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DEVELOPING A FITNESS PROGRAM FOR SUMMIT
INTERMEDIATE SCHOOL

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

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Education: Middle Grades

by
Rosemary Dunkley Kirkland
June 1996

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INTERMEDIATE SCHOOL

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Approved by:


Dr. Irvin Howard, First Reader

June 10, 1996
Date


Dr. Jennie Gilbert, Second Reader

ABSTRACT

Our nation is deeply entrenched in a fitness craze wherein billions of dollars are spent to find a healthier way to eat, exercise and meet the daily demands of living. Although some disagreement does exist, experts have repeatedly warned us that we should all be participating in a regular exercise regimen and eat a diet of low fat, high carbohydrate foods. Healthy choices and habits are formed early in our lives. The best place to establish these early healthy habits is while in school, most preferably in physical education health classes. However, our current physical education classes seem to be lacking in establishing priorities for fitness by continuing to focus on a sports related skills curriculum over a fitness and health related curriculum.

This project is a plan whereby Summit Intermediate School will implement a new fitness and health oriented curriculum. The Prudential *FITNESSGRAM* will be utilized as the change vehicle through which students will face a variety of fitness activities, assessments, and goal setting opportunities during physical education classes. Physical education teachers, students, and parents will be actively and jointly involved in establishing new fitness priorities for the rest of their lives.

ACKNOWLEDGMENTS

This past year has been a great learning experience. I wish to say thank you to the following people: Dr. Irvin Howard, who provided this program and patiently helped me; Dr. Jennie Gilbert, for her expert advice; and I would also like to thank my children for their support and patience with me as I finished my Master's Degree. I want to encourage them to obtain an education and follow their dreams.

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Chapter One: Introduction

Today's youth lead a sedentary lifestyle of watching television, playing Nintendo, or listening to the radio while eating a junk food diet of chips, cookies and soda pop. Dr. Kenneth Cooper, a leading expert in health and fitness, has described our children's lifestyle in his book *Kid Fitness*, "Millions of our children -- the majority of them in middle and upper middle-class homes -- face the prospect of serious disease and shortened life spans because of sedentary living and poor nutrition."

The majority of articles that are referenced in this project carry the message that American children are unfit, however some point to the fact that there is not enough proof to show a sizable decline in children's fitness in recent years. The literature regarding the status of children's fitness is inconclusive. Only in terms of body composition are children known to be less fit today than twenty years ago.

On May 23, 1994, President Clinton showed his concern when he appointed 15 physical fitness, sports, health and community leaders to become the new members of the President's Council on Physical Fitness and Sports. His goal for this council is to motivate Americans to become more physically fit. The reason President Clinton established his Presidential Council on Physical Fitness and Sports is because of his concern with the results of many studies on the physical fitness of children.

Corbin (1986) stated that the National Children and Youth Fitness study shows that children are fatter than they were 20 years ago. Geil's (1988) research indicates that 15 percent to 25 percent of today's children are obese. Obesity increases the risk of a host of life-threatening diseases, including coronary heart disease (CHD), stroke, atherosclerosis, orthopaedic disorders and diabetes. Four years later Kuntzleman and Reiff (1992) agreed that children are heavier today than in previous years. They also report that, as measured by distance runs, there has been a decline in the aerobic fitness of children.

Thomas Gilliam and his colleagues (1982) found that 62 percent of 47 youngsters studied had at least one CHD risk factor and that 21 percent had three or more factors. Taylor and Baranowski's (1991) research suggests that aerobic exercise has positive effects on reducing the risks associated with cardiovascular disease including obesity. Since most children have the opportunity to participate in physical education classes at school, it would be most effective to establish fitness goals and practices in the school setting. However, it seems that this is one area in which physical education classes are now failing.

Studies show there is insufficient aerobic activity in our school's physical education programs. Lacy and LaMaster (1990) observed that junior high school students were involved in fitness activities for fewer than 5 minutes in a 34 minute class period. This is definitely not enough time for development of fitness. Ross and Gilbert (1985) reported

that most middle school physical education programs focus on sports and games rather than fitness activities.

The purpose of this project is to design a fitness program for the middle school level to be implemented at Summit Intermediate School in the Etiwanda School District. The California Basic Educational Data (CBEDS) at Summit Intermediate School for October 1995 recorded 707 students. In attendance were 358 girls and 349 boys, with approximately 45 percent White, 30 percent Hispanic, 10 percent Black, 10 percent Asian or Pacific Islander, and 5 percent Filipino. Currently, Summit Intermediate School Physical Education is offered four days a week for fifty minutes and the fifth day for forty minutes to all sixth, seventh and eight graders. The curriculum is designed to teach students competitive skills for playing sports. Some of the units include volleyball, basketball, touch football/knacki, floor hockey, tumbling, frisbee, soccer, track & field, and softball. A five minute warmup proceeds each day's activity. It consists of stretching the neck, trunk, arm and leg regions, jumping jacks and push-ups. Rarely is there any time available for cool down before dressing.

Summit Intermediate School physical education students currently run the mile once a week. Times are recorded along with resting heart rate and post-exercise heart rate. The other four days are devoted to a particular sport such as basketball, knacki, volleyball, floor hockey or soccer. Students are not always receiving enough training to improve their muscular strength and endurance. Students rarely

participate in the 20 minutes of aerobic exercise that will improve their cardiovascular endurance. Currently students are stretching muscles before their body temperature has risen. This could result in small tears in the muscles. After they stretch, they then run; and a cool down rarely takes place.

The Presidential Challenge Fitness Award Testing is given in the fall as a pre-assessment and again in the spring as a post-instructional assessment. The Presidential Challenge consists of timed sit ups, pull ups, double leg sit and reach, short shuttle run and the mile run. Students are scored based on their performance level for each specific event compared to a national percentile. Norm reference standards compare the performance of a child or a group of children to a known reference group. These standards eliminate many students who are healthy and fit yet do not rank in the 90 percentile. Very few students score high enough on each event in order to qualify for the Presidential Fitness award. The pull up test is not a good indicator of muscle strength because it is very specific to certain muscles and is difficult for students to train and see improvement. The traditional sit up test, while possibly an indicator of abdominal muscle strength, may be harmful to the neck and back.

Due to the limited success in norm-referenced physical fitness testing, criterion-referenced testing has become more popular. Prudential *FITNESSGRAM* is a national fitness test battery that measures fitness levels through criterion-

referenced health standards. Scores for a specific test item are established based on criteria thought to produce a health benefit or reduce the risk of a specific health problem. Students' scores place them in a healthy fitness zone or a needs improvement category. The scores are not ranked as in the Presidential Challenge.

In the early 1950's the Kraus-Weber Test measured a child's skill level. Today the emphasis is on health-related fitness versus skill-related fitness. The goal is to increase physical activity across the lifespan. The American Alliance of Health, Physical Education, Recreation and Dance (AAHPERD) defines fitness as, "A physical state of well-being that allows people to perform daily activities with vigor, reduce their risk of health problems related to lack of exercise, and to establish a fitness base for participation in a variety of physical activities."

Keeping this definition in mind our nation has shifted its emphasis from skill-related fitness to health-related fitness. Our nations' concern was demonstrated in September 1990 by Health Secretary Louis W. Sullivan when he presented *Healthy People 2000*, a public health agenda for the United States. This report was to boost national health promotion and disease prevention by proposing three broad goals to be accomplished by the year 2000. The first goal of *Healthy People 2000* is to increase the span of healthy life for Americans; second, to reduce health disparities among Americans, and third to achieve access to preventive services for all Americans. One of the biggest components of this

report is to increase physical activity and fitness in both adults and children.

The purpose of this project is to design a program that will increase the fitness level of students at Summit Intermediate School. The program will focus on aerobic capacity, muscle strength and endurance, body composition, flexibility, and good nutrition. The instrument used to assess the program will be the Prudential *FITNESSGRAM*. This innovative program has three advantages over the present Presidential Challenge Fitness Testing. First, each of the test items was selected to assess important aspects of a student's health-related fitness, not skill or agility. Second, students are compared not to each other, but to criterion-referenced health standards. These standards are established for each age and gender and established to indicate the level of fitness necessary for good health. Third, participants receive objective feedback and positive reinforcement, which are important to changing behavior and work as a communications link with teachers and parents.

This project does run up against some obstacles. First, school administrators must buy into the program. The initial cost of the Prudential *FITNESSGRAM* is \$69.00. This includes the instruction material, equipment, 200 computer sheets and computer program. The cost in the future will decrease as only additional *FITNESSGRAM* assessment sheets need be purchased. Currently Summit Intermediate School does not have any computers for their Physical Education Department. Using the *FITNESSGRAM* instrument would require the use of

computers. The school has approximately twenty two computers in its computer lab which is utilized by students all day. They have two computers and one printer in the office for twenty five teachers to use. An additional three computers are on roving carts, one allocated for each grade. To effectively implement this program at Summit Intermediate two computers are needed in the Physical Education Department, one for the boys physical education instructors and one for the girls physical education instructors.

FITNESSGRAM will benefit both student and instructor. *FITNESSGRAM* is based on changes from older fitness tests (Presidential Challenge) that are not as safe. *FITNESSGRAM* Back Saver Sit and Reach measures flexibility in the hamstrings by measuring one leg at a time. The safety issue for Sit and Reach is the fact that forward flexion with the knees locked increases pressure on the discs in the low back. It also encourages alternating the Back Saver Sit and Reach with the Shoulder Stretch to educate students that flexibility is important in all areas of the body and not just the hamstring and low back muscles. Another safety change takes place in the abdominal strength and endurance test. The Modified Sit-up, which was used previously, involves the action of the hip flexor muscles in addition to the abdominal muscles. The safer test is the Curl-up which does not involve the assistance of the hip flexor muscles and also minimizes compression in the spine, when compared to a full sit-up with the feet held. The Trunk Lift is a new addition to fitness tests because of its relationship to low

back health and poor vertebral alignment. Musculoskeletal fitness of the abdominal, hamstrings and back extensors work together to maintain posture and help prevent low back problems.

Not only are there safety benefits to the *FITNESSGRAM*, but the teachers benefit from a detailed manual and computer software program that will personalize the student's results and give feedback in areas of needed improvement. Teachers must work together on this project to ensure success. Additional training requires further commitment on the part of all participating teachers and administrators, and it will require more organization among physical education teachers setting up fitness circuits. All of these new commitments will further strain an already full work schedule of the physical education teachers at Summit Intermediate School.

The *FITNESSGRAM* focuses on good health rather than skill. Competitive students who in the past have enjoyed the skill level involved with obtaining the Presidential Award can still enjoy Fitnessgram by setting personal goals that would push them to improve. This program will continue to require that students run the mile once per week. Sports portfolios will be used to record times and heart rates. In addition, the second fitness day will be utilized to concentrate on muscle strength, endurance and flexibility. California State Framework dictates an increase in fitness activities in the curriculum. Aerobics will also be implemented through the use of jump ropes, steps and aerobic dance. Circuits will be set up to accommodate different

fitness areas. Not only will exercise take place but valuable information about the body and how to keep it healthy will be covered. Criterion will be established and students will set up their own personal fitness program in order to meet the criterion. Students will be encouraged to work on their fitness at school as well as at home.

What follows is a review of literature and a plan to implement this fitness program at Summit Intermediate School.

Chapter Two: Review of the Literature

Too many youth today lead sedentary lifestyles with little or no activity, spending hours a day watching television while being enticed by commercials to eat junk food. Many major publications support that American children are fatter, less fit, and less healthy than they were 10 years ago. This chapter will focus on the history and literature that deals with fitness.

History of Literature and Research on Fitness

At the turn of the century, and through the early 1920's, the term 'fitness' focused on muscular strength. The most commonly used measures of fitness were Sargent's strength battery of the 1880's and Rogers' Physical Fitness Index (Clarke, 1967). Fitness began to change by the end of World War I when cardiovascular fitness began to receive more attention. Physical fitness was beginning to be described as more than one factor. Not only was strength measured but also blood pressure, resting heart rates, and post-exercise heart rates. By the 1950's two doctors named Kraus and Weber developed a physical fitness test which had multiple items assessing strength and flexibility (Kraus & Hischland, 1954). They gave this physical fitness test to school children and concluded from their findings that American children were much less fit than European children. *Sports Illustrated* (Boyle, 1955) published an article reporting the results of

this study entitled, "The Report that Shocked the President." This brought immediate concern to the leaders of our nation and more attention was given to our youth's physical fitness. The work of Kraus and Raab (1961) stressed the importance of fitness for health. They coined the term "hypokinetic diseases" which referred to cardiovascular conditions and other health problems which stem from sedentary lifestyles.

In the early 1960's Dr. Kenneth Cooper motivated us to participate in aerobics. Soon after, in 1965, the American Association for Health, Physical Education and Recreation (AAHPER) developed a fitness test which added running, jumping and throwing (AAHPER, 1958). Other multidimensional fitness batteries were developed during the 1950's -1960's, including the Oregon Motor Fitness Test and the California Physical Performance Test (Clarke, 1967). President John F. Kennedy raised concern over our nation's fitness by asking all American boys and girls to take the President's Council on Fitness And Sports fitness test to evaluate adolescent fitness in America and to motivate them to improve.

