the liquids we drink. We have to be super spies when looking out for good healthy liquids to drink.

1. What kinds of drinks do you think are most healthy for your body? Why?
2. Are there any kinds of drinks you should limit and/or avoid? Why?

Make list of student responses on the board.

In this lesson, we're going to learn to be on the lookout for healthy things to drink.

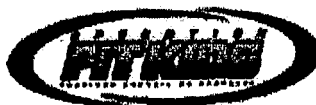
#### Learn It!

Water is the most important nutrient in your body. Did you know that water makes up 65-70% of your body?

Draw a chart to show how much 65-70% of their body is.

How long do you think you could live without food? *A few weeks.*





## Lesson 2 — Heart Smart Kids on the Liquid Lookout

### Learn It! (cont.)

How long do you think you could live without water? *A few days.*

That's not very long, which is why we need to drink at least eight cups of water each day. Also, since our bodies are mostly water, we need to keep in good water balance to avoid getting dehydrated. Drinking water can help us stay in good fluid balance. Another bonus is that water has no calories.

What other kinds of liquids do we drink? *Soda, milk, fruit juice, and sports drinks.* Soda doesn't give you many nutrients. Did you know that a 12-ounce can of soda has about 150 calories and 10 teaspoons of sugar? (*Measure out 10 teaspoons of sugar for a visual representation of how much sugar is in an average can of soda.*) Although it tastes good, it is full of sugar and supplies empty calories. Calories give you energy. If you take in more energy (calories) than what your body needs, your body saves them for later in the form of stored fat. If you never use them later, you gain additional body fat. Too much additional body fat puts you at risk for obesity, diabetes, heart disease, high blood pressure, and other life-threatening diseases. If you are going to drink soda, limit it to just once a week.

Other liquids you need to look out for are fruit drinks and sports drinks. Although they are usually healthier for you than soda, many of them contain too much sugar, which are empty calories, too. Some sodas also contain caffeine, which can make you feel jumpy, increase your risk of dehydration and, in some kids, even cause headaches. If you're going to choose a juice, limit it to one drink a day and make sure it is 100% fruit juice, not a juice drink or blend. Reading the back of the label will tell you exactly what you're drinking. Watch out for words like corn syrup and sucrose, which are other ways of saying sugar. Let students examine the labels on the juice bottles. Notice that juice drinks have ingredients like corn syrup and sucrose. 100% juice has no sugar added.

What liquid haven't we talked about yet? *Milk.* That's right, milk is a great liquid for kids to drink, especially low-fat milk without any added syrup or flavored powders. Milk is high in nutrition and isn't filled with added sugar (unless you're drinking the flavored kind...chocolate, strawberry, etc., which you should limit). Milk is known for having good amounts of calcium, which is a mineral you need to make and keep your bones and teeth strong.

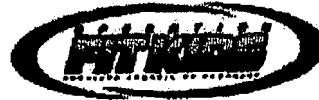
So who can tell me which liquids should be at the top of your list? *Water.* Why? *Because our bodies are 65-70% water, which means we need to keep in good "water balance" to avoid dehydration as well as to keep our body running smoothly. Water has no calories.* What other drinks are healthy? *Milk and 100% fruit juice.* Who can tell me something they learned about water and 100% fruit juice? *Milk is high in nutrients and low in added sugar, unless you drink the flavored ones. It is also high in calcium. 100% fruit juice is relatively high in nutrients and vitamins and low in added sugar. It does have calories, so we need to make sure we don't drink too much.*



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## Lesson 2 – Heart Smart Kids on the Liquid Lookout

### Learn It! (cont.)

What kinds of drinks should we limit? *Soda, sports drinks, and fruit drinks.*  
*Why aren't these drinks your healthiest choice?* Because they are full of sugar and sometimes contain caffeine. Also, most of them are high in calories, many of them being empty calories that provide few, if any, nutrients.

### Let's Go!

Pass out the LIQUID LOOKOUT HANDOUT to each student and select students to read aloud and discuss.

### Apply It!

Pass out the LIQUID LOOKOUT WORKSHEET and ask students fill it out.

### Check It!

1. Who can give me two reasons why we should drink low-fat milk? *It's high in nutrition and isn't filled with added sugar.*
2. Who can give me two reasons why we should drink water? *It doesn't have any calories and it keeps us from getting dehydrated.*
3. What are two facts you learned about juice? *We should limit juice to one glass a day and choose 100% because it doesn't contain added sugar.*
4. What are two facts you learned about soda pop? *Soda pop is full of sugar and can be high in calories.*
5. Why are water, low-fat milk and 100% juice better than soda pop? *Water, low-fat milk and 100% juice contain essential nutrients for our bodies and soda pop provides few nutrients.*

### Student Journal

Write a poem using water as the topic.



