

A QUALITY HEALTH AND PHYSICAL EDUCATION PROGRAM MAKING A
DIFFERENCE FOR AFRICAN AMERICAN TEENAGERS

By

HATTIE YVONNE CURREN

B.S., Lincoln University, 1975

M.S., Kansas State University, 1994

AN ABSTRACT OF A DISSERTATION

Submitted in partial fulfillment of the requirements for the degree

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Abstract

A growing concern for the United States and the World Health Organization is that Americans are getting fatter. The obesity rates continue to rise in 23 states (Arnst, Catherine Science & Technology, 2009). There is also a high incidence of childhood obesity among children ages 10-17. The epidemic of obesity goes far beyond being an individual problem. It has become a national crisis. The obesity epidemic calls for a well-formulated strategy.

This study involved a health physical education program with 12 African American female teenagers ranging from grades 7 – 11. The program was designed to help students realize the importance of preparing for a healthy future. The African American females met one hour a day for three days a week. As part of the program, each student's fitness performance was evaluated using the FitnessGram protocol. Pretesting begins at the start of school and post testing during second semester. The FitnessGram report gives the performance levels for the Healthy Fitness Zone (HFZ) and the "Needs Improvement" zone. Attaining the HFZ for a test indicates that the student has a sufficient fitness level to provide important health benefits. The "Needs Improvement" zone indicates that the student may be at risk of health issues if that level of fitness remains the same over time. The Healthy Fitness Zone and Needs Improvement consists of three basic components: (1) Aerobic capacity; (2) muscle strength, endurance, and flexibility; (3) body composition (Meredith, Welk 2007). Students' personal fitness information was charted daily during the program. The data collected for the personal profile assisted teenagers in setting goals related to reducing their weight and building self-esteem (Merki, Don, Bronson Merki,

Mary 2004). Monitoring and charting profiles provided guidelines for accomplishing goals that were necessary for changing students' body image.

The findings of this study indicated that the African American teenage participants did not want to commit to the exercise needed to improve their cardiovascular and personal fitness levels. Individual participants realized the reasons for contributing factors, which included the following categories: 1) Competing after school programs 2) Peer pressure.

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Major Professor
Dr. John Hortin

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Dedication

In memory of my phenomenal and loving parents

Carrie Lee Curren

Roosevelt Curren Sr.

Special Dedication

Dr. James Abbott

Dr. James Boyer

Lois Malone

Nancy Bailey

You were my illumination, the first fire we light, Is the fire inside.

CHAPTER 1 - Introduction

The focus of this study is an increasing number of teenagers that are considered overweight. The medical dictionary defines obesity as an abnormal accumulation of fat, usually twenty percent or more over an individual's ideal body weight. Obesity is associated with a greater risk of illness, disability, and death (Dillon, Erin 2007). The Centers for Disease Control (CDC) has plenty of concerns for the increase of obesity among teenagers. Being excessively overweight can result in many serious health problems, including type 2 diabetes, hypertension, coronary disease, heart attack, infertility, colon problems, and prostate, endometrial, and breast cancer (Dillon, Erin 2007).

Childhood obesity has become an increasing problem in youth ranging from 6-18 years of age. As such, many youth face an increased risk of a number of serious diseases. Youth are being diagnosed with weight-related chronic ailments that usually strike much later in life (Dillon, Erin 2007). American young adults are not expected to get diabetes, heart disease, strokes, and cancer.

The number of cases of Type II diabetes, which is specifically associated with obesity, has increased among youth in the last twenty years (Dillon, Erin, 2007)). Being obese increases the risk of further life-threatening complications of diabetes by the time children reach thirty years of age. As this condition worsens, it also leads to kidney failure, heart attack, nerve damage, and blindness.

Obese adolescents face the possibility of metabolic syndrome, which creates the risk factors that increase a person's chances of developing chronic diseases. A person is diagnosed with metabolic syndrome when three or more of the following symptoms are present:

- Waist size greater than 40 inches for males or 35 inches for females
- High blood pressure (greater than 130/85)
- Elevated glucose (blood sugar)
- Low density lipoprotein (LDL) and high density lipoprotein (HDL) levels of cholesterol LDL (low-builds up in arteries, higher levels in the blood the greater the risk of heart disease)
- Elevated levels of triglycerides (fat in the bloodstream)

(Dillon, Erin, 2007)

Doctors associate high levels of glucose with damage to the lining of the arteries, a decrease in kidney function to remove salt from the blood stream (which leads to hypertension), risk of blood clot, and slowed production of insulin. The dangerous changes in the body result in an increased risk of cardiovascular disease (Dillon, Erin, 2007).

Obesity also takes an emotional toll on teenagers, who have to face the consequences of being overweight during their formative years. The stigma of being overweight contributes to a number of social and emotional problems. Researchers have discovered that many teenagers are continually teased and bullied because of their weight problems (Dillon, Erin, 2007). Many teenagers who are obese are faced with isolation and social ostracism, and these experiences can lead to depression and other psychological problems. Researchers at the CDC have discovered that many obese teenagers consider themselves extremely overweight and that many of these individuals have considered or attempted suicide (Dillon, Erin, 2007).

The National Association for Sports and Physical Education (NASPE) has stated that every student in our nation's schools, K-12, needs an opportunity to participate in a quality physical education programs (Hill, Grant, Strategies, 2003). The role of a quality physical education program is to develop health-related fitness, physical competence, and cognitive understanding about physical activity as well as to guide all students to adopt healthy and physically active lifestyles. Physical education programs should provide learning experiences that meet the developmental needs of young adults to improve their mental alertness, academics, and enthusiasm for learning. According to NASPE guidelines, a high-quality physical education program includes three components: appropriate instruction, meaningful content, and opportunity to learn (Hill, Grant, Strategies, 2003).

In many physical education programs, teachers are leading a new revolution to get all students involved in a non-threatening physical education class (Hill, Grant, Strategies, 2003). This is an inspiring, active, healthy living design for the development of a quality daily physical education class for all children. Teenagers learn the “why’s “how’s” of investing in their own health (Hill, Grant, Strategies, 2003). This physical education program measures health-related fitness levels, individual effort, and progress toward personalized fitness and physical activity goals rather than athletic skills (Hill, Grant, Strategies, 2003). The program incorporates a variety of sports and fitness activities, which are tailored for each individual’s instruction and assessment plan; it also incorporates technology, such as heart rate monitors and pedometers (Hill, Grant, Strategies, 2003). Physical education according to this design provides the knowledge and skills to inspire a lifetime of physical activity (Hill, Grant, Strategies, 2003).

Losing weight for themselves will boost their energy level. The personal fitness program will help struggling obese teenagers to develop positive attitudes about their weight and offer support to others in the program. To create lifelong friendships with other teenagers and healthy lifestyles, teenagers begin to focus on incorporating a balanced diet and exercise in their daily routines.

In my experience as a physical education teacher, I have observed that adolescent girls with a body composition of 25% fat mass and a 25% lean body mass or worse are reluctant to participate in weight loss programs. In my opinion these adolescent girls have given up and have become apathetic and indifferent to weight loss activities. My hope is to assist students in devising a weight reduction plan that is structured, motivational, reliable, and efficient.

Statement of the Problem

Obesity is a problem that affects teenagers of every race. However, obesity is especially wide spread among African American teenagers (NASPE, 2003). Based on my observation of Midwest sporting events society places a great deal of emphasis on entertainment, which centers on meals at restaurants and other venues.

African American females appear reluctant to participate in physical activity. They seem to have given up on losing weight and have become apathetic and indifferent to participating in physical activities. The goal of the researcher, therefore, was to implement a weight reduction program for urban African American females in a physical education class.

Purpose of the Study

The purpose of this study was to determine the effectiveness of a weight reduction program for middle and high school aged African American females in an urban setting. The program was designed to create a stress-free physical education environment; diffuse any fears students had about physical activities, and motivate them to think positively about themselves and their weight. This program joined parents, physical educators, and students in helping promote fitness and nutrition.

The weight reduction program provided the female participants with an opportunity to learn about their physical fitness and personal health. The participants were guided to compare their initial fitness indicators to the health fitness standards from the FitnessGram assessment. African American females involved in regular physical activity should be able to achieve scores that place them within or above the Healthy Fitness Zone (HFZ) for their given age. Program participants utilized heart rate monitors and FitnessGram reports to assist their planning and monitoring of progress in the personal fitness program.

Research Questions

This study was not an evaluation of the FitnessGram, but rather a study on the exploratory effect of a total weight loss program for obese, females, African American adolescents in a midwestern public school.

The total weight loss program included the following interventions: nutrition healthy choices, food log, coaching, monitoring, advising and motivation. Most of these interventions were one-on-one and were done periodically as the study progressed.

1. What effect, if any, does a voluntary, after-school weight loss program have on the fitness levels of adolescent African American females (ages 11 -17)?
 - a. What effect, if any, does a voluntary, after-school weight loss program have on the *cardiovascular fitness* of adolescent African American females (ages 11 -17)?
 - b. What effect, if any, does a voluntary, after-school weight loss program have on the *abdominal strength* of adolescent African American females (ages 11 -17)?
 - c. What effect, if any, does a voluntary, after-school weight loss program have on the *upper-body strength* of adolescent African American females (ages 11 -17)?
 - d. What effect, if any, does a voluntary, after-school weight loss program have on the *flexibility* of adolescent African American females (ages 11 -17)?
 - e. What effect, if any, does a voluntary, after-school weight loss program have on the *body composition* of adolescent African American females (ages 11 -17)?
2. What effect, if any, does a voluntary, after-school weight loss program have on the ability of adolescent African American females (ages 11 -17) to assess their personal levels of fitness?
 - a. What effect, if any, does a voluntary, after-school weight loss program have on the ability of adolescent African American females (ages 11 -17) to assess their *caloric intake*?

- b. What effect, if any, does a voluntary, after-school weight loss program have on the ability of adolescent African American females (ages 11 -17) to assess their *energy output*?
- 3. What effect, if any, does a voluntary, after-school weight loss program have on the motivation of adolescent African American females (ages 11 -17) to maintain a healthy weight?
 - a. What effect, if any, does a voluntary, after-school weight loss program have on the *internal motivation* of adolescent African American females (ages 11 -17) to maintain a healthy weight?
 - b. What effect, if any, does a voluntary, after-school weight loss program have on the *external motivation* of adolescent African American females (ages 11 -17) to maintain a healthy weight?

Assumptions

The researcher assumed that participants would perform to the best of their ability during the fitness testing. The researcher also assumed that student participants would answer all interview questions truthfully.

Limitations of the Study

This study was limited to 12 African American females attending a middle and high school in the Greater Kansas City area. One concern for this study was a population of African American females was self selected by the researcher. The other area of concern was generalization of each case of adolescent females in a midwestern urban public school.

Significance of the Study

The findings of this research study have the potential to benefit the field of physical education by providing insights into challenges of weight reduction among middle and high school aged African American females. Because physical education classes help shape students' attitudes and decisions toward healthy lifestyles, this research can inform the efforts of educators who wish to design physical education classes for this population. Findings from this study also may prove useful for educators trying to help the adolescent African American females understand their overall health and their role in improving their future health.

Definitions

Note: The information in the following definitions can be found in Glencoe Health A Guide to Wellness (Bronson, Merki, 1989, 1987).

Aerobic means “with oxygen” and refers to the use of oxygen in the body’s metabolic or energy-generating process.

Aerobic capacity is the maximum amount of physiologic work that an individual can do, as measured by oxygen consumption. It is determined by a combination of aging and cardiovascular conditioning and is associated with the efficiency of oxygen extraction from the tissue..

Anaerobic refers to a type of process that does not require the presence of oxygen.

Basal metabolism is the absolute minimum amount of energy required to maintain the life process in the human body.

Beats Per Minute (BPM) is a unit used to measure one’s heart rate. A rate of 60 BPM means that one beat occurs every second.

Body composition is used to describe the percentages of fat, bone, and muscle in human bodies. Because muscular tissues take up less space in the body than fat tissue, body composition and weight determine leanness.

Body mass index (BMI) is an index that relates a person's body weight to his or her height. The BMI is a person's weight in kilograms (kg) divided by his/her height in meters (m) squared.

Calorie is a unit of heat that measures the energy available in different foods or that is used during exercise.

Carotid pulse is the pulse located on each side of the neck, just below the ear.

Cooling down is the term used to describe an easy exercise that allows the body to gradually transition from an exertion state to a resting or near resting state.

Childhood obesity may refer to both children and adolescents. In general, the word "children" refers to individuals 6 to 11 years of age, and "adolescents" refers to individuals 12 to 17 years of age.

Diet is the combination of what one eats and drinks regularly.

Disease is an illness that affects the body or mind.

Exercise is any bodily activity that enhances or maintains physical fitness and overall health.

Exercise frequency is the number of times a person exercises in a specified period of time.

Exercise intensity is the amount of energy a person uses when he or she exercises.

Exercise time is the amount of time spent exercising during one session.

Fitness is physical and mental soundness.

Heart and lung endurance refers to the ability of the heart and lungs to deliver needed oxygen to the body during exercise, without causing undue stress, and then quickly return to a resting rate.

Maximum Heart Rate (MHR) is the maximum number of times the heart should beat per minute.

Metabolic syndrome is a combination of disorders that increase the risk of cardiovascular disease and diabetes.

Muscle endurance describes how well a group of muscles can continue performing over a period of time without causing undue fatigue.

Muscle strength describes the greatest amount of work muscles can do at a given time.

Physical fitness comprises two related concepts: general fitness (a state of health and wellbeing) and specific fitness (a task-oriented definition based on the ability to perform specific aspects of sports or occupations).

Pulse recovery rate is the rate at which the heart beats following activity.

Resting heart rate is a normal heart rate that can range from 40 to 100 beats per minute.

A resting heart rate can vary with an individual's fitness level, and age.

Target heart rate formula is a mathematical formula (Karvonen formula) that is used to determine an individual's target heart rate. The formula involves subtracting a person's age from her maximum heart rate (MHR) to arrive at a target heart rate range (which is a percentage of the individual's MHR). Staying within this range helps an individual work most effectively during cardio workouts.

Target Heart Rate (THR) or training heart rate, is a desired range of heart rate reached during aerobic exercise, which enables one's heart and lungs to receive the most benefit from a workout. (Example: $220 (\text{MHR}) - 17 (\text{age}) = 203$; $203 \times 0.6 (\text{secs}) = 121 \times 0.6 (\text{secs}) = 72 \text{ THR}$)

Target Heart Rate Zone (THRZ) is the range within which the heart must beat during exercise to achieve the optimum cardiovascular effect. It is recommended that an appropriate range for most healthy individuals is 55-85% of their maximum heart rate.

(Example: $220 \text{ (MHR)} - 17 \text{ (age)} = 203$; $203 \times 0.6 \text{ (secs)} = 121 \text{ low \#}$; $203 \times 0.8 \text{ (secs)} = 162 \text{ high \#}$).

Seventeen years old 121-162 the teenager must use this formula to find out how hard they should work their heart. The maximum is 220 and is the danger zone for working out.

When teenagers are exercising, they must stay within the zone (not below and not above their zones).

CHAPTER 2 - Review of Related Literature

Overview

The Acceptance of Obesity Is a Dangerous Trend

The National Association to Advance Fat Acceptance (NAAFA), an advocacy organization for overweight people, argues that individuals should accept their bodies instead of trying to lose weight by dieting and exercising. This message flies in the face of research that connects being overweight with increased health risks. Researcher Jennifer Grossman (2007) states that NAAFA rejects findings that link obesity to diabetes, and osteoporosis, stroke, and heart disease. NAAFA members suggest that overweight people resist the temptations of dieting and possibly succumbing to the American culture of being obsessed with being ultra thin.

Grossman (2007) observes that many teachers and parents are afraid to have the discussion on health risks and obesity, because the discussion encourages fat phobia. The growing numbers of overweight individuals has grown from 1986 61% to 79% in 2006, (Grossman, 2007), and these figures are based on overweight adults who weigh more than the recommended weight based on height and body frame. There is another group of overweight individuals who are 20% more than their recommended weight. Because America has grown fatter, the industry has had a billion dollar increase in dieting sales (Grossman, 2007).

Obesity Endangers Health

Obesity dangers that are associated with obesity, which are sleep apnea, arthritis, hypertension, and diabetes. Bonnie Liebman (2007) is the director of nutrition at the Center for Science in the Public Interest. She notes that obesity increases the risk of a variety of cancers. It has been theorized that obesity raises hormone levels, which in turn increases growth of cancer

cells. Liebman (2007), argues that by losing excess pounds and maintaining a stable weight, people can decrease their risk of developing different cancers such as cancer of esophagus, kidney, colon, and breast cancers, as well as protect themselves from a range of other diseases.

Most people are a few pounds overweight. Bonnie Liebman (2003) researcher says that many deaths could be prevented each year in the United States, if women and men could simply maintain a normal weight.

Common Diseases and Conditions Within the African American Community Associated With Obesity

Blacks and people of color in communities have a higher percentage of obesity of all ethnic groups. Researcher Makeisha Lee (2007) has come to understand that obesity is a disorder. Just because a person is overweight does not make that person healthy. Based on the fact that they have fat in their bodies and that puts those individuals at a greater risk with their overall health. In order to address the problems of obesity and related illnesses one must understand the severity of being overweight.

Whenever a person wants to lose weight it is important that the person keep in mind three factors. Indicated by obesity experts:

- Anyone can lose weight and keep it off and understand why you gain weight providing you know the underlying factors that contribute to obesity.
- Outstanding weight loss **cannot** be accomplished through fad diets, weight loss drugs or an exercise program.
- It is virtually impossible for obese individuals to continue to eat in a “normal: way and stay thin.

(Lee, 2007)

The body is not fully able to store carbohydrates and proteins so fat is converted and stored. One pound of fat represents 3, 500 calories and our diets must be balanced with the proper nutrition and adequate, physical activity, to avoid becoming overweight. The Center for Disease Control Prevention (Lee, 2007) states that 35% of Black women are obese and 30% Black men are obese.

It's incredible how the government gives more subsidies to sugars, fats, and dairy products, which gets twenty times more attention. Then on the other hand the more healthy foods like fruits and vegetables get less attention. Meat and dairy will have three times more subsidy than grains. Since 1995, the amount of corn grown in the U. S. and processed has increased three times (Lee, 2007). Corn is a principle source of sweeteners in American food. Corn is cheap and companies can make almost anything out of it, especially high calorie food. This high calorie food can be found in thousands of products every day. Agriculture and health policies disconnect at this juncture. It's not important to have a subsidy for the food supply because good nutrition funds are allocated to grow the foods that allow businesses to bring in more money. It's amazing that manufactures can make sugar water, (beverages) sugars, flour fat, and starch that are advocated in the old USDA food pyramid (Lee, 2007).

Chronic Diseases and Environmental Factors

In the 21st century there is an overweight and toxic culture, which has caused chronic diseases to spread (Lee, 2007). This discussion will highlight diseases that overwhelmingly afflict the black community and that can be controlled through proper exercise and nutrition. Medical doctors encouraged patients to take aspirin, which is for the prevention of heart disease. It has been estimated that a regular dosage of aspirin is responsible for a large amount of deaths due to stomach bleeding (Lee, 2007).

Heart Disease

CDC researchers say that African American men are more likely than white men to die from heart disease. Hypertension has been referred to as the “silent killer”. The reason that hypertension has been coined as this because of the lack of exercise and poor health care coupled with the lack of quality foods available in many areas (Lee, 2007). The other factors include job stress and depression.

Medical professionals over emphasize cholesterol levels with heart disease, whereas it is a must to get to the root of the problem. When cholesterol-lowering drugs are administered they tend to destroy the hormones and nervous system (Lee, 2007). It is a well-known fact that plaque is a primary cause of eighty-five percent of all heart attacks and strokes.

Stroke

African Americans are at a greater risk than Caucasian individuals of having a stroke. For example African Americans between the ages of 34 and 54 are four times likely to have a stroke than their Caucasian counterparts. (Lee, 2007) More than 100, 000 African Americans have a stroke every year. On average, every 45 seconds an African American has a stroke. The most common cause of stroke is from high blood pressure.

Diabetes

There are 2.3 million African Americans that have diabetes, and out of that number 1/3 of African Americans are not aware that they have this ailment. For every six Whites, ten African Americans have diabetes. They will be twice as likely to develop blindness, and 2.6 – 5.6 times more likely to develop kidney disease according to the CDC (Lee, 2007). It is also important that

exercise is incorporated to help the continuation of burning fat to increase muscle mass, as well as managing cholesterol levels (Lee, 2007).

High Blood Pressure

African Americans experience high blood pressure more often than White individuals with an earlier onset and are always severe. High blood pressure is the highest among people of color in the world (Lee, 2007).

Attention Deficit Hyperactivity Disorder or Attention Deficit Disorder (ADHD OR ADD)

Children that consume fattening foods illustrate how obesity can directly cause health problems. Taking a look at the childhood epidemic of Attention Deficit Hyperactivity Disorder (ADHD or ADD). Present 26% of all African American children are diagnosed with ADHD, according to the Journal of the Medical Association (Lee, 2007).

Recent studies revealed that 80% of children with ADHD are symptom free within two weeks just by eliminating certain foods from their diets. When certain foods such as white flour and refined sugars, are replaced with good nutrition, children can be relieved of these symptoms of ADHD or ADD (Lee, 2007).

One proven cause of ADHD has been hydrogenated oils. This is literally a poison to the brain and nervous system and can create birth defects. Hydrogenated oils will block the absorption of essential fatty acids and then a depletion of nutrients, minerals, and vitamins, which are absolutely crucial for a healthy brain (Lee, 2007)

ADHD or ADD is based on labeling, but the fact remains that the symptoms indicates clearly that this disease results from poor choices. In 2007, a Lancet study of additives and

ADHD strongly suggested that children's diets consisted of food additives that were significantly more hyperactive with short attention spans rather than those not given additives (Lee, 2007).

Eighty percent of children that are on medication for ADHD will also still need medication as teenagers and fifty percent will still need medication as adults. This is going to indicate that as adults they will be faced with life threatening side effects. This treatment can be reversed without the use of drugs (Lee, 2007).

Cancer

African American women have the highest incidence of disease for certain types of cancers, such as bronchus, lung, rectal, and colon cancers. According to Surveillance (Lee, 2007) Epidemiology and End Results (SEER), Black males also have a high incidence of prostate cancer. This research targets the Black community simply because of the latest statistics. Studies have revealed that thirty-five percent more Blacks die from cancer each year, as compared to the general population (Lee, 2007).

Obesity has a direct link to cancer incidence. A study that has been conducted by the American Cancer Society shows that 90,000 annually cancer deaths are attributed to being overweight and obese. Researchers speculate that the production of estrogen and insulin stimulate the growth of cancer (Lee, 2007).

Alternative treatments do work and are available for this disease, and include combined therapy, herbs, phyto-nutrients and enzymes. These therapies are inexpensive and more effective than the recommended drugs and therapies.

A study was conducted by Cornell University (Lee, 2007) and this research indicated that phyto-chemicals in the skin of an apple inhibit production of colon cancer cells by forty-three percent. The National Cancer Institute reports that foods containing flavonoids like apples can

reduce the risk of colon cancer by fifty percent. Chemotherapy does not kill “cancer stem cells” that will grow back, but creates an effect of progression by shrinking the tumor. This treatment destroys tissues in the heart, kidney, and brain, which cause permanent damage. The doctors agree that complete and thorough treatment of cancer should be multi-faceted in offering of healing, prevention, as well as health advancement (Lee, 2007).

Overlooked Disease Connection and Environmental Factors

The Environmental Pressure Group (Lee, 2007) conducted a study that measured the chemical toxins found in the blood of its participants. Chemical substances ranged from fire retardant pesticides DDT (which has been associated with cancers and nervous and immune system disorders) were present. (Lee, 2007) African Americans need to be aware of the risk within their community in respect to pollution, to lessen the damaging effects in our lives and our offspring’s lives. The breast milk of women is linked to jet fuel (Lee, 2007). A New York study found that women from the Dominican and African American communities have been exposed to pesticides also known as organophosphates (Lee, 2007). This type of exposure has proven that even a small amount can be more harmful than once thought. Children exposed to these pesticides may experience diminished coordination, stamina, reduced creativity and impaired memory (Lee, 2007).

Stricter testing guidelines should be enforced to assist in the prevention and detection of these harmful substances. Other factors suggest the reason why Blacks are more susceptible because they work more in areas of textile, coal, asbestos, and silica mining industries. Working in this type of environment causes occupational respiratory ailments. These hazardous materials contribute to chronic lung diseases. This explains the high incidence of deaths related to asthma in Blacks, as opposed to deaths in Whites (Lee, 2007).

Any Americans testing positive for contaminated blood is definitely proof that the government needs to address this pollution problem. This shows that exposure over the years takes a toll on any person and due to the buildup of toxins. This type of exposure puts individuals at risk for illnesses such as heart and lung disease, but most of all inflammation of the brain as well. It is crucial and vital that the government continue to get better laws on pollution in our communities to help stop this ongoing contamination in everyday life for the safety of our health, and our children, and future generations (Lee, 2007).

What Constitutes A Quality Physical Education Program?

The National Association for Sports and Physical Education (NASPE) has stated that every student in our nation's schools, K-12, needs an opportunity to participate in a quality physical education program (NASPE Strategies, 2003, p. #8). The role of a quality physical education program is to develop the health related fitness, physical competence, and cognitive understanding about physical activity for all students to adopt healthy and physically active lifestyles. Physical education programs assist with learning experiences that meet the development needs of young adults which helps improves the child's mental alertness, academics, and enthusiasm for learning. NASPE defines a high quality physical education program, as including three important components: appropriate instruction, meaningful content, and opportunity to learn. NASPE has outlined three areas that are aligned with quality physical education documents, which range from the National Standards for Physical Education to Appropriate Practice Documents, Opportunity to Learn Documents, and the Assessment Series: (NASPE Strategies, 2003, p. #8);

Opportunity to Learn:

- Adequate equipment and facilities

- Qualified physical education specialist providing a developmentally appropriate program
- Instructional periods totaling 150 minutes per week (Elementary) and 225 minutes per week (middle and high school)

Meaningful Content:

- Promotion of regular amounts of appropriate physical activity now and throughout life
- Opportunities to improve their emerging social and cooperative skills and gain a multi-cultural perspective
- Development of cognitive concepts about motor skill and fitness
- Fitness education and assessment to help children understand improve and or maintain their physical well being
- Instruction in a variety of motor skills that are designed to enhance the physical, mental, and social emotional development of every child

Appropriate Instruction:

- Regular assessment or monitor and reinforce student learning
 - No physical activity for punishment
 - Out of school assignments that support learning and practice
 - Well-designed lessons that facilitate student learning
 - Maximum practice opportunities for class activities
 - Full inclusion of all students
- (NASPE Strategies, 2003, p. #8)

Promoting Physical Activity Through Goal Setting Strategies

Physical educators have a major role when it comes to creating an environment that allows students to learn the value of physical activity. Students will engage in a variety of activities as well as participate in (NASPE Strategies, 2004, p. #25) activities outside of the school environment. Physical educators have always used specific goals for students within certain units, but they should also reassure students to set their own goals. Goal setting allows interactions for student in the learning process and allows them to develop the skills that support an active lifestyle.

When students take ownership in goal setting and make decisions about their own learning and become responsible for their own actions, they are very likely to follow through

with the tasks. It is very important to define goals and plan out strategies for reaching personalized long and short-term goals. Students will need assistance to focus on their goals:

- Identify specific realistic goals
- Write goals down in a journal
- Share the goals with others
- Develop a plan of action that includes sub-goals
- Set a deadline for achieving their goals
- Evaluate their goals often
- Reassess and readjust goals, when necessary

(NASPE Strategies, 2004, p. #25)

Students that are aware of identifying their goals and accomplishing what they hope to achieve will reflect what they value in their own lives. As students make plans, writing down goals and how they hope to achieve them, they will become focused on their purpose. By setting goals for instance, if a student wants to increase abdominal strength, he/she must look at the criteria, such as time and how charting shows progress as he/she moves toward a goal.