In 1965 the concept of a hierarchy of fitness components began to emerge. T.K. Cureton spoke of the health issue of fitness. He introduced medical information that directly connected fitness disease prevention and positive welfare. Fitness for health was distinguished from fitness for performance. The concept of a hierarchical multidimensional model was flooded in the literature by experts such as Johnson, Updyke, Stolberg and Schaefer, (1966) and Corbin, Dowell, & Landiss (1968). Physical fitness encompassed

health-related fitness (cardiovascular fitness, strength fitness, muscular endurance, flexibility and body composition) and skill-related fitness (balance, coordination, power, speed, agility and reaction time). All these were components thought to help the individual function effectively in society without undue fatigue and have reserve energy to enjoy leisure time.

In 1980, AAHPERD developed the Health Related Physical Fitness Test. Several recent papers (Bouchard, Shephard, Stephens, Sutton, & McPherson, 1990; Caspersen, Powell, & Christenson, 1985; Pate, 1983, 1988) have supported the American College of Sports Medicine (ACSM, 1988) position statement encouraging an emphasis on health-related fitness

over

Reviewing the literature uncovers the disagreement among experts over the belief that children today are less fit

today t

(Allsen, Harrison & Vance, 1989; Kuntzleman & Reiff, 1992; President's Council on Physical Fitness and Sports, 1986; Ross & Gilbert, 1985) point out that fitness levels for children are lower than desired and in many situations has not improved in the last decade. On the other hand other fitness experts (Blair, 1992; Corbin & Pangrazi, 1992; Simons-Morton, O'Hara & Parcel, 1987) disagree, supporting their arguments that fitness tests in the 1980's and 90's were so different than those used in the 1950's, 60's and 70's that it is difficult to precisely compare previous and current fitness levels (Strand & Reeder, 1993). Not only

have test items changed, but so have the rating standards. Corbin (1987) stated that criteria used to determine "acceptable" levels of fitness varied from study to study, so it is almost impossible to determine exactly how many of our children lack the fitness necessary to become and stay healthy. Current evidence (Blair et al., 1989) states that more moderate amounts of health-related physical fitness are enough to contribute to good health whereas exceptionally high performance on a fitness test may not reflect good health, especially when the performance is based on skill-related fitness tests such as the 50 yard dash and long jump.

The literature does agree that risk factors for heart disease begins early in childhood and for this reason fitness for youth should be a national priority. The literature also supports a need for more research concerning the activity levels of children. With more research, physical education teachers can teach "higher order objectives" (Corbin, 1987). Instead of telling students what activities to do, physical educators can teach them the facts about exercise, how to evaluate their own fitness, and how to plan their own exercise programs. Corbin proposes a comprehensive educational plan can help learners become independently good fitness and exercise consumers.

Corbin and Pangrazi (1992) showed that most children are just as fit as children 40 years ago when compared to the most recent criterion-referenced standards. Their debate stems from the fact that physical fitness tests have changed along with the rating standards. The first AAHPERD Youth

Fitness Test involved skill-related fitness test items whereas recent tests emphasize health-related fitness. High performance on the 50-yard dash or the long jump does not necessarily reflect good health. Whereas, evidence suggests that more moderate amounts of health-related physical fitness are enough to contribute to good health (Blair et al., 1989).

Healthy People 2000: A New Emphasis

In 1980 the United States Public Health Service released a study entitled *Promoting Health/Preventing Disease: Objectives for the Nation*. This study identified 226 health objectives for the nation with eleven objectives specifically relating to exercise and fitness. The objectives were to be reached by 1990. Unfortunately they were not reached and a new health and fitness program was developed entitled *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*, nicknamed *Healthy People 2000* (U.S. Public Health Service, 1990). These objectives were to be met by the year 2000. The following three goals are targeted for children six to seventeen years of age:

- 75 percent of children aged 6-17 will engage in vigorous activity at least three days per week for 20 or more minutes per occasion.
- 50 percent of children ages 6-17 will participate in daily physical education.
- 50 percent of the time spent in physical education classes will be engaged in lifetime fitness activities.

The Physical Education Department at North Carolina State University conducted the North Carolina Children and Youth Fitness Study (NCCYFS) in 1992. The purpose was to establish "starting points" to help direct North Carolina toward success in reaching the three goals for children established in *Healthy People 2000*. The North Carolina study replicated the health-related fitness tests of the NCYFS I (McGinnis, 1985) and NCYFS II (McGinnis, 1987).

The results of this study showed both males and females 10-16 had higher percent body fat than youth in the national study. Eleven and twelve year old boys and girls had significantly higher percent body fat than the rest of the age groups. Both groups were less flexible than their national counterparts and males aged 9-13 and females aged 8, 9, 12, and 13 were significantly less aerobically fit compared to the national average in the mile test. Abdominal strength and upper body strength and endurance results were comparable to the national average. The comparisons of this study reveal that children in North Carolina have lower fitness scores on most tests compared to the national data of NCYFS I & II, especially body composition, cardiorespiratory, and flexibility testing (Davis K. L., Roberts, T. C., Smith, R. R., Ormond III, F., Pfohl, S. Y., & Bowling, M., 1994). In addition researchers at the University of North Carolina reported that children scored 12-15 percent below the national average when tested for cholesterol levels, body fat, blood pressure, and exercise tolerance (Harrell, J.S., McMurray, R., Frauman, A, & Bandiwala, S. 1992). This is one

study that supports the theory that children are less fit today than in previous years.

Adolescent Obesity and Heart Disease

Researchers agree that children today have a higher percentage body fat than in previous national studies. Obesity is associated with low self-esteem, diabetes, coronary heart disease, stroke, and hypertension. Childhood obesity is a dominant disorder that increases the risk of adult obesity, morbidity, and mortality (Gortmaker, Dietz, Sobol, & Wehler, 1987; Must, Jacques, Dallal, Bajema, & Dietz, 1992). Research (Giel, 1988) indicates that 15 percent to 25 percent of today's children are obese. Dr. William Dietz and Steven Gortmaker support this through their own investigations that suggest that one out of four school-aged children is overweight and that "the prevalence of obesity has increased 54 percent" amongst the 6 to 11 year old population for the years 1963 to 1980. This suggests a need for children to be more physically active and better educated involving nutrition.

The treatment of childhood obesity involves diet and exercise (Epstein & Wing, 1987). Exercise habits are hard to instill and obese children often return to sedentary behaviors (Epstein, Koeske, & Wing, 1984). Obese children are more sedentary than their non-obese peers and choose to be sedentary when given the chance to be active or sedentary (Epstein, Smith, Vara, & Rodefer, 1991). The growing concern

of obese children suggests the need for increasing fitness activity in physical education, while making it fun. If obese children experience joy and satisfaction from being active then hopefully their attitudes and habits of sedentary behavior will change.

Television is a popular leisure-time activity which is subsequently related to obesity (Dietz & Gortmaker, 1985). Television may contribute towards obesity by reducing access to higher energy expenditure activities. The NCCYFS study determined that youth 6-17 years old who watched four or more hours of television on weekends performed significantly worse on measures of abdominal strength/endurance, flexibility, and cardiorespiratory fitness. Television is one link to suggest why children today are less active.

Deitz and Gortmaker's title for their article, *Do we fatten our children at the television set?* refers to one of the greatest contributors to adolescent obesity. Not only does watching television cause children to be less active but it also increases their caloric intake. Food commercials present repeated prompts to eat and children respond (Jeffery, McLellarn, & Fox, 1982). Watching television may become a conditioned stimulus for eating if children repeatedly eat in front of the television.

The American Heart Association's (AHA) recent report states that a sedentary lifestyle is now considered an independent risk factor for coronary heart disease (Fletcher et al., 1992). The American Alliance Association of Health, Physical Education, and Recreation (Gilliam et al., 1982)

concludes, on the basis of comparisons, that on average today's students are taking longer to run the mile than students of ten years previous and that today's youth are less fit. Some studies examining the prevalence of childhood coronary heart disease (CHD) claim that 40 percent of today's children already show early signs of CHD (Gilliam et al., 1982). Research shows the prevalence of atherosclerosis in elementary school-aged children (Berg et al., 1983). Gilliam (et. al., 1982) found that 62 percent of 47 youngsters studied had at least one CHD risk factor and that 21 percent had three or more factors. Another source reported as many as 60 percent of children in the United States exhibit at least one modifiable adult risk factor for coronary heart disease by the age of 12 (Berenson et al., 1980). Thomas (1990) also reported that even half of the children from families who do not have a history of coronary heart disease do have elevated cholesterol levels. These statistics are astonishing.

Problems stemming from obesity and CHD among adults already places a \$100 billion health care burden on the United States (Vogel, 1991). Coronary heart disease remains the leading cause of death in the United States and is a major contributor to lost productivity, disability, and medical costs (American Heart Association, 1993). If interventions do not take place with today's children their poor fitness will follow them into adulthood (American Academy of Pediatrics, 1986). In 1986, Emmet Keeler of the RAND Corporation put it this way, "For each person who

chooses an armchair lifestyle, society pays \$1,900 annually." Just think what the cost must be today.

The initial causes of CHD is atherosclerosis in the internal linings of major coronary arteries. The pathogenesis of coronary atherosclerosis involves dysfunction and injury to endothelial cells; lipid (primarily low density lipoprotein or LDL) insudation, alterations, and deposition; macrophage and smooth muscle cell infiltration; fibrosis; and calcium deposition (Leon, 1995). This disease process begins in childhood and progresses in severity over decades. That is why our nation is so concerned with improving our nation's physical activity levels as found in the objectives of *Healthy People 2000*. Physical inactivity is a dominant risk factor in the United States. This is supported by a recent survey by the Centers for Disease Control and Prevention. It revealed that 60 percent of American adults perform little or no recreational physical activity (Siegel, Brackbill, & Frazier, 1991).

Most studies that have been completed examining the effects of physical activity of CHD have involved adult (middle-aged or older) men. The risk of death from CHD increased about twofold in individuals who were not physically active as compared to active individuals (Berlin & Colditz, 1990; Powell et al., 1987; Blair, 1993). The following are a few key studies that support the basis that physical activity will improve your health. Paffenbarger and colleagues' (Paffenbarger, Gima, Laughlin, Mary, & Black, 1971) 22-year study involved San Francisco Bay longshoremen.

In this study, a threefold increase in death from CHD was associated with low energy expenditure on the job as compared to high energy workout.

Morris (et al. 1973, 1990) conducted a study which included a 10 year follow-up of up to 18,000 British male executive clerks and civil service employees. Another study, over an eight year period involved 10,000 healthy men and over 3,000 women who received maximal treadmill exercise tests at The Cooper Institute for Aerobics Research in Dallas (Blair et al., 1989). The Harvard Alumni study (Lee & Paffenbarger, 1992) assessed men in 1962 or 1966 and in 1977 through mail back questionnaires in 11,703 men. Data from this study showed weight loss in men who increased their physical activity. All these studies along with many others support the inverse relationship of increased physical activity with a decreased risk of CHD, as well as with all-cause mortality.

The largest reduction in relative risk of CHD appears to occur in going from a sedentary to moderately-active lifestyle and from below average to average fitness for one's age. In terms of energy expenditure the mass of observational data suggests that physical exertion of even moderate intensity, if performed on the average of 30 minutes or more a day, at a total energy cost of 1,050 to 2,000 kcal a week for an average-sized person, is associated with a reduced risk of death from CHD (Haskell, 1994; Leon et al., 1987; Paffenbarger et al., 1986). This information directly supports the vital need to live a physically active life.

Many recommendations in the field of fitness have come from small scale, short-term human experimental studies, animal research, and cross-sectional comparisons of physically active versus sedentary people to help explain how physical activity and cardiorespiratory fitness lower the risk of initial CHD events, and improve survival after a myocardial infarction, also known as heart attack (Leon & Norstrom, 1995). These recommendations consist of physiologic, anatomic, and metabolic adaptations to physical activity and depend on the type, intensity, frequency, duration, and length of the participation. The evidence supporting physical activity gleaned from many of these small scale, short term studies (Blair, Kohl, & Gordon, 1992, Leon, 1990, 1991) is as follows:

1. Reduction in severity of coronary atherosclerosis both directly and through favorable effects on other major coronary risk factors (i.e., loss of excess weight/body fat, reduction in blood pressure, improved insulin sensitivity, and increased glucose tolerance.)
2. A reduction in myocardial oxygen demands at rest and during sub-maximal physical effort by a decrease in heart rate and systolic blood pressure.
3. An increased myocardial oxygen supply through lengthening of diastole by heart rate slowing, as well as perhaps by increasing vascularity.
4. A reduction in risk of coronary thrombosis by decreased platelet adhesiveness and aggregability and promotion of fibrinolysis.

Physical Activity and Fitness Recommendations

To reap the benefits just listed, it is recommended that a combination of recreational physical activity on a daily basis plus a formal endurance exercise program several times a week be implemented to increase aerobic power. Inactivity at work and during leisure time doubles one's risk of a fatal and nonfatal heart attack, distinct of other risk factors. The following are recommendations from various professional organizations concerning exercise: The American College of Sports Medicine (ACSM 1990) proposed 20-60 minutes of aerobic activity, 3-5 days per week at an intensity of 50-85 percent of functional capacity; The American Heart Association (Fletcher et al., 1992) identified physical inactivity as a risk factor for cardiovascular disease, "Persons of all ages should include physical activity in a comprehensive program of health promotion and disease prevention and should increase their habitual physical activity to a level appropriate to their capacities, needs, and interest."