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## Liquid Lookout

## Handout

Name \_\_\_\_\_

Are you thirsty?  
Did you know that the same sugar that makes a sweet drink (e.g., soda pop, juice drink, etc.) taste so good can make you MORE thirsty than you were before!

To quench your thirst try:

- Low-fat milk
- Water
- 100% fruit juice

**Instead of sugary drinks like soda to keep your body running smoothly.**

### LIQUID FACTS:

#### **MILK**

Low fat milk makes your bones happy!

Milk is the perfect drink for your bones because it has calcium and vitamin D in it. This helps your bones to grow strong.

Think you don't like milk? Give it another try! Drink it when it is really cold, you can even add ice cubes, flavored syrup, or powder (once in awhile) to your milk – YUM!

#### **100% FRUIT JUICE**

A lot of juices are mostly sugar and water! Try to drink only juices that say 100% juice on the label (not things like "fruit juice drink" or "fruit juice blend"). Many 100% juices contain a lot of vitamins, but also contain sugars. Limit 100% juices to ONCE a day.

#### **WATER**

All living things must have water to survive. Water is the most necessary nutrient of them all - so necessary that people can't survive for more than a few days without it. More than half your body is made up of water! Take time throughout the day for a glass of water whether or not you feel you need it. If you wait until you feel thirsty, you increase risk of becoming dehydration. Drink water as OFTEN as you can.

#### **SODA**

Most sodas contain sugar and caffeine, which may speed up dehydration. A 20-ounce bottle of soda has about 13 teaspoons of sugar! LIMIT sodas to special occasions and choose a small can/glass.

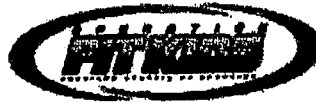


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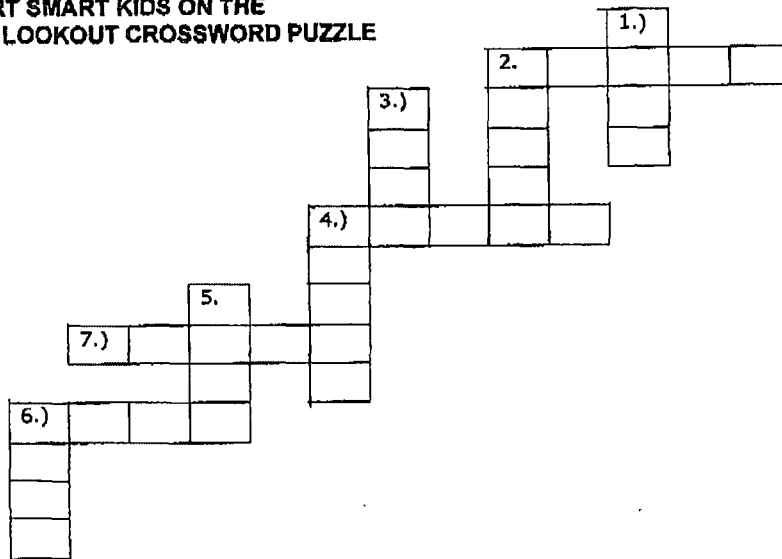




# Liquid Lookout

# Worksheet

## HEART SMART KIDS ON THE LIQUID LOOKOUT CROSSWORD PUZZLE



### Down

- 1.) The acronym that means Frequency, Intensity, Time, and Type of exercise.
- 2.) It's fun to do and it's exercise, too.
- 3.) Has about 10-13 teaspoons of sugar in each serving.
- 4.) All living things must have this to survive.
- 5.) Exercise and eat healthy foods for \_\_\_\_\_.
- 6.) This refers to how long you exercise.

### Across

- 2.) You do this with liquids.
- 4.) Most necessary nutrient of them all.
- 6.) This refers to what "kind" of exercise you do.
- 7.) "No sugar added."

Here is a list of words to be used in the crossword puzzle.  
\*You may use words more than once

- TYPE
- MILK
- JUICE
- DRINK
- FITT
- WATER
- SODA
- TIME
- DANCE
- LIFE



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## Walk this way

## Handout

Name \_\_\_\_\_

Want to be healthy and active? You will have more energy and feel good each day and all you need to do is WALK THIS WAY...