Having students discuss and share their goals with their peers will spark enthusiasm; increase the confident level of students as they get support from others and as they achieve individual goals. Physical education teachers will also discuss with students to remind students to respect the goals of other classmates, and to encourage and not to judge others based on their goals and values. Defining the goal may be simplistic, but the success of reaching any goal must begin with the first step. Planning the steps well with a properly laid out plan will determine failure or success. Sub-goals will allow students to monitor and stay on track, watch their progress, and assess how well they are accomplishing their own goals.

Sub-goals will be evident when students monitor their progress; because it is then that they realize how sub-goals function as indicators for changes that may be required to reach a principle goal. Understanding this process of goal setting and that it is incremental and long term, with checks and balances which are definitely required along the way. Assessment should

always be a goal setting variable. When students are not making strides that they are unhappy with, themselves and should readjust their goals and make it a more attainable goal. If the goal has been accomplished, this is the time to reflect on the process. Students can be provided task sheets, which will help students monitor their own progress and is also a tool for physical education teachers to use in checking that progress against their own teaching assessment. In the daily environment of students where there are choices being made, students really begin to think about how choices affect and influence their lifestyle.

It is important to introduce goal-setting strategies as early as the elementary level, so that they can begin achieving at an early age. This allows students to build a foundation, for personal wellness and start using critical thinking skills about what they want to do; and accomplish their own goals setting strategies. Physical education teachers have a responsibility to guide and help students to devise appropriate goal-setting strategies that are conform to the guidelines of national and state physical education standards.

Secondary level students will discuss and identify, reflect upon, and apply what they have learned about the benefits of physical activities in their daily lives. More and more school districts are moving towards incorporating more minutes into their physical education programs. Under these circumstances, physical education teachers can begin to address individual needs and assign students to one or more national standards and direct them towards making plans on how to achieve these national standards.

In summary, goal setting helps students to internalize and keep them engaged in their own learning. Goals that are to be accomplished need to be written down, attainable, measurable, realistic, and changeable. Physical education teachers that utilize goal-setting strategies in physical education empower students to begin to think more critically about what they want to

attain from their education and how to attain it. These strategies that are taught as tools students will be able to apply to other areas of their lives. As the old saying goes, “nothing succeeds like success” (NASPE Strategies, 2004, p. # 25).

Using Students to Assess Physical Fitness Performance

It is extremely important to promote physical fitness to our students in grades K-12. This is a major objective to physical education teachers. Particularly, when fitness levels begin to improve, students receive more significant cognitive, affective, and physiological benefits. The experts of American Alliance for Health Physical Education Recreation and Dance (AAHPERD, 1999), improved fitness:

- Lowers the risk of death from coronary heart disease
 - Lowers health care costs
 - Lowers the incidence of obesity
 - Reduces stress
 - Helps to maintain a healthy body weight
 - Give more energy to do school work, daily chores, and play
 - Strengthens the bones and muscles
 - Reduces the risk of heart disease
 - Helps lower blood pressure and resting heart rate
 - Makes the heart pump more strongly
- (Hill, Grant Strategies, 2003, p. # 34)

There are three key components in the promotion of fitness assessment, and there are several reasons for their importance in K-12 schools. First assessment provides information regarding the students’ present level of fitness. This gives the physical education teachers information that student have realistic fitness goals and motivates them to improve. Fitness scores may be communicated in a graph form and can be sent to parents as a way to enlist them as partners in this process. Second fitness tests help physical educators gauge the effectiveness of physical activities over a period of time, as there is proof of whether student participation in specific activities results in advancing fitness levels. Finally, testing gives students an awareness

of the specific components of fitness that will assist them in designing their own fitness programs.

Unfortunately, fitness testing has been a long tedious process as physical educators assess K-12 students. (Hill, Grant, Strategies, 2003, p. #34). Physical educators have administered each fitness test each student; the entire process may take several weeks to complete and thus reduces the time for other class activities. Some physical educators solely depend on themselves to monitor students' fitness test because lack of confidence in students' ability to accurately record student performance (Hill, Grant, Strategies, 2003, p. #34). Researchers have argued that testing does not have to be completely administered exclusively by adults because trained students are just as reliable as adults (Hill, Grant, Strategies, 2003, p. #34). Studies have shown that fifth graders can be trained and are valid testers to score their peers (Hill, Grant, Strategies, 2003, p. #34).

Using peer monitors has some good advantages, because it takes less time away from other activities. This technique is similar to having students exchange papers as if to grade each other's classroom assignments. When students administer the test, physical education teachers are able to complete the assessment in a matter of minutes rather than the hours it takes to do each individual student. This process allows physical educators to test more frequently throughout the school year. Peer monitors prepare other classmates to assess their own fitness properly. Once students are able to assess fitness, they will be more likely to self-assess themselves over a longer period of time. Whenever students are placed into groups they begin to work cooperatively, because they have taken on the role as test taker, counter, and recorder. This will also help them to work together and exercise out of class and get prepared for the next fitness test. In order to monitor peers teaching peers, students should be placed in small groups of

three to five students for training in correct assessment and reporting procedures. During the cooperative learning sessions students rotate the jobs of test takers, counter and recorder (Hill, Grant, Strategies, 2003, p. #34). Students will have access to viewing charts and illustration of proper form will be available for each testing station to remind students of the standards for each test.

The teacher's role is to focus on supervising the testing environment rather than testing each class member. The teacher will give a signal when it's time to rotate to the next station. The teacher must make sure that in moving around the facility, each student is accurately reporting scores. Teachers should place reliable students in each group to ensure that students are following the correct procedures and not inflating their scores. Teachers have the responsibility of randomly checking the performance of students to determine whether correct procedures are being followed. Teachers may decide to use two designated independent scorers in each group and have them deposit scores in sealed containers at each station.

All students carry their own scorecard as they rotate from station to station. Upon completion of testing students must write down their own accomplishments and set new goals for the next fitness test. Physical educators can also help students prepare for the next session of fitness testing by utilizing exercises as part of the warm up.

Peer monitors can be used in other ways in fitness testing such as having the students test students in lower grades, or, as an outside required assignment, that their friends and family be assessed. This outside assignment will provide an excellent leadership opportunity for younger students as well as family and friends. Students can also use their peer achievement in alternative activities such as double rope skips; hula hoops spins, and skills from basketball unit such as free

throws, lay-ups and dribbling down court. (Hill, Grant, Strategies, 2003, p. #34). This technique can be used with other sport units to help assess sport skills test with students at all grade levels.

In summary research has shown that this is a productive way to get students involved in testing and understanding why it is important to be physically fit; and how their fitness level improved with each sport which increases a healthy lifestyle.

Don't Eat This Book Fast Food and the Supersizing of America

(Spurlock, 2005 p.9)

Girth of A Nation

Spurlock claims that 30% of Americans are overweight; and the other 65% are obese. This information comes from the American Obesity Association (Spurlock, Morgan 2005). The study also indicates sixty million Americans are obese and the other nine million are “severely obese.” During 1991 and 2001, the obesity figures skyrocketed as well as doubling in those ten years (Spurlock, 2005 p.9)

Children's obesity rates remained stable during the 1960's. The obesity rates began to rise in 1970 and in twenty years, the obesity rate has doubled in children and tripled in teenagers (Spurlock, 2005 p.11). September 2004, 16% of American children (between the ages of 6 and 18) are now overweight or obese. Toddlers are beginning to become obese as early as two years of age.

The epidemic of obesity is definitely a nationwide problem, and is cutting across gender, race, and ethnicity. Health issues in this country have a great impact on the nation's poor, especially Hispanic and African Americans. The National Women's Health Information Center says that Mexican American women are only 1.5 times likely to be more obese than the general

population of American women. There maybe some interlocking factors that contributes to being obese. A variety of these issues may be related to genetics. Hispanics and African Americans seem to be genetically more at risk for diseases such as diabetes, and might be genetically prone to obesity.

Lower income individuals don't usually have the educational knowledge and information that helps them understand how to provide the proper nutrition for their families. What is more obvious is that the lower class families do not have access to health care promoting institutions or other facilities. Lower income families have fewer supermarkets in their neighborhoods and they are subjected to less nutritious foods, such as fresh vegetables and lean meats. Reports from the USDA show that the cost of vegetables and fruits rose 120% between the years 1985-2000, while the price of certain junk foods like sweets and sodas rose less than 50% on the average (Spurlock, 2005). Being in a lower economic status discourages healthy eating habits in a lot of ways. Children and teenagers that are in a lower incomes bracket depend on federally funded National School Lunch Programs for their primary hot meals. These meals are basically high-fat, low-nutrition foods (Spurlock, 2005). Families that rely on government assistance will splurge when they receive their monthly check or food stamps and by the end of the month the kitchen cabinets are bare (Spurlock, 2005). According to the nutritionist the families go through a cycle of feast or famine type of diet, which leads to an unbalanced metabolism.

Just because children are overweight doesn't mean that their peers will psychologically abuse them, but what it really means is that being fat could lead to an unhealthy lifestyle. Diseases that are related to obesity will claim the lives of 400,000 Americans and that is the same as smoking tobacco (Spurlock, 2005). Children who are becoming obese and overweight, are more likely to suffer other health problems, including gout, colon cancer, heart disease, high

blood pressure, high cholesterol, arthritis, menstrual abnormalities, sleep apnea, and diabetes (Spurlock, 2005). The United States spends millions of dollars annually on treating these illnesses. It is obvious that overweight parents are teaching their children not to exercise and instead parents are bringing meals home from fast food restaurants such as Burger King, Pizza Hut, and McDonalds (Spurlock, 2005).

On the other hand overweight parents may not be able to have children because women may not be able to get pregnant. Obese males are most likely to have a poor sperm count quality, possibly because of too much estrogen, which is produced by fat cells.

In summary, there seems to be some sort of genetic connection to obesity. It is thought that obesity is especially prevalent among Hispanic Americans and African Americans. In 2001 the BBC reported that a French team of scientists had identified an “obesity gene” but also noted, “the majority of people in Europe carry the gene so it is only one piece in the jigsaw of reasons why obesity develops.” (Spurlock, 2005, p.16) The girth of a nation and our teenagers is truly in a crisis. Nutritionists, parents, and educators must provide tools to turn this epidemic around. Without diet and exercise we will definitely increase the cost of health care.

Physical MisEducation

It was mentioned earlier that **OVEREATING + UNDEREXERCISING = OBESITY**, brings all the consequences of disastrous health issues (Spurlock, 2005 p.120). When the body takes in more calories than is worked off, your body will store those extra calories as fat. During the lean times that were centuries ago our bodies were programmed to be lean mean machines. The reason for that was because of human history, food was scarce. When we were able to eat we would eat all of our food. The body used that energy to carry it through its daily grind of plowing the fields and completing the task of the day. In this day and time we are living in a

world of all you can eat, where food is over produced and pushed on us everywhere we go.
(Spurlock, 2005)

We over eat because the food companies' main objective is to get people to eat more of their food. They did that by placing foods in vending machines where it is easy accessible. It is done by increasing the portions and by advertising. Big business has made food available to people to eat as much as possible twenty-four hours a day, seven days a week, and 365 days a year. (Spurlock, 2005)

Now after shoveling all those extra calories into our bodies, we have not done any extra exercise to burn off those calories. So invariably we are getting fatter and fatter. It's terrible that we don't even know the basic facts. If you ask Americans what a calorie is do you think they would have the correct answer? If you asked another question like what is the definition of diet (Spurlock, 2005)?

The answer to what is a calorie is a unit of heat that measures the energy available in different foods or used up during exercise. And the answer to the second question what is the meaning of a diet, the combination of what one eats and drinks regularly.

In order to stay trim and healthy, eating 100 calories of food means we have to exercise and burn 100 calories. The amount of calories you burn depends on your weight, the activity you are doing, and with intensity of that particular activity. Researchers suggest that individuals should work out 3 to 5 days a week for 60 minutes.

In the last fifteen years physical education has declined in American schools. This is because many school districts cannot afford the funding for the maintenance of gym equipment, and teachers. The legislation of "No Child Left Behind Act" state education boards have placed

pressure on schools to implement more emphasis on core subjects and cram in as much as possible during the school day (Spurlock, 2005 p.126).

Phil Lawler who has implemented a model physical education program in Illinois, says, “I have often referred to music, art, and physical education as the sacrificial lambs of education. We are now in a society of high stakes testing. Everything that we are trying is to improve science, math and reading scores” (Spurlock, 2005, p. 126) Lawler has had to struggle getting one period of gym time. Lawler also goes on the record suggesting that research shows that physical activity is actually good for the brain as well as the body. The increased flow of oxygen to the brain that comes with physical exercise makes children better focused students when returning to the classroom.

Reports from the CDC (Spurlock, 2007) 43% of American high schools took physical education daily. In 2003, the percentage of daily physical education dropped to twenty-eight percent. By 2003, it was reported that little more than half of high school students were not taking any sort of physical education classes. In the State of Missouri, freshman are required to have a physical education class for one year, but sophomores, juniors, and seniors are not required to take physical education. When these students did enroll in physical education classes, many stood around or only wanted to play basketball. In most physical activity classes boys will participate more than girls. Girls are most likely not to participate in physical activity and are at risk of being obese or overweight (Spurlock, 2007).

CHAPTER 3 - Methodology

Purpose of the Study

“All parts of the body if used in moderation and exercised in labors to which each is accustomed, become thereby healthy and well, developed, and age slowly; but if unused and left idle, they become liable to disease, defective in growth, and age quickly.”

Hippocrates

The research focuses on 12 adolescent girl that are African American females from ages 11-17 years. The significance of this study is to help African American adolescent girls to improve in the following areas:

- Cardiovascular endurance
- Lose inches off the waist
- Muscular endurance
- Body Mass Index/Body Composition
- Self Esteem

Laying a solid foundation on which to build a comprehensive program for fitness and will result in lifelong changes. African American females are becoming increasingly at risk of adopting a sedentary lifestyle. The method used in this study involves the basic components of physical fitness. At the beginning of the 2009, school year twelve high school females on different grade levels will participate in this study (Meredith, Welk 2007). These high school students were selected based on the following criteria: (a) height and weight, (b) Body Mass Index (BMI), and (c) FitnessGram Report (Meredith, Welk 2007).

This personal fitness program will assess the basic components of physical fitness. The components of the FitnessGram consist of the following:

- Aerobic Capacity – Looking at the health standpoint, aerobic fitness or cardiovascular endurance is generally considered as the most important of the

fitness components. Many terms are used when describing physical fitness such as cardiorespiratory fitness, cardiorespiratory endurance, cardiovascular fitness, aerobic work capacity, aerobic fitness and physical working capacity. Benefits of cardiovascular fitness are the increased ability of the heart, lungs, and circulatory system to supply oxygen and nutrients to working muscles efficiently. It also allows activities that involve large muscle groups (i.e. walking, running, biking, etc) to be performed over a longer period of time.

- Body Composition – refers to the relative proportions of body weight in terms of lean body mass and body fat. Lean body mass represents the weight of muscle, bone, internal organs and connective tissue. Body fat represents the remaining fat tissue. Body fat serves three important functions:

- 1) Insulator to conserve heat
- 2) Metabolic fuel for the production of energy
- 3) Padding to cushion your internal organs

It's essential to maintain some body fat, but an excess level poses a serious health risk. High levels of body fat are associated with high blood pressure, increased levels of blood fats and cholesterol, heart disease, stroke, diabetes and certain cancers (Meredith, Welk 2007). In contrast, very low body fat can cause the development of such medical conditions as heart damage, gastrointestinal problems, shrinkage of internal organs, immune system abnormalities, disorders of the reproductive system, loss of muscle tissue, damage to the nervous system, abnormal growth and even death (Meredith, Welk 2007).

- Muscle Strength – is very important to your overall health and fitness. Adequate levels of strength are necessary to perform daily routines at home and work, without excessive fatigue or stress. Higher levels of muscular endurance fitness also reduce the incidence of lower back pain and injury to the musculoskeletal system (Meredith, Welk 2007). Strong muscles also assist your cardiovascular system in sustaining physical activity.
- Flexibility – is the ability to move a joint through its complete range of motion and is important to general health and physical fitness. Flexibility is reduced when muscles become short and tightened with disuse causing an increase in injury and strains.

Research Questions

1. What effect, if any, does a voluntary, after-school weight loss program have on the fitness levels of adolescent African American females (ages 11 -17)?
 - a. What effect, if any, does a voluntary, after-school weight loss program have on the *cardiovascular fitness* of adolescent African American females (ages 11 -17)?
 - b. What effect, if any, does a voluntary, after-school weight loss program have on the *abdominal strength* of adolescent African American females (ages 11 -17)?
 - c. What effect, if any, does a voluntary, after-school weight loss program have on the *upper-body strength* of adolescent African American females (ages 11 -17)?
 - d. What effect, if any, does a voluntary, after-school weight loss program have on the *flexibility* of adolescent African American females (ages 11 -17)?
 - e. What effect, if any, does a voluntary, after-school weight loss program have on the *body composition* of adolescent African American females (ages 11 -17)?

2. What effect, if any, does a voluntary, after-school weight loss program have on the ability of adolescent African American females (ages 11 -17) to assess their personal levels of fitness?
 - a. What effect, if any, does a voluntary, after-school weight loss program have on the ability of adolescent African American females (ages 11 -17) to assess their *caloric intake*?
 - b. What effect, if any, does a voluntary, after-school weight loss program have on the ability of adolescent African American females (ages 11 -17) to assess their *energy output*?
3. What effect, if any, does a voluntary, after-school weight loss program have on the motivation of adolescent African American females (ages 11 -17) to maintain a healthy weight?
 - a. What effect, if any, does a voluntary, after-school weight loss program have on the *internal motivation* of adolescent African American females (ages 11 -17) to maintain a healthy weight?
 - b. What effect, if any, does a voluntary, after-school weight loss program have on the *external motivation* of adolescent African American females (ages 11 -17) to maintain a healthy weight?

Research Design

In my experience as a physical education teacher, I have observed that adolescent girls with a body composition of 25% fat mass and a 25% lean body mass or worse are reluctant to participate in weight loss programs. In my opinion these adolescent girls have given up and have become apathetic and indifferent to weight loss activities. My hope is to assist students in devising a weight reduction plan that is structured, motivational, reliable, and efficient.

Adolescent girls will be interviewed, individually about the strength and weaknesses on their surveys, fitness test, nutrition plan, workout plan, and self esteem.

The goal of this study is to get African American females more involved in physical activity. In recent years implementing physical activity programs have some serious problems in our schools. The existing barriers that have been identified are lack of motivation, facilities, resources, equipment, and most importantly lack of time (Meredith, Welk 2007).

In addition to these situations it is also noted that many schools do not provide daily physical education. Other barriers include a lack of attention to gender and the need for appropriate professional development opportunities (Meredith, Marilu, Welk 2007).

The most important factor is equipping students to have the ability to manage self, being with friends, staying in shape, physically fit, and improving skills (Meredith, Welk 2007).

Population and Sample

The population was selected from an African American high school which serves 100% African Americans. At the beginning of the school year the BMI was calculated for each student in the physical education class. Students were invited to participate with a BMI category of 25 - 29.9% fat mass as overweight. And with a BMI of 30% or greater places students in the category of obesity, with a large waist circumference, and risk factors for diseases and conditions associated with obesity. This program started in October 2009 and was completed February 2010. (Meredith, Welk 2007).

These participants are considered as being overweight and may face several risk factors according to BMI categories. Those who are overweight or obese are at a greater risk for many types of diseases. A small amount of weight (loss just 10 percent of the current weight) will help to lower the risk of developing diseases associated with obesity (Meredith, Welk, 2007).

Protection of Human Subjects

In July 2009, the researcher obtained approval from the office for Research Involving Human Subjects (IRB) at Kansas State University to complete this study. Every effort was made to ensure the confidentiality and anonymity of all students and their families. Surveys, FitnessGram Reports, Questionnaires, FitnessGram Reports, and Informed Consent forms are stored in different locations. Student identification numbers were used to ensure confidentiality of all subjects.

The human subjects involved in this research project volunteered willingly without monetary compensation. Human subjects will completely understand that by withdrawing from this research project that their academic grade will not be affected in their physical education class. Subjects may discontinue their consent at any time and stop participating without explanation.

Instrument

Assessment Protocol

Aerobic Capacity/The PACER Test

Objective: To run as long as possible across a 20 meter space at a specified area.

The PACER (Progressive Aerobic Cardiovascular Endurance Run) is the default aerobic test in the FitnessGram. This multistage fitness test is an adapted 20-meter shuttle run. This is a progressive run that increases in intensity such that at the beginning it is easy but it gets harder at the end. The test begins slowly and has a built in warm up and allows subjects to pace

themselves. The test is accompanied with music to create a fun atmosphere for a distance run while measuring aerobic capacity. It is not necessary to have students run to exhaustion (Meredith & Welk, 2007).

Equipment and Facilities: The PACER test requires a flat, non-slippery surface at least 20 meters long (21 yards, 32 inches), CD player with adequate volume, measuring tape, marker cones, pencils and score sheet. Student should wear tennis shoes.

Test Instructions

- Mark off the gymnasium area 20 meter (21 yards, 32 inches) using cones to divide lanes with floor tape at each end.
- Using the audiotape for the PACER test, calibrate by timing the one-minute test interval at the beginning of the tape.
- Make copies of score sheet for all students to be tested.
- Before testing, allow subjects to listen to several minutes of the tape so that they know what to expect. Students will be allowed to practice.
- Students will select a partner. Students that are being tested will line up behind the starting line.
- The individual PACER CD has an automated voice that announces each level as the tape advances.
- Students run across the 20-meter distance and touch the line with their foot by the time of the beep. At the sound of the beep, they turn around and run back to the other end. If some students get to the line before the beep, they must wait for the beep before running in the other direction. Students continue until they fail to reach the line before the beep for the second time.

- A single beep will signal at the end of the time for each lap. A triple beep sounds at the end of each minute. The triple beep serves the same function as the single beep and also alerts each runner that the pace gets faster. Inform students that when the triple beeps sounds they should not stop but should continue the test by turning and running toward the other end.

When to Stop

The first time that a student does not reach the line by the beep, the student stops where she is and reverses direction immediately, attempting to get back on pace. The test is completed for a student the next time (second time) she fails to reach the line by the beep (two misses do not have to be consecutive; the test is over after a total of two misses). After students complete the test, they should continue to walk and stretch in a designated area to cool down. A student remaining at one end of the testing area through two beeps (does not run to the other end and back) should be scored as having two misses and her test is over.

Scoring

During the PACER test, one lap is the distance of 20 meters (from one end to the other). The scorer will record the lap number (crossing off the numbers on the score sheet) the score is the number of laps completed by the runner.

Abdominal Strength and Endurance/Curl up Test

Objective: To complete as many curl ups as possible (maximum of 75) to a cadence.

Equipment

Curl up measuring strip: 4 ½ inches for older students

Scorecard

Assessment suggestions

- One curl up every 30 seconds.
- Record number of curl ups completed prior to the second form correction.
- Reposition the students' if her body moves.
- Movement starts with flattening of back.
- Fingertips must reach opposite side of strip.
- Cadence encourages steady movement.
- Students should not "reach" with arms.
- Form correction: Heels must remain in contact with mat.
- Form Correction: Pauses are not allowed.
- Form correction: Fingertips should touch far side of strip.

Test Instructions

Students were allowed to select a partner. Partner A performs curl ups while the partner B counts and watches the form for errors. Partner A gets in a supine position on the mat, knees bent at an angle of 140 degrees, feet flat on the floor, legs slightly open, arms are down by the side of the body with palms of hands on the mat. The fingers are stretched out and the head resting on the mat. Students should have their feet extended as far as possible from the buttocks while ensuring the feet remain in contact flat on the floor. The closer the feet are positioned in relation to the buttocks, the more difficult the movement.

After partner A has been briefed and is in the correct position on the mat, partner B places the measuring strip under partner A's legs so that partner A's fingertips rest on the nearest edge of the measuring strip. Partner B then gets in position on the knees and counts curl ups and watches for breaks in the position. The student now places a piece of paper under partner A's

head. A sheet of paper is placed under partner A's head as this will assist partner B to judge if partner A's head touches down on each repetition. Partner B will watch for the paper to crinkle each time partner A touches with her head.

Before the curl up test starts, it is a good practice for all partners to pull on the other partners' hands to ensure the shoulders are relaxed and in a normal position. When partner A is allowed to have incorrect shoulder position before the beginning the test, she may be able to get the fingertips to the other side of the testing strip by merely moving the arms and shoulders up and down. The heels must stay in contact with the mat as partner A curls up slowly; the fingers will slide across the measuring strip until fingertips reach the opposite side then partner A curls back down until her head touches the sheet of paper on the mat. Movement should be slow and with the specified cadence or the pre-recorded cadence. The examiner may use the PACER music tape. Partner A continues without pausing until she can no longer continue or has completed 75 curl ups.

When to Stop

Subjects are stopped after completing 75 curls ups, when the second form correction is made, or when they can no longer continue.

Form Corrections

- Heels must stay in contact with the mat.
- Head must always return to the mat on every repetition.
- Rest periods and pauses are not allowed. Each movement is continuous and performed with the cadence.
- Fingertips are required to touch the far side of the measuring strip.

Scoring

The number of curl ups actually performed determines the score. Every time the students' head returns to the mat is when the curl up is counted. For the ease of administering the test it is permissible to be consistent with all of the students and classes when determining whether or not you will count the first incorrect curl up.

Upper Body Strength and Endurance/Push up Test

Strength and endurance muscles in the upper body are very important in daily activities, promoting good posture, and functional health. The upper body's strength's role is maintaining functionality becomes more evident as people age (Meredith & Welk, 2007). This is a recommended test item, which should be performed at a 90-degree angle.

Objective: To complete as many push-ups as possible at a rhythmic pace. This is used for male and females.

Ninety Degree Push up

An elbow angle of ninety degree is a recommended test for upper body strength and endurance the push up test requires little or no equipment; several students may be tested at one time, with each partner changing places at the end of each evaluation. Students may use this test as a conditioning activity as well as in self-testing.

The ninety-degree push up has been shown to produce consistent scores but reliability depends on how the test is given (Meredith & Welk, 2007). Students have a tendency to count scores for their partners that are consistently higher than adults because the counting student

tends to not evaluate whether the push up is completed correctly. Students were allowed to practice--the ninety-degree push-ups and watching and evaluating their partner.

Equipment and Facilities

The equipment used for this test is the FitnessGram CD with the recorded cadence for the push-ups. The correct cadence is 20 ninety-degree push-ups per minute. The PACER test CD contains a recorded 90-degree push cadence. All push-ups may be performed on the floor or mat. Cardboard or squares maybe used to assist students in judging a 90 degree angle.

Form Corrections

- Stopping/failure to maintain pace.
- No 90 degrees angle at elbow a repetition.
- Correct body position maintaining straight back
- Failure to extend arms fully.
- Stop test if student is in pain.

Test Instructions

- Students will pair off with a partner. One will perform the push-ups while the other counts and watches to see if the student's bend elbows are at a 90-degree angle.
- The student is in a prone position on the mat with hands placed under or slightly under the chest and shoulders, fingers spread out, legs are straight and apart, and toes tucked. The student pushes up from the mat with the arms until the arms are straight, keeping the legs and back straight. The back will stay in a straight line from head to toes while performing test. The student will lower her body using the arms until the elbows bend at

a 90-degree angle and the upper arms are parallel to the floor. This movement is repeated as many times as possible.

- On each repetition the student should push up and continue the movement.
- The rhythm should be approximately 20, 90-degree push-ups per minute or 1 90-degree push up every 3 seconds.

When to Stop

The test will be discontinued when the second mistake is made. Only one mistake is allowed per individual during form correction.

Push up Scoring

The students that are actually completed perform the numbers of push-ups. To make it easy on participants during the administration of the test, it is allowable to count the first incorrect 90-degree push up. It is extremely important to be fair and consistent with all students when determining that you will count only the first incorrect push up.