The World Health Organization/International Society and Federation of Cardiology (Bijnen et al., 1994) said the following to notify the international community that physical inactivity is an important risk factor for heart disease.

Physical inactivity should be considered an important risk factor in coronary heart disease and should be included in prevention policies, particularly in industrialized countries. Because physical inactivity is a modifiable risk factor, industrialized countries should set concrete policy objectives for

physical activity. Regular light-to-moderate physical activity, documented in current studies as having significant health benefits, should be encouraged. From a public health perspective, encouraging inactive persons to increase their physical activity is more important than encouraging already active persons to become even more active.

WHO/FIMS (Blair et.al. 1994) made the following statement to urge governments to promote and enhance programs of physical activity and fitness as health and social policy:

Physical activity should be reintegrated into the routine of everyday living. Children and adolescents should be provided with facilities and the opportunity to take part in daily programs of enjoyable exercise so that physical activity may develop into a lifetime habit. Adults should be encouraged to increase habitual activity gradually, aiming to carry out daily at least 30 minutes of physical activity of moderate intensity. Women must be offered more opportunities and more encouragement to the elderly to lead physically active lives. Provide exercise advice and facilities for people with disabilities and chronic diseases.

In 1994, England proposed the following policy statement: "Engage in 30 minutes of moderate intensity physical activity, such as a sustained brisk walk, on at least 5 days of the week. Aim for a total of 30 minutes of physical activity on each of these days. Ideally take this in one period, but make up this total from shorter bouts of 15 minutes, if this is easier for you. Build up gently." (Kiloran, 1994). Finally in 1995 the Centers for Disease Control and Prevention and American College of Sports

Medicine (Pate et al. 1995) presented a public health message on physical activity and health in which they recommended that all adult Americans should participate in 30 minutes or more of moderate intensity physical activity on most, preferably all, days of the week.

Dr. Kenneth H. Cooper, a preventive medicine specialist, has promoted aerobic exercise as a foundation of good health because it helps develop your body's ability to sustain exercise, build muscle tissue and and burn fat. He suggests doing aerobic activities for at least 30 minutes three times a week or 20 minutes four times a week. Along with aerobic exercise is the need to build and strengthen muscles. One of the most important fitness discoveries in the last decade uncovered that muscle burns calories at the highest rate. Bailey (1993) states, "Of all the calories burned in the body, 50 to 90 percent are burned by the muscles --- even when you sleep." By increasing muscle mass you raise metabolic rate, even when you are resting (Cooper & Cooper, 1996). William Evans, Ph. D., director of the Noll Physiological Research Center at Pennsylvania State University states, "Strong, well-toned muscles keep your circulation high, draw in more oxygen, rev up calorie-burning and increase your overall metabolism, helping you to burn off stubborn layers of excess body fat.

Healthy People 2000 not only alerted the nation to a concern over physical inactivity but it also pointed out the need to improve the American diet. For this reason leaders from the food industry, nonprofit organizations, and

government developed the National Action Plan in 1993 to Improve the American diet (Trumpfheller, Foerster & Palombo, 1993). Their big concern was for our nation's children who are at risk from lifestyles that can lead to chronic disease, such as coronary heart diseases, cancer, and diabetes. Many groups have indicated healthy diet as a crucial beginning in the prevention of several chronic diseases. In 1995 a National Action Conference was held to bring the issues of nutrition and health for children to the forefront of the agenda of national policy makers. Three papers were presented to address the issues of, first, what we know about the status of children's nutrition, second the current environmental influences on children's eating and last how to change the diets of America's children.

A major goal in *Healthy People 2000* is striving for a decrease in obese children and adolescents. The development of obesity can be attributed to two major factors: excessive energy intake (food consumption) and lack of energy output (physical activity). The surgeon general's report on nutrition and health in 1989 reported that obesity is associated with hypertension, diabetes, and dyslipidemias in adults. In children, obesity has been shown to continue into adulthood.

Albertson's (Albertson, Tobelmann, Engstrom, Asp, 1992) study of food intake in children, age 2-10 years concluded that children today are heavier than they were in the past, but children today are consuming no more food or fat than children in previous years. The Nationwide Food Consumption

Survey 1977-78 and 1987-88 confirmed these findings; children today are consuming no more energy or fat than children in previous years. In fact, there is a suggestion of a downward trend in fat consumption over the past 10 years among children in all age groups. This suggests that children today are heavier because of inactivity.

Physical Education and Fitness Education

Unfortunately the data involving physical activity among children is hard to interpret. There is limited data to accurately assess children's physical activity. Several studies, however, point out that children are not receiving the required amount of physical education. The 1984 National Children and Youth Fitness Study (NCYFS) found that 63 percent of 10th and 12th graders participated in physical education classes three or more times a week (US. Department of Health and Human Services, 1985). The 1991 Youth Risk Behavior Survey (YRBS) reported that only 45 percent of girls and 53 percent of boys in high school participated regularly in physical education classes. Of those, only 75 percent of the girls and 85 percent of the boys actually exercised for at least 20 minutes per class (Morbidity and Mortality Weekly Report, 1992). Lack of physical activity has resulted in an increase in obesity. Schools are best equipped to be influential in providing information regarding the important health benefits of physical activity along with providing the actual activity.

The review of our children's nutritional status leads us into a review of the environmental influences on our children's eating. Eating a home-cooked meal with the family every night has gradually been disappearing over the last 25 years. Today American children are given more and more responsibility for making their own food choices and are constantly exposed to advertising messages about food.

We Are What We Eat

The Third National Health & Nutrition Examination Survey (NHANES III 1991) using body mass index as the measure of body size concluded that the prevalence of obesity among adolescents is rising. Data from NHANES II 1976-80 indicated that 15 percent of adolescent girls and 16 percent of adolescent boys were overweight. Data from NHANES III (1991) indicated that those figures had increased to 22 percent for girls and 20 percent for boys (McDowell Briefel & Alamo et al., 1994). The comparison of data indicates an increase of approximately 5 percent. Research supports that children's energy intake (food consumption) has remained constant. Researchers hypothesize that because of this fact children's physical activity must be declining to support the evidence that obesity is increasing (Albertson et al., 1992). Gortmaker et al. (1987) compared data between 1963 and 1980 from the NHE, NHANES I, and the NHANES II surveys. They based their findings on the triceps skin fold measurement and found an increase in obesity.

Reviewing the demographics and socioeconomic factors affecting children will help explain some of these changes.

The proportion of children in the U.S. population is decreasing as the birth rate drops and older Americans continue to live longer. The National Commission on Children (1991) reported that in 1960, children under the age of 18 accounted for 36 percent of all Americans; in 1990, they made up 26 percent and by 2010 they are predicted to make up 23 percent of the population. A dramatic change has taken place in cultural and ethnic diversity over the years. The Latino-origin and black communities together form a growing segment of the child population. Blacks are just 12 percent of the U.S. population, but they are 15 percent of those under age 5; Latinos are 8 percent of the total population, but 12 percent of preschool children (O'Hare, 1992). The U.S. Bureau of the Census projects these groups will make up nearly 30 percent of the child population in the year 2000. Racial and ethnic distinctions also account for differences in children's nutritional intakes. Black children showed the largest nutritional risk; they have lower vitamin A intakes and higher total fat, saturated fat, cholesterol, and sodium intakes than any other racial/ethnic group measured (Johnson, Guthrie, Smiciklas-Wright & Wang, 1994).

The past two decades has shown significant growth in maternal employment. The percentage of employed mother with children under 6 rose from 19 percent in 1960 to 57 percent in 1990; and for school-aged children, the percentage of employed mothers rose from 43 percent in 1970 to 64 percent

in 1988 (Select Committee on Children, Youth, and Families, 1989). Traditionally, the mother took the role of teaching her children good eating habits that safeguarded against health, now the media and child care providers share in this role.

Economic status is a major environmental factor affecting the well-being of children. The U.S. Bureau of the Census (1993) reported that poverty of Americans increased by 1.3 million in 1993, bringing the total to 39 million, or 15.1 percent of the total U.S. population. In 1993, 12.2 percent of whites lived in poverty, compared to 33.1 percent of blacks and 30.6 percent of Latinos. The poverty rate for all children under the age of 18 was 21.9 percent. A major reason underlying the rise in poverty is the growing number of single-parent families. Female-headed families are more than five times as likely to be poor as married-couple families, and the number of female-headed families has been progressing rapidly for several decades. A study (Sherry, Springer, Connell, Garrett, 1992) reported that children from a high-poverty geographic area were almost twice as likely to be short for their age as children from a low-poverty area. In contrast, the most universal problem for children in the low-poverty area was obesity.

Children's eating patterns are changing in this country. Traditional sit-down family dinners at home are less common. Forty-six percent of family food expenditures are for food and beverages served outside the home, with 34 percent of the total food dollar spent on fast foods (Blaylock, Elitzak,

Manchester, 1990). The take-out market is increasing and a recent review of food industry trends showed that the deli department had the largest percentage increase in sales (+16.4 percent) of all 105 supermarket categories studied; ready-to-eat salad sales soared 82 percent in 1993. Pizza is the fastest growing dinner item, up 81 percent from 1983 (Sloan, 1994). Less and less consumers sit down to eat the traditional "three square meals", in fact only 50 percent of adults surveyed said they did (Senauer, Asp, Kinsey, 1991). Children follow in their parent's footsteps. A recent study confirmed that children are snacking about two to three times a day (Cross, Babiez, Cushman, 1994). Snacks at the top of the list are salty, crunchy foods and ice cream. Eating more fruits and vegetables, and drinking more healthful variations of drinks and snacks such as natural drinks, flavored waters, and pretzels is becoming a trend in teenagers (Kate, 1993). Today more and more snack food companies are marketing reduced fat or fat-free food items. Some examples are pretzels, potato chips, cookies, crackers, and cream cheese. Eating fruits and vegetables provide energy and a healthful alternative to junk food.

It used to be "Mom" was the prime decision maker for what food the family consumed. Currently, children are deciding on their own the foods they will eat. More and more children are eating alone, or are getting a large proportion of their calories and nutrients from snacks. Advertisers have capitalized on a growing food market of children. The average 10 year old makes approximately 250

purchases per year without his or her parents knowledge (McNeal, 1991). Children directly influence what their parents purchase. Marketers realize that in today's shopping aisles, children are making food purchasing decisions.

Influences of Television

Children have become the target of millions of dollars in food advertisements. Adolescents are preparing meals more and more today than in the past, probably because more mothers are working and simply do not have time for food preparation. Over half of the 4th and 5th graders report that they prepare their own breakfasts, lunches, and dinners (Baranowski, Domel, Gould, 1993). Children may view as much as 3 hours per week of food advertisements alone (Cotunga, 1988). The greater the number of hours of television watched by children, the more the children request, purchase, and consume advertised foods (Taras, Sallis, Patterson, Nader, Nelson 1989). Over 50 percent of food advertisements on children's television are for items high in fat, oil, and sugar (Kotz, Story, 1994). Saturday morning used to be the targeted time to market for children until learning that only 3-7 percent of children's television watching for 2 to 17 year olds is on Saturday morning (Stipp, 1993). Children actually spend 5 to 10 times more hours watching television in prime time.

Children 12 to 17 spend an average of 22 hours a week watching television (Nielsen, 1990). Next to the family, the

television may be the most important influence on child development (Dietz, 1986). Television has become permanently linked with eating in our culture; up to three in every four adults say they watch television when they eat dinner (Weinberg, 1993). When there is less parental supervision, the amount of time adolescents spend watching television increases. A study (Brown, Childers, Bauman, Kooh, 1990) showed that black children and girls spent more time with television than whites and boys.

Television is an environmental factor affecting our children's nutrition. A study of Pennsylvania sixth grade children reported that children who spend more time watching television exercise less than children who watch less television (Shannon, Peacock, Brown, 1991). Children who spend more time watching television are in poorer physical shape (Ross, Pate, 1987); their metabolic rate may be reduced, causing them to burn fewer calories (Klesges, Shelton, 1993). This is a major concern since child obesity is the biggest nutritional problem of children and later in life becomes a risk factor in cardiovascular heart disease. Television is a major source of information about food choices for many young children and can have many negative health-related effects (Deitz, Gortmaker, 1985). The American Academy of Pediatrics (1995) believes that advertising directed toward children is inherently misleading and exploits children under 8 years of age. Children and parents need to be educated on the negative influence of television advertising junk food.

Fats and Minerals

Unfortunately television influences viewers to eat snack foods which are generally high in fat calories and sugar. Health-related fitness is not just physical activity, it incorporates healthy eating. The next section will review the effects of fats, sodium, iron, and calcium.

Fat intake has been a topic of public concern over the past twenty years, due to the correlation between excessive fat intake and the subsequent development of chronic diseases, such as cardiovascular disease, diabetes, and certain cancers (National Cholesterol Education Program, National Research Council, Public Health Service, 1991; Rolls & Shide, 1992). Excessive intake of fat, specifically saturated fat, has been found to increase blood lipid levels, which is a major risk factor for cardiovascular disease. The progression of cardiovascular disease begins early in life; in fact, plaque formation has been noted in the arteries of children and young adults (Strong, Newman, Freedman, Gard, Tracy, & Solberg 1986). Fat holds more kcal per gram than protein or carbohydrate. The combination of excessive fat intake and physical inactivity can lead to an increased risk of obesity (Must, Jacques, Dallal, Bajema & Dietz, 1992; Rolls & Shide, 1992). Students need to be taught the harmful effects concerning fat intake.