### TOP 10 Ways to STRUT YOUR STUFF!

1. Walk as often as you can – start by taking shorter and slower walks. Then move on to longer and faster walks. Use a clock to measure your success.
2. Use a pedometer to measure your steps – Using a pedometer is a PERFECT way to see how many steps you are taking each day!
3. Walk for FUN! – Walk with your family and friends and make it fun. Walking with others not only helps their health but also gives you a time to bond with those you love. (Remember dogs are family too!)
4. Warm up and cool down – **Warm up** at the start of your walk by walking slowly and taking deep breaths. **Cool down** at the end for your walk by slowing down your walk and stretching your legs. Warm ups and cool downs are important to every workout – they prepare your body for the work, help you ease back when it's over, and can even help reduce your risk of injury.
5. Walk with good technique – Walk with your head upright, back straight, and arms comfortably swinging at your sides (bend your elbows for FAST walking).
6. Pace yourself – Listen to your body. The longer and faster your walk, the more "warmth" your body will feel – you may even sweat! You will breathe heavier and your heart will beat faster.
7. Wear the proper shoes – Gym shoes will give you good support and are comfortable.
8. Best foot forward – When walking, let the heel of your foot hit the ground first then roll down through the rest of your foot, and finish by pushing off the ball of the foot.
9. Drink water – Drink water before, during, and after walking to avoid the risk of **dehydration**.
10. Try other exercises – Add to your walking exercise by doing muscle-strengthening exercises at least twice a week. Push-ups, leg squats, and lunges are great choices.

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# Walk this way

# Worksheet

Name \_\_\_\_\_

The Top 10 Ways to Strut your Stuff got all mixed up. Use the handout to unscramble each item from the Top 10 list below:

1. ryt erhto seersixce \_\_\_\_\_
2. lakw sa toenf sa you nac \_\_\_\_\_
3. kridn retaw \_\_\_\_\_
4. sue a rpeetdoem ot emreuas uoyr tspse \_\_\_\_\_
5. tesb tofo dfroarw \_\_\_\_\_
6. lakw fro nuf \_\_\_\_\_
7. reaw hte rperpo hoses \_\_\_\_\_
8. rmwa pu dna ocol wodn \_\_\_\_\_
9. cape fylouesr \_\_\_\_\_
10. lakw thiw dogo etueqcihn \_\_\_\_\_



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## Walk this way

## Answer Sheet

Name \_\_\_\_\_

The Top 10 Ways to Strut your Stuff got all mixed up. Use the handout to unscramble each item from the Top 10 list below:

11. ryt erhto seersixce \_\_\_\_\_ Try other exercises \_\_\_\_\_
12. lakw sa toenf sa you nac \_\_\_\_ Walk as often as you can \_\_\_\_\_
13. kridn retaw \_\_\_\_ Drink water \_\_\_\_\_
14. sue a rpeetdoem ot emreuas uoyr tspse \_\_\_\_ Use a pedometer to  
measure your steps \_\_\_\_\_
15. tesb tofo dfroarw \_\_\_\_ Best foot forward \_\_\_\_\_
16. lakw fro nuf \_\_\_\_ Walk for fun \_\_\_\_\_
17. reaw hte rperpo hoses \_\_\_\_ Wear the proper shoes \_\_\_\_\_
18. rmwa pu dna ocol wodn \_\_\_\_ Warm up and cool down \_\_\_\_\_
19. cape fylouesr \_\_\_\_ Pace yourself \_\_\_\_\_
20. lakw thiw dogo etueqcihn \_\_\_\_ Walk with good technique \_\_\_\_\_



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## **Fitness Game: Mission Possible**

### **Items needed:**

- 10 plastic bowls
- Markers
- Mission cards (index cards)

### **Game set up and play**

Using different colored markers, draw a different colored circle on the bottom of each plastic bowl. Write the following missions on index cards and tape one card on the bottom of each of the plastic bowls.

### **Your mission:**

- Hop on right foot 10 times
- Do 15 jumping jacks
- Walk in a circle for 30 seconds
- Hop on your left foot 10 times
- Walk as slow as you can for 30 seconds
- Do 5 X 2 push ups
- Do 10 - 9 + 4 lunges on your right leg
- Do 20-10 - 5 lunges on your left leg
- Do a standing calf stretch with your right leg forward while reciting the first and last name of everyone in your group
- Do the standing calf stretch with your left leg forward while reciting the last and then first name of everyone in your group.
- Mission accomplished. Please sit down!

While your students are occupied and not looking, hide each of the bowls, turned upside down colored circle visible around the room.

NOTE: For increased fun, use a large open area (gym, playground, etc)

Divide the class into teams of 3. Assign a team color that coincides with each of the colors of the upside bowls.

On your signal, direct the team players to interlock arms and move together as a team to find the hidden bowls with their team color. Each time a colored bowl is found, the youngest member of the team reads the mission taped to the inside of the bowl and the team begins completing the mission. You will know when everyone has completed the mission, as they will all be sitting down.