Flexibility Testing Back-Saver Sit and Reach

Maintaining joint flexibility is important to one's personal health. Decreased flexibility is generally not a problem with teenagers. Many teenagers will easily pass the flexibility items; however the flexibility item is optional (Meredith, & Welk, 2007).

Objective:

Students need to be able to reach the specified distance on the right and left sides of the body.

Back-Saver Sit and Reach

The back-saver sit and reach is very similar to the traditional sit and reach except that the test is performed on one side at a time. Step testing one leg at a time; the determination of any asymmetry in the flexibility of the hamstring and hyperextension of the knees is avoided. The sit and reach only measures the flexibility of the hamstring muscles. Hamstring flexibility allows rotation of the pelvis in forward movements bending and posterior tilting of the pelvis for proper sitting.

The back-saver sit and reach has shown consistent scores when administered with standardized conditions. The back-saver sit and reach has shown accurate scores of the hamstring flexibility, with the correlation to both right and left leg being moderately high. The back-saver sit and reach has poor correlation with criterion tests of low back flexibility (Meredith & Welk, 2007).

Testing Suggestions

- Square hips to box for alignment.
- Hold 4th reach for at least one second.

Equipment and Facilities

This assessment requires a sturdy box approximately 12 inches high. A measuring scale is placed on top of the box with the 9-inch mark parallel to the face of the box against which the student's foot will rest. The zero end of the yardstick is closest to the student.

Test Instructions

Students will remove their shoes and sit down at the test apparatus. The teenagers must have one leg fully extended with the foot flat against the box. The opposite knee is bent with the sole of the foot flat on the floor. The instep of the foot will rest on the line with 2 to 3 inches to the side of the straight knee. The arms are extended forward over the yardstick with the hands placed one on top of other (left over right whichever is comfortable for the subject). The palms are placed down, the student looks directly forward and slide hands in a downward motion keeping the back straight and head up with both hands along the top of the yardstick four times and hold the position of the fourth reach for at least 1 second. The student will switch to the opposite side and position the legs as before and reach again. The student may allow the bent knee to move to the side as the body moves forward if necessary, but the sole of the foot has to remain on the floor.

Back-Saver Sit and Reach Scoring

- Record the number of inches and each side to the nearest half inch.
- Maximum score: 12 inches.
- Performance is limited to discourage hyper mobility. Students should meet the standard on the Healthy Fitness Zone, on both the right and left sides.

Body Composition/ Body Mass Index (BMI)

Body Mass Index (BMI) provides an indication of appropriateness of an adolescents weight relative to height. Body Mass Index (BMI) is determined by using this formula “weight (kg)/height ²(m)”. While the data can be entered in pounds and inches, the results are now calculated with the metric formula. For example, a student that weighs 100 pounds (45.36 kilograms) that is 5 feet (1.52 meters) tall would have a BMI of 19.6. Another

student may be of the same weight but 5 feet 2 inches tall would have a BMI of 18.3 (Meredith & Welk, 2007).

Therefore, weight and height measures record regular portions of test process for all students are converted to metric units by the computer to calculate BMI pounds to kilograms and feet to meters (Meredith & Welk, 2007). This information on conversions of height and weight to BMI measures can be found at the following

website:(www.nhlbisupport.com/bmi/bmicalc.htm) Department of Health and Human Services
National Institutes of Health

Skin Fold Measurement

Objective:

To measure the triceps and calf muscle skin fold thickness for calculating percent body fat.

Equipment and Facilities

A skin fold caliper is necessary to perform this assessment. Calipers are inexpensive.

Testing Suggestions

- Measurements taken on right side of body
- Measure back of arm, over triceps
- Bend the arms at 90 degrees marking midpoint.
- Straighten arm to take measurement
- Pinch half inch above the marked site
- Measure inside of right leg at maximum calf girth.

Testing Procedures

The calf and triceps muscles skin folds have been chosen because the sites are easily measured and highly related to total body fatness. The calipers measure a double layer of subcutaneous skin and fat.

Measurement Locations

Using a string to find the midpoint is a good suggestion. The skin fold site is in a vertical position. Pinching the fold between the string sites above the midpoint will ensure that the fold is measured right on the midpoint.

The calf muscle skin fold is measured on the inside of the right leg at the level of maximal calf girth. The right foot is placed on a flat surface with the knee flexed at a 90-degree angle. The vertical skin fold should be grasped above the level of the maximum girth and the measurement made below the group.

Measurement Technique

- Measuring a persons' skin fold should be performed on the right side.
- The student is instructed to relax the leg and arm while being measured.
- Grasp the skin between the thumb and forefinger and lift away from the other body tissue. This should not be painful but firm as not intended to be painful.
- Place the caliper half inch below the pinch site.
- Be sure the caliper is in the middle of the fold.
- This procedure is to do one measurement at each site before doing the second measurement at each site and finally the third set of measurements.

Scoring

When using the calipers, the measurement is automatically registered. Each measurement should be taken three times, with the score being the middle value of three scores. Student measurements should be taken three times, with the recorded score being the median (middle) value of three scores. To illustrate: if the scores were 7.0, 9.0, and 8.0, the score would be recorded as 8.0 millimeters. Each reading will be recorded to the nearest .5 millimeters. A conversion chart is available for males and females in the FitnessGram (Meredith & Welk, 2007, p.97 & 98).

Validity and Reliability

The validity of the FitnessGram assessment is an appraisal of whether this test measures what it is supposed to measure. It's usually expressed in a systematic way, which quantifies how strong the relationship is between test results and the most direct measurement of the fitness component that's being tested (Meredith & Welk, 2007).

A reliable test consist of measurements that is dependable and trustworthy in the FitnessGram because the same students get the same score when executing their physical best for the same test repeatedly. The reliability of the physical fitness test is definitely high, especially when students put forth their physical best. Reliability may drop considerably if a child does not give his/her physical best, is unable to perform the test task, or feeling stressed, unhappy, and tired (Meredith & Welk, 2007).

Data Collection

The FitnessGram fitness test battery evaluates five different parts of healthy-related fitness, including aerobic capacity, muscular strength, muscular endurance, flexibility, and body

composition. This evaluation assesses the teenagers current level of health related fitness and help identify ways to promote healthy lifestyles.

Aerobic capacity is a measure of the ability of the heart, lungs and muscles to perform sustained physical activity. In general, the more the teenager exercises the higher the aerobic capacity level will be. Aerobic capacity is measured with the PACER test. The importance of good aerobic capacity can reduce risks of heart disease, stroke, and diabetes. Although generally not present in teenagers, these diseases can begin during childhood and adolescence. Aerobic capacity – Healthy Fitness Zone (HFZ) for 14 year old girls = 23 – 51 laps.

Muscle strength, endurance, and flexibility these components of health related fitness measures the overall fitness of the musculoskeletal system. A variety of tests are used to assess these different components. The importance of this fitness level of muscles is important for injury prevention and overall body function. Strength, endurance, and flexibility are important for maintaining good posture, low back health, and total body function. Muscle strength, endurance, and flexibility Healthy Fitness Zone (HFZ) for 14 year old girls; curl ups = 18 -32 repetitions; push ups = 7 – 15 repetitions; back saver sit and reach – at least 10 inches right and left legs.

The body composition measure refers to the relative proportion of fat and lean tissue in the body. Skin fold calipers or other measuring devices can estimate body fat percentages. The Body Mass Index (BMI) is another indicator that determines if a teenager is at a healthy weight for her height. Overweight teenagers are at high risk for being overweight adults. Adult's obesity is associated with a number of chronic health problems. Many of these health problems can begin early in life. It is important to begin healthy eating and regular activity early.

Body composition (BMI) Healthy Fitness Zone (HFZ) for 14-year-old girls 14.90 – 24.50

The interpretation of the FitnessGram is based on health related fitness includes a variety of factors. With regular physical activity most teenagers will be able to score in the Healthy Fitness Zone for most of the tests. It is important that children and adolescents be physically active everyday (a total of 60 minutes is recommended) even if they are already fit. If a teenager is in the Needs Improvement area on a particular test, it is important to provide additional opportunities to be active so they can improve their levels of fitness.

The FitnessGram Longitudinal Tracking Chart is used to graph the fitness level of each individual from the first FitnessGram testing experience to most recent. The report includes a graph for every test item plotted and the scores for each test date. The gray shaded area in each graph indicates the Healthy Fitness Zone for that test item. The chart communicates long term progress in achieving and maintaining healthy fitness levels.

Nutrition and physical activity will support the assessment of fat reduction in students that will consistently collect personal data. This data will contribute to helping students understand their level of fitness and the importance of working to improve as well as maintain their physical fitness.

Dependent variables are based on physical fitness (FitnessGram protocol), Survey Instrument (Appendix A), Personal Inventory (Appendix B), BMI (Measured weight and height

Independent variables are based on physical education to promote physical activity in school:

- Block scheduling (Monday, Wednesday, and Friday with 55 minutes of class; classes on Tuesday and Thursday 100 minutes of class) Three class sessions (1) brief warm up and daily conditioning exercise to improve muscle strength and endurance (2) fitness activities to promote cardiovascular fitness (e.g. aerobic brisk walking/running), (3) Sport

skills that focus on basic skills and not the competition side which is followed by cool down stretching exercises.

- During two days a week students were involved in planning their nutrition diary. Students would have a counseling session on their general overall physical health.

CHAPTER 4 - Results

The purpose of this study was to assist African American teenagers in assessing their personal health. The study also provided valuable information, making them aware of how important diet and exercise is to their well-being.

Twelve African American females selected to take part in this study. This study took place during November 2009 through February 2010. Each participant was involved in physical activity and recorded her food intake. All individuals took a pre-test in October 2009 and a post-test at the end of the February 2010. The pre-test evaluated each subject's healthy fitness zone and each was given feedback on each test performed. The test gave information on what was the healthy zone for each teenager's age.

As the study continued with the participants, they began to realize how a good fitness and diet plan made them feel mentally better. Of course a proper diet and fitness regimen doesn't only affect your body physically; it also affects you mentally as well. When eating the right balance of foods, it means that your head is clear and you stay motivated.

Being involved in the right level of physical activity and a nutritional plan can make all the difference in concentrating, on academics and cope with daily stress. Teenagers today are not committed to being involved in exercising for sixty minutes a day. Teenagers believe they are invincible when it comes to their personal health. It's almost like they feel " I am healthy and I'm immune to getting heart disease, hypertension, diabetes, insulin resistance, and high cholesterol."

Participants were selected by the following Body Mass Index (BMI) categories:

Table 4.1 Body Mass Index (BMI) Categories

Low %	17.1
Optimal %	17.1 – 22.0
Moderate %	22.1 – 27.0
High %	27.1 -32.0
Very High %	32.0

Seven participants were classified as being overweight, one teenager classified as a Class I, two were classified as Class II, one morbid, and one super obese. These human subjects volunteered to be in the study with the approval of their parents. The study which was held after school, had to compete with many obstacles and other school activities such as the marching band, robotics, volleyball, basketball, Double Dutch, Daughters on the Rise, after school tutoring, inclement weather, and Kauffman Foundation. Some teenagers were involved with church activities like praise dancing, outside drill teams and soccer teams. Often school activities were cancelled because of bad weather conditions or schools' administration sent all students home. This had a powerful impact on the program because only one participant may show up for the weight loss program.

Research Questions

1. What effect, if any, does a voluntary, after-school weight loss program have on the fitness levels of adolescent African American females (ages 11 -17)?
 - a. What effect, if any, does a voluntary, after-school weight loss program have on the *cardiovascular fitness* of adolescent African American females (ages 11 -17)?

African American female students volunteering in an after-school weight loss program were able to be active for 3 days a week. Cardiovascular fitness is

important in being healthy and fit almost each day for a total of 30 to 60 minutes daily.

Individuals learned how to calculate their personal target heart rate zone. After each teenager figured their target heart rate zone it was explained that they must keep their heart rate in the zone. Their heart rate must not be above or below the calculated range. (Below, In, and Above).

Cardiovascular fitness is good for your heart and body composition. Cardiovascular fitness also allows the ability of the heart, lungs, and circulatory system to supply oxygen and nutrients to working muscles efficiently, and allows activities that involve large muscle groups (walking, running, swimming, and biking) to be performed over long periods of time. From a health standpoint, cardiovascular or aerobic fitness is considered to be the most important of the fitness components. Comparing the results of cardiovascular fitness for volunteer African American females between the ages 11 -17. The tables below will show the number of times that each individual met their goal of being in their target heart rate zone.

Table 4.2 Cardiovascular Fitness Report

Participant	Date	Activity	Total Time	Target Zone	Below Zone	In Zone	Above Zone
TB073712	11/10/09	Step	30	124-165	94		
Age 13	11/17/09	Treadmill	30			143	
	11/19/09	Step	30			124	
	12/01/09	Stability	30		79		
	12/03/09	Step	30		93		
	12/08/09	Treadmill	30			136	
	12/10/09	Step	30			143	
	12/16/09	Stability	30		97		
	12/17/09	Step	30		55		
	01/21/10	Treadmill	30			126	
	02/04/10	Step	30		100		
	02/09/10	Stability	30		90		
	02/18/10	Step	30		120		

Table 4.3 Cardiovascular Fitness Report

Participant	Date	Activity	Total Time	Target Zone	Below Zone	In Zone	Above Zone
DB057675	11/10/09	Step	30	124-166	118		
Age 12	12/03/09	Treadmill	30			139	

Table 4.4 Cardiovascular Fitness Report

Participant	Date	Activity	Total Time	Target Zone	Below Zone	In Zone	Above Zone
MD504601	11/10/09	Step	30	123-164	100		
Age 14	12/01/09	Treadmill	30			124	

Table 4.5 Cardiovascular Fitness Report

Participant	Date	Activity	Total Time	Target Zone	Below Zone	In Zone	Above Zone
AG083577	11/10/09	Step	30	124-165	72		
Age 13	11/17/09	Treadmill	30			137	
	12/02/09	Stability	30		107		
	12/03/09	Step	30			128	
	12/10/09	Step	30			136	
	12/16/09	Stability	30			132	
	12/17/09	Step	30		78		
	01/12/10	Step	30		101		
	01/14/10	Stability	30		122		
	01/21/10	Treadmill	30		120		
	01/28/10	Step	30		107		
	02/03/10	Step	30			128	
	02/04/10	Treadmill	30		110		
	02/10/10	Step	30		84		
	02/17/10	Step	30				173

Table 4.6 Cardiovascular Fitness Report

Participant	Date	Activity	Total Time	Target Zone	Below Zone	In Zone	Above Zone
RG057430	01/14/10	Stability	30	123-164	113		
Age 15	01/21/10	Treadmill	30			147	
	01/28/10	Step	30			140	
	02/03/10	Step	30			126	
	02/04/10	Treadmill	30			134	
	02/17/10	Step	30				167
	02/18/10	Step	30		120		

Table 4.7 Cardiovascular Fitness Report

Participant	Date	Activity	Total Time	Target Zone	Below Zone	In Zone	Above Zone
MG504989	11/10/09	Step	30	124-165		127	
Age 13	12/03/09	Step	30			150	

Table 4.8 Cardiovascular Fitness Report

Participant	Date	Activity	Total Time	Target Zone	Below Zone	In Zone	Above Zone
SH063801	11/10/09	Step	30	124-165	91		
Age 13	11/17/09	Treadmill	30			132	
	12/03/09	Step	30			150	
	01/12/10	Step	30			152	

Table 4.9 Cardiovascular Fitness Report

Participant	Date	Activity	Total Time	Target Zone	Below Zone	In Zone	Above Zone
AJ034620	11/10/09	Step	30	123-164	109		
Age 15	11/11/09	Stability	30			144	

Table 4.10 Cardiovascular Fitness Report

Participant	Date	Activity	Total Time	Target Zone	Below Zone	In Zone	Above Zone
KNJ076708	11/17/09	Treadmill	30	124-165		154	
Age 13	11/18/09	Stability	30			145	
	12/01/09	Stability	30			136	
	12/03/09	Step	30			155	
	12/10/09	Step	30			148	

Table 4.11 Cardiovascular Fitness Report

Participant	Date	Activity	Total Time	Target Zone	Below Zone	In Zone	Above Zone
SN063124	11/10/09	Step	30	124-165	110		
Age 13	12/03/09	Step	30		110		

Table 4.12 Cardiovascular Fitness Report

Participant	Date	Activity	Total Time	Target Zone	Below Zone	In Zone	Above Zone
DT502365	12/03/09	Step	30	124-164	118		
Age 14	12/10/09	Step	30			160	
	12/16/09	Stability	30		115		
	12/17/09	Step	30		98		
	01/12/10	Step	30			137	
	01/04/10	Stability	30			124	
	01/20/10	Treadmill	30				171
	01/21/10	Treadmill	30				172
	01/28/10	Step	30		120		
	02/03/10	Step	30			135	
	02/04/10	Treadmill	30			131	
	02/09/10	Treadmill	30			140	
	02/10/10	Step	30		110		
	02/17/10	Step	30				181

Table 4.13 Cardiovascular Fitness Report

Participant	Date	Activity	Total Time	Target Zone	Below Zone	In Zone	Above Zone
LW501686	01/12/10	Step	30	123-164		162	
Age 15	01/14/10	Stability	30		111		
	01/21/10	Treadmill	30		101		
	02/04/10	Treadmill	30			150	

- b. What effect, if any, does a voluntary, after-school weight loss program have on the *abdominal strength* of adolescent African American females (ages 11 -17)? African American female students volunteering in an after-school weight loss program were able to be physically involved in abdominal strength for 3 days. This physical activity involved being able to complete a number of curl ups within a given time and remain in their healthy fitness zone for their age 11 -17.

Abdominal strength is very important to the overall health and fitness. Adequate levels of strength are necessary to perform daily routines at home and school, without excessive fatigue or stress. Higher levels of abdominal fitness also reduce the incidence of lower back pain and injury to the musculoskeletal system. Strong muscles also assist the cardiovascular system in sustaining physical activity. Comparing the results for African American females between the ages 11 – 17. (Curl Ups/CU, Needs Improvement/Nds Imp, Healthy Fitness Zone/HFZ, and Exceeds/Exc)

Table 4.14 Abdominal Strength Fitness Report

Participant	Date	Activity	Total Time	Target Zone	Below Zone	In Zone	Above Zone
LW501686	01/12/10	Step	30	123-164		162	
Age 15	01/14/10	Stability	30		111		
	01/21/10	Treadmill	30		101		
	02/04/10	Treadmill	30			150	

Table 4.15 Abdominal Strength Fitness Report

Participant	Date	Activity	Time	CU/HFZ	Nds Imp	HFZ	Exc
DB057675	11/10/09	Curl Ups	1 minute	18-32			48
Age 12	12/03/09					30	

Table 4.16 Abdominal Strength Fitness Report

Participant	Date	Activity	Time	CU/HFZ	Nds Imp	HFZ	Exc
MD504601	11/10/09	Curl Ups	1 minute	18-32		21	
Age 14	12/01/09					22	

Table 4.17 Abdominal Strength Fitness Report

Participant	Date	Activity	Time	CU/HFZ	Nds Imp	HFZ	Exc
AG083577	11/10/09	Curl Ups	1 minute	18-32		18	
Age 13	11/17/09					24	
	12/02/09					30	
	12/03/09					30	
	12/10/09					25	
	12/06/09						43
	12/17/09						40
	01/12/10						48
	01/14/10						40
	01/21/10					25	
	01/28/10						38
	02/03/10						44
	02/04/10						35
	02/10/10					24	
	02/17/10					28	

Table 4.18 Abdominal Strength Fitness Report

Participant	Date	Activity	Time	CU/HFZ	Nds Imp	HFZ	Exc
RG057430	01/14/10	Curl Ups	1 minute	18-35			38
Age 15	01/21/10					25	
	01/28/10					30	
	02/03/10						39
	02/04/10						46
	02/17/10						39
	02/18/10					31	

Table 4.19 Abdominal Strength Fitness Report

Participant	Date	Activity	Time	CU/HFZ	Nds Imp	HFZ	Exc
MG504989	11/10/09	Curl Ups	1 minute	18-32	8		
Age 13	12/03/09					20	

Table 4.20 Abdominal Strength Fitness Report

Participant	Date	Activity	Time	CU/HFZ	Nds Imp	HFZ	Exc
SH063801	11/10/09	Curl Ups	1 minute	18-32		18	
Age 13	11/17/09					20	
	12/03/09					20	
	01/12/10						45

Table 4.21 Abdominal Strength Fitness Report

Participant	Date	Activity	Time	CU/HFZ	Nds Imp	HFZ	Exc
AJ034620	11/10/09	Curl Ups	1 minute	18-35			
Age 15	11/11/09					20	

Table 4.22 Abdominal Strength Fitness Report

Participant	Date	Activity	Time	CU/HFZ	Nds Imp	HFZ	Exc
KNJ076708	11/17/09	Curl Ups	1 minute	18-32		25	
Age 13	11/18/09					25	
	12/01/09					30	
	12/03/09					30	
	12/10/09					25	

Table 4.23 Abdominal Strength Fitness Report

Participant	Date	Activity	Time	CU/HFZ	Nds Imp	HFZ	Exc
SN063124	11/10/09	Curl Ups	1 minute	18-32		20	
Age 13	12/03/09					21	

Table 4.24 Abdominal Strength Fitness Report

Participant	Date	Activity	Time	CU/HFZ	Nds Imp	HFZ	Exc
DT502365	12/03/09	Curl Ups	1 minute	18-32		21	
Age 14	12/10/09					31	
	12/16/09						42
	12/17/09					25	
	01/12/10					22	
	01/14/10					30	
	01/20/10					20	
	01/21/10					25	
	01/28/10						33
	02/03/10					22	
	02/04/10						35
	02/09/10					31	
	02/10/10					30	
	02/17/10					22	

Table 4.25 Abdominal Strength Fitness Report

Participant	Date	Activity	Time	CU/HFZ	Nds Imp	HFZ	Exc
LW501686	01/12/10	Curl Ups	1 minute	18-35			40
Age 15	01/14/10						41
	01/21/10					31	
	02/04/10						36

- c. What effect, if any, does a voluntary, after-school weight loss program have on the *upper-body strength* of adolescent African American females (ages 11 -17)?

African American female students volunteering in an after school weight loss program were able to be physically involved in their upper body strength for 3 to 5 days. Each individual would have to complete strength activities that include resistance training for areas of the upper body. Students may need to do more repetitions each day to build their upper body strength.

The tables listed below will show the strength classification when compared to African American females in the age group 11 – 17.
(Needs Improvement/Nds Imp, Push Ups/PU, Healthy Fitness Zone/HFZ, and Exceed/Exc)

Table 4.26 Upper Body Strength Fitness Report

Participant	Date	Activity	Time	PU/HFZ	Nds Imp	HFZ	Exc
TB073712	11/10/09	Push Ups	1 min	7-15			
Age 13	02/18/10					9	

Table 4.27 Upper Body Strength Fitness Report

Participant	Date	Activity	Time	PU/HFZ	Nds Imp	HFZ	Exc
DB057675	11/10/09	Push Ups	1 min	7-15			
Age 12							

Table 4.28 Upper Body Strength Fitness Report

Participant	Date	Activity	Time	PU/HFZ	Nds Imp	HFZ	Exc
MD504601	11/10/09	Push Ups	1 min	7-15			
Age 14							

Table 4.29 Upper Body Strength Fitness Report

Participant	Date	Activity	Time	PU/HFZ	Nds Imp	HFZ	Exc
AG083577	11/10/09	Push Ups	1 min	7-15			
Age 13	01/12/10				3		

Table 4.30 Upper Body Strength Fitness Report

Participant	Date	Activity	Time	PU/HFZ	Nds Imp	HFZ	Exc
RG057430	01/14/10	Push Ups	1 min	7-15	5		
Age 15	02/17/10					11	

Table 4.31 Upper Body Strength Fitness Report

Participant	Date	Activity	Time	PU/HFZ	Nds Imp	HFZ	Exc
MG504989	11/10/09	Push Ups	1 min	7-15			
Age 13							

Table 4.32 Upper Body Strength Fitness Report

Participant	Date	Activity	Time	PU/HFZ	Nds Imp	HFZ	Exc
SH063801	11/10/09	Push Ups	1 min	7-15			
Age 13	01/12/10				5		

Table 4.33 Upper Body Strength Fitness Report

Participant	Date	Activity	Time	PU/HFZ	Nds Imp	HFZ	Exc
AJ034620	11/10/09	Push Ups	1 min	7-15			
Age 15							

Table 4.34 Upper Body Strength Fitness Report

Participant	Date	Activity	Time	PU/HFZ	Nds Imp	HFZ	Exc
KNJ076708	11/18/09	Push Ups	1 min	7-15	5		
Age 13							

Table 4.35 Upper Body Strength Fitness Report

Participant	Date	Activity	Time	PU/HFZ	Nds Imp	HFZ	Exc
SN063124	11/10/09	Push Ups	1 min	7-15			
Age 13							

Table 4.36 Upper Body Strength Fitness Report

Participant	Date	Activity	Time	PU/HFZ	Nds Imp	HFZ	Exc
DT502365	12/03/09	Push Ups	1 min	7-15			
Age 14	01/12/10					8	

Table 4.37 Upper Body Strength Fitness Report

Participant	Date	Activity	Time	PU/HFZ	Nds Imp	HFZ	Exc
LW501686	01/12/10	Push Ups	1 min	7-15		10	
Age 15							

- d. What effect, if any, does a voluntary, after-school weight loss program have on the *flexibility* of adolescent African American females (ages 11 -17)?

For African American females to improve their flexibility it is important to do stretching activities. Be sure that each individual does each stretch slowly 3 or 4 days each week, holding the stretch 20 – 30 seconds.

The participants will have the ability to move a joint fluidly through its complete range of motion and it is important to general health and physical fitness.

Flexibility can be reduced when muscles become short and tightened with disuse causing an increase in injury and strains.

The flexibility table will show the healthy fitness zone for female's ages 11 – 17. (Sit & Reach, Right/Left Leg/S & R/R&LLg, Flexibility/Flex, Needs Improvement/Nds Imp, Healthy Fitness Zone/HFZ, Exceeds/Exc)

Table 4.38 Flexibility Fitness Report

Participant	Date	Activity	HFZ S&R/R&LLg	Nds Imp	HFZ	Exc
TB073712	11/10/09	Sit & Reach	R/10" L/10"		10/10	
Age 13	02/18/10					12/12

Table 4.39 Flexibility Fitness Report

Participant	Date	Activity	HFZ S&R/R&LLg	Nds Imp	HFZ	Exc
DB057675	11/10/09	Sit & Reach	R/10" L/10"		10/10	
Age 12						

Table 4.40 Flexibility Fitness Report

Participant	Date	Activity	HFZ S&R/R&LLg	Nds Imp	HFZ	Exc
MD504601	11/10/09	Sit & Reach	R/10" L/10"		12/11	
Age 14						

Table 4.41 Flexibility Fitness Report

Participant	Date	Activity	HFZ S&R/R&LLg	Nds Imp	HFZ	Exc
AG083577	11/10/09	Sit & Reach	R/10" L/10"			12/12
Age 13	02/17/10					12/12

Table 4.42 Flexibility Fitness Report

Participant	Date	Activity	HFZ S&R/R&LLg	Nds Imp	HFZ	Exc
RG057430	01/14/10	Sit & Reach	R/12' L/12''		12/12	
Age 15	02/18/10				12/12	

Table 4.43 Flexibility Fitness Report

Participant	Date	Activity	HFZ S&R/R&LLg	Nds Imp	HFZ	Exc
MG504989	11/10/09	Sit & Reach	R/10'' L/10''	6/4		
Age 13						

Table 4.44 Flexibility Fitness Report

Participant	Date	Activity	HFZ S&R/R&LLg	Nds Imp	HFZ	Exc
SH063801	11/10/09	Sit & Reach	R/10'' L/10''		10/11	
Age 13						

Table 4.45 Flexibility Fitness Report

Participant	Date	Activity	HFZ S&R/R&LLg	Nds Imp	HFZ	Exc
AJ034620	11/10/09	Sit & Reach	R/12' L/12''		12/12	
Age 15						

Table 4.46 Flexibility Fitness Report

Participant	Date	Activity	HFZ S&R/R&LLg	Nds Imp	HFZ	Exc
KNJ076708	11/17/09	Sit & Reach	R/10'' L/10''			12/12
Age 13						

Table 4.47 Flexibility Fitness Report

Participant	Date	Activity	HFZ S&R/R&LLg	Nds Imp	HFZ	Exc
SN063124	11/10/09	Sit & Reach	R/10'' L/10''			12/12
Age 13						

Table 4.48 Flexibility Fitness Report

Participant	Date	Activity	HFZ S&R/R&LLg	Nds Imp	HFZ	Exc
DT502365	12/03/09	Sit & Reach	R/10” L/10”	8/8		
Age 14	02/17/10			9/9		

Table 4.49 Flexibility Fitness Report

Participant	Date	Activity	HFZ S&R/R&LLg	Nds Imp	HFZ	Exc
LW501686	01/12/10	Sit & Reach	R/12’ L/12”		12/12	
Age 15						

- e. What effect, if any, does a voluntary, after-school weight loss program have on the *body composition* of adolescent African American females (ages 11 -17)?