The Dietary Guidelines for Americans, the National Cholesterol Education Program Recommendations for Children and Adolescents, and the *Healthy People 2000* recommend

limiting total fat intake to 30 percent or less of total kcal. In research from NHANES I (1971-1975), the mean percent of calories from total fat was 37 percent for children 6-11 years old (Braitman, Adlin & Stanton, 1985). The most recent national survey from USDA's Continuing Survey of Food Intakes by Individuals (CSFII), (1989-91) and NHANES III (1988-91) indicate that the mean total fat intake of children 2-19 years was 33-34 percent of total kcal (McDowell, et al, 1994). The NHANES III survey reported that black children 6 to 19 years old had a higher percentage of fat intake of 36.1 percent of calories from fat. The School Nutrition Dietary Assessment Study (SNDA) in 1992 reported that the mean percent of calories from total fat was 34 percent for children in grades 1 through 12 (Devaney, Gordon, & Burghardt, 1993).

Intake of saturated fat has been more directly associated with the development of cardiovascular disease than has an excessive intake of total fat (Barr, Ramakrishnan, Johnson, Holleran, Dell & Ginsberg, 1992). The National Cholesterol Education Program (1991) and the U.S. Department of Health and Human Services (1991) recommend an intake of less than 10 percent of calories from saturated fat. The NHANES I 1971-75 survey reported 14 percent of calories from saturated fat and the NHANES II 1976-80 survey reported 13 percent of saturated fat from total calories. More recently the Third National Health and Nutrition Examination Survey (1988-91) and The School Nutrition Dietary Assessment Study (1993) have indicated intakes of saturated

fat for children 3 to 19 years old ranging from 12.2 percent to 14 percent with less than 10 percent of children meeting the recommended requirements of less than 10 percent or less of their calories from saturated fat. These studies show that boys have higher intakes of saturated fat than girls. The major contributors of saturated fats are higher-fat dairy products, meat, poultry, fish products, cookies, cakes, and pies (Park & Yetley, 1990). This information will be useful in the nutrition section of this project.

Excessive sodium intake contributes to adult hypertension, or high blood pressure. Based on the estimates from NHANES III 1988-91 the National High Blood Pressure Education Program (1993) states that approximately 25 percent of adults in the United States suffer from hypertension. High blood pressure can contribute to the development of stroke, coronary heart disease, and congestive heart failure (MacMahon, Peto Cutler & Collin, 1990; Whelton & Klag, 1989). The occurrence of hypertension in childhood is rare but evidence shows that a decrease in sodium consumption among adults is effective in reducing blood pressure. The Dietary Guidelines for Americans, *Healthy People 2000*, and the National High Blood Pressure Education Program recommend a daily intake of no more than 2300-2400 mg of sodium chloride.

The Institute of Medicine reported in 1993 that iron-deficiency anemia was 4.1 percent among boys and 2.8 percent among girls 11 to 14 years old. These results were based on the definition of anemia associated with laboratory evidence

of iron depletion, based on one or more of the following test results: low serum ferritin, or an elevation in erythrocyte protoporphyrin levels. Iron deficiency has decreased since the 1970's but adolescent girls still appear to be at risk for iron deficiency.

Epidemiologic research supports that higher intakes of fruits and vegetables is associated with lower risk of cancer (Steinmetz, 1991) and it also suggests that the antioxidant vitamins found in fruits and vegetables reduce the risk of coronary heart disease (Gey, 1990). Five or more servings of fruit and vegetables is recommended for optimal health and prevention of cardiovascular disease and cancer. State and local surveys of fruit and vegetables consumption have found that intake is about half the recommended amount (Market Research Corporation of America, 1993; Basch, Zybert, & Shea, 1994; California Department of Health Services, 1993).

Inadequate calcium consumption can effect linear growth and decrease bone mass thus becoming a risk factor for osteoporosis as an adult (Bronner, 1994). The recommended Dietary Allowance (RDA) for calcium are 800 mg for children 1 to 5 years old, 800 to 1200 mg for children 6 to 10 and 1200 to 1500 mg for children 11 to 24 years old (National Research Council, Commission on Life sciences, Food and Nutrition Board, 1989). Data from NHANES III 1988-91 found that, on average, children over 11 years of age do not consume the recommended amounts of calcium (McDowell, Briefel et al., 1994).

Education: How We Go From Here to There

The National Action Conference on Healthy Eating for Children (1994), identified six elements to build a successful nutrition education program: (1) programs are behaviorally based and theory driven; (2) family involvement is incorporated into programs for elementary-aged children; (3) programs for middle school to senior high students include self-assessment of eating patterns; (4) behavior change programs include intervening in the school environment; (5) behavior change programs include intervening in the larger community; and (6) programs include intensive instruction time. The move for fitness and nutrition is towards behaviorally based programs as supported by *Healthy People 2000* goals. The social cognition theory is one behavior theory that has been successful. It posits that individual, behavioral, and environmental factors interrelate and are important in behavior change. One's perception of one's ability to make a change or accomplish a task is also important to this theory. Reinforcement leads us to evaluate the importance of peer groups and significant others in changing behavior.

Students in middle school are in Piaget's formal operational stage of cognitive development. Individuals at this stage begin to think abstractly. They can formulate hypotheses to explain occurrences, and can come up with alternatives. They have the ability to understand the recommended nutrient levels and that what they eat affects

their health, growth, and weight. Utilizing a self-assessment program takes advantage of using these growing cognitive skills. Successful programs using self-assessment have been reported by Perry & Klepp (1987), Howison, Niedemyer, & Shortridge (1988) and White & Skinner (1988).

The reliability and validity of physical fitness tests continue to be an issue (Safrit & Looney, 1992; Woods, Pate, & Burgess, 1992). Questions of the test's ability to accurately predict present fitness levels of American youth is also a concern (Blair, 1992; Corbin & Pangrazi, 1992). Corbin & Pangrazi (1992) use the criterion-reference approach to examine data from the National School Population Fitness Survey, originally analyzed using the traditional norm-referenced standards. They concluded that, even though fitness is low for certain items, the percentage of children who fall in the low fitness category is not as high as earlier reported. Educators are using these tests as a means to have students become more physically educated. Fitness expert Russell R. Pate is concerned with the fact that little research has been conducted to determine how these physical fitness tests and test items affect the attitudes and knowledge of the children subjected to the test each year.

Christine Hopple and George Graham (1995) conducted a study to find out what children think, feel, and know about physical fitness testing. Fourth and fifth graders at two separate schools were the subjects, with the Presidential Physical Fitness Challenge as the testing instrument. Interviews were conducted asking three general research

questions involving the mile-run test:

1. Did children understand what the test item measured? Did they understand the implications of good, or poor, performance on the test item?
2. What did the children think, in general, about the mile-run test? What did they like about it? Not like? What would they change about it?
3. Were there any differences in how students who tended to score well on the test items responded to the above two questions versus those who scored poorly?

The findings centered around three important pieces of information. First, most students do not have a clear understanding of why they take the mile-run physical fitness test; second, many students dislike taking the mile-run test, some so much that they become "test dodgers"; and last, given the chance, many students would change the mile run to make it more fun. Students in this study mainly showed little or no understanding of why they were being asked to complete the mile-run test. Very few could explain it in terms of the purpose presented by their teacher. Yet, this information is considered a vital component in helping to "physically educate" students about the benefits of lifetime physical activity. The obvious gap between what teachers in this study expected their students to learn and the knowledge students actually verified is a reminder that just because we teach it, does not mean they learn it (Hopple & Graham, 1995).

Data from Hopple & Graham (1995) also indicates that many students viewed the mile-run test as a painful, negative experience to be either actively or passively dodged. The

question asked by Hopple and Graham, "Is there a connection between children who consistently either actively or passively dodge the test and those who exhibit the condition of "learned helplessness"? Learned helpless individuals feel they have no control over achievement outcomes during the performance of tasks both physical or academic. When children constantly encounter failure, they come to believe that nothing they do can change prospective outcomes. One important cause of learned helplessness is constant failure in accomplishing tasks. For adolescent students learned helplessness is compounded, given that they have already had ample opportunities to succeed, yet have failed. Mary D. Walling and Thomas J. Martinek observed a 13 year girl who showed these symptoms of learned helplessness and made these suggestions from their observations:

1. Stress effort and improvement over outcome. Learned helpless children are not perceptive at recognizing their improvement, perhaps because they focus more on comparing their performance to other students' abilities.
2. Structure the learning environment for maximum participation. Learned helpless children frequently expect failure outcomes, and the stress put upon a child who is forced to perform in front of a group of peers can be detrimental.
3. Encourage students to engage in physical activity outside of school. Students might be prompted to practice a skill at home if their physical education teachers suggested a particular task, such as jumping rope or dribbling a basketball.
4. Create leadership and responsibility roles for the students. Learned helpless children do not perceive that they have control over the

outcomes in their lives, so they can benefit from being in situations that promote feelings of responsibility. Involving children in tasks of helping with equipment, demonstrating an activity, or running errands, can help them experience feelings of control and responsibility. Learned helpless children are sometimes slow and hesitant, and they can be easily overlooked.

Learned helplessness applies to fitness in that students who have experienced frustration and failure in physical education classes stressing skills will be reluctant to try new methods to reduce health related risk factors from their lives. Students who have been tested on physical skills in the past will welcome a program that will assess them on their individual improvement as opposed to evaluating their performance versus other students. In reviewing the literature there is a growing concern over the lack of motivation in physical education. Portman (1995) did research to find out more information contributing to low-skill students in physical education classes. Thirteen low-skilled students were the subjects. All 13 students found physical education to be an unhappy experience and only liked it when they felt successful. They all felt they would be more successful in class if they were not publicly criticized by their peers. All 13 showed symptoms of learned helplessness, that feeling of failure breeds failure. Research (Nicholls, 1984; Weiner, 1985) on learned helplessness supports how students in this state quickly become discouraged by initial failure to master a skill, viewing failure as clear evidence of their low ability and quickly give up. If they are successful they attribute it to

luck.

Nicholls' (1984) work states that ability is viewed as being demonstrated when higher effort expenditure results in success. This view implies that children perceive a positive relationship between the concepts of ability and effort. Some teachers have indicated that they believe when they recognize effort as a means for higher achievement, they see the students effort leads to improvement (Veal & Compagnone, 1995). Thus, simply recognizing student effort by way of feedback can augment skill levels.

A shift is occurring in fitness testing from evaluating individual fitness levels by means of motor performance tests to the use of health-related fitness tests. Corbin & Pangrazi (1993) compares personalized informal tests to formal tests. Personalized informal tests involve students working with partners to help each other develop fitness. The focus is on self-testing with the objective to teach students the process of fitness testing so they will be able to evaluate their health status during adulthood. Test results are treated as private property and are not shared or posted with the class. More and more schools are switching to The Prudential *FITNESSGRAM* which is an informal test promoting health-related fitness components of aerobic endurance, flexibility, muscular/strength endurance and body composition.

The Presidential/National Physical Fitness Challenge Test (PCPFS) has been the test most commonly used in the past. It is a formal test awarding high level performers.

Test protocol is critical and because this test requires maximal performance, it may not be motivating to less capable students. Only 2 percent of all children taking the AAHPERD Youth Fitness Test actually earn the PCPFS awards (Corbin, 1987). Research indicates that goals must be reasonable and attainable to be motivating (Biddle, 1986; Locke & Latham, 1985). Blair (1985) has provided statistics to show that fitness improves with regular exercise. On the other hand Laporte, Dearwater, Cauley, Slemenda, and Cook (1986) credit health benefits more to regular exercise than to a state of exercise. This can be supported by the student who has high scores on a fitness test but does no regular exercise. Research (Bouchard et. al., 1992) suggests that the margin for fitness improvement in cardiovascular fitness depends on heredity and maturation. Some children have a predestined advantage on fitness tests because of genetic predispositions, for instance types of muscle fibers inherited. Corbin's (1987) research suggests that certain children will have difficulty in attaining "high" level performances regardless of how often they exercise. These kinds of test could be sending confusing messages that some children who exercise regularly will never receive the health benefits.

The National Association for Sport and Physical Education's (1992) definition for the physically educated person is one who: **Is** physically fit; **Does** participate regularly in physical activity; **Knows** the implications and the benefits of involvement in physical activities; **Values**

physical activity and its contributions to healthy lifestyles; and **Has** learned the skills necessary to perform a variety of physical activities. Given the potential of the nations' public schools to address the American public, schools have been singled out as a primary channel through which school age children can gather information, assess attitudes, and develop behavioral skills necessary to improve their health status (Iverson et. al., 1985). The following are guidelines written in 1986 by the President's Council on Physical Fitness and Sport for physical education teachers to include in their physical education program:

1. Stress the importance of aerobic conditioning and total body fitness and understanding the physiological concepts of fitness.
2. Teach children to become responsible for their own fitness. Demonstrate to them the importance of physical activity that is sufficient to stimulate normal growth and development.
3. Provide experiences that will enable children to understand the necessity of maintaining good health-related fitness.
4. Incorporate motivational schemes to promote positive attitudes toward physical fitness.
5. Discuss with students the immediate and long-term effects of health-related fitness.
6. Provide information on running economy and pacing oneself when exercising.
7. Allow children to test their knowledge about health-related fitness and total fitness.