Adapted from the American Council of Exercise

## Program Evaluation

Please answer the following using the scale listed below:

- 1 Disagree a lot
- 2 Disagree a little
- 3 Do not Agree; Do not Disagree
- 4 Agree a little
- 5 Agree a lot

1      2      3      4      5

1. The program was easy to locate
2. The program was easy to integrate into the daily curricula.
3. The material was grade appropriate.
4. The handouts were useful.
5. The activities were interesting to the students.
6. The program was user friendly.
7. I would recommend this program to other educators.

### RECOMMENDATIONS

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Please return evaluation to health office: attention school nurse.

APPENDIX C

SURVEY

Survey

Age \_\_\_\_\_  
Male \_\_\_\_\_ Female \_\_\_\_\_

1. What is BMI?  
A. Big Men Included  
B. Body Mass Index  
C. Rock group
2. Do you know what your weight and height is currently?  
YES \_\_\_\_\_ NO \_\_\_\_\_
3. Do you know what your weight and height was last year at this month?  
YES \_\_\_\_\_ NO \_\_\_\_\_
4. Can you run the mile in 10 minutes or less?  
YES \_\_\_\_\_ NO \_\_\_\_\_
5. At lunch do you  
A. Bring lunch \_\_\_\_\_  
B. Buy lunch Cafeteria \_\_\_\_\_ Snackbar \_\_\_\_\_  
C. Don't eat lunch \_\_\_\_\_
6. Do you eat breakfast?  
YES \_\_\_\_\_ NO \_\_\_\_\_
7. Do you regularly walk or ride your bike to school?  
YES \_\_\_\_\_ How many days a week \_\_\_\_\_  
NO \_\_\_\_\_
8. Do you buy a drink from the snack bar more than 2 times a week?  
YES \_\_\_\_\_ SODA \_\_\_\_\_ WATER \_\_\_\_\_  
NO \_\_\_\_\_
9. Do you belong to a sport team or dance team outside of school?  
YES \_\_\_\_\_  
NO \_\_\_\_\_
10. Which describes you?  
A. Too thin  
B. Overweight  
C. Normal weight

Please rate the statement on the scale provided:

Strongly agree    agree    undecided    disagree    strongly disagree

1. Childhood obesity is not a problem.					
2. Poor nutrition does not play a role in childhood obesity.					
3. Sedentary lifestyle does not play a role in childhood obesity.					
4. Children's eating habits are influenced by their parents/guardians.					
5. Children's eating habits are influenced by the media.					
6. Children's eating habits are influenced by their peers.					
7. Eating/Not eating breakfast affects a child's ability to focus.					
8. Childhood obesity does not play a role in academic performance.					
9. Self esteem is not affected in children with obesity.					
10. Schools should not provide healthy lifestyle education.					

Please select one of the statements that best describes you.

11. I consider myself overweight    yes \_\_\_\_\_    no \_\_\_\_\_



# MOUNTAIN VIEW SCHOOL DISTRICT

2585 South Archibald Avenue • Ontario, California 91761 • TEL: (909) 947-2205 • FAX: (909) 947-1605

*Robert G. Cosgrove, Ed.D., Superintendent*

March 4, 2005

To Whom it May Concern:

Please be advised that Carmen Kemp and Melody Mendiola have obtained permission to develop a program addressing "Obesity in our School Age Children." This program will be developed for Mountain View School District.

Sincerely,

Terry Weatherby  
Assistant Superintendent  
Curriculum and Personnel

## Board of Trustees

Ronald Newton • Jill Coulter • Mike Sweeney • Betty Pinheiro • Susan Paterson  
Member Clerk President Member Member



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## ASSIGNED RESPONSIBILITIES PAGE

This was a two-person project where authors collaborated throughout. However, for each phase of the project, certain authors took primary responsibility. These responsibilities were assigned in the manner listed below.

1. Assessment and Implementation Request
  - a. Assessment of need and request for implementation at Mountain View School District (MVSD) conducted by Carmen Kemp. Approval granted to implement program at MVSD.
  - b. Assessment of need presented to Etiwanda School District (ESD) conducted by Melody Mendiola. Approval pending at ESD.
2. Curriculum Development
  - a. Nutrition  
Assigned Leader: Melody Mendiola
  - b. Physical activity  
Assigned Leader: Carmen Kemp
  - c. Program Evaluation  
Team Effort: Carmen Kemp and Melody Mendiola
3. Writing Report and Presentation of Findings:
  - a. Introduction



Team Effort: Melody Mendiola

b. Literature

Team Effort: Carmen Kemp

c. Methods

Team Effort: Carmen Kemp

d. Discussion

Team Effort: Melody Mendiola