African American female students volunteering in an after school weight loss program that involves individual body composition. This refers to the relative proportions of the body weight in terms of lean body mass and body fat.

Lean body mass represents the weight of muscle, bone, internal organs and connective tissue. Body fat represents the remaining fat tissue.

It is important for all individuals to improve their body composition. It is also important to be involved in physical activity at least 5 days each week.

The table listed below will show the body composition for females between the ages 11 – 17. (Healthy Fitness Zone/HFZ, Body Fat/BF,)

Table 4.50 Body Composition Report

Participant	Age	Date	HFZ % BF 13.00-32.00	Low % 17.1	Optima l % 17.1- 22.0	Moderate % 22.1- 27.0	High % 27.1- 32.0	Very High % 32.0
TB073712	13	11/10/09	13.00-32.00				29.1	
DB057675	12	11/10/09	13.00-32.00					38.2
MD504601	14	11/10/09	13.00-32.00				28.4	
AG083577	13	11/10/09	13.00-32.00			26.2		
RG057430	15	01/14/10	13.00-32.00				27.1	
MG504989	13	11/10/09	13.00-32.00					45.8
SH063801	13	11/10/09	13.00-32.00			26.5		
AJ034620	15	11/10/09	13.00-32.00					39.2
KNJ076708	13	11/17/09	13.00-32.00			26.2		
SN063124	13	11/10/09	13.00-32.00				30.8	
DT502365	14	12/03/09	13.00-32.00					53.8
LW501686	15	01/12/10	13.00-32.00			25.4		

2. What effect, if any, does a voluntary, after-school weight loss program have on the ability of adolescent African American females (ages 11 -17) to assess their personal levels of fitness?
 - a. What effect, if any, does a voluntary, after-school weight loss program have on the ability of adolescent African American females (ages 11 -17) to assess their *caloric intake*?

After assessing good nutrition for participants personal inventory 5 out of 12 females stated they eat a balanced diet.

African American female ages 11 – 17 can assess how good nutrition provides their body with maximum energy and wellness. Food provides energy for the body and the energy that foods supply to the body. This energy fuels everything you do from exercising and playing sports to doing your homework and talking with friends. Calories and nutrients are substances in food that a teenager's body needs to grow, to repair itself, and to supply you with energy.

Making healthy food choices will provide a body with the nutrients, it needs to help you look your best and perform at your physical best.

Teenagers need the same nutrition as other age groups, just in slightly different total calories and proportions. As long as teens eat from all the food groups and nutritious sources, they will not need supplemental vitamins or minerals unless they have medical issues.

The total of calorie intake for female's healthy eating plans adds up to about 1,800 to 2,400 calories. A sedentary teenager should take in the lesser number of

calories. The simple fact is that when a teenager eats more calories than she burns, she will gain weight.

- b. What effect, if any, does a voluntary, after-school weight loss program have on the ability of adolescent African American females (ages 11 -17) to assess their *energy output*?

The females in this program assessed their personal fitness behavior as being with a lack of energy output. The females did not have enough energy to perform at their physical best in an after-school weight loss program. Each participant must have enough good nutrition to fuel them through their workout. Five out of twelve females had enough good nutrition to help them perform their physical best. African American female ages 11 – 17 will assess their general energy output by using the food guidelines to balance basic dietary needs. The guidelines suggest balancing energy intake with energy output. This means that as long as you burn what you eat, your weight will stay the same. If you want to lose weight, however, you need to burn more energy than you take in through the food you eat.

- 3. What effect, if any, does a voluntary, after-school weight loss program have on the motivation of adolescent African American females (ages 11 -17) to maintain a healthy weight?

- a. What effect, if any, does a voluntary, after-school weight loss program have on the *internal motivation* of adolescent African American females (ages 11 -17) to maintain a healthy weight?

Three out of twelve participants wanted to change internally to help prevent serious health conditions such as diabetes and high blood pressure. African American female ages 11 – 17 must have awareness that change is necessary and then figure out how to move forward. Each individual must build motivation and continue to feel motivated, and want to feel good about themselves (feel stronger, walk longer, the ability to walk up the stairs, and have more energy) and feel successful.

The real key to motivation is a sense of control over what you are doing, when you are doing it and where. Choosing something you know you love or something you think you will grow to love and have fun. By adding social support such as friends and family members to keep you engaged in activities.

- b. What effect, if any, does a voluntary, after-school weight loss program have on the *external motivation* of adolescent African American females (ages 11 -17) to maintain a healthy weight?

Six females discussed their external motivation as wanting to wear a two-piece swimsuit. Four females discussed wanting to reduce their dress size just to wear smaller dresses. Two females were undecided about their external motivation because they felt that their outward appearance did not need changing. African American female ages 11 – 17 must understand that motivation is either internal or external. The best motivation is motivation that is found within you. Searching for motives outside of yourself change, lose value or become ineffective which means you stop the behavior that was being motivated.

African American females can consider these external motivates to help with changing their behaviors. Try incorporating these ten steps to self-esteem:

- 1 Know yourself
- 2 Understand what makes you feel great
- 3 Understand the things that bring you down
- 4 Set goals to achieve what you want
- 5 Develop upbeat friendships
- 6 Don't be afraid to ask for help
- 7 Stand up for your beliefs and values
- 8 Help someone else
- 9 Take responsibility for your own actions
- 10 Look your best each day to show you care

Participant Interview TB073712

An interview with human subject TB073712 revealed that she was an only child. While interviewing this teenager, it was discovered that her grandmother was instrumental in getting her granddaughter involved in the program. The food log that was documented was not consistently recorded daily and many days' meals did not have the required servings by the food guide pyramid. The family gathering for Thanksgiving revealed that a large amount of food was prepared and this teenager reported that she did overeat during this family meal.

The physical activity days were set for Tuesday through Thursday. She was able to attend 10 days because of her commitment to the Kauffman Foundation. In order for this teenager to be successful and be healthy and fit, it is important to do some physical activity 5 days a week. On the days she attended, she was not very energetic and was listless while participating. She

enjoyed being involved in the program because it allowed her to interact with other teenagers of different ages. Whenever she was exercising, she had a lackadaisical approach and never tried to get in a hurry or to pick up her pace when doing step aerobics, walking the treadmill or using the elliptical to get her heart rate up in her target heart rate zone. She enjoyed the weight machines because she did not have to exert too much energy. Because of her sporadic attendance she never reached any of the goals she set for herself. Her goals were attainable but she had no real commitment in reaching the goals.

During the days of her attendance she used the treadmill for thirty minutes; she never reached her target heart rate. Following the activity she was required to check her heart rate, which was only 94 beats per minute her target heart rate zone was calculated between 124-165 beats per minute, which she rarely reached during physical activity.

This subject performed 24 laps to be in the healthy fitness zone. On the curl-up test the subject performed 26 abdominal curl-ups to be in the healthy fitness zone. This young lady was tested over the back saver sit and reach for the right and left legs. She was able to reach her healthy fitness zone while performing this portion of the test. Upper body strength test was the push up portion of the test that measured how many push-ups could be performed in one minute. The participant has a time limit to complete as many push-ups as possible. The subject can stop within that time limit and start again to complete the test before the time has elapsed. The objective is to be in the healthy fitness zone and this subject was able to reach her healthy fitness zone. While this human subject was performing the pre-test she was able to test in the healthy fitness zone. Because she was involved in other outside physical activities she was able to maintain her healthy fitness zones. Making a comparison with her post-test this participant did not have any significant changes on the FitnessGram.

My health journey is a food diary tracking the types of foods that the participant consumed on a daily basis. It seemed very difficult for the subjects to keep a journal on the foods that were eaten. Preteens seemed to prepare or select the types of foods for themselves. Inspection of the subject's food diary showed that many of the daily meals did not have selections that were appropriate for a 13-year-old teenager. There was a limited amount of food selections from the food pyramid. Some selections for breakfast, lunch, and dinner may have been one or two items of grains, vegetables, fruits, milk, and meats and beans. Many of the meals consumed were limited in nutritional value and snacks were sometimes empty calories (an empty calorie is a casual dietary terminology, are a measurement of the present high-energy foods with poor nutritional profiles, from processed carbohydrates or fats). Lunch was usually eaten at school. If the meals were undesirable the participant would skip the school lunch and get unhealthy foods from the vending machines. She admits that her weight fluctuated up and down. Conducting a final interview with this individual, she stated that she enjoyed the program because of the different exercises and routines on various days. She said that she saw her weight go up and down. She thought she lost a couple of inches around her waist but her weight did continue to fluctuate. Her grandmother was very supportive and encouraged her to eat healthy foods. Mother kept the participant busy and involved in the church drill team and praise dancing. It seemed as though from all of the activities went late into the evenings and caused dinner meals to be eaten late. This could have been another cause of the fluctuating.

Figure 4.1 FitnessGram Results Pre/Post Test for TB073712

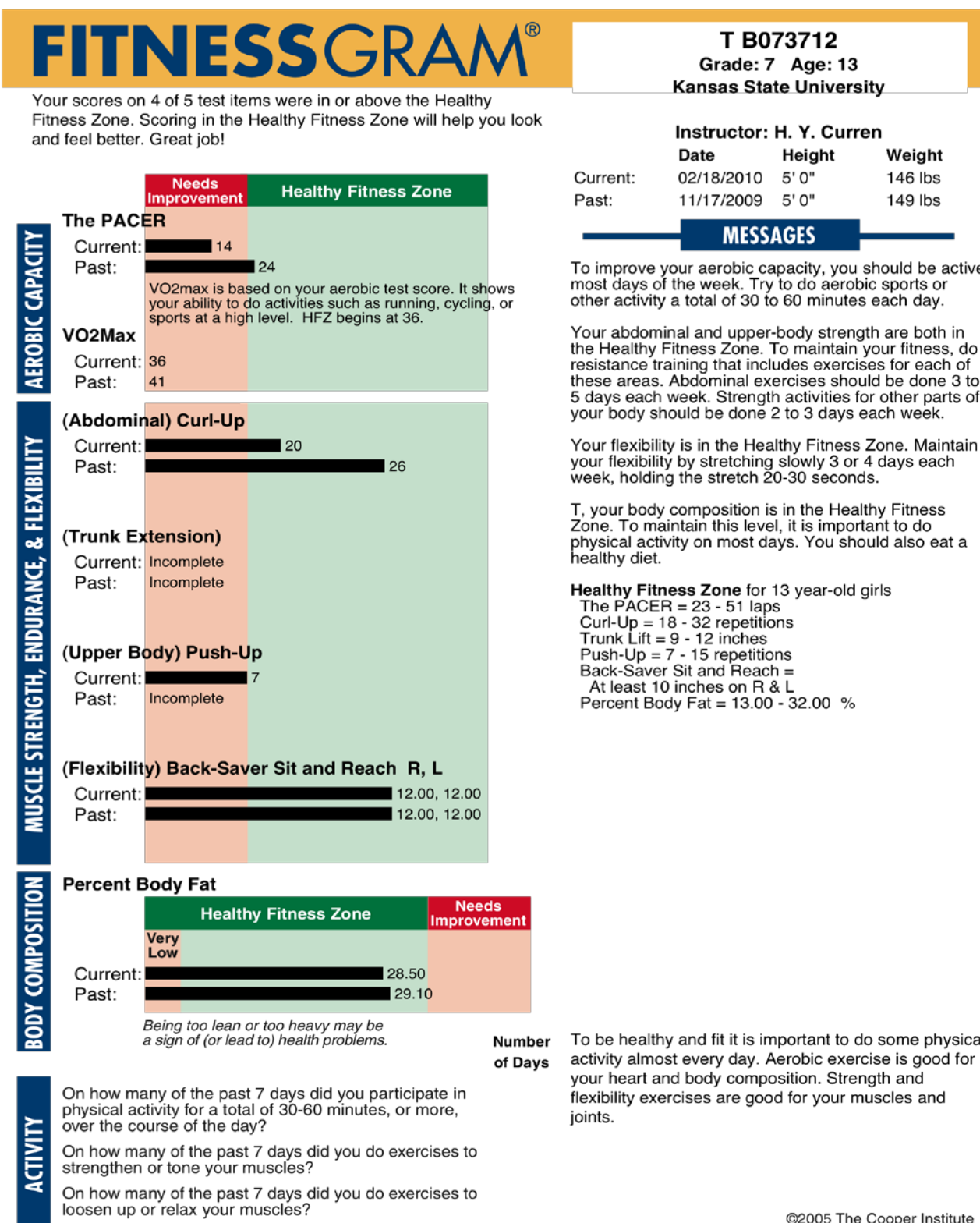


Table 4.51 FitnessGram Results for Longitudinal Tracking Chart TB073712

FITNESSGRAM®
ACTIVITYGRAM®

Longitudinal Tracking Chart

01/02

USA HigherEd school District

T B073712

Understanding the Tracking Charts

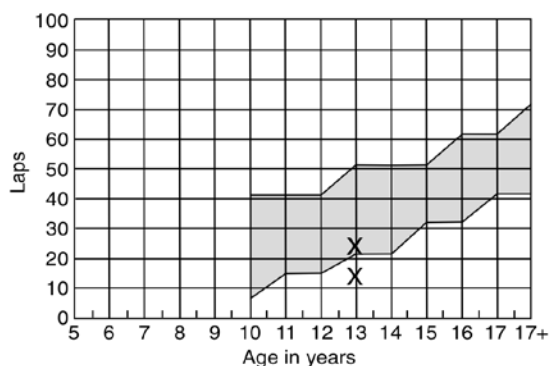
The *FITNESSGRAM* Longitudinal Tracking Chart is used to graph the fitness level of each individual from the first *FITNESSGRAM* testing experience to the most recent. The report includes a graph for every test item plotted and the scores for each test date. Scores from two test dates can

be plotted each year. The gray shaded area in each graph indicates the Healthy Fitness Zone for that test item. This chart communicates long-term progress in achieving and maintaining healthy fitness levels.

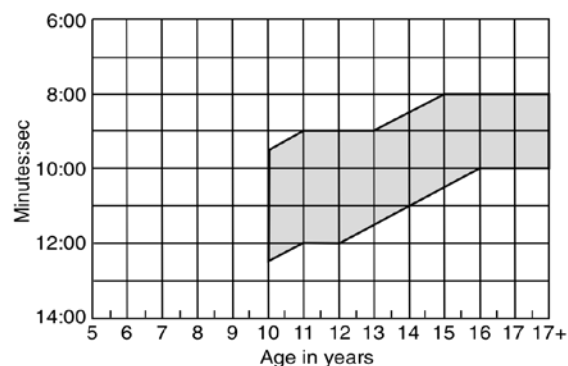
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AEROBIC CAPACITY

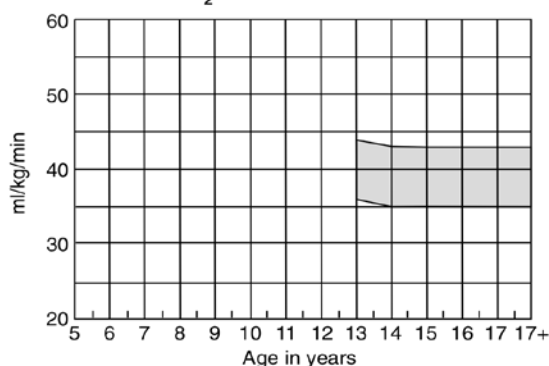
Girl's PACER



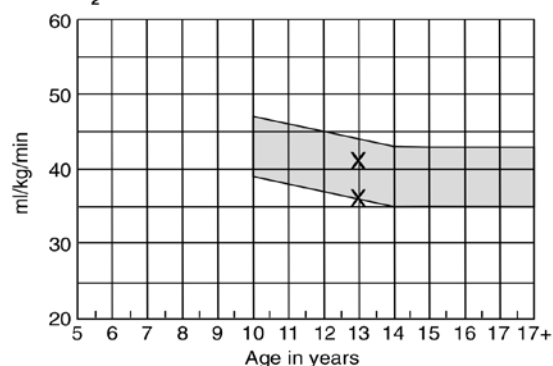
Girl's One-Mile Run/Walk



Girl's Walk Test $\dot{V}O_2\text{max}$

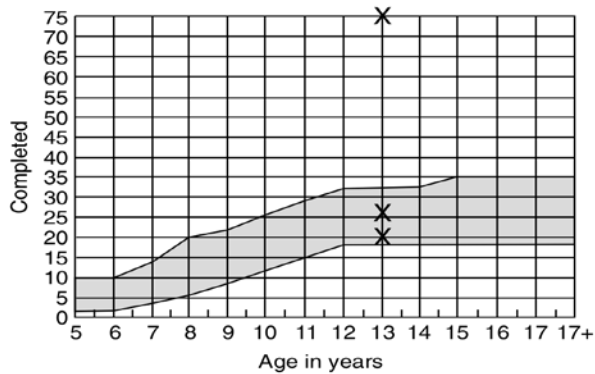


Girl's $\dot{V}O_2\text{max}$

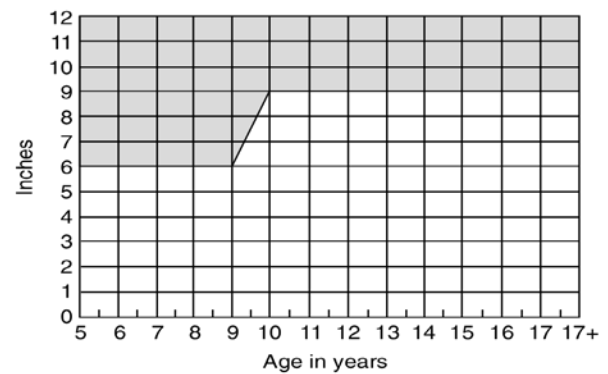


MUSCLE STRENGTH, ENDURANCE, AND FLEXIBILITY

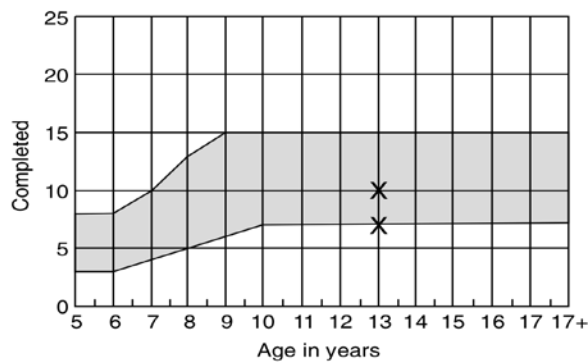
Girl's Curl-Up



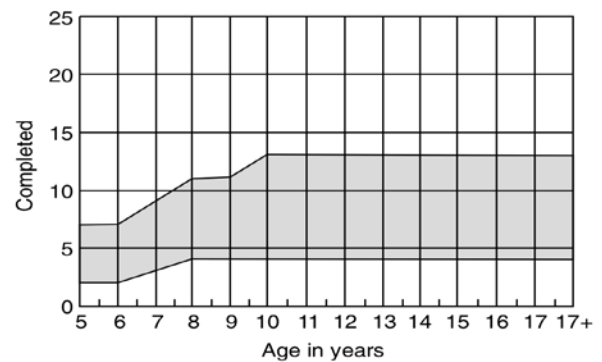
Girl's Trunk Lift



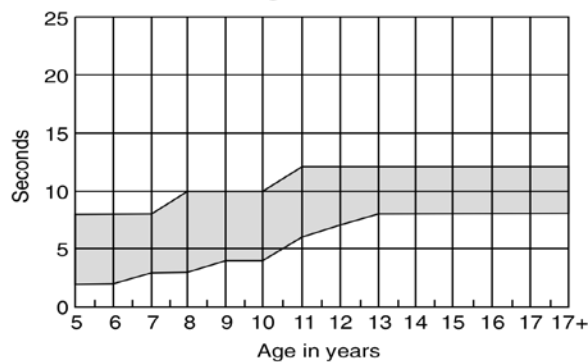
Girl's Push-Ups



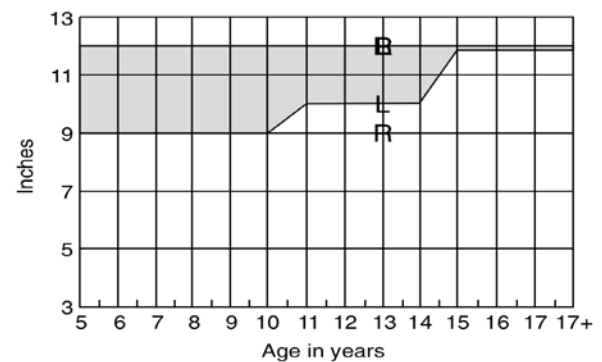
Girl's Modified Pull-Ups



Girl's Flexed Arm Hang

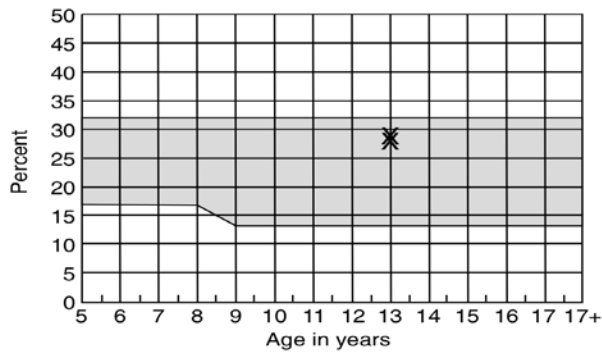


Girl's Back-Saver Sit and Reach

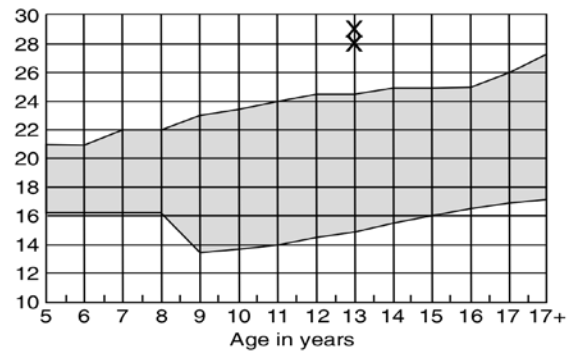


BODY SIZE AND BODY COMPOSITION

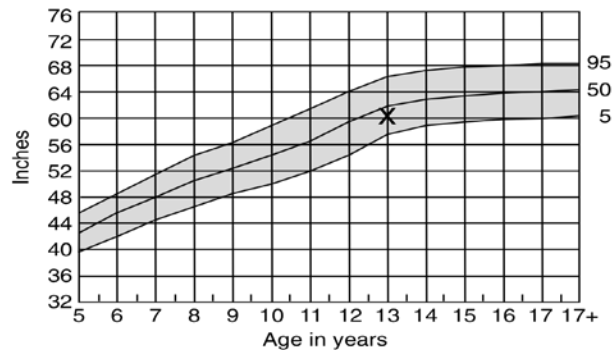
Girl's Percent Body Fat



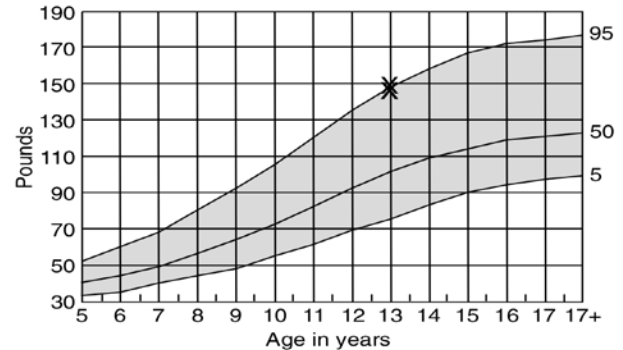
Girl's Body Mass Index



Girl's Height



Girl's Weight



© 1994, 1999, 2004, 2005 The Cooper Institute.

Developed by The Cooper Institute, Dallas, Texas. Endorsed by The American Alliance for Health, Physical Education, Recreation and Dance.

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Height and weight charts adapted from the National Center for Health Statistics and National Center for Chronic Disease Prevention and Health Promotion, 2000. www.cdc.gov/growthcharts

Participant Interview DB057675

Human subject DB057675 was a member of the weight loss program. She weighed 237 pounds and is only 5 feet 5 inches tall, which puts her in the category of Class II obesity according to the guidelines on the Body Mass Index Chart. This teenager was new to the school and she was very anti-social. She would not participate in the daily physical activities in physical education class. She was often seen eating in class and passing out unhealthy snacks to other individuals in the physical education class. The researcher spoke with the mother and she decided that the after school program would be excellent because not many students would be involved in the program and it would be a small group of teenagers without the stress that often accompanies a large physical education class. The mother was always taking her child to the doctor and having tests run to see why she was having so many health issues.

This teenager came to two sessions on November 10, and December 3. On November 10 she used the treadmill 20 minutes and never reached her target heart rate zone. On this day she never reached her target heart rate zone she was out of her zone for 30 minutes. Before starting her activity her resting heart rate was 64. Upon completion of the workout her beats per minutes was 118. On December 3, when she returned to the workout session, she weighed 235 pounds. Earlier that day in the physical education class she did not participate but was over in a corner sneaking food as well as passing out snacks to make friends with the other girls in the gym class. She attended the after school session and her resting heart rate was 69 and she was in her target heart rate zone for one hour and thirty minutes with her beats per minute was 139.

The mother notified me that she had received the results of her child's' test results from Children's Mercy Hospital. The mother provided information about the results of the blood test and revealed that her child has a condition called insulin resistance, a condition in which the

body produces insulin but does not use it properly. As a result, her body needs more insulin to help glucose enter cells. Her pancreas tries to keep up with this increased demand for insulin by producing more. The pancreas fails to keep up with the body's need for insulin. With the excess build up in the bloodstream, setting the stage for diabetes. Insulin resistance increases the chance of developing type II diabetes and heart disease. This mother and child are learning about insulin resistance, which is the first step toward making lifestyle changes that will help prevent diabetes and any other health problems. Because of early detection of this child's health issues, she is now involved in a program at Children's Mercy Hospital where she can be monitored more closely for her A1C hemoglobin blood sugars, and a workout plan that will assist this young lady in creating a healthy lifestyle change.