Most middle school physical education programs tend to emphasize sports and games rather than fitness activities as reported by Ross and Gilbert (1985). Football, volleyball,

soccer, softball and basketball are the most common sports encompassing the curriculum (Siedentop, Mand, & Taggart, 1986). Since most team sports are mostly anaerobic, students are not receiving the recommended amount of at least 60 percent of maximum training heart rate for a minimum of 20 minutes per day. Strand and Reeder (1993) conducted research to determine which physical education activities of middle school students improved cardiovascular fitness. Basketball, speedball, and football were the only three out of nine activities to reach 60 percent heart rate level for a total of 15 minutes. The following are recommendations (Strand & Reeder, 1993) for teachers to implement to ensure that students obtain adequate cardiovascular fitness development during physical education classes:

1. Traditional team sports in physical education classes generally do not develop aerobic fitness, but may lead to anaerobic fitness.
2. To retain traditional team sports in their curriculums, teachers must develop techniques for obtaining even greater aerobic fitness during those activities. For example, keep all students actively engaged by keeping team membership to a minimum and playing two-on-two or four-on-four.
3. Teachers must restructure activity units so that opportunities for developing aerobic fitness are built into their unit plans. For example, three days a week could be spent in traditional activities while two days are spent in aerobic activities (Petray et al., 1989; Steinhardt & Stueck, 1986).
4. Teachers may have to restructure curricular offerings. Traditionally, junior and senior high school programs have emphasized sports and games rather than fitness. If the development of cardiovascular fitness is a

major goal, curricular changes which eliminate or modify traditional activities must be implemented.

In summary, the literature reviewed stresses the need for increased physical activity and fitness during physical education classes as well as during leisure time. This supports the reasoning for this project. A stronger fitness emphasis needs to be initiated at Summit Intermediate School. Our nation's youth have increased in body fat with one out of four children considered obese. Research indicates that childhood obesity generally carries on into adulthood and is a factor of coronary heart disease. Poor nutrition and inactivity lead to obesity. Lack of self esteem and helplessness accompany obesity.

The fitness program proposed in Chapter 3 will help increase the physical activity of the students. It will teach students the reasons for becoming more physically active and use the literature reviewed to support its foundation. Children need to know the risks of coronary heart disease and know how proper nutrition and physical activity can safeguard against these risks. The literature addresses the improvement in the criterion reference physical fitness tests over the older norm-reference tests because it allows more students to achieve success and more accurately assesses a child's health-related fitness. This project will replace the traditional Presidential Challenge Fitness test (norm-reference) with the Prudential *FITNESSGRAM* (criterion reference).

The literature emphasized moving away from traditional

sports and replacing it with increased fitness activities. Summit Intermediate School's physical education program is currently sports skilled based. The new program will promote increased fitness. The literature also addressed the need to help motivate those learned helpless students. One solution incorporated in this program is to emphasis effort and not just skill. The literature reviewed is the foundation for the following fitness program for Summit Intermediate School.

Chapter Three: A Fitness Program for Summit Intermediate School

This fitness program is designed for the physical education department of Summit Intermediate School located in Rancho Cucamonga, California. Rancho Cucamonga, which within the last 20 years incorporated three smaller communities (Cucamonga, Alta Loma, and Etiwanda) into one city, is a suburban center within San Bernardino County and ranked the tenth safest city in the country among cities with populations of 100,000 or more (Daily Bulletin, January 13, 1996). The median family income in 1990 was \$50,349 with the majority of homes having two incomes (Rancho Cucamonga Community Profile 1994). The city is very active in offering youth, adult, and senior citizen programs. The community is very religious with many different organizations. There are numerous city parks offering baseball, softball, tennis, and soccer leagues. The area experienced tremendous growth between 1986-1994 and is still growing but at a much slower rate.

Summit Intermediate School consists of 358 girls and 349 boys making a total of 707 students. The ethnic makeup is approximately 45 percent White, 30 percent Hispanic, 10 percent Black, 10 percent Asian or Pacific Islander, and 5 percent Filipino. The school is in its second year, having split enrollment from Etiwanda Intermediate School in the 1994-95 school year. The school facility was converted from an elementary school into a middle school. Initially the conversion plans did not include a gymnasium with outer

walls, but thanks to the efforts of the school board members the walls were included and a spectacular gym was dedicated 8 months into the first year. The school still lacks a track and field facility.

Summit Intermediate School does offer after-school sports for both girls and boys. The sports offered are volleyball, football, basketball, and track and field. To be eligible for the team a student must maintain a 2.00 average and have satisfactory citizenship. They compete against five other middle schools in a league within the city of Rancho Cucamonga. At this point only limited intramural sports have been offered during lunch time activities.

Healthy People 2000 Guidelines

The literature for this project definitely supports a thrust on getting our youth back in shape. Government's concern for the health of our youth generated the *Healthy People 2000* initiative which presented many objectives to help improve our nation's health. Three goals were targeted for children six to seventeen. Summit Intermediate School is currently meeting the first two; of engaging in vigorous activity at least three days per week for 20 minutes or more; and that 50 percent of children ages 6-17 currently participate in daily physical education.

Students at Summit Intermediate School participate in physical education classes every day. Students attend physical education classes for 50 minutes Monday through

Thursday and 40 minutes on Fridays. The third goal of *Healthy People 2000* is that by the year 2000, 50 percent of the time spent in physical education classes will be to focus on lifetime fitness activities.

Currently the physical education program at Summit Intermediate School emphasizes sports such as football/knacki, basketball, volleyball, tennis, softball, floor hockey and soccer. As the research points out only the sports of football, basketball and speedball produced the desired heart rates of at least 60 percent of maximum training heart rate for a minimum of 20 minutes per day. Summit Intermediate School's physical education program is not meeting *Healthy People 2000's* third goal. They are however devoting one day a week to fitness by engaging the students in running a one mile course. This takes the students between 7 to 20 minutes to run. Unfortunately many students walk, and many walk so slow they do not raise their heart rates. Running the mile is good but has some drawbacks. First, for the majority of students it does not get the desired heart rate of 60 percent of maximum training heart rate for a minimum of 20 minutes. The students who really try hard may reach the targeted heart rate but finish running the mile in less than 15 minutes. Second, students find it boring and give little effort while some begin to avoid class altogether the day the mile is run or have parents write bogus excuse notices. Third, fitness cannot be developed one day per week. After reviewing the literature the big push is to restructure our traditional physical

education programs from sports and games to fitness.

Summit Intermediate School's physical education department this year implemented the Sharkfolio (a sports fitness journal) which provides the student a record of their resting heart-rate, mile times and post exercise heart-rate. This has been beneficial to the students because they can compare their previous scores. These Sharkfolios can be accessed next year to include the student's *FITNESSGRAM* test scores and the student's personal fitness goals. Aerobic homework is another important factor already in place at Summit Intermediate School. Students receive certain points for various aerobic activities. Students are encouraged to do 20 minutes of continuous aerobic activity every day. Students receive extra points when they participate with a parent or guardian. The American Alliance for Health, Physical Education, Recreation and Dance and The Cooper Institute for Aerobics report that the best way parents can help children be active is to participate with them.

In working toward *Healthy People 2000's* third goal, Summit's physical education program will refocus on fitness. Physical fitness will be the theme providing a wide variety of activities whose only function is to promote fitness and to have students develop the ability to assess activities for their personal fitness. The contents of this program will establish a foundation upon which Summit Intermediate will build physical fitness emphasis into its physical education program focusing on the following health related components: cardiorespiratory endurance, muscular strength and endurance,

flexibility, and body composition. Cardiorespiratory endurance is an indicator of the efficiency of the circulatory and respiratory systems of the body. The key to achieving cardiorespiratory endurance is to do the activity continuously at target heart rate (60 percent of maximum training heart rate) level for at least 20 to 30 minutes three to five times a week. Muscular strength is the ability of the muscles to produce force at high levels over a short period of time. Muscular endurance explains how long a muscle can produce the force without becoming excessively fatigued. Weight training, jumping rope, calisthenics, isometric exercises and isotonic exercises are activities that improve muscular strength and endurance. It is recommended that activities involving these areas be done two to four times per week. Flexibility is the ability of your joints to move through their full range of motion. Body composition is the relative amount of bone, muscle and fat.

Psychomotor, Cognitive, and Social/Emotional Outcomes

This fitness program will have the following specific psychomotor, cognitive and social/emotional outcomes:

Psychomotor

1. Display an improved level of performance in the areas of health-related fitness. Two days per week will be devoted to physical fitness including 20-30 minutes of aerobic activity, along with strength training.

Cognitive

1. Explain and define the components of fitness.

2. Teach students to become responsible for their own fitness. Students will analyze their personal *FITNESSGRAM* report and set personal goals to improve their health-related fitness.
3. Discuss with students the short and long-term effects of health-related fitness.
4. Understand how certain activities improve skill-related fitness.

Social/Emotional

1. Demonstrate an improved level of self-confidence in fitness activities.
2. Value the effort exerted to enhance fitness.
3. Value the effort of others.
4. Demonstrate a willingness to assist others in improving their fitness level.

This program will start with devoting two complete days a week to fitness. A third day will contain a 20 minute aerobic section if the unit being taught is not football, speedball or basketball. The following are some ideas that could be incorporated into the fitness days: run/walk 30 minutes, aerobic dance, line dance, circuits (Appendix A), jump rope, and obstacle course. Many traditional games can be modified to increase the running component and keep many students active and moving (Appendix B). The main objective will be to work directly on the fitness components. Each activity will provide instruction as to its importance. Each lesson will contain some type of self-assessment. For example, performing a number of curl ups, recording performance (number of curl ups) and comparing to prior performance. Circuits will play a big role because both cardiorespiratory endurance and muscular strength can be

improved during the same workout. When setting up circuits, aerobic stations (jump roping, step aerobics, short-shuttle) should alternate with muscular strength stations to keep the heart rate up. Music should be used whenever possible to help liven up the students (Appendix C).

A cognitive component of physical fitness will accompany each fitness day. A two to five minute lecture will promote this theme at the beginning of class and once again at the conclusion of class. For example, if the theme is "flexibility", the benefits of stretching will be taught. Students will also be taught that the body temperature needs to be warmed up before stretching to prevent injury. Students will be told how developing good flexibility can prevent many health problems in the future. Demonstration will focus on a certain static stretches. Information could be given about how improving flexibility can help improve skill-related fitness.

Flexibility is a major component of this health related program. Stretching keeps the muscle limber, and helps prepare the muscles for movement. Any activities involving running or swinging your arms promotes tightness and inflexibility. Stretching before and after a workout keeps a person flexible and helps prevent common injuries such as shin splints and tennis elbow. It is important to stretch properly to prevent injury and small tears in the muscle fiber. To do this it is important to warm up the body temperature before you stretch. This can be accomplished by lightly running, jumping jacks or any aerobic activity for a

few minutes. Once body temperature is increased stretching should consist of a relaxed, sustained hold focusing on the muscle being stretched. The stretch should never be ballistic or held to the point of pain. These methods can actually do more harm than good. So, out go the traditional cherry pickers. Stretches should be held for approximately 10-30 seconds, then repeated after a short rest.

Eliminating some harmful, yet long held traditional exercises, is another important component of this new fitness program. The traditional sit-up which used to be the main exercise for strengthening the abdomen is now considered inefficient and harmful to your lower back. The psoas muscles run from the lower back around to the front of the thighs. During the sit-up the action of the psoas muscles is to pull the thighs closer to the torso. The traditional situp worked the psoas muscles rather than the abdominal muscles. More importantly sit-ups grind the vertebrae in your lower back. This happens because to work the abs effectively you are trying to make the lower back round, but tension in the psoas encourages the lower back to arch which can cause lower back pain. The good news is that by strengthening your abdominal muscles you build muscle that helps burn calories and you also prevent future back problems. Ab crunches, exhalation roll-ups, twisting exhalation roll-ups, cross-knee crunches are safe ways to strengthen the upper abdominal. Vertical lying leg thrusts and reverse crunches are safe exercises to build the lower abdominal.

Units will be designed to focus more on fitness. Sports units will size down teams to emphasize more running and activity. For example, soccer teams would be kept to smaller sizes of five or six compared to eleven. Another way to increase activity is to play mass soccer with 4 or more balls or with 4 or more teams at one time. To promote activity in girls, points could be adjusted to award more when a girl scores. When playing anaerobic sports, fitness breaks could occur periodically. For example, every time a team rotates in volleyball they could do 25 jumping jacks, in tennis after each game students could run around the court before continuing.

FITNESSGRAM

The initial hurdle in promoting and initiating this new program has already been cleared. Prudential *FITNESSGRAM* has been purchased for use in the school and will be the instrument used to assess the students' fitness. Currently the physical education department has no computers. The literature supports access of nearly one computer per teacher (Robinson, 1991; Boe, 1989). Due to a shortage of funds in the physical education department at Summit Intermediate School the two computers desired to assist with the computation of *FITNESSGRAM* tests will take a little time and creativity to acquire. One possibility will be applying for the Southern California Edison's 1996 STEP UP To Support Education, a mini-grant program. They are offering grants

for amounts of \$1,000, \$2,000, \$3,000, \$4,000 or \$5,000. Parental involvement and participation will be the educational focus in applying for the grant. Appendix D is a copy of the grant submitted.

Parents would first become involved in the Prudential *FITNESSGRAM* through family fitness night, an event where both students and families are invited to share an evening gaining valuable information about health related components and joining in physical activities. Appendix E is a letter inviting parents to Family Fitness Night. At Family Fitness Night parents will be asked to fill out a physical activity readiness questionnaire found in Appendix F before they, along with their child, complete the battery of tests. Following the battery of tests they enter the information into the computer and receive a personal health-related printout to take home. Parents will then be rallied to volunteer for future testing at the school. Until the money for these computers is obtained the physical education teachers can utilize the computers in the computer lab after school to enter testing scores.

Along with parent volunteers, the school nurse has agreed to become involved in the administering of the body composition test. She will measure weight, measure height, and measure percent of body fat. She can complete approximately 10 students per period. She will also be utilized as a resource for student's personal health concerns. Currently the school nurse is excited to join together with the physical education department to promote

and assist in carrying out the *FITNESSGRAM* program. Appendix G contains the printout example of the result of a *FITNESSGRAM* test along with some score sheets. The *FITNESSGRAM* testing will take place at least two times a school year. The first test will take place in the beginning of fall and a follow up will take place in the spring. After the initial test is given and students receive their personal *FITNESSGRAM* results, goals must be set and a contract determined. Goals will be set in each health-related area and compared in the spring to the follow up scores of the *FITNESSGRAM*.

You Stay Active, a book put out by The American Alliance for Health, Physical Education, Recreation and Dance and The Cooper Institute for Aerobics Research works in partnership with Prudential *FITNESSGRAM* as a comprehensive recognition program that encourages regular physical activity. It has various recognition programs for participants in the *FITNESSGRAM* program, including summer incentives, as well as blackline master copies for certificates. *You Stay Active* includes a fitness goals contract that will be used after the first *FITNESSGRAM* test to record the students' score. The student establishes a goal and more importantly lists activities that will help reach that goal. The follow up score is marked allowing students to compare and evaluate. This contract is found in Appendix H. Currently, *You Stay Active* is designed for elementary schools but is working on a recognition program specifically for middle schools and secondary schools to be released in the spring of 1997.

Before this program is completed it is recommended that middle schools develop and implement fitness and activity assessment events similar to "It's Your Move" at a level appropriate for middle schoolers. Combining *You Stay Active* and *FITNESSGRAM* will better assess health and motivate the students at Summit Intermediate School to improve their fitness level. Appendix I is one example of a certificate developed by *You Stay Active*.

Nutrition

Summit Intermediate School offers a nutrition flex class and a health elective to 6th graders. Unfortunately, not all students get these classes. All students taking band do not receive health. Out of nine flex classes offered to 6th graders they only are able to participate in five. The 7th and 8th graders have no classes teaching nutrition and health. For this reason, nutrition will be incorporated into this physical fitness program. The following three areas will be addressed: the food guide pyramid, reading food labels, and the psychological influence to eat junk food from advertising. Students will gain an understanding of the food guide pyramid and be able to plan a week's menu high in complex carbohydrates and low in fats. It should be stressed to students that for lifelong weight management, fat intake should only be 20-25 percent of daily intake. Students will also be encouraged to read and understand the "Nutrition Facts" on food labels. This knowledge will help students

determine which foods are "empty calories" and which foods are full of nutrients. Finally, students will be educated in the pitfalls of food advertising. Five days throughout the year will be set aside for class instruction. Rainy days would be a perfect time to teach nutrition. Along with classroom instruction will come mini-lessons on nutrition which might involve one tidbit of information given while students are stretching. Appendix J contains newsletters put out by *You Stay Active* which would be used for classroom instruction.

Inservice

New programs and new technology often get off to a slow start due to lack of inservice. Kinnaman (1990) and Robinson (1991) warn against the one-time inservice approach. This program proposes that the physical education staff utilize one of the first week school prep days when meeting as a department to introduce and promote the program. At this first inservice an extensive study of the *FITNESSGRAM* will prepare teachers to administer the fitness tests. Hands-on practice in taking skin fold measurements will help prepare and eliminate any teacher apprehensions. Teachers will also practice entering scores into the computer. Teachers will collectively work on ways to increase activity during physical education classes. They will examine the psychomotor, cognitive and social/emotional outcomes found on page 52 and determine success of program. Collectively

teachers will develop fitness themes that can be presented on fitness days. They will also work on ways to help motivate students. Inservices will continue at monthly meetings.

Successful change in schools occurs when teachers feel a sense of involvement (Fisher, 1989). Teachers should be involved from planning to evaluation. Some possible incentives for physical education teachers utilizing the *FITNESSGRAM* in their physical education curriculum are:

1. Access to computers during departmental meeting time in order to record *FITNESSGRAM* results.
2. Student assessment will be automatically computer generated, saving physical educators valuable prep time.
3. Provide state of the art instruction and services to students.
4. Motivate students to higher participation levels.

Chapter Four: Evaluation

To determine the success or failure of any new program it must be evaluated and measured against old accepted standards. The evaluation of this fitness program will take place in sections and stages throughout the year. The evaluation will include input from students, teachers, parents, and *FITNESSGRAM*. The first evaluation will take place with the physical education teachers after the first inservice introducing this program. They will be asked a series of questions to determine their opinions of physical fitness curriculum. The teachers can set further fitness goals as a school after the students are tested by *FITNESSGRAM* in the fall. The parents will then respond after they participate in *FITNESSGRAM* testing during Family Fitness night. The combination of this information will be considered the initial evaluation. The middle stage will consist of teacher communication over how the restructure of the philosophy of the department is working. The final evaluation will take place after the second formal *FITNESSGRAM* testing in the spring.

Initial Evaluation

The first evaluation will take place with the physical education teachers following the first inservice for this program. Appendix K contains the evaluation form that will be used at the end of the inservice. This evaluation form

has five questions which solicit the interest in changing the current sports focused curriculum to a fitness focused curriculum. Before the form is handed out the physical education teachers will communicate with one another to develop ideas for increasing the fitness emphasis in Summit Intermediate School's physical education program. The physical education staff should determine a percentage of the student body that they feel should be able to achieve the *FITNESSGRAM* Healthy Fitness Zone or better in the first year.

After Summit Intermediate School's physical education teachers administer *FITNESSGRAM* to their students in September the monthly departmental meeting will be used to assess the outcomes experienced. Teachers will relate the students reactions. Problems will be addressed. The discussion will lead to ways of better administering the test for the upcoming Family Fitness Night. The computer lab will be reserved to enter *FITNESSGRAM* results at this meeting. After parents participate in Family Fitness Night, while waiting for the computer to print out their results, they will be asked to fill out an evaluation form (Appendix L). The form will give Summit Intermediate School's physical education department an idea of what the parents think about the *FITNESSGRAM* program. It will also let the department know if the parents felt Family Fitness Night was worthwhile. More importantly it will motivate the parents to buy into the program and become supporters and participants of regular physical activity with their children.

Middle Stage Evaluation

Regular monthly departmental meetings will address the theme of fitness in Summit Intermediate School's physical education department. Collective ideas will generate new fitness themes and activities and continue to iron out any flaws. Teachers will become more comfortable the more this program is addressed and collaborated. The key is to get the physical education teachers involved in generating ways to improve this program.

After participating in September's *FITNESSGRAM* testing students will receive immediate feedback regarding their current level of fitness. This information can then be used as the basis for designing personal, individualized programs of fitness development. Students can then set goals in each health-related fitness component. Student and teacher will enter a contract with both party's signatures. This system gets students involved in creating their own personal fitness program. Just as important as it is to get teachers involved to experience success the same holds true with students. The more ownership students take the greater chance of achievement. Students can retest themselves monthly and determine if they are meeting their goals. If the student's goals have been met then new goals can be written.

Final Evaluation

Final *FITNESSGRAM* testing will take place in late

spring. The students will perform a self-evaluation. Students will compare their scores from the fall *FITNESSGRAM* test and determine if they have achieved their goals. Those students who met their contracts will be awarded certificates and any other incentives that have been offered. The beauty of this evaluation is that they can personally see how they compare to the Healthy Fitness Zone and receive important information concerning areas that need improvement. Students will be required to get a parent signature stating that the parent has reviewed the *FITNESSGRAM* score sheet with the student. A parent evaluation, located on the same paper, will also be mandatory as homework. Appendix M contains the Parent *FITNESSGRAM* Evaluation.

The Parent *FITNESSGRAM* Evaluation will assess the parents' view of the *FITNESSGRAM* assessment and how it has helped them be more supportive and involved. The form will include a statement requiring a signature stating that the parent has reviewed the *FITNESSGRAM* printout. It will determine if the parents felt the program was an effective measure of their child's health-related fitness. It will also determine parent involvement. Parent involvement is important for the the success of this project. If parents participate with their child, the child is more likely to continue physical activity and improve his/her fitness.

After the final testing, an overall score will be tabulated to be able to find the percentage of the student body that met their goals to meet the standards of the Healthy Fitness Zone. This can be compared to the percentage

the previous fall. These figures can help determine the success of the program and also determine needed improvements. If the resulting percentage is below the stated goal then the physical education department will need to adjust their curriculum in order to increase the number of students achieving the goal. All physical education teachers will complete the teacher survey found in Appendix N.

The final departmental meeting with physical education teachers will discuss the pros and cons of this project. They will address the following questions:

1. Have the three goals of Healthy People 2000 been sufficiently met?
2. Have students been taught to become responsible for their own fitness?
3. As physical experiences that will enable our students to understand the necessity of maintaining good health-related fitness?
4. Have we incorporated motivational schemes to promote positive attitudes toward physical fitness?
5. Have we discussed with students the immediate and long-term effects of health-related fitness?
6. Have the students' efforts and not just skill been recognized?
7. Have we met the psychomotor, cognitive and social/emotional outcomes detailed in chapter three?

Answering these questions will help the physical education staff assess their strengths and weaknesses.

Reviewing the evaluations throughout the year will help determine the success of this program. Strengths can be drawn on and reimplemented the next year. Weaknesses can be

dissected to determine ways to improve. New school-wide fitness goals can be determined for the coming year.

Summary

In conclusion this fitness program will promote *Healthy People 2000*. It will help meet the third goal of *Healthy People 2000* by spending 50 percent of the time in physical education classes engaged in lifetime fitness activities. It will teach students how to assess their own fitness level and create their own fitness program. Learning these skills will carry on into adulthood. This program will teach students the health risks involved with improper nutrition and physical inactivity. Students will learn about the pitfalls of television. They will also be instructed in how to read labels to help them make healthier food choices.

The Prudential *FITNESSGRAM* is a state of the art testing instrument that encourages students to become healthy. It is not a competitive program thus avoiding a threatening environment. Parents are encouraged to participate. Parent participation will lead to added success. Incorporating *FITNESSGRAM* into Summit Intermediate School's physical education curriculum will provide students, parents and instructors with an instrument that will assess health-related fitness. The computerized technology not only assists instructors in computation but more importantly gives an individual print out of the student's fitness levels and adds information on how to improve unhealthy fitness areas.

The nation's concern over the rise of children's obesity is a concern that prompted this project. When effectively implemented this program will help decrease the ratio of obese and unfit children at Summit Intermediate School. It will help produce and maintain healthy children who hopefully will develop lifelong health habits. In closing, Hippocrates, the founder of medicine said in the fifth century B. C., "Eating alone will not keep a man well; he must also take exercise. For food and exercise while possessing opposite qualities, yet work together to produce health." (McGinnis, 1992)

Appendix A: Fitness Circuits

Divide students into eight groups. Each group will be sent to a different station. The groups will move clockwise approximately every three minutes.

- | | |
|-----------|--|
| Station 1 | Aerobic Step |
| Station 2 | Tricep dips: 3 sets of 10 reps
Squats: 2 sets 30 reps |
| Station 3 | Jump rope |
| Station 4 | Curl-ups: 3 sets of 25 reps
Trunk extensions |
| Station 5 | Basketball: 5 right side layups
5 left side layups
5 free throws |
| Station 6 | Pulls ups
Push ups: 3 sets of 10 reps
Peg board |
| Station 7 | Short shuttle run (30 feet wide) |
| Station 8 | Hula hoops (Hula or use like a jump rope) |

Fitness Circuit: Inside Gymnasium

Divide students into eight groups. Each group will be sent to a different station. The groups will move clockwise approximately every three minutes.

- | | |
|-----------|--|
| Station 1 | Aerobic Step |
| Station 2 | Biceps and Triceps holding the hand weights with arms held to perpendicular to body.
Biceps (3 sets of 25 reps)
Triceps (3 sets of 25 reps) |
| Station 3 | Jump rope - individual |
| Station 4 | Lunges (3 sets of 20 reps) forward and side performed with alternating legs. |
| Station 5 | Dribble basketball from end-line to end-line alternating hands at each line. |
| Station 6 | Pulls ups (3 sets of 5 reps: Weaker athletes may be assisted by partners until they gain sufficient strength.)
Push ups: 3 sets of 10 reps
Peg board |
| Station 7 | Long jump rope (Waterfall) |
| Station 8 | Forward rolls (2 sets of 5)
Back rolls (2 sets of 5)
Cartwheels (2 sets of 5) |

Fitness Circuit: Outside

Divide students into eight groups. Each group will be sent to a different station. The groups will move clockwise approximately every three minutes.