Figure 4.2 FitnessGram Results for Pre/Post Test DB057675

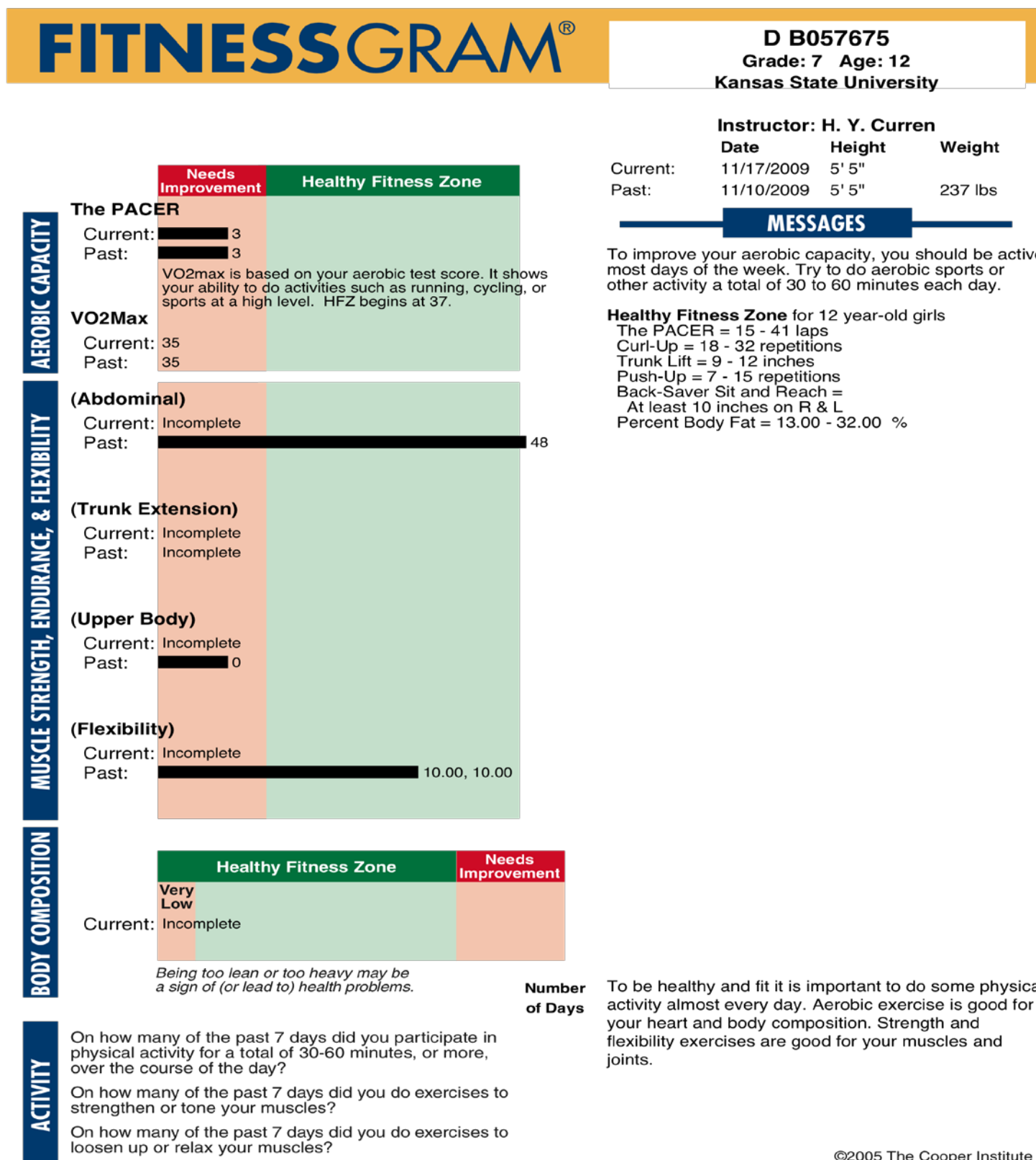


Table 4.52 FitnessGram Results for Longitudinal Tracking Chart DB057675

FITNESSGRAM[®]
ACTIVITYGRAM[®]

Longitudinal Tracking Chart

11/09

USA HigherEd school District

D B057675

Understanding the Tracking Charts

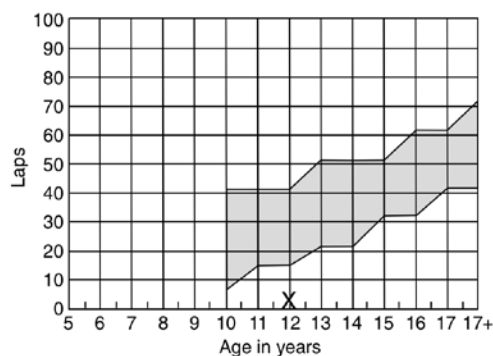
The *FITNESSGRAM* Longitudinal Tracking Chart is used to graph the fitness level of each individual from the first *FITNESSGRAM* testing experience to the most recent. The report includes a graph for every test item plotted and the scores for each test date. Scores from two test dates can

be plotted each year. The gray shaded area in each graph indicates the Healthy Fitness Zone for that test item. This chart communicates long-term progress in achieving and maintaining healthy fitness levels.

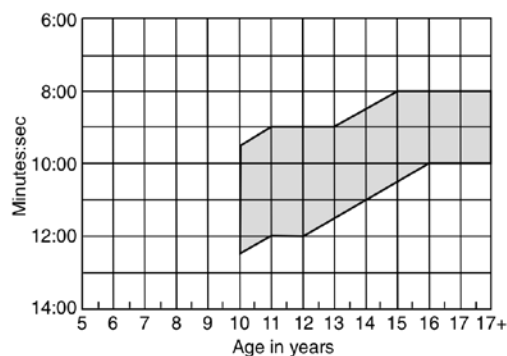
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AEROBIC CAPACITY

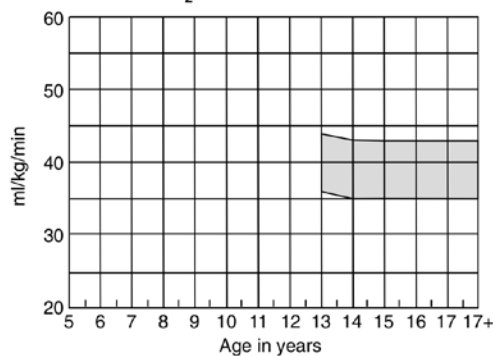
Girl's PACER



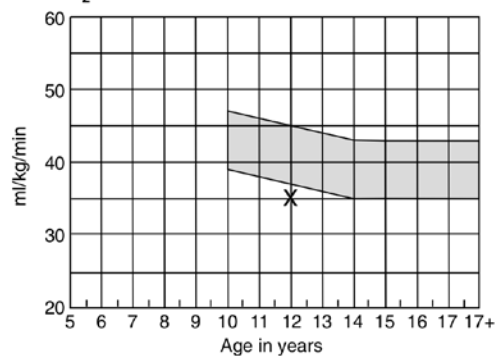
Girl's One-Mile Run/Walk



Girl's Walk Test $\dot{V}O_2$ max

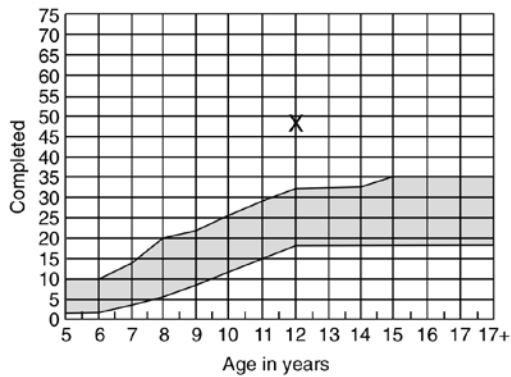


Girl's $\dot{V}O_2$ max

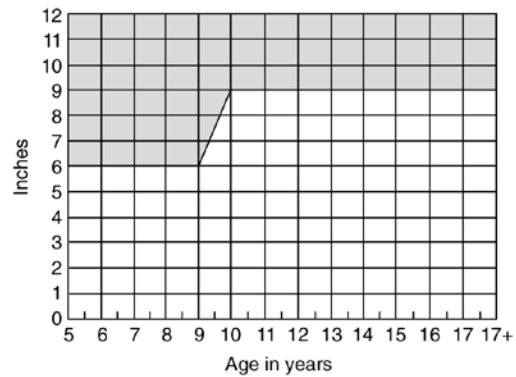


MUSCLE STRENGTH, ENDURANCE, AND FLEXIBILITY

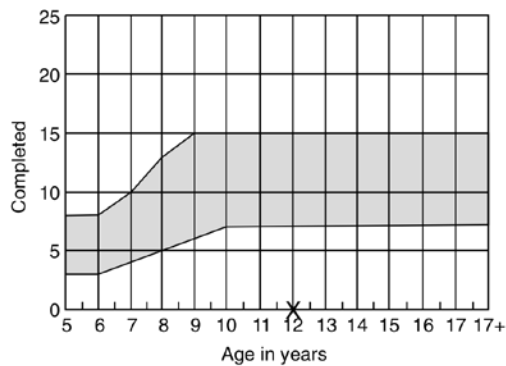
Girl's Curl-Up



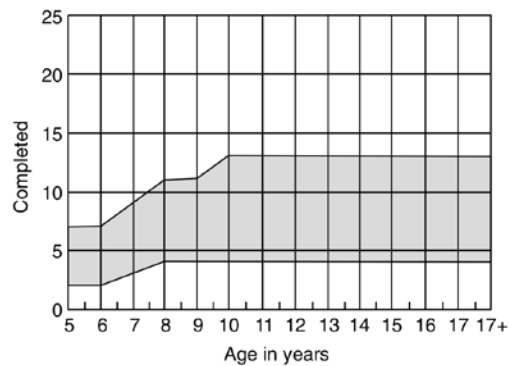
Girl's Trunk Lift



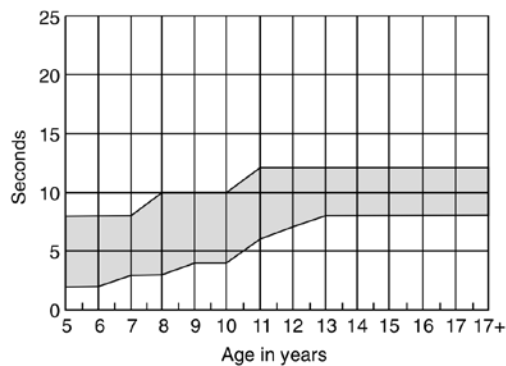
Girl's Push-Ups



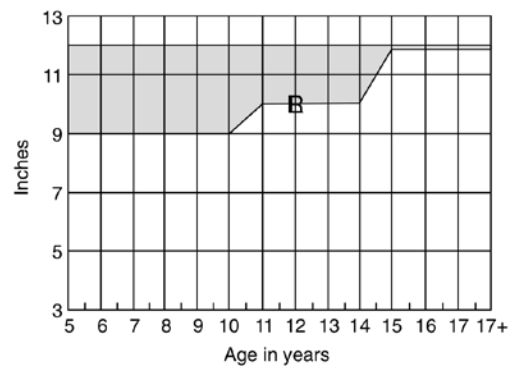
Girl's Modified Pull-Ups



Girl's Flexed Arm Hang

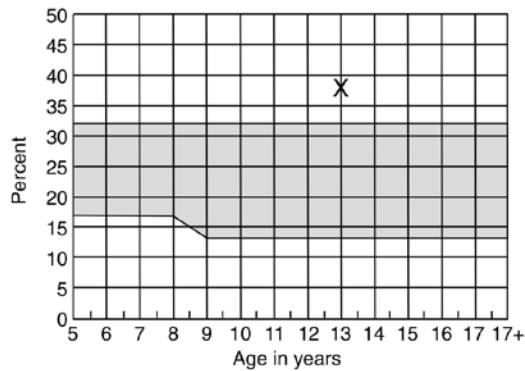


Girl's Back-Saver Sit and Reach

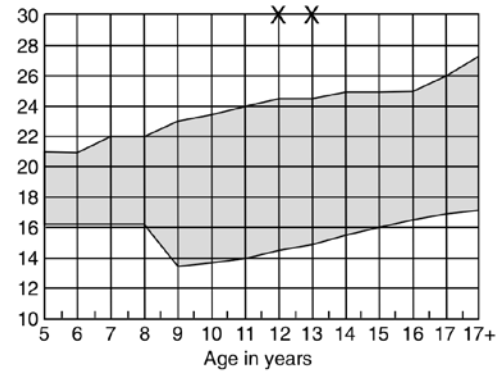


BODY SIZE AND BODY COMPOSITION

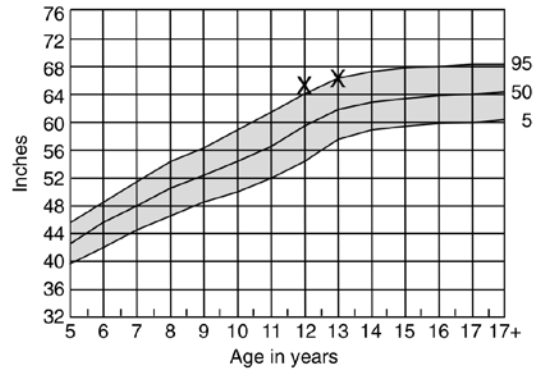
Girl's Percent Body Fat



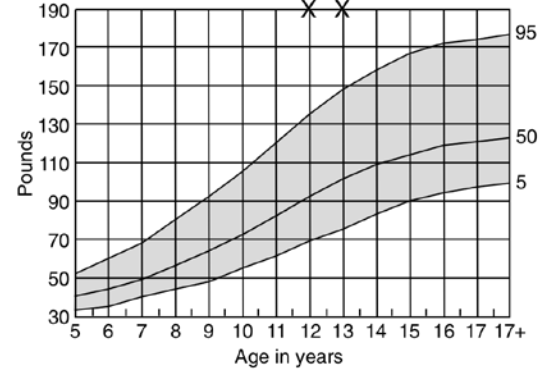
Girl's Body Mass Index



Girl's Height



Girl's Weight



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Height and weight charts adapted from the National Center for Health Statistics and National Center for Chronic Disease Prevention and Health Promotion, 2000. www.cdc.gov/growthcharts

Participant Interview MD504601

MD504601 is a 14-year-old eighth grader who is overweight. Her current weight is 176 pounds and her BMI is 28.4%. This teenager came to the program a total of three times. The first time was when the program began and the program was explained to her. She seemed to be genuinely excited about the research. She stated that she was a Kauffman scholar and that she could only attend on Tuesday and Thursday after school. She was also involved in Daughters on the Rise, which met every Tuesday.

She weighed in on the first day, with her weight being 176 pounds. Her resting heart rate was 75, she used the treadmill for twenty minutes and took her pulse following that activity and her beats per minutes was 100 beats. For her age she should have been working her heart between 123-164 beats per minute. On December 1st when she returned she worked out on the weight machines and she was able to get her heart in the target heart rate zone. She did not keep a food diary so it was very difficult to see the types of foods she consumed on a regular basis.

The FitnessGram shows that she is in the healthy fitness zone for her weight. But according to the BMI scale with combination of weight and height she is considered overweight at 28.40%. This individual did not complete the program but she was able to give a final interview about her experience in the program. She explains that she liked the fact that it included a variety of exercises. She enjoyed walking on the treadmill and using the Dance Dance Revolution (DDR) to get her heart rate pumped up. Her attendance was hindered because she was a member of the Kauffman Foundation Program and her participation was limited. She also attended the program Daughter's on the Rise (DOR). While attending DOR, a variety of unhealthy snacks were provided and no physical activity was promoted nor did it motivate the young ladies to get active. This participant discovered that it took a great effort to lose weight

and because other commitments would not allow her to participate. Her mother was very supportive of the program and encouraged her daughter to stay with the program. The mother explained to her daughter that she seemed to enjoy what she was doing because she was losing weight. The mother advised her not to eat a lot of sweets and to consume more fruits and vegetables. The mom would prepare breakfast at home. If the daughter didn't eat breakfast at home she would get breakfast at school. All school lunches are well balanced and nutritional. MD504601 explained that the cafeteria menu could be greatly improved.

Dinner consisted of home cooked meals by her mother. The mom cooks 5 days of the week and on the weekends they usually go out for dinner. They visit fast food restaurants such as Chinese food restaurants. Her mother suggests eating healthy and encouraged her to eat a salad and to make other healthy selections when eating out. This participant believes that if she continues to eat fast foods, fried chicken, and junk food she will continue to gain weight and these unhealthy habits will eventually cause her to have diabetes, high blood pressure, and high cholesterol. She explained that the church that she attends has an exercise program. I encouraged her to get involved and she should include her mother because it would be beneficial for both of them.

Figure 4.3 FitnessGram Results for Pre/Post Test MD504601

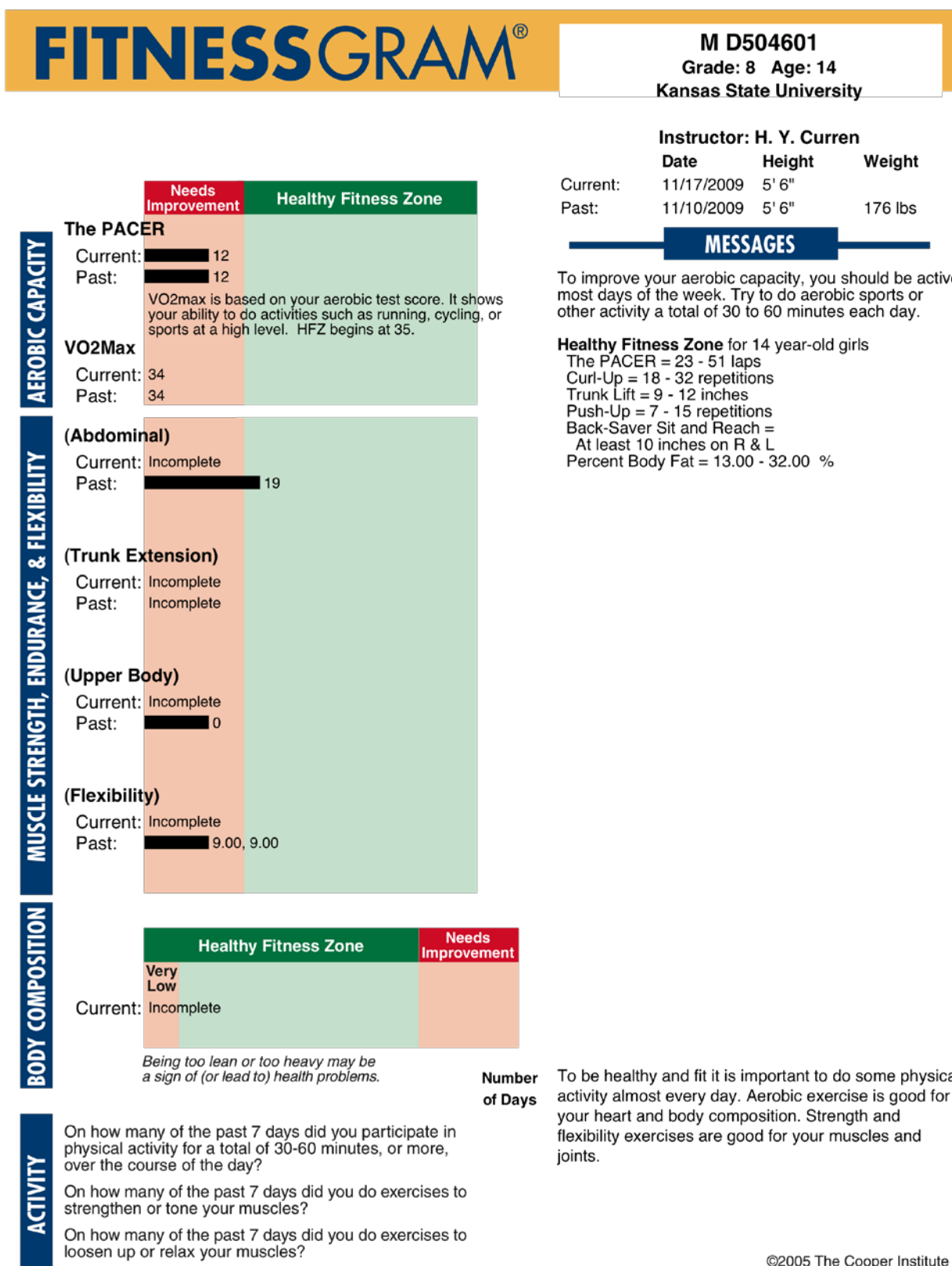


Table 4.53 FitnessGram Results for Longitudinal Tracking Chart MD504601

FITNESSGRAM®
ACTIVITYGRAM®

Longitudinal Tracking Chart

11/09

USA HigherEd school District

M D504601

Understanding the Tracking Charts

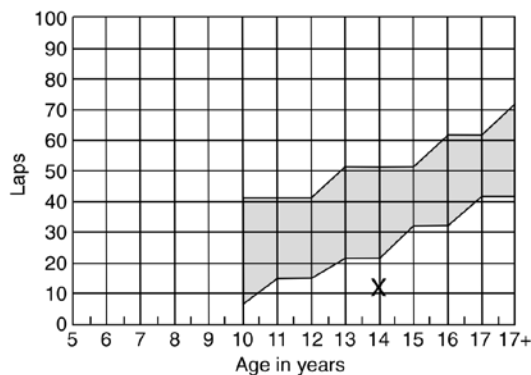
The *FITNESSGRAM* Longitudinal Tracking Chart is used to graph the fitness level of each individual from the first *FITNESSGRAM* testing experience to the most recent. The report includes a graph for every test item plotted and the scores for each test date. Scores from two test dates can

be plotted each year. The gray shaded area in each graph indicates the Healthy Fitness Zone for that test item. This chart communicates long-term progress in achieving and maintaining healthy fitness levels.

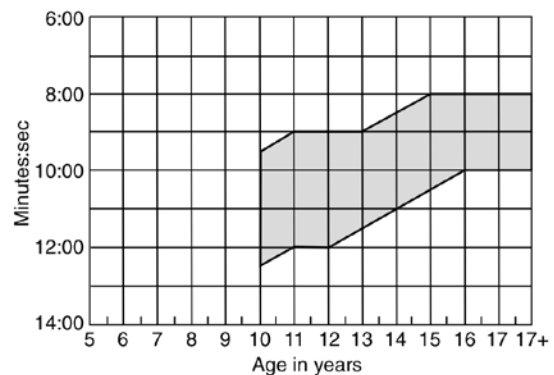
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AEROBIC CAPACITY

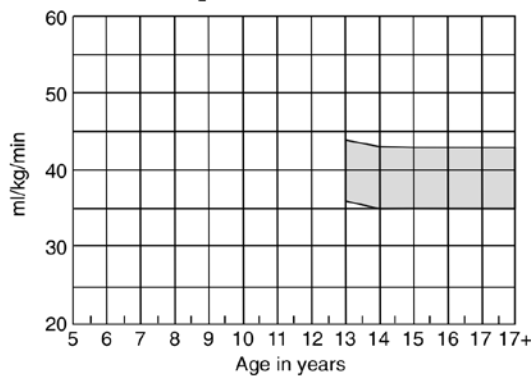
Girl's PACER



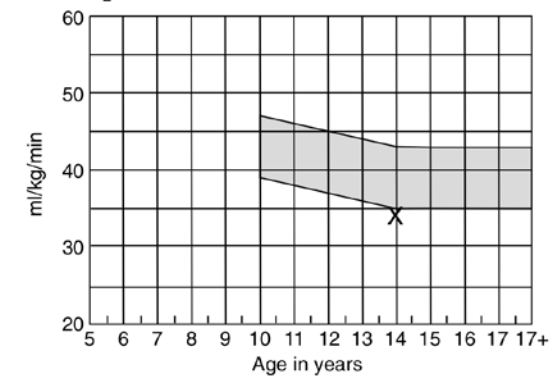
Girl's One-Mile Run/Walk



Girl's Walk Test $\dot{V}O_2$ max

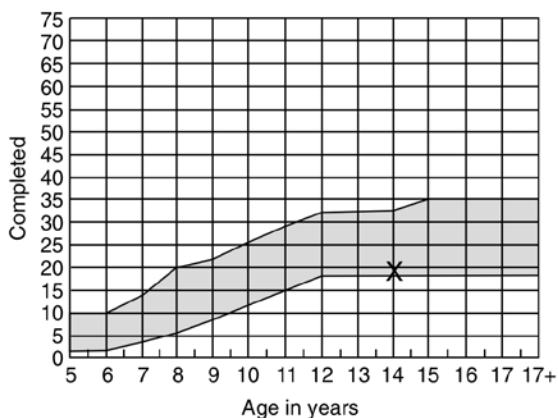


Girl's $\dot{V}O_2$ max

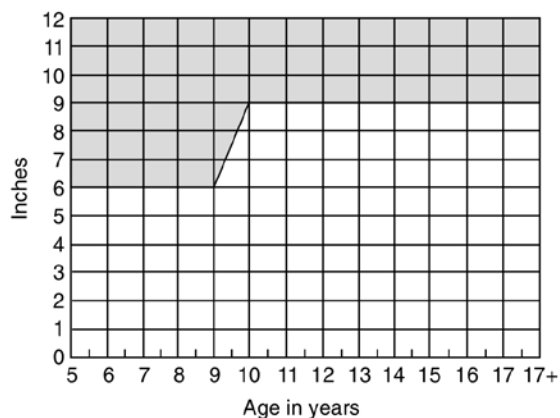


MUSCLE STRENGTH, ENDURANCE, AND FLEXIBILITY

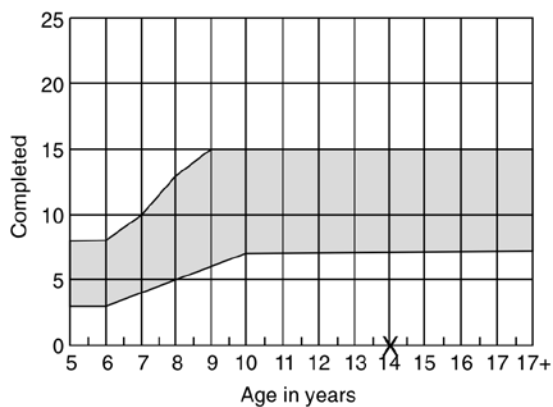
Girl's Curl-Up



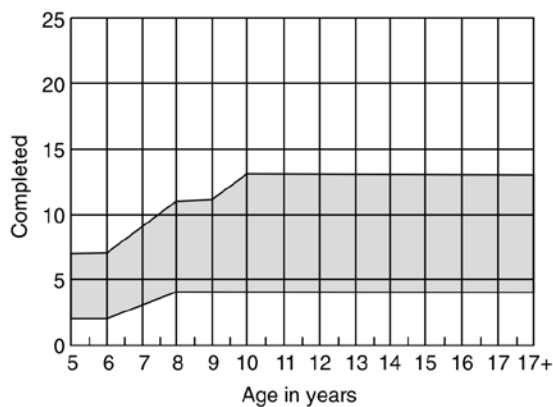
Girl's Trunk Lift



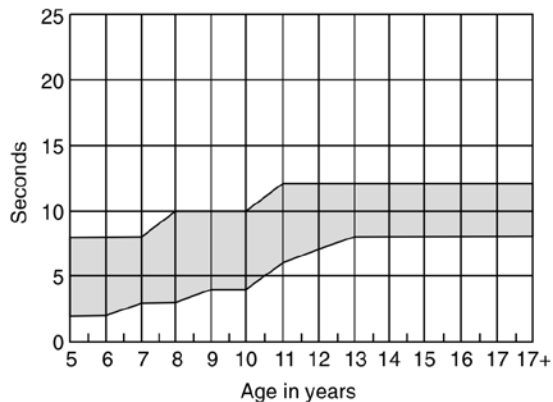
Girl's Push-Ups



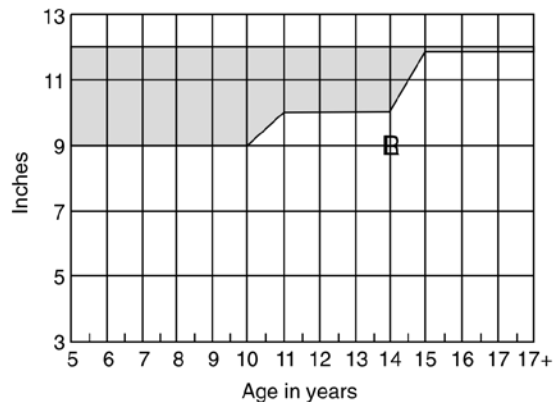
Girl's Modified Pull-Ups



Girl's Flexed Arm Hang

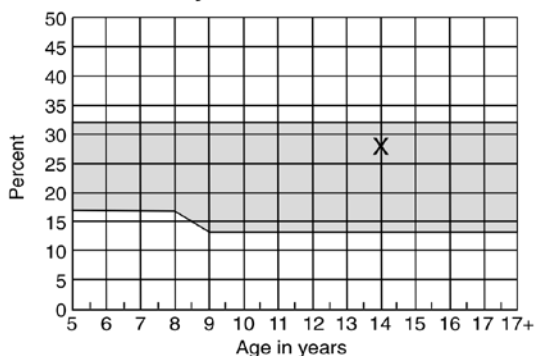


Girl's Back-Saver Sit and Reach

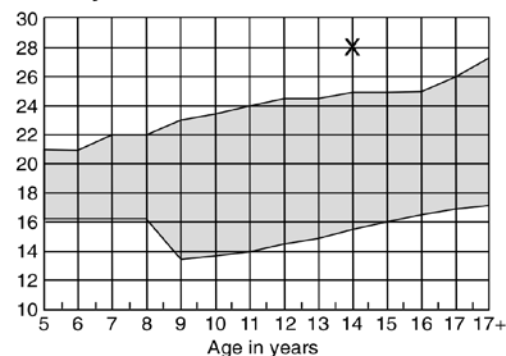


BODY SIZE AND BODY COMPOSITION

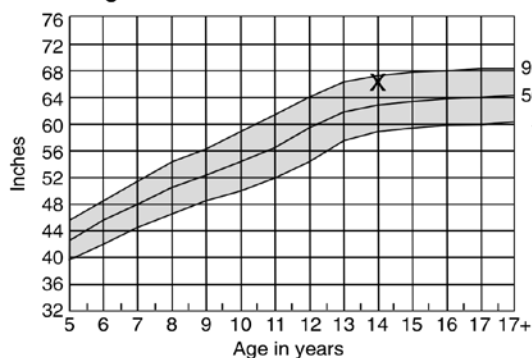
Girl's Percent Body Fat



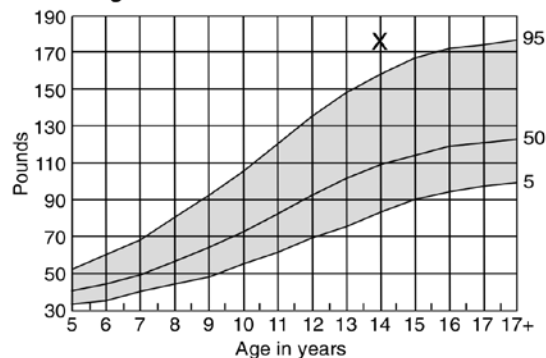
Girl's Body Mass Index



Girl's Height



Girl's Weight



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Height and weight charts adapted from the National Center for Health Statistics and National Center for Chronic Disease Prevention and Health Promotion, 2000. www.cdc.gov/growthcharts

Participant Interview AG083577

AG083577 is a 13-year-old African American, Mexican American that completed the pre-test and post-test. The pre and post-test scores for this participant did not make any significant change. The score of this test revealed that she needs improvement and she completed 21 laps and in order to be in the Healthy Fitness Zone (HFZ) for the PACER = 23-51 laps.

Upper body strength is the performance of being able to complete push-ups. This teenager was not able to complete the recommended amount of push-ups to be in the healthy fitness zone. During the pre-test and post-test she could only complete 4 push-ups and in order to be in the Healthy Fitness Zone (HFZ) for her age of 13, push-ups = 7-15 repetitions.

From these findings it was recommended that this participant could improve her aerobic capacity by being active most days of the week. Her abdominal strength is healthy but should be maintained by performing curl ups and other exercises three to five days each week. Maintaining her flexibility it is recommended that she should stretch slowly three or four days each week and hold this stretch for at least twenty- thirty seconds.

Her body composition is in the Healthy Fitness Zone (HFZ). It is important to incorporate and eat a healthy diet. Participant AG083577 completed 26 days of “My Health Journey”, that was a documentation of the foods she ate on a daily basis. She also made positive remarks about herself. This participant had some very realistic concerns about her weight. Perusing her food diary the researcher noted that she missed 30 meals, which is a direct problem when it comes to losing weight. She also ate a basic light breakfast. About 17 meals consisted of grains, milk, fruits, and meats. Her lunches were often consumed at school and lunches were prepared meals from the food guide pyramid. The dinner meals were always eaten at home or the parent would bring food home from fast food restaurants.

This participant had come to the realization of how important diet and exercise is beneficial to losing weight and staying healthy. Looking over her diary she only spent 25-30 minutes on physical activities during the course of thirteen days that she participated in the weight loss program.

AG083577 set some realistic goals for herself such as losing inches around the waist. She wants to increase her heart and lung endurance so she walks without being tired. She wants to increase her water intake to keep from becoming dehydrated during workout sessions. She enjoyed working out on the weight machines because she felt as if she was improving and making changes in her body image. She also realized that her weight was fluctuating up and down. She was improving on her endurance when she did push-ups for her upper body strength. She also set goals to lose three pounds and cut down on fat products. The parent could have been a little more involved in assisting in the preparation of the food; this subject could have made more progress. Her personal inventory indicates that her level of fitness is below her potential level. Her score on the personal inventory that assess her fitness behavior showed a score of six that indicated her fitness behavior needs improvement.

At her exit interview, she discussed what she enjoyed about the weight loss program, which was she was losing weight and developing muscle. She did not enjoy doing push-ups because she did not have the upper body strength to perform the exercise. She stated if she had more time in the program she thinks maybe it would be possible to reach the maximum score.

She discovered that she improved her personal fitness because she came to the program on a regular basis and little by little she saw changes. She explained that she came to the program because she wanted to get in shape and join the school marching band next year. She didn't give

up because she saw how physical the marching band was and wanted to be ready to go out for the band because her sister was a member of the marching band.

Her weight fluctuated up and down because of her diet but she lost inches and about two pounds. After the program was over she was involved in African dance, which was very physical. Although she wasn't really sure if she lost any more weight it was evident that her muscles toned up. As she viewed herself in the mirror her muscles were firm and started developing muscle strength.

Figure 4.4 FitnessGram Results for Pre/Post Test AG083577

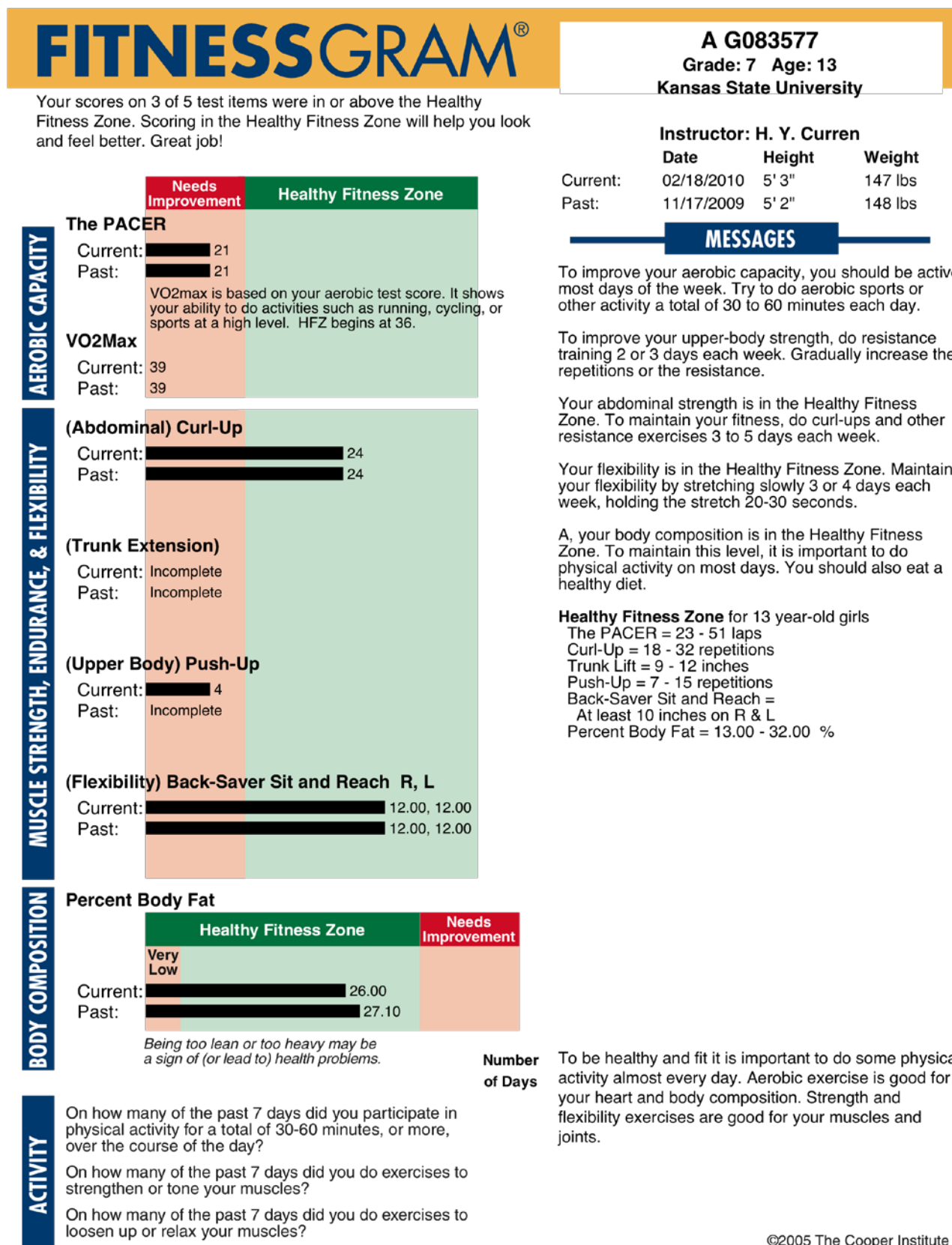


Table 4.54 FitnessGram Results for Longitudinal Tracking Chart AG083577

FITNESSGRAM®
ACTIVITYGRAM®

Longitudinal Tracking Chart

11/09

USA HigherEd school District

A G083577

Understanding the Tracking Charts

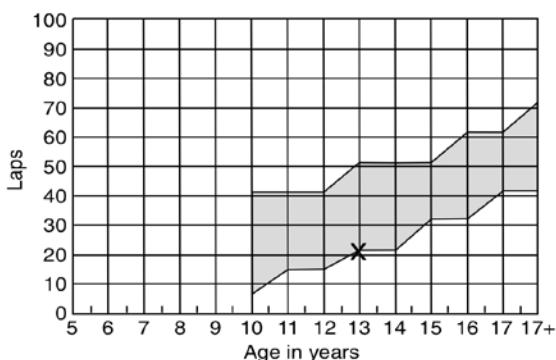
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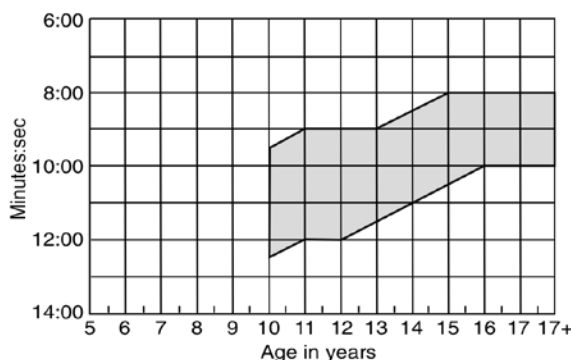
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AEROBIC CAPACITY

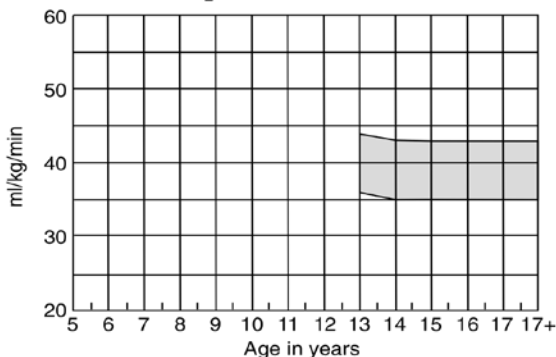
Girl's PACER



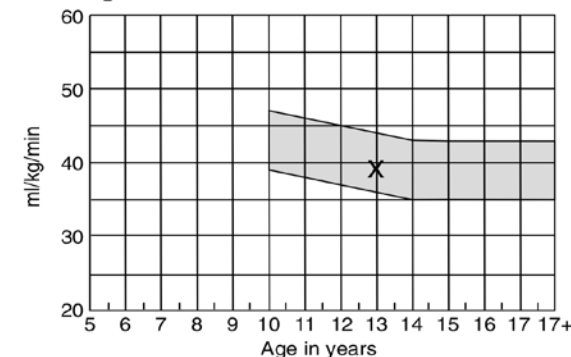
Girl's One-Mile Run/Walk



Girl's Walk Test $\dot{V}O_2$ max

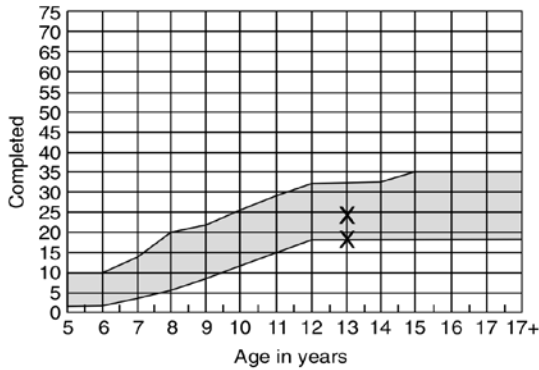


Girl's $\dot{V}O_2$ max

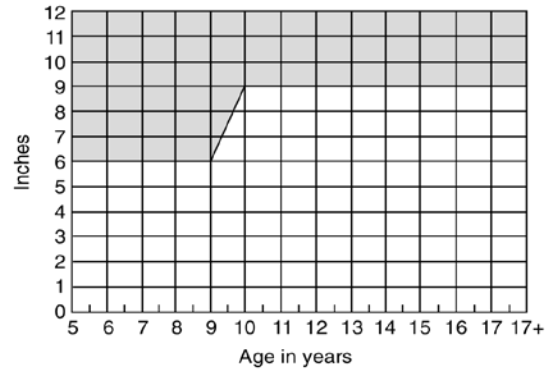


MUSCLE STRENGTH, ENDURANCE, AND FLEXIBILITY

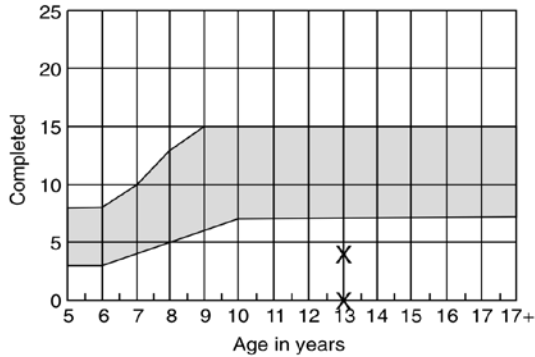
Girl's Curl-Up



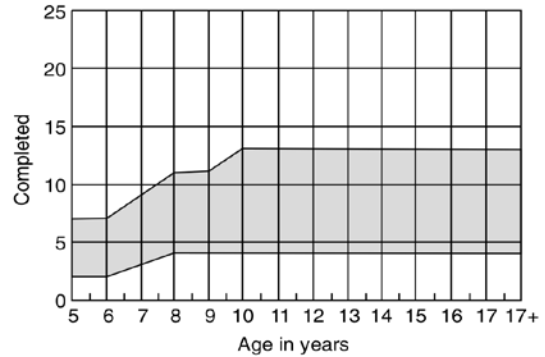
Girl's Trunk Lift



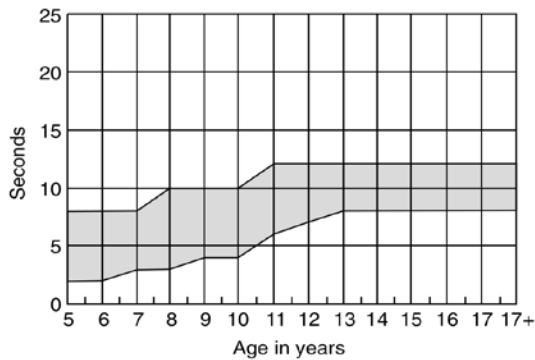
Girl's Push-Ups



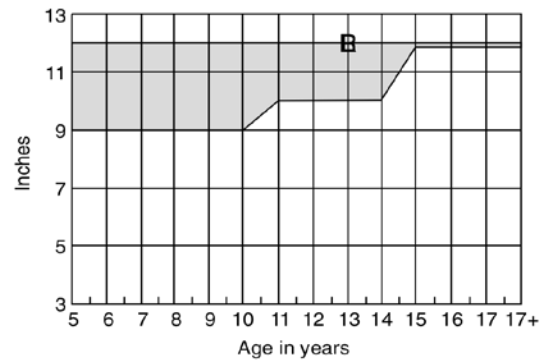
Girl's Modified Pull-Ups



Girl's Flexed Arm Hang

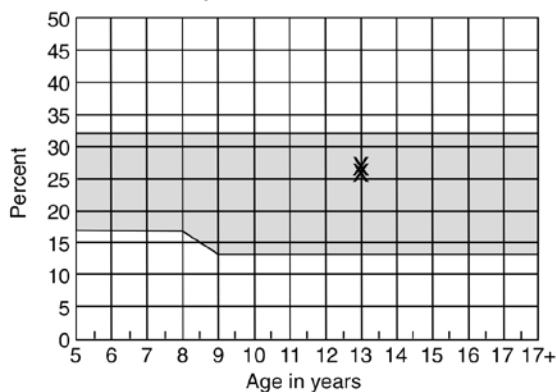


Girl's Back-Saver Sit and Reach

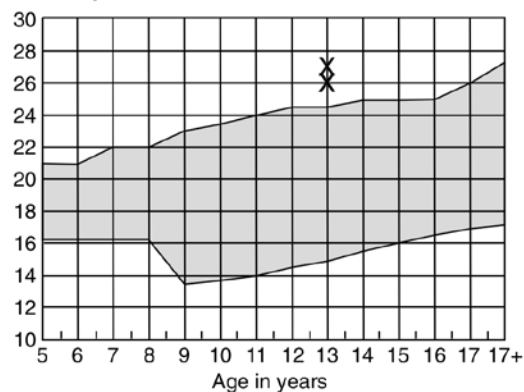


BODY SIZE AND BODY COMPOSITION

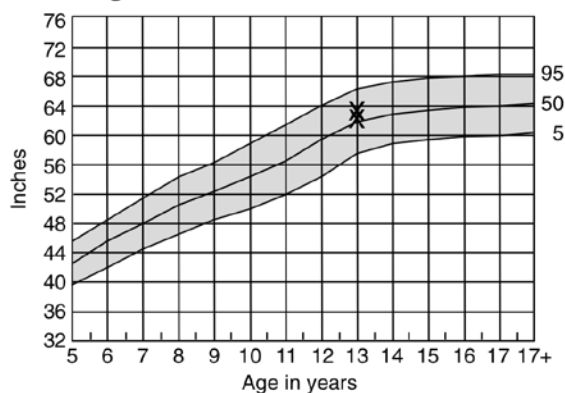
Girl's Percent Body Fat



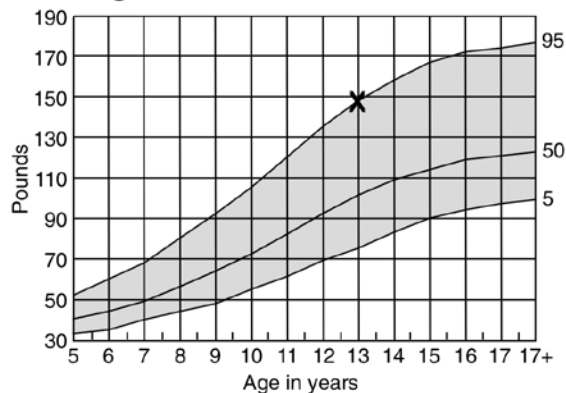
Girl's Body Mass Index



Girl's Height



Girl's Weight



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Height and weight charts adapted from the National Center for Health Statistics and National Center for Chronic Disease Prevention and Health Promotion, 2000. www.cdc.gov/growthcharts

Participant Interview RG057430

RG057430 and AG083577 are sisters. Each teenager was very supportive of the other. RG057430 is a 15-year-old tenth grader that came to the program on January 12. She is a member of the schools' marching band and she was very instrumental in keeping the other girls motivated. She joined the program because her sister was coming after school and both girls had to stay together. Her sister spoke highly of the program and she decided that this would help her stay in shape while the band was not practicing. When she came to the program she weighed in at 154 pounds. According to the National Institutes of Health established guidelines indicated that she is overweight with a BMI of 27.10%. The FitnessGram stated that her body composition is in the Healthy Fitness Zone (HFZ) for her age of 15 years.

On the aerobic capacity she needs improvement because she scored 30, and she needed to score 35 laps to be in the healthy Fitness Zone (HFZ). Out of the twelve times that she came to the workout sessions five of those days she stayed between her target heart rate zone which is 123-164. She was very determined on these days to get her heart rate her zone. On January 13, she was involved in a cardio workout and as she was actually performing the workout for thirty-three minutes and thirty-seconds she was only in her target heart rate zone for eight minutes and thirty-seconds. She was above her zone only for fifteen seconds. Out of the thirty-three minutes she was below her zone for twenty-four minutes and forty-five seconds. Just physically watching her perform during physical activity it appeared that she was really working hard. After the activity and she actually counted her pulse she was not performing in her target heart rate zone. It is obvious that she needs improvement on her heart and lung endurance.

Her muscle strength, endurance, and flexibility test revealed that she performed in the passable range for abdominal curls with a score of twenty, back-saver sit and reach right, and left

leg she got the maximum of 12 inches on both legs. The Upper body strength she actually completed fifteen push-ups. For her age group and the only human subject for her aged reached the maximum score. According to the FitnessGram her body composition is 27.10 percent and falls between the charts at 13.00- 32.00%. It also states that her body composition is in the Healthy Fitness Zone (HFZ) and requires that it is important to do physical activity three to five days a week. It is important that she eat a well balanced diet.

This particular young lady did not enter the program until January. She never kept a food diary but tried to be very aware of the foods she consumed. On many days she and her sister would skip breakfast at home, so they had the school breakfast and lunch. On several occasions she would skip lunch in hopes of losing weight. Lunch usually started around 10:30 in the morning. If lunch was skipped, she would go without fuel for her body until she went home in the afternoon. She would stop by the vending machines and buy unhealthy snacks before her workout. Meals would be prepared at home by her and her mother or on other occasions the parent would bring food home for dinner or the family would go out for dinner. She actually set some goals to lose pounds and inches, but because she skipped meals and ate unhealthy snacks it was difficult for her to reach her desired weight. Her weight fluctuated throughout the weight program. At the beginning her weight was 153 lbs. and when the program was over her weight was 154 lbs.

She was involved in the schools marching band, which involves gross motor movement. Whenever a band member makes a mistake during the practice routine they are required to step out of formation and perform push-ups. This explains why this subject has great upper body strength.

During her exit interview she stated she disliked the warm up activities before the workout. She did not really get her heart rate up because of the dislike for warming up and her pulse was never in the target heart rate zone. She did have a desire to work out on the weight machines because this helped develop her upper body strength. As she was involved in the performance of working out on the weight machines she was very enthusiastic about this workout.

The mother was not very supportive during her short time in the program. The mother felt that her daughter was not overweight, but the daughter felt she was because of her height was 5'3 and weight 156 pounds. She completed the program and she was able to see improvements in her weight and could go up and down the stairs to class and especially to the cafeteria, which was on the fourth floor, and the band room was on the fifth floor without complaining. She claimed if she had started at the beginning of the program she probably would have lost more weight than she did, but she did lose 3 pounds. Her upper body definitely made some improvements and toned up. When the program was over she stayed for band practice and continued to work out on her own to stay in shape. She believes that if she stayed on a workout plan and continued with band practice and the band camp she may reach her goals of losing her desired weight.

Figure 4.5 FitnessGram Results for Pre/Post Test RG057430

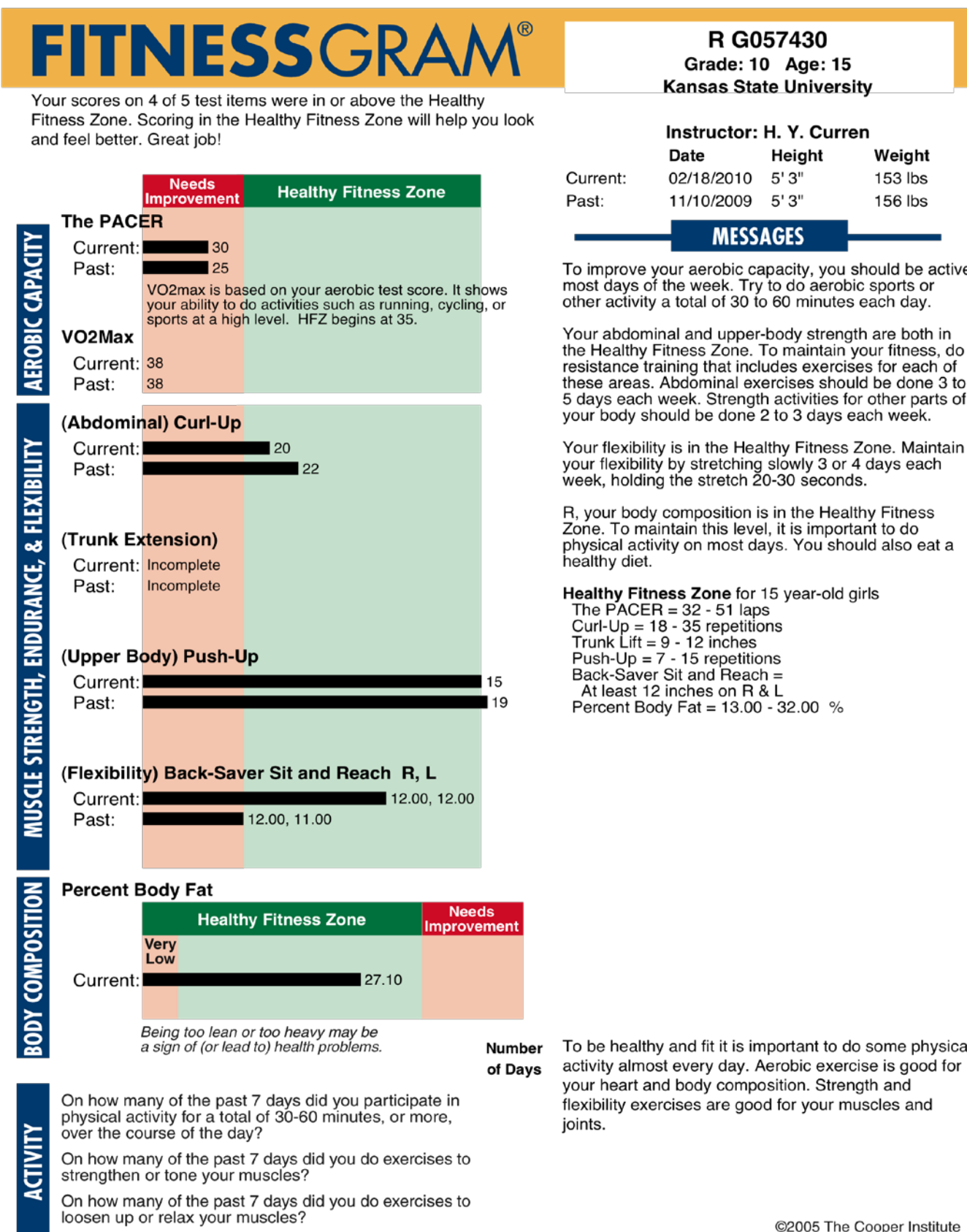


Table 4.55 FitnessGram Results for Longitudinal Tracking Chart RG057430

FITNESSGRAM®
ACTIVITYGRAM®

Longitudinal Tracking Chart

11/09

USA HigherEd school District

R G057430

Understanding the Tracking Charts

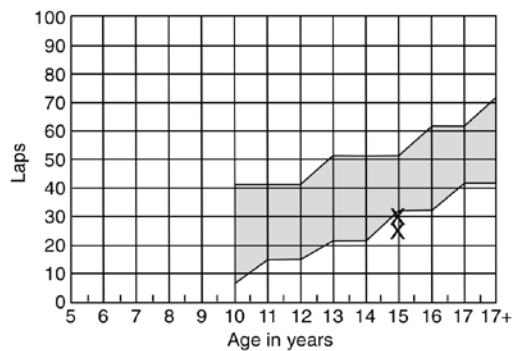
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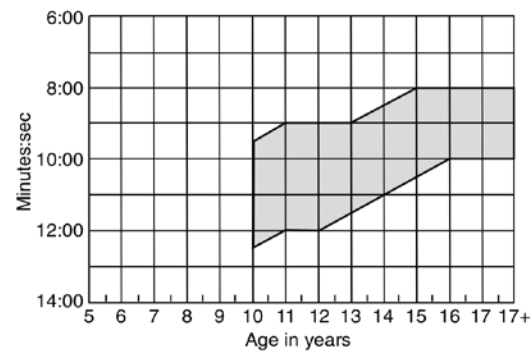
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AEROBIC CAPACITY

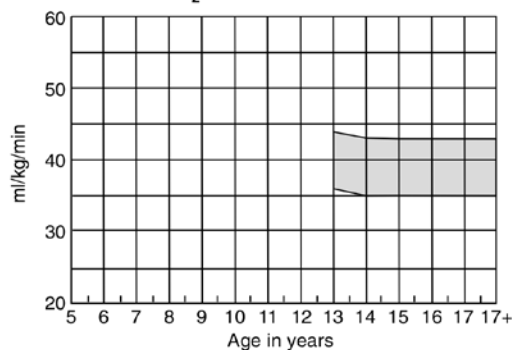
Girl's PACER



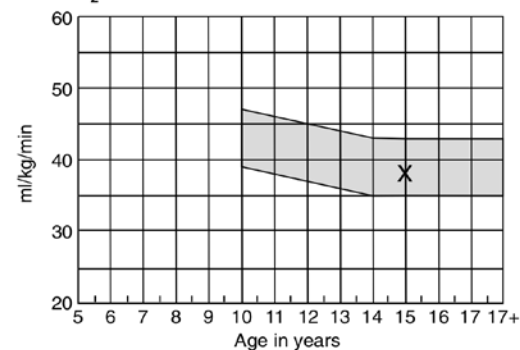
Girl's One-Mile Run/Walk



Girl's Walk Test $\dot{V}O_2$ max

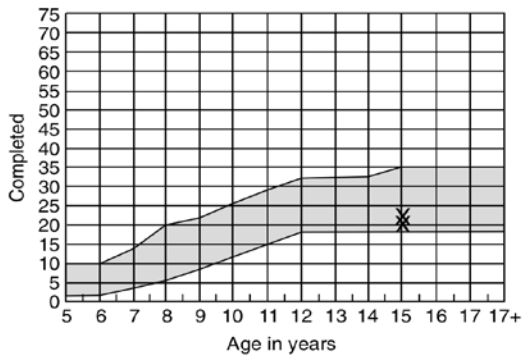


Girl's $\dot{V}O_2$ max

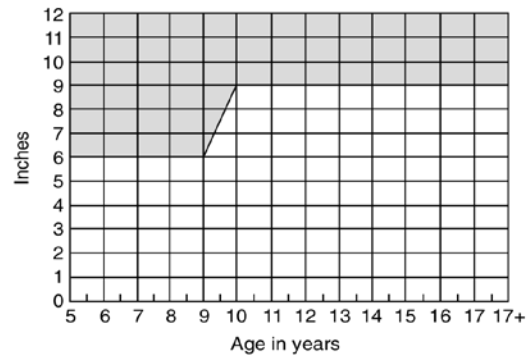


MUSCLE STRENGTH, ENDURANCE, AND FLEXIBILITY

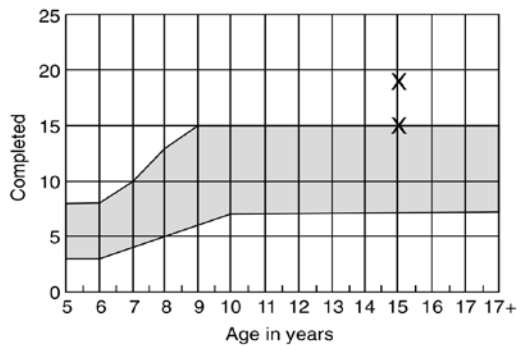
Girl's Curl-Up



Girl's Trunk Lift



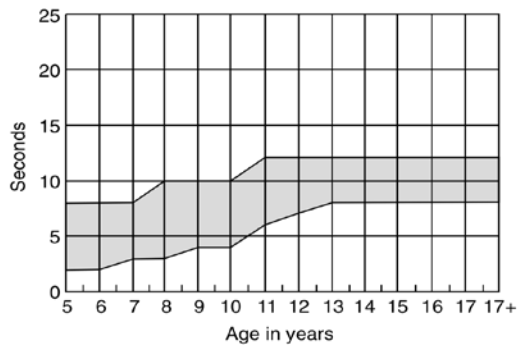
Girl's Push-Ups



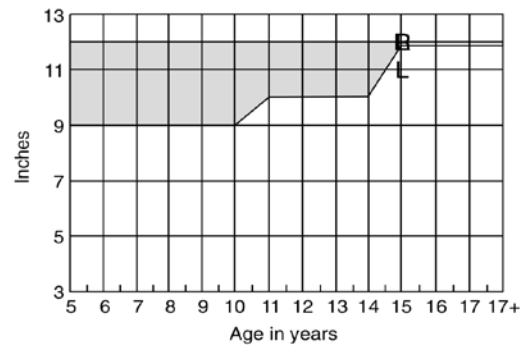
Girl's Modified Pull-Ups



Girl's Flexed Arm Hang

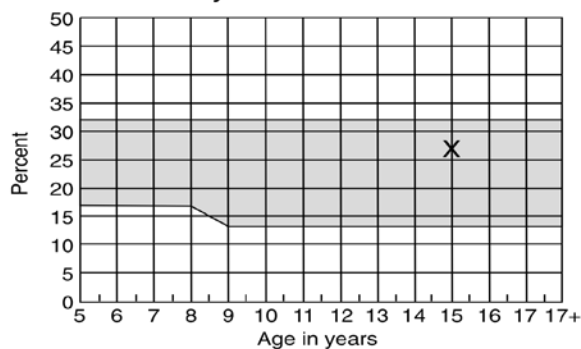


Girl's Back-Saver Sit and Reach

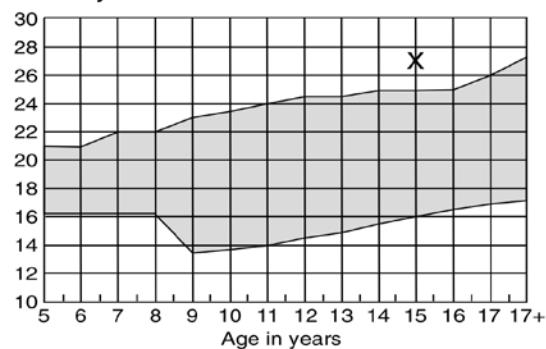


BODY SIZE AND BODY COMPOSITION

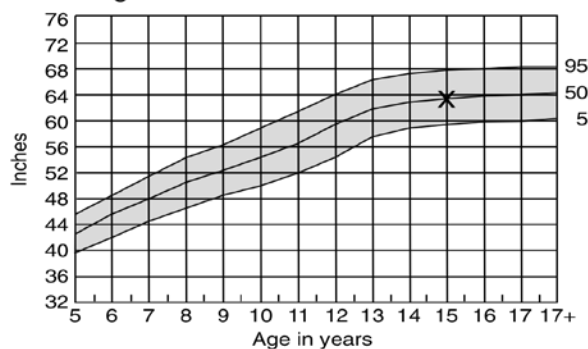
Girl's Percent Body Fat



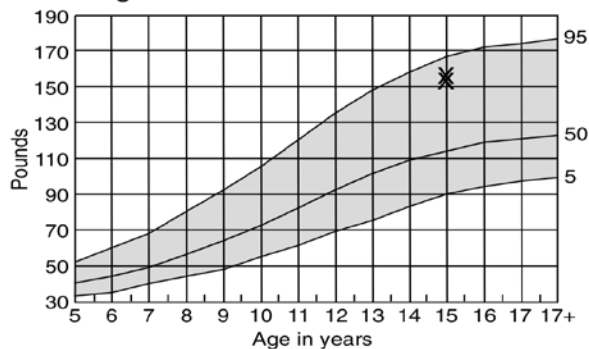
Girl's Body Mass Index



Girl's Height



Girl's Weight



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Height and weight charts adapted from the National Center for Health Statistics and National Center for Chronic Disease Prevention and Health Promotion, 2000. www.cdc.gov/growthcharts

Participant Interview MG504989

MG504989 is an African American pre-teen who is 13 years old. At the beginning of the pre-test she weighed 284 pounds and her height is 5 feet 6 inches. All of her scores on the pre-test indicated that she needs improvements in all areas of the fitness test. Before the program started there was a personal conversation with the father. He was in an agreement that he would support her and the program. The father knew that the daughter was overweight but after the program started she only attended November 10 and weighed 283 pounds, December 3, weighed 282 pounds. She made sure that after school the researcher was informed about going to the Kauffman Foundation or attending Daughter's on the Rise. On the days she could have attended she told the researcher she was going home and could not stay after school. These were the choices or excuses she made many times to keep from coming to the program after school.

When she was in physical education class she may or may not participate in warm up exercises. She would only play or participate in the daily activities in class for about fifteen minutes and then sit down and get involved in idle conversation and sneak food with other students. Because of her lack of inactivity she is in the range of 45.80 percent body fat, which classifies her as being morbidly obese. This female is at high risk of high blood pressure, raised cholesterol and or cardiovascular disease. She may even be in a high-risk category of becoming a victim of Type II diabetes, which really occurs, in older adults. Watching and observing this young lady sneak food in class and eat all the wrong things at lunch or just going without eating is and detrimental to her own well being.

She was not in the program long enough to keep up with the foods she ate, but she was given a food diary to record her meals. She did not bother to use the diary that she was given. She was asked during her exit interview if she had lost weight she said yes. This subject was not

aware of her weight on the first day and never weighed in again. She did not lose a significant amount of weight to be out of the morbidly obese range. She thought the obesity program was teaching her how to plan meals and to incorporate exercise in her daily routine. She stated that unfortunately she made some bad choices and decided to go home and participate in other activities. Especially attending Daughters on the Rise where there was no physical exercise and the girls were engaged in non-physical activity and ate candy and other types of junk food.

Figure 4.6 FitnessGram Results for Pre/Post Test MG504989

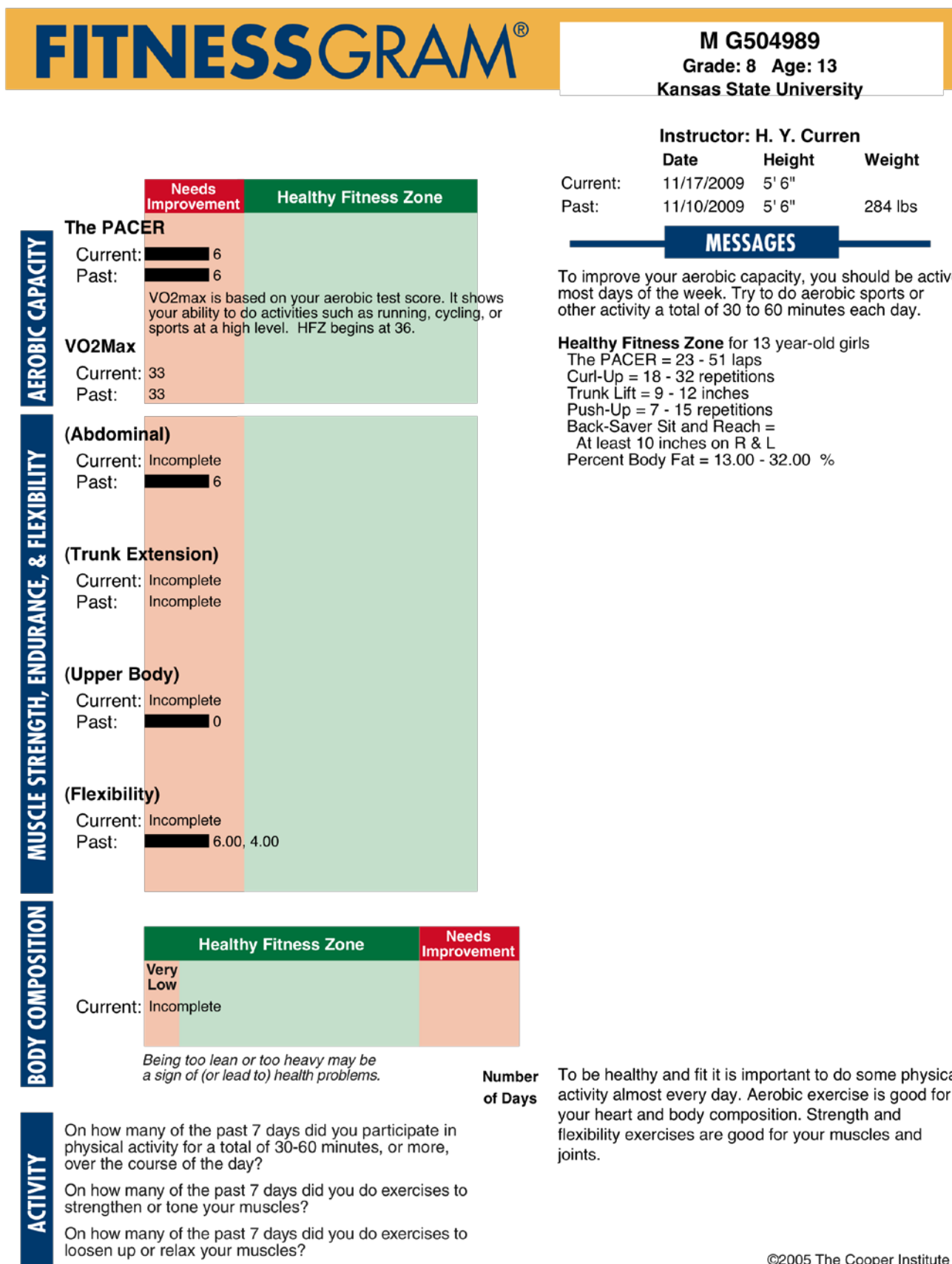


Table 4.56 FitnessGram Results for Longitudinal Tracking Chart MG504989

FITNESSGRAM®
ACTIVITYGRAM®

Longitudinal Tracking Chart

11/09

USA HigherEd school District

M G504989

Understanding the Tracking Charts

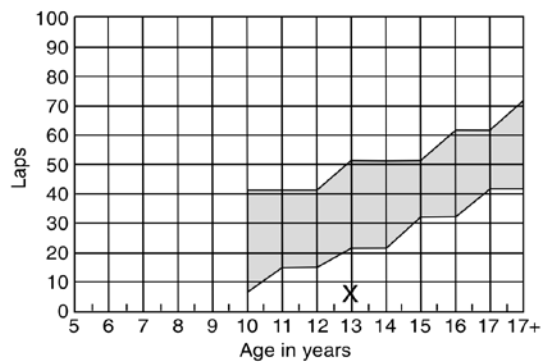
The *FITNESSGRAM* Longitudinal Tracking Chart is used to graph the fitness level of each individual from the first *FITNESSGRAM* testing experience to the most recent. The report includes a graph for every test item plotted and the scores for each test date. Scores from two test dates can

be plotted each year. The gray shaded area in each graph indicates the Healthy Fitness Zone for that test item. This chart communicates long-term progress in achieving and maintaining healthy fitness levels.

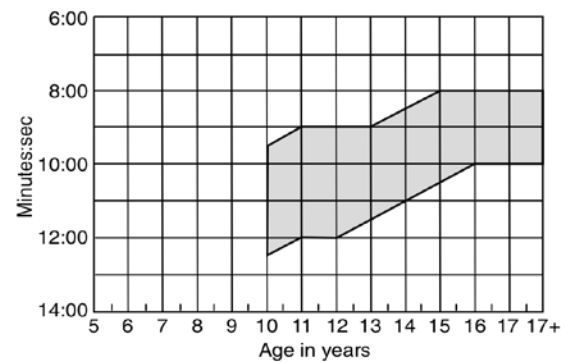
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AEROBIC CAPACITY

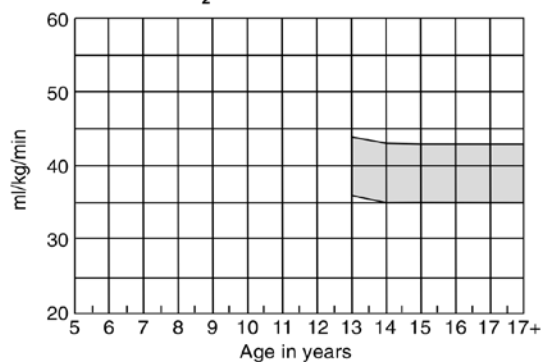
Girl's PACER



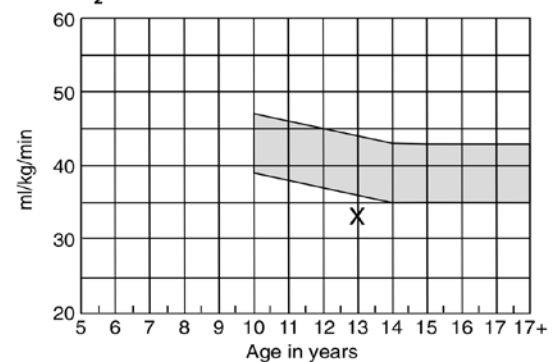
Girl's One-Mile Run/Walk



Girl's Walk Test $\dot{V}O_2$ max

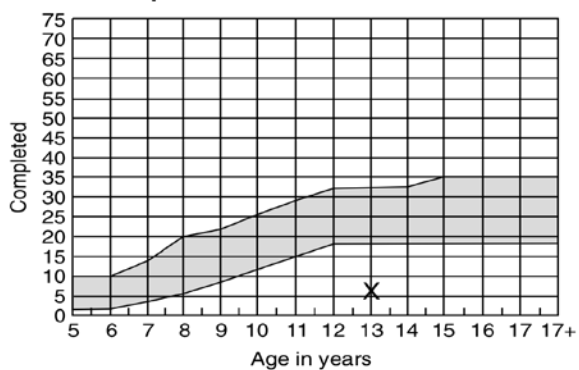


Girl's $\dot{V}O_2$ max

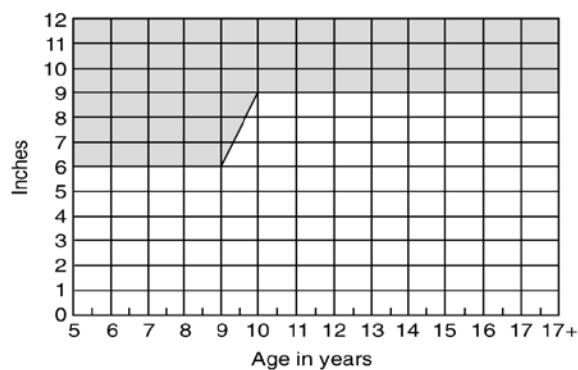


MUSCLE STRENGTH, ENDURANCE, AND FLEXIBILITY

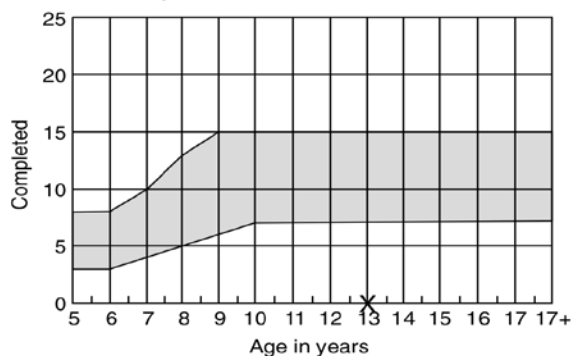
Girl's Curl-Up



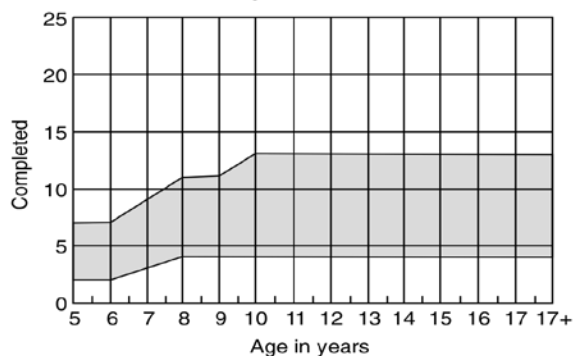
Girl's Trunk Lift



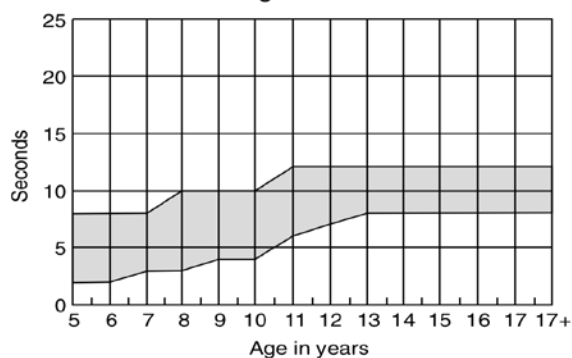
Girl's Push-Ups



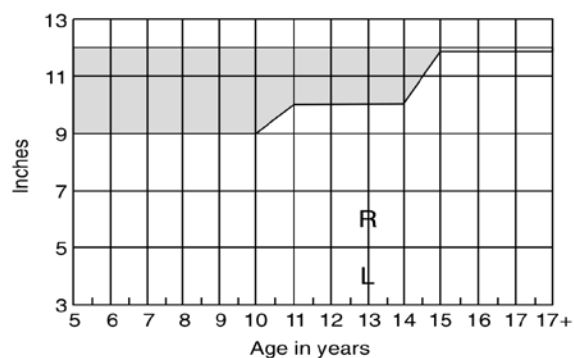
Girl's Modified Pull-Ups



Girl's Flexed Arm Hang

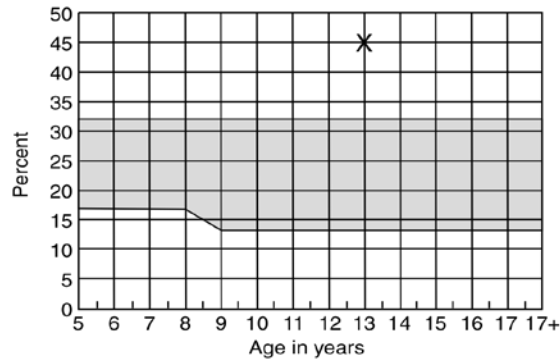


Girl's Back-Saver Sit and Reach

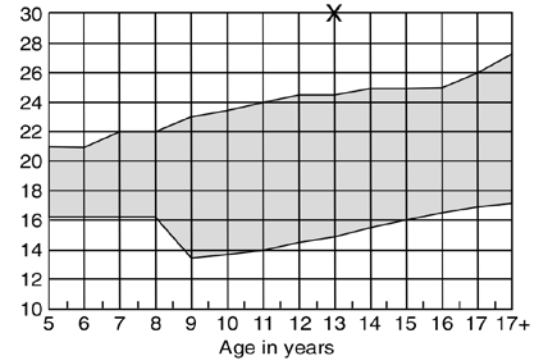


BODY SIZE AND BODY COMPOSITION

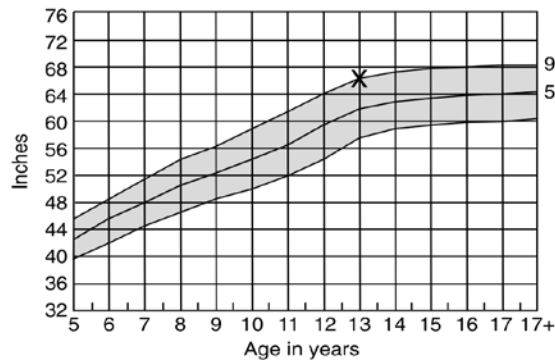
Girl's Percent Body Fat



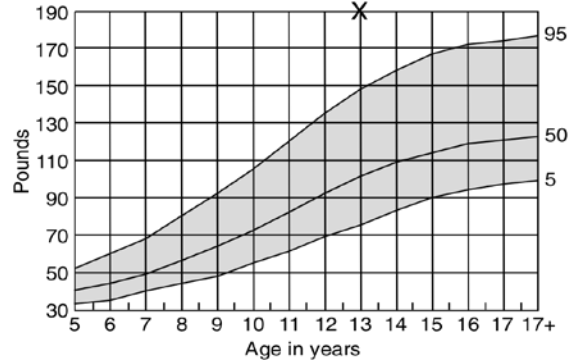
Girl's Body Mass Index



Girl's Height



Girl's Weight



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Height and weight charts adapted from the National Center for Health Statistics and National Center for Chronic Disease Prevention and Health Promotion, 2000. www.cdc.gov/growthcharts

Participant Interview SH063801

SH063801 is a 13 year old African American teenager that who the program on November 10. She weighed in at 146 pounds. As she attended her weight began to decline. She was assessed on the physical fitness test but her ability to score in the Healthy Fitness Zone (HFZ) was too poor. She could not complete aerobic capacity test because her heart and lung endurance was very poor to complete the PACER test. She was also administered the 3 minute step test and she was able to score in the Healthy Fitness Zone (HFZ). Her Target Heart Rate Zone (THRZ) is 124-165 and the results of the test was 133 Beats Per Minute (BPM), which placed her in the target heart rate zone.

When she was administered the upper body test for pushups she was not able to complete any push-ups and scored a zero on the test. It was suggested that she should improve her upper body strength by completing resistance training two or three days each week. The flexibility back-saver sit and reach on the right and left leg was scored 10 inches on the left and 11 inches on the leg which placed her in the Healthy Fitness Zone (HFZ). To keep this activity in perspective she was encouraged to continue maintaining her flexibility slowly stretch three or four days each week, holding each stretch 20-30 seconds.

This teenager's abdominal strength is in the Healthy Fitness Zone (HFZ). It is recommended that she maintain her fitness level by doing curl ups and other resistance exercise three to five days each week. The National Institute of Health Guidelines places this human subject in the category of being overweight at 26.70 per cent of her body weight. It states that she is in the unhealthy fitness zone.

This teenager dropped out of the program before the post-test was given. During her exit interview she discussed what she liked about the program and stating that she enjoyed the way

her body felt after working out. Her self-esteem improved greatly. She did not complete the program because she joined the Double Dutch team, marching band, and Daughters on the Rise. Double Dutch and the marching band require a lot of physical activity and would be beneficial in her losing weight, whereas Daughters on the Rise encouraged bad eating habits because of providing candy, cookies, and pizza after school. She did not keep a food diary but her mother was supportive and encouraged her to return. The teenager decided she wanted to participate in the other activities. She felt that because she was still active that it was okay not to return to the weight program. In the other programs her weight and physical activity was not being supervised. So she had no idea if she was losing weight or inches. She was always sneaking food in her health class. It was obvious that she did not lose weight and was picking up more.

Figure 4.7 FitnessGram Results for Pre/Post Test SH063801

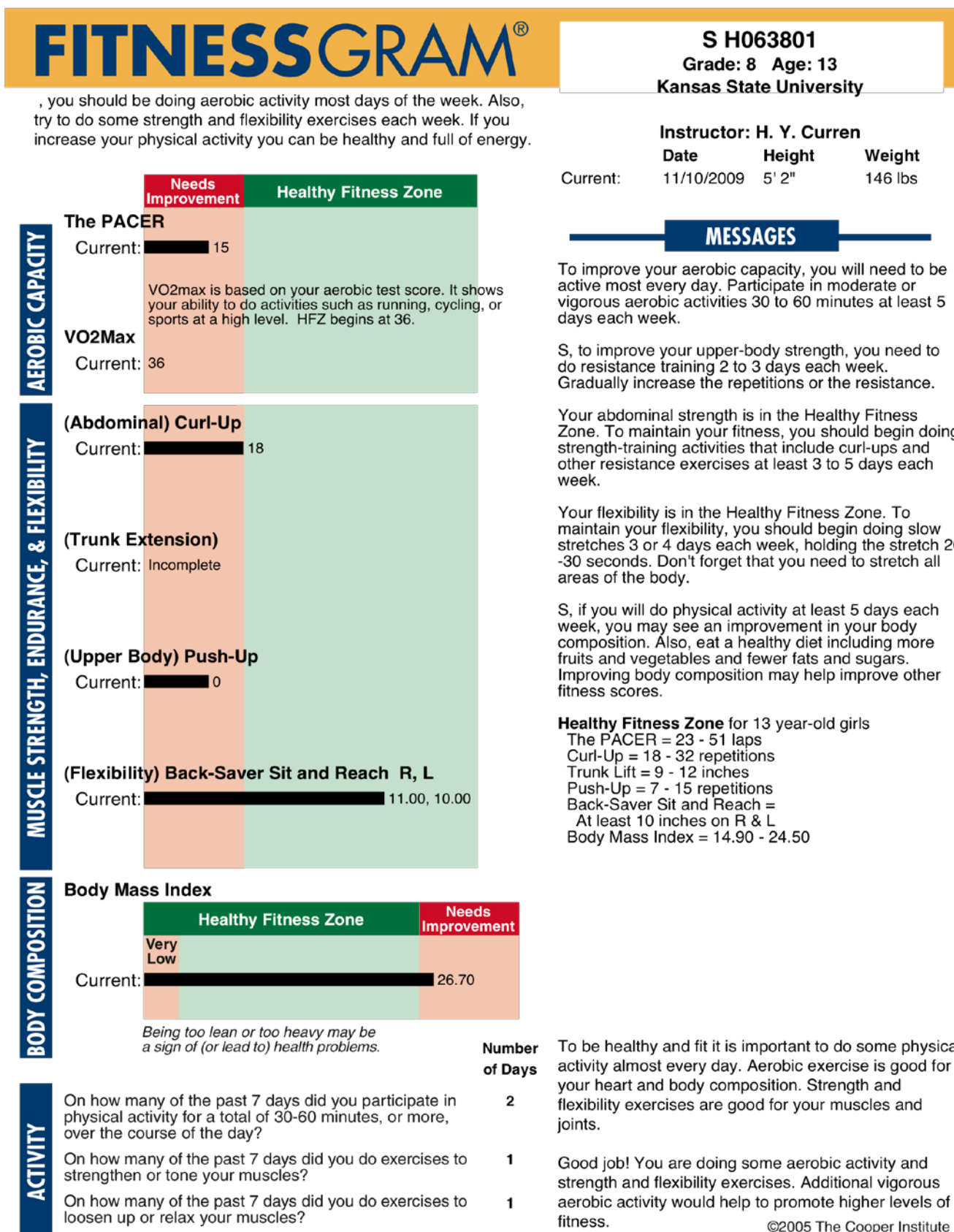


Table 4.57 FitnessGram Results for Longitudinal Tracking Chart SH063801

Understanding the Tracking Charts

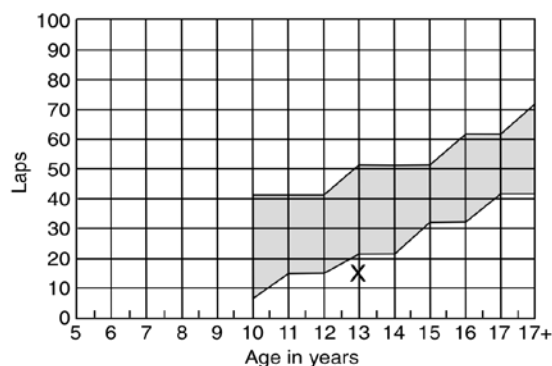
The *FITNESSGRAM* Longitudinal Tracking Chart is used to graph the fitness level of each individual from the first *FITNESSGRAM* testing experience to the most recent. The report includes a graph for every test item plotted and the scores for each test date. Scores from two test dates can

be plotted each year. The gray shaded area in each graph indicates the Healthy Fitness Zone for that test item. This chart communicates long-term progress in achieving and maintaining healthy fitness levels.

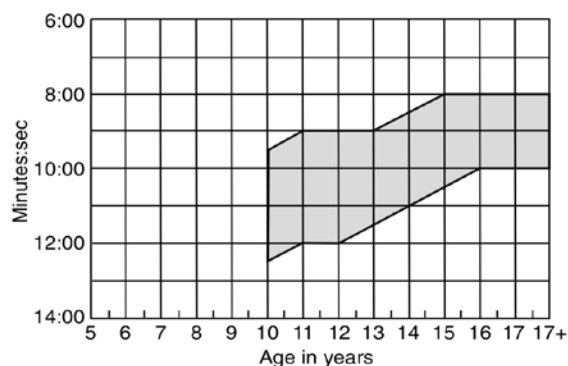
Left side = L Right side = R

AEROBIC CAPACITY

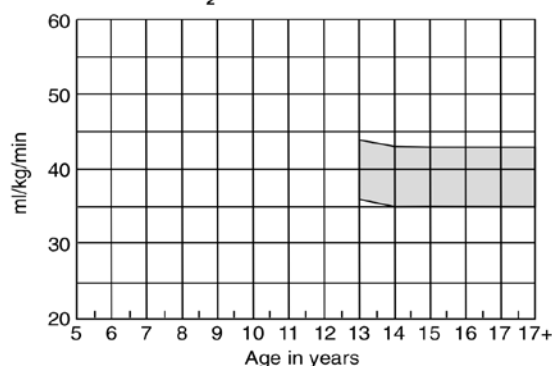
Girl's PACER



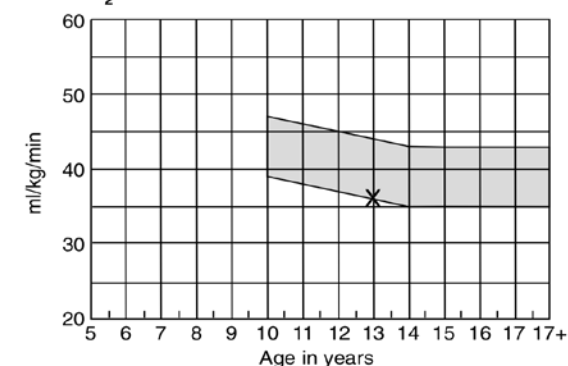
Girl's One-Mile Run/Walk



Girl's Walk Test $\dot{V}O_2$ max

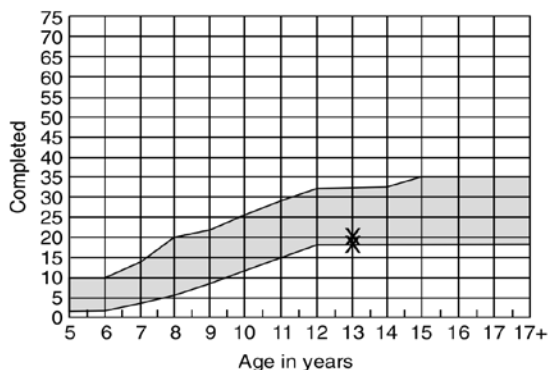


Girl's $\dot{V}O_2$ max

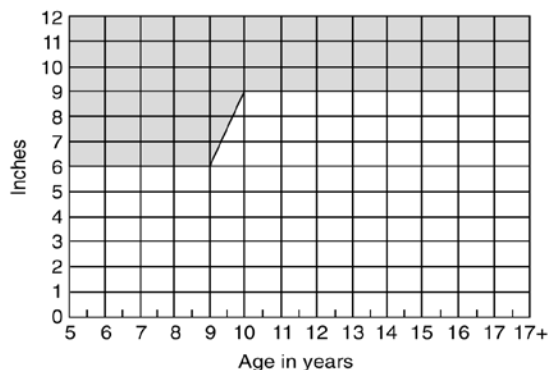


MUSCLE STRENGTH, ENDURANCE, AND FLEXIBILITY

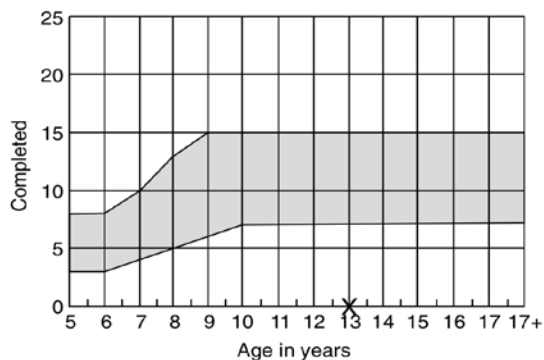
Girl's Curl-Up



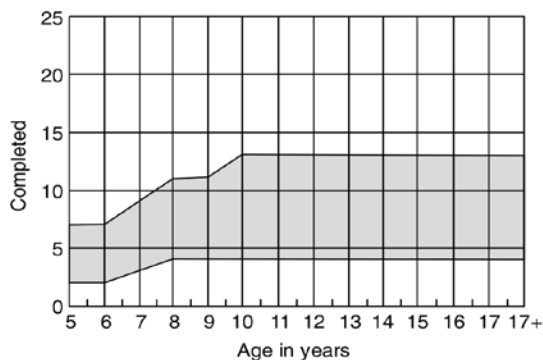
Girl's Trunk Lift



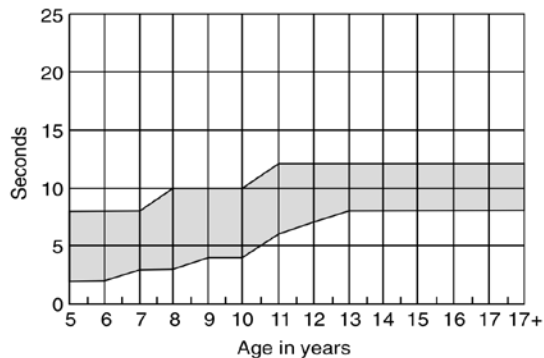
Girl's Push-Ups



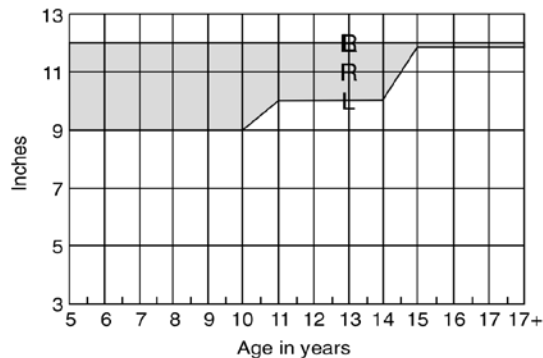
Girl's Modified Pull-Ups



Girl's Flexed Arm Hang

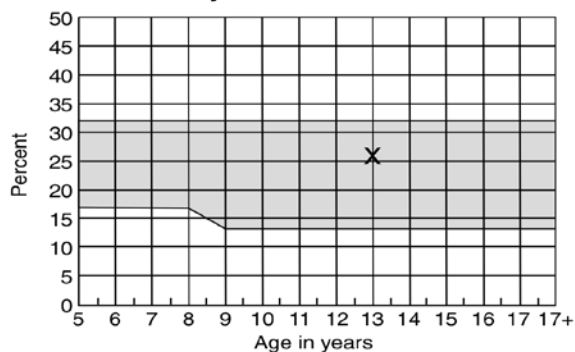


Girl's Back-Saver Sit and Reach

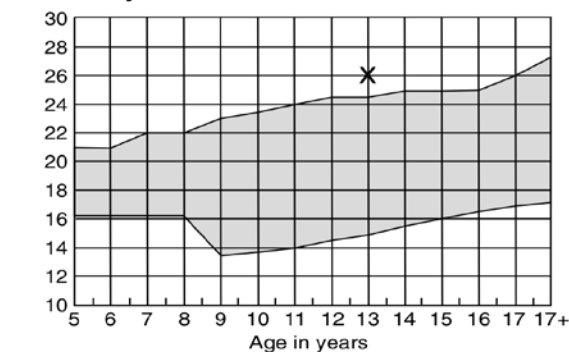


BODY SIZE AND BODY COMPOSITION

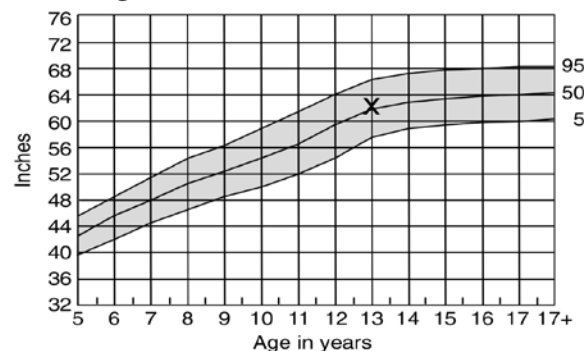
Girl's Percent Body Fat



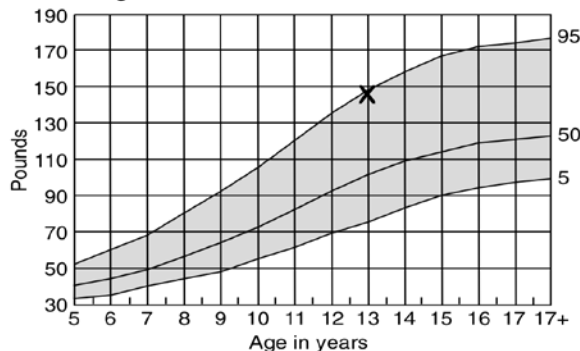
Girl's Body Mass Index



Girl's Height



Girl's Weight



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Height and weight charts adapted from the National Center for Health Statistics and National Center for Chronic Disease Prevention and Health Promotion, 2000. www.cdc.gov/growthcharts

Participant Interview AJ034620

AJ034620, an age 15 ninth grader, took part in this program for a short time. She completed the pre-test and came to the program for a total of three times. Before she attended the mother was contacted and gave a little background on the family history. The mother, father and their daughter are all overweight and have a history of high blood pressure and diabetes. The father expired during the school year due to complications from his health issues. The daughter and the mother did not discuss the conditions because it was very stressful for both of them.

Her FitnessGram pre-test revealed that her aerobic capacity was low and she was not able to process the maximum oxygen level and therefore she needs to improve.

Abdominal strength pre-test she scored a zero she did not put forth an effort to complete this test. Maintaining adequate levels of abdominal strength is necessary to perform daily routines at home and work.

This human subjects' upper body strength is in the needs improvement range. She was only able to perform 6 push –ups and the Healthy Fitness Zone (HFZ) for her age of fifteen years of age is 7-15 repetitions. The recommended suggestions for strength training should include at least one exercise for each of the major muscle groups in your body. This teenager should include one core exercise for the lower body and two core exercises for the upper body. To avoid muscle fatigue she should arrange her program so that successive exercises do not involve the same muscle groups.

Flexibility of this teenager is in the Healthy Fitness Zone (HFZ) with a score of 12 inches on the right and left leg. In order for this teenager to remain in the Healthy Fitness Zone (HFZ) and have the ability to move joints fluidly through the range of motion and stay in good general

health and fitness. The recommended tips to maintain this level of fitness to help improve her flexibility are as follows:

- Choose at least one exercise for each of the major muscle groups
- Stretch slowly without bouncing
- Hold each stretch just below the pain threshold for 10-60 seconds
- Perform 2-6 repetitions for each exercise
- To improve flexibility the routine should be performed three days each week
- Maintaining your flexibility, 1 day each week

This teenager has a body composition of 39.20 percent. Her body composition refers to the relative proportions of body weight in terms of lean body mass and body fat. Her lean body mass represents the weight of muscle, bone, internal organs and connective tissue. Her body fat represents the remaining fat tissue. AJ034620 understands that it is essential to maintain some body fat, but an excess level poses a serious health risk. Her body weight of 250 pounds is made up of 125 lbs of lean mass (bone, muscle and connective tissue), and 125 lbs. of fat mass. This teenager needs to reduce her body fat.

An exit interview was conducted with this teenager and she expressed herself very candidly. She did not like the program, did not socialize and did not like any of the other teenagers that were participating. Even though her mother wanted her to stay after school because of the health issues that was a part of the family history. The mother was very supportive but this teenager was very adamant about going home. When she went home after school she danced and would go outside and play kick ball with the other children in her neighborhood.

This participant did not attend long enough to pick up any information about losing weight. Her mother wanted her to stay in the program because of their family history. If she had remained she could have shared the information with her mother to help to improve their health. This participant was only in the program because her mother wanted her to attend and work on her weight issues. She did not lose any weight because her priority was to go home after school. Her mother was very supportive of the program but the daughter was not interested in the program. She did attend daily dance practice, which included hip-hop, and praise dancing at church. She would participate in this praise dancing two days a week. This teenager discussed her eating habits; she only eats breakfast on the weekends when her mother cooks the morning meal. She eats school lunches depending on what's on the menu. She likes the school tacos and some ala carte dishes. The mother prepares the dinner meals during the week. Home cooked meals usually consist of meat loaf, fried chicken, casseroles, vegetables and a variety of food from the food guide pyramid. The food mother cooks during the week and they eat out frequently on the weekends. The participant does not make healthy choices when visiting restaurants like Chili's, Longhorn, Granite City, and Gojo's.

Figure 4.8 FitnessGram Results for Pre/Post Test AJ034620

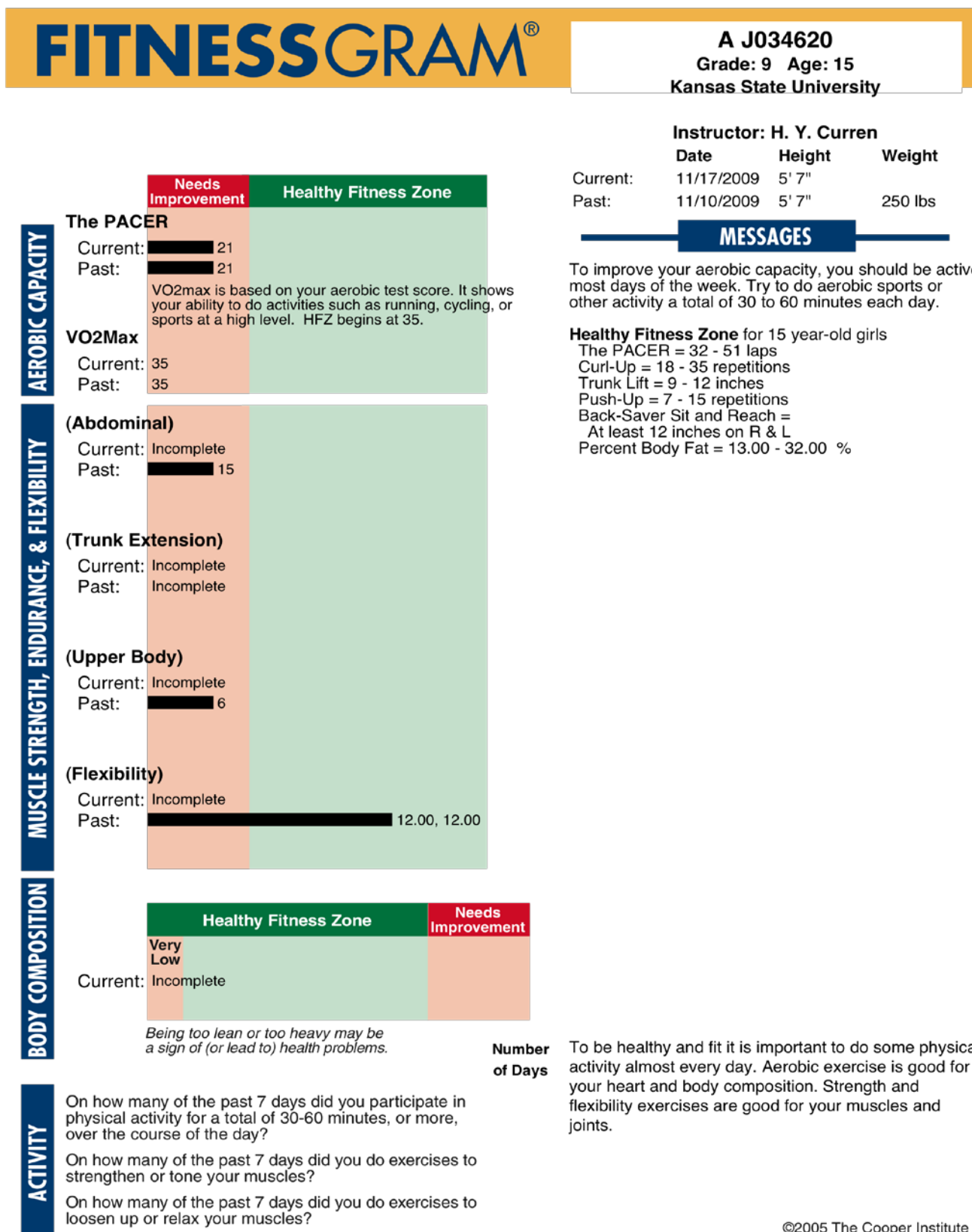


Table 4.58 FitnessGram Results for Longitudinal Tracking Chart AJ034620

FITNESSGRAM[®] ACTIVITYGRAM[®]	Longitudinal Tracking Chart	11/09
USA HigherEd school District		A J034620

Understanding the Tracking Charts

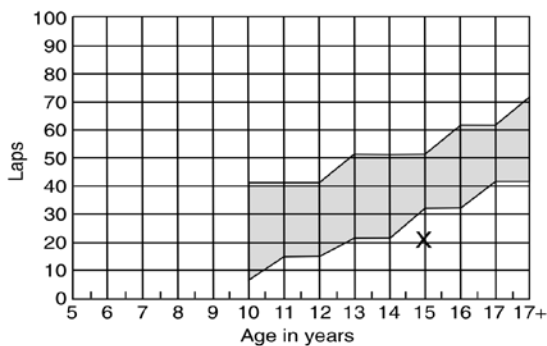
The *FITNESSGRAM* Longitudinal Tracking Chart is used to graph the fitness level of each individual from the first *FITNESSGRAM* testing experience to the most recent. The report includes a graph for every test item plotted and the scores for each test date. Scores from two test dates can

be plotted each year. The gray shaded area in each graph indicates the Healthy Fitness Zone for that test item. This chart communicates long-term progress in achieving and maintaining healthy fitness levels.

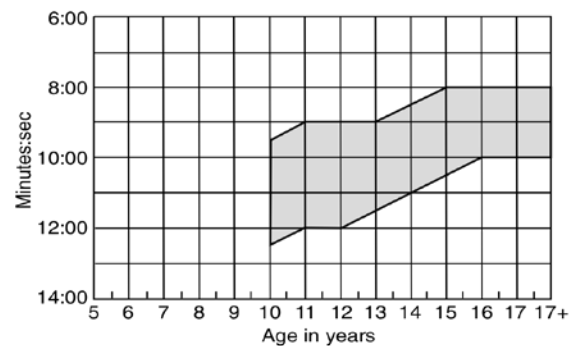
Left side = L Right side = R

AEROBIC CAPACITY

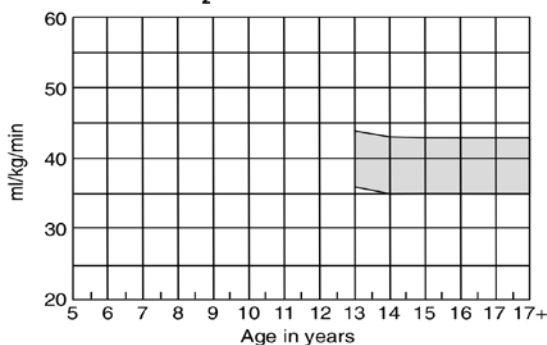
Girl's PACER



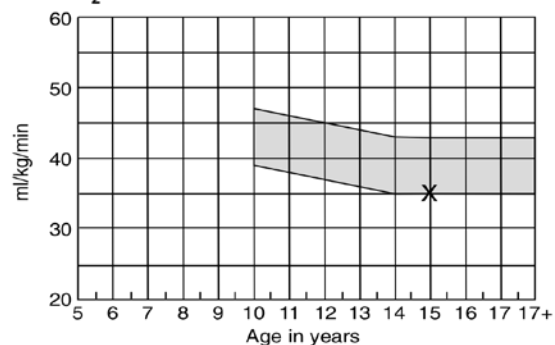
Girl's One-Mile Run/Walk



Girl's Walk Test $\dot{V}O_2$ max



Girl's $\dot{V}O_2$ max

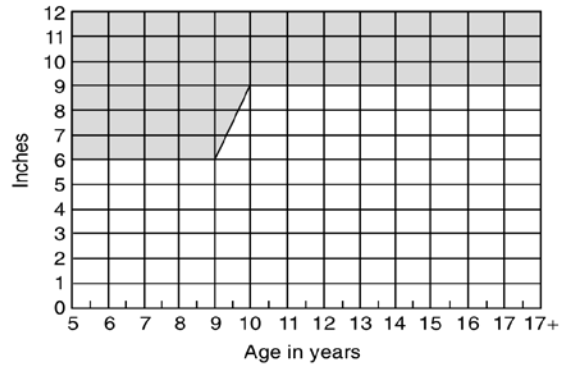


MUSCLE STRENGTH, ENDURANCE, AND FLEXIBILITY

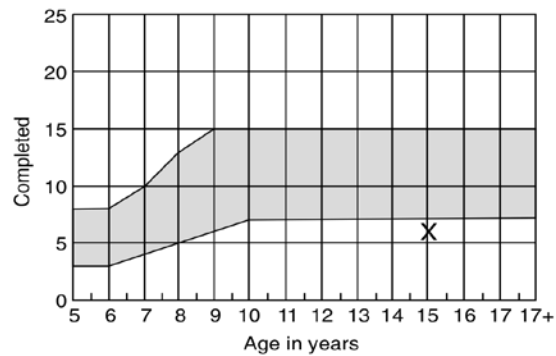
Girl's Curl-Up



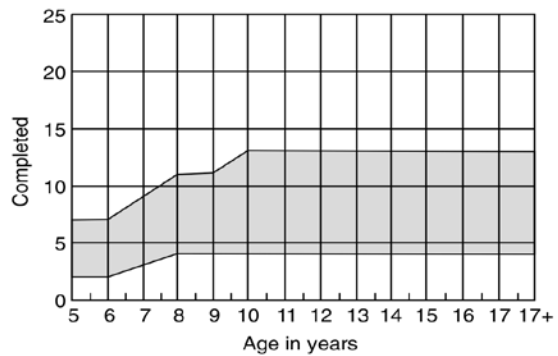
Girl's Trunk Lift



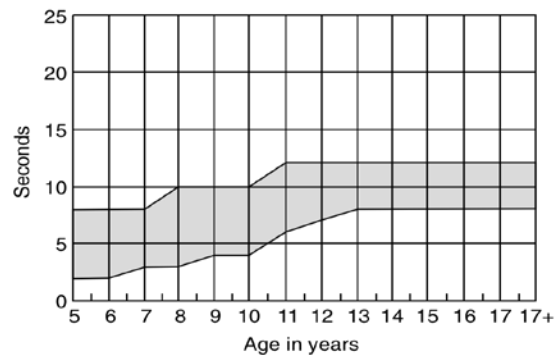
Girl's Push-Ups