Station 1	Handball
Station 2	Tennis against the wall: forehand and backhand
Station 3	Jump rope
Station 4	Basketball: Layups and free throws
Station 5	Dribble soccer ball
Station 6	Hurdles
Station 7	Plyometrics exercises Cariocas Skip jump High Knees
Station 8	Tire Run

Appendix B: Fitness Games

Dirty Laundry- Students are divided into two teams. Both teams are provided with knotted up clothes or soft balls spread out on the ground. On the command "Go!" both teams throw the balls from their side to the opponents side. After a while the teacher blows the whistle, the throwing stops, and the number of clothes or balls on each side is counted. The team with the fewest number of clothes or balls wins. Check heart rate after the whistle.

Sharks and Fish - Students (fish) line up on one end of the football field or basketball court. One student is the shark and stands in the middle. The shark attempts to tag the fish. The shark calls out a category such as "people wearing black tennis shoes" etc. Players who fit the category run from one end to the other and must avoid being tagged. Tagged players become sharks and the game continues. "Fish" who run out of bounds on the sides are considered tagged. The last "Fish" left untagged becomes the next games "Shark." Check heart rate after three new sharks.

Steal the Bacon - Divide students into teams of three. One team of three will play against another team of three. Number all the players 1,2 or 3 on each team. Mark the starting point for each players and place the bacon (eraser) in between. Each player places a flag in the back of their waistband. Call out 1,2, or 3 and the players called go out and compete to retrieve the bacon. Once a player grabs it, he/she/ attempts to return to their starting point. The player who didn't grab the bacon chases the player who did and attempts to pull their flag. Players may not run backwards to avoid having their flag pulled. Points maybe kept per team or per pair. Math computation can be used in place of 1, 2, or 3.

Flag Grab - Players wear football flags. Players scatter around the predetermined boundaries. Upon the command "Go", players attempt to pull other player's flags while avoiding having their own pulled. Play continues until everyone's flags is pulled. Players who have lost their flags continue to pull other player's flags. Two winners are awarded, the player with the most flags and the last player whose flag hasn't been pulled. Check heart rate at the end of each round.

Wheelbarrow race - In pairs, one student holds the feet of the student who uses the hands. Half way through exchange roles.

Frisbee Discathon - Each player has a frisbee. Players throw Frisbees and run around a predetermined course. There may be required flight paths along the way such as throwing under the bench, through the soccer goal post or around a tree. Frisbees are picked up and thrown within three steps of where they landed. Players may not walk or run with the frisbee. Players may not interfere with each other. The winner is the first person completing the course.

Capture the Flag - Divide players into two teams. Each team occupies on half of the playing area. Each area contains a chair with the flag and a chair considered "jail". The playing area is divided by cones or line. Players are safe in their own half but can be tagged in the opposing team's half. Upon the command "Go", players may run into the opponent's half in order to capture the flag and return to their own half without being tagged. Once a player seizes the opponents flag, he/she must carry it back to their own side; it cannot be passed to a teammate. When a player is tagged, he/she must go directly to jail. Players are released from jail when a teammate comes to the jail, without being tagged. One player at a time can be released and both the prisoner and the rescuer get a free walk back. They both must complete this walk back before they can reenter their opponent's half. Players are not allowed to guard the jail and guard the flag. This keeps players moving. Once a player crosses "the line" with opponent's flag, without being tagged, his/her team scores a point. At this time, the jails are emptied and everyone returns to their own half awaiting the command "Go!"

Bowling Fitness - Divide into four teams. Each team is at the corner of the basketball court. A bowling pin (cone) is placed in the center of the court. Each team has a basketball they roll to attempt to knock down the pin. If the pin is not knocked down they retrieve their own ball and dribble it back to their team. When the pin is knocked down by any team all players do 10 pushups and 25 jumping jacks and sit down in line. The team seating down first wins.

Sedan Chair Race - Form teams of three. Two runners face each other and hold each others wrists. The "passenger" sits on the arms of the runners and holds on to the necks.

Appendix C: Music List

JOCK JAMS Volume 1, ESPN, 1995 Tommy Boy Music, Inc.

JOCK ROCK Volume 2, ESPN, 1995 Tommy Boy Music, Inc.

Disney's Mickey Unrapped

MTV Party to Go Volumes 1-6

Appendix D: Grant Application

Winners: How they did it

Following are examples from three of the 31 winning entries in the 1995 STEP UP To Support Education grant program.

Mission Elementary School, Ontario

Project Name: Science on the Move

Project Contacts: Teachers Diane Andreano, Suzanne Carlson and David Gonzales

Our year-round school was selected to be one of five CSIN2 (California Science Implementation Network, Level 2) schools out of the 32 schools in the district. With the funds from this grant, we will expand our CSIN program and our ability to provide a high quality, hands-on math, science and technology program developing two mobile science teaching stations to be used in all classrooms K-6.

Our goals:

1. to meet the educational needs for access to amplify the math, science and literacy abilities of our at-risk students by exposing them to activities and materials otherwise unavailable to them,
2. to bring into the classroom materials and activities related to our school's math-science-technology emphasis, and
3. to strengthen the home/school connection through parent participation at school and extension of classroom experiences to the home. (Parents will assist in the teaching of classroom units.)

Due to the limited space at a year-round site, a full-blown science laboratory classroom is not feasible. These stations will be equipped for teaching specific units on habitats (both Life and Earth Science) and will meet the need of bringing real world math/science concepts into the classroom, since so many of our students come from economically deprived homes (35% live in government-subsidized housing or motels, 35% live in AFDC households, and 60% receive free or reduced lunches), and rarely visit museums, tide pools, etc. Parents (including Spanish-speakers) and teachers will be trained to use these teaching stations in the classrooms and to extend the classroom experiences to the home. Program activities will include mini-ecosystems in bottles, dioramas of habitats and child-made weather instruments. Our school's science, math and technology committee is presently writing the curriculum K-6. Materials are sorely needed to help make this project come to life.

This project received a \$5,000 STEP UP To Support Education grant.



Students and staff at Mission Elementary School in Ontario celebrate their \$5,000 grant for "Science on the Move."

Project Name "Let's Get Fit"

Overview

- Give overview of program: Problem statement, goals, objectives, activities
- Do not identify the school, district or city
- Use only space provided.

OVERVIEW
<p>Multiple studies have shown that childhood obesity is a dominant disorder which leads to adult obesity, morbidity and mortality. Some research has shown that as many as 1 in 4 school-age children are obese. Prudential has developed a computer software program know as Fitnessgram which measures and monitors the fitness levels of children and adults. Fitnessgram utilizes improved fitness test measures over other physical ability tests such as The President's Physical Fitness Test.</p> <p>The goal is to involve parents and students in a year round fitness program by exposing them to activities and materials otherwise unavailable to them. The home/school connection will be strengthened through parent participation with their child in Family Fitness Night, Aerobic Homework and other activities that encourage fitness as a lifestyle choice. Fitnessgram will assist physical education teachers in measuring, monitoring and advising students of fitness levels and providing feedback that is personalized for each participant.</p> <p>To successfully conduct the Fitnessgram program, two computers, one printer, and the Fitnessgram software is desperately needed.</p>

Budget

- Identify specific materials needed (i.e., equipment, books, software, transportation, etc.)
- Stipends, salaries and labor dollars are not applicable for funding.
- Request only the total funds needed to support the program for up to one school year.

BUDGET		
Itemized Description:		
2 MacIntosh LC580 8MB Hard Disk 800 CPU w/CD ROM M3964LL/C	@ \$1,400	\$2,800
2 MacIntosh 8 MB Memory Expansion Kits (1-8MB51MM) M3652LL/a	@ 350	700
1 Hewlett Packard Deskwriter 600 Printer C2185A		350
2 Prudential Fitnessgram complete programs	@ 70	140
Actual Total		\$3,990

We are applying for the following grant amount (please check one):

- \$1,000
 \$2,000
 \$3,000
 \$4,000
 \$5,000

Project Name "Let's Get Fit"

Number of students program reaches 707 Grade level(s) 6th, 7th, 8th

Number of parents program reaches 300 Number of teachers involved 7

What group(s) of at-risk students is(are) this program designed to reach? Do not identify school by name.

This program will reach students who are at risk for coronary heart disease (CHD) and childhood obesity. Recent studies show that 1 out of four school age children are considered obese. Studies are finding more CHD risk factors in school age children. This program will help these physically at-risk students and parents improve their health and fitness.

What Target Objective(s) does the program support?

- Parental Involvement and Participation
- Science and/or Mathematics
- K-12 Literacy
- Workforce Preparation

Program must include a computer technology component.

Implementation Year

This program will be implemented in the 1996-1997 school year. yes no

Measurable Goals

- Describe how you will measure the success of the program. (Increased grades or test scores, reduced absenteeism, improvement in conduct, specific skills, etc.)
 1. Students and parents will improve scores on Fitnessgram tests.
 2. Students will understand CHD risk factors.
 3. Students will be able to assess their own fitness levels.
 4. Students will plan a personal fitness program.
 5. Absenteeism will be diminished due to improved student fitness.
 6. _____
- Southern California Edison will require an end-of-the-school-year report/evaluation.



Project Name "Let's Get Fit"

Other Support

What other support (in-kind or monetary) will be contributed by the school, community and/or business, other than this grant? (Demonstrates collaborative effort on the part of the school.)

- School
- School district
- Parent organization
- Community organization
- Business partner
- Other grant funding
- Other

Name and type of support:

The school and school district is in full support of improving our students' health and physical fitness. Sports Chalet is currently a partnership business that assists our school with some physical education materials.

Future Funding

Briefly describe plan for future funding to make your program self-sustaining or "institutionalized":

The program, once funded with computer, printer and the Fitnessgram software, will be self-sustaining for several years. In the future additional computers and printers would accelerate the calculating process. These funds will be budgeted into the School Site Plan.

Certification

I certify that all the statements made in the application are correct to the best of my knowledge. If I am a recipient of a STEP UP grant, I will comply with all the requirements listed in the application. I give permission to Southern California Edison for the release of all material submitted by me for use as may be deemed appropriate for the purposes of the STEP UP To Support Education program.

Applicant's Signature

Date

Mail completed application to

Southern California Edison
Attn: STEP UP To Support Education
1190 Durfee Ave., Suite 200
South El Monte CA 91733



Postmark deadline is March 29, 1996.



STEP UP To Support Education

APPLICATION

Please type all information

Identification Information

1. School District IRS No./Tax I.D. No. 95-6001103
2. School District Name Etiwanda Elementary School District
3. County San Bernardino
4. School Name Summit Intermediate School
Street Address 5959 East Avenue City Etiwanda Zip 91739
Mailing Address (if different):
Street Address P.O. Box 248 City Etiwanda Zip 91739
5. Project Name "Let's Get Fit"
6. Name of Applicant Rosemary Kirkland Title Teacher
7. Telephone No. School (909) 899-1704 Home (909) 945-2401

I have reviewed the STEP UP To Support Education grant proposal and budget. I believe it will be a valuable contribution to our educational program and I will support its implementation if funded.

Principal's Signature

Sylvia Kordich Date 3/28/96
Principal's Name (Typed)

Authorized School District Official's Signature Date _____

Appendix E: Letter for Family Fitness Night

Family Fitness Night

When: Wednesday, October 2, 1996

Time: 6:00pm - 8:00pm

Where: Shark Tank

Summit Intermediate School will be hosting a family fitness night Wednesday, October 2, 1996, from 6:00p.m.- 8:00 p.m. for the purpose of introducing a new fitness program. The *FITNESSGRAM* program will be used to assess health-related fitness components. Parents will have the opportunity to evaluate the fitness level of their children and learn how to interpret the results. Parents will also be encouraged to participate in the tests and record results on the computer and receive a personal computer printout of their health-related fitness abilities and suggestions of ways to improve.

The Summit Intermediate School Physical Education Staff looks forward to meeting with you at Family Fitness Night. Come join in the fun of being active!

Appendix F: Physical Activity Readiness Questionnaire

PHYSICAL ACTIVITY READINESS QUESTIONNAIRE (PAR-Q)

A Self-Administered Questionnaire for Adults

PAR-Q is designed to help you help yourself. Many health benefits are associated with regular exercise, and the completion of PAR-Q is a sensible first step to take if you are planning to increase the amount of physical activity in your life.

For most people, physical activity should not pose any problem or hazard. PAR-Q has been designed to identify the small number of adults for whom physical activity might be inappropriate or those who should have medical advice concerning the type of activity most suitable for them.

Common sense is your best guide in answering these few questions. Please read them carefully and check YES or NO opposite the question if it applies to you.

YES NO

1. Has your doctor ever said you have heart trouble?
2. Do you frequently have pains in your heart and chest?
3. Do you often feel faint or have spells of severe dizziness?
4. Has a doctor ever said your blood pressure was too high?
5. Has your doctor ever told you that you have a bone or joint problem such as arthritis that has been aggravated by exercise, or might be made worse with exercise?
6. Is there a good physical reason not mentioned here why you should not follow an activity program even if you wanted to?
7. Are you over age 65 and not accustomed to vigorous exercise?

If You Answered

YES to one or more questions

NO to all questions

If you have not recently done so, consult with your personal physician by telephone or in person BEFORE increasing your physical activity and / or taking a fitness test. Tell him what questions you answered YES on PAR-Q, or show him your copy.

PROGRAMS

After medical evaluation, seek advice from your physician as to your suitability for:

- unrestricted physical activity starting off easily and progressing gradually.
- restricted or supervised activity to meet your specific needs, at least on an initial basis. Check in your community for special programs or services.

If you answered PAR-Q accurately, you have reasonable assurance of your present suitability for:

- *A Graduated Exercise Program* - A gradual increase in proper exercise promotes good fitness development while minimizing or eliminating discomfort.
- *A Fitness Appraisal* - A simple tests of fitness (such as the Canadian Home Fitness Test) may be undertaken if you so desire.

POSTPONE

If you have a temporary minor illness, such as a common cold.

Developed by the British Columbia Ministry of Health.

Modified and used with the permission of the British Columbia Ministry of Health.

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Appendix G: FITNESSGRAM Score Sheets

INTERPRETING RESULTS



FITNESSGRAM

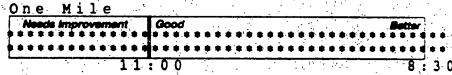
COMMITTED TO HEALTH RELATED FITNESS

Jane Jogger
 FITNESSGRAM Jr. High
 FITNESSGRAM Test District
 Instructor: Fridgman
 Grade: 09 Period: 09 Age 09

Test Date	Height	Weight
MO-YR	FT-IN	LBS
09-91	4-10	102
09-92	4-10	103

AEROBIC CAPACITY

HEALTHY FITNESS ZONE



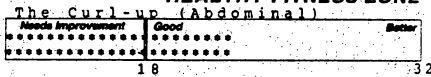
Current Past

min:sec	ml/kg/min
8:00	45
9:15	43

Jane, your aerobic capacity was very good. Try to maintain your fitness by doing 20-30 minutes of vigorous activities at least 3 or 4 times each week.

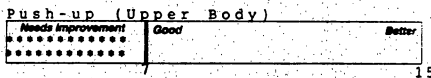
MUSCLE STRENGTH, ENDURANCE & FLEXIBILITY

HEALTHY FITNESS ZONE



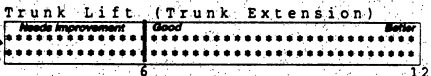
# performed	inches
27	12
23	12

Improve your upper body strength by doing push-ups against the wall, push-ups, horizontal ladder and other climbing activities.



# performed	Right P	Left F
5		
5		

Improve your flexibility by doing slow stretches and holding the stretch 2-30 seconds.



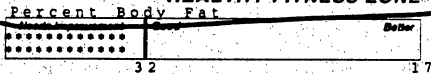
Right P	Left F
12	12
12	12

To improve your body composition, remember to do some aerobic activity each day and follow a balanced nutritional program eating more fruits and vegetables and fewer fats and sugars. Improvement on this item would most likely improve your scores on other test items.

The test of flexibility is optional. If given, it is scored pass or fail and is performed on the right and left.
 Test given: Back Saver Sit and Reach

BODY COMPOSITION

HEALTHY FITNESS ZONE



% fat
33
33

To parent or guardian: The Prudential FITNESSGRAM is a valuable tool in assessing a young person's fitness level. The area of the bar highlighted in yellow indicates the "healthy fitness zone." All children should strive to maintain levels of fitness within the "healthy fitness zone." By maintaining a healthy fitness level for these areas of fitness your child may have a reduced risk for developing heart disease, obesity or low back pain. Some children may have personal interests that require higher levels of fitness (e.g. athletes).

Recommended activities for improving fitness are based on each individual's test performance. Ask your child to demonstrate each test item for you. Some teachers may stop the test when performance equals upper limit of the healthy fitness zone rather than requiring a maximal effort.

Developing good exercise habits is important to maintaining lifelong health. You can help your son or daughter develop these habits by completing the activities on the back of this report together and by encouraging regular participation in physical activity.



Developed by
 The Cooper Institute
 for Aerobics Research
 Dallas, Texas

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 The Prudential
 Insurance Company
 of America

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YOU STAY ACTIVE
Fitness Goals Contract

In order to improve my personal fitness level, I, with the help of my teacher, have set the following fitness goals. I will participate in the activities outlined in this plan in order to achieve the desired improvement in physical fitness. Based on my current level of fitness, I believe that these goals are reasonable. When I achieve these fitness goals, I will receive the You Stay Active recognition for fitness performance.

Fitness Component Test Item Circle Appropriate Item	Score Date: ____	My Goal	Activities to Improve Physical Fitness	Follow-up Score Date: ____
Aerobic Capacity <i>One Mile Walk/Run</i> <i>The Pacer</i>				
Body Composition <i>Percent Body Fat</i> <i>Body Mass Index</i>				
Muscle Strength, Endurance & Flexibility <i>Curl-up</i>				
<i>Trunk Lift</i>				
<i>Push-ups Modified Pull-ups</i> <i>Pull-ups Flexed Arm Hand</i>				
<i>Back Saver Sit and Reach</i> <i>Shoulder Stretch</i>				

_____ Student _____ Date _____ Teacher

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Fitness Contract

I, _____, agree to:

When I complete the requirements listed above, I will receive appropriate recognition of my activity.

Student's Signature

Date

I agree that the student named above will receive recognition of completing the terms of this contract by receiving

Teacher's Signature

Date

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Get Fit Award

This certifies that

has successfully completed the "Get Fit" activity program
and demonstrated outstanding commitment to
developing good fitness habits.

Date _____

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Appendix J: You Stay Active Newsletters

Volume 1, Number 3



YOU STAY ACTIVE

A Newsletter from the You Stay Active Recognition System

Use The Food Guide Pyramid to Balance Your Diet

The Food Guide Pyramid can help you and your child balance your eating programs. The Pyramid embraces the moderation message which is critical to maintaining a well-balanced, appropriate diet.

There are five major food groups. You should eat some foods from each of these five groups daily. No one group is more or less important than any other. A sixth group representing the fats, oils and sweets should be used sparingly. Following the recommendations suggested by the Pyramid will ensure that you are getting

dietary variety and that you are eating foods in the best proportions for weight management.

Each food group has a specific range of servings recommended daily. In order to achieve the recommended ranges, you will need to eat some food types more often during the day than others.

The Food Guide Pyramid reinforces the concept that a diet high in complex carbohydrates and low in fats (20-25% of daily intake) is best for lifelong weight management.

What Counts as 1 serving

Milk, Yogurt and Cheese

1 cup of milk or yogurt
1 1/2 ounces of natural cheese
2 ounces of process cheese

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

2-3 ounces of cooked lean meat, poultry or fish
1/2 cup of cooked dry beans, 1 egg, or 2 tablespoons of peanut butter count as 1 ounce of lean meat

Vegetable

1 cup of raw leafy vegetables
1/2 cup of other vegetables, cooked or chopped raw
3/4 cup of vegetable juice

Fruit

1 medium apple, banana, orange
1/2 cup of chopped, cooked or canned fruit
3/4 cup of fruit juice

Bread, Cereal, Rice and Pasta

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

If you eat larger portions, make certain that you count them as more than 1 serving. Be sure to eat at least the lowest number of servings from each group daily. Try to pick the lowest fat choices from the food groups.

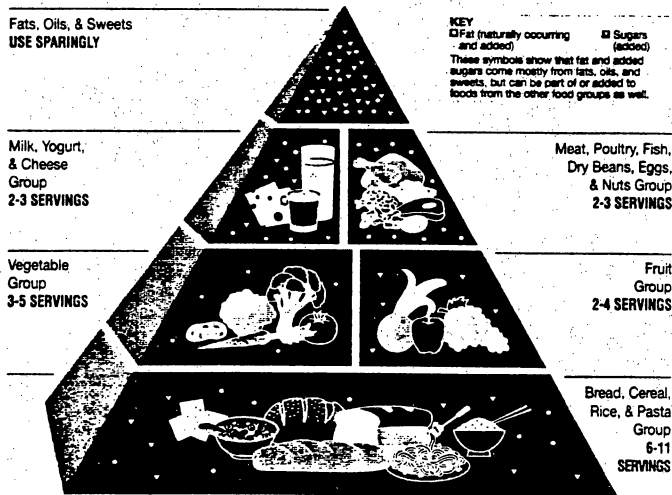
Source: *Home and Garden Bulletin 252*.
U.S. Department of Agriculture.

Published by:
American Alliance for Health,
Physical Education, Recreation and
Dance, Reston, VA 22091
The Cooper Institute for Aerobics
Research, Dallas, TX 75230

Distributed by:

Food Guide Pyramid

A Guide to Daily Food Choices



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YOU STAY ACTIVE

A Newsletter from the You Stay Active Recognition System

The New Nutrition Label

The Food Label

Buying has become simpler. It is now possible to make informed, sensible food purchases without carrying your calculator or being a nutritionist. The Food Label, now required on nearly all foods, allows consumers to compare and buy with confidence. Nutrition claims such as "low-fat" can only be used if a food meets legal standards set by the government. Information on similar food products is provided for comparable serving sizes. The label is titled *Nutrition Facts*.

The nutrition label provides the following information:

- serving size
- number of servings per container
- the number of calories
- calories from fat
- amount and percent of *Daily Value* for
 - ▼ total fat
 - ▼ saturated fat
 - ▼ cholesterol
 - ▼ sodium
 - ▼ total carbohydrate
 - ▼ fiber
 - ▼ sugar
 - ▼ protein
 - ▼ some vitamins and minerals

The *Daily Value* is calculated for people who eat approximately 2,000 calories a day (many older

adults, children, and sedentary women) or 2,500 calories a day (active men, teenage boys, and very active women). The *Daily Value* helps put each food item into the context of a full days dietary goals.

Combine foods during the day that will help you achieve 100% of the *Daily Value*, especially items such as total carbohydrates, fiber, vitamins and minerals. The label can help you determine which foods are nutrient dense and which foods are simply "empty calories." The *Nutrition Facts* label can be a very valuable assistant in making wise food choices.

What do the label claims mean?

- Fat-free** — Less than 0.5 grams per serving.
- Low-fat** — 3 grams or less per serving.
- Low saturated fat** — 1 gram or less per serving.
- Low cholesterol** — Less than 20 mg per serving.
- Low calorie** — 40 calories or less per serving.
- Light** — One-third fewer calories or one-half fat of the original.
- One-half the sodium of a product already low-fat and low-calorie.

Nutrition Facts	
Serving Size	1/2 cup (114g)
Servings Per Container	4
Amount Per Serving	
Calories 90 Calories from Fat 30	
% Daily Value*	
Total Fat 3g	5%
Saturated Fat	0g 0%
Cholesterol	0mg 0%
Sodium 300mg	135
Total Carbohydrate 13g	45
Dietary Fiber	3g 12%
Sugars	3g
Protein	3g
Vitamin A 80% • Vitamin C 60%	
Calcium 4% • Iron 4%	
* Percent Daily Values are based on a 2,000 calorie diet. You daily values may be higher or lower depending on your calorie needs:	
	Calories 2,000 2,500
Total Fat	Less than 65g 80g
Sat Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 240mg 240mg
Total Carbohydrate	300g 375g
Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

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Appendix K: Initial Teacher Evaluation

Circle one

1. There is a need to incorporate more fitness into Summit Intermediate School's physical education curriculum.
strongly agree agree disagree strongly disagree

2. Two days of fitness is needed to improve students health-related fitness components.
strongly agree agree disagree strongly disagree

3. The *FITNESSGRAM* program is a more effective measure of fitness than the Presidential Fitness Challenge.
strongly agree agree disagree strongly disagree

4. I feel the *FITNESSGRAM* fits the state framework of physical education.
strongly agree agree disagree strongly disagree

5. Fitness should be the emphasis in Summit Intermediate School's physical education curriculum.
strongly agree agree disagree strongly disagree

Appendix L: Family Fitness Night Evaluation

Circle one

1. The *FITNESSGRAM* program is an effective measure of my child's health-related fitness.
strongly agree agree disagree strongly disagree
2. My family is physically inactive and in need of a fitness program.
strongly agree agree disagree strongly disagree
3. Children's activity level increases with parent support and participation.
strongly agree agree disagree strongly disagree
4. Participation in Family Fitness Nights are worthwhile.
strongly agree agree disagree strongly disagree

Comments _____

Summit Intermediate School's physical education department will be needing parent volunteers to administer The *FITNESSGRAM* in the future. If you are interested in volunteering fill out the following information:

Name: _____

Phone Number: _____

Appendix M: Parent *FITNESSGRAM* Evaluation

Circle one

1. The *FITNESSGRAM* program is an effective measure of my child's health-related fitness.

strongly agree agree disagree strongly disagree

2. My child's *FITNESSGRAM* computer printout was easy to read and very informative.

strongly agree agree disagree strongly disagree

3. I feel that my child's body-fat has decreased since participating in the *FITNESSGRAM* program.

strongly agree agree disagree strongly disagree

4. I feel that my child's activity level has increased this year.

strongly agree agree disagree strongly disagree

5. I feel that my child's overall health-related fitness has improved since participating in the *FITNESSGRAM* program.

strongly agree agree disagree strongly disagree

6. I participated with my child in working toward his fitness goals.

all the time often sometimes seldom never

I have reviewed my child's *FITNESSGRAM* printout.

Parent Signature: _____

Appendix N: Teacher Survey

Check one

1. I agree that two class days a week should be devoted to fitness.

Yes _____ No _____

2. I incorporated more fitness into my instruction this past year.

Yes _____ No _____

3. I administered the *FITNESSGRAM* to my students this year.

Yes _____ No _____

4. I believe the *FITNESSGRAM* program is a more effective measure than the Presidential Fitness Challenge.

Yes _____ No _____

Comments _____

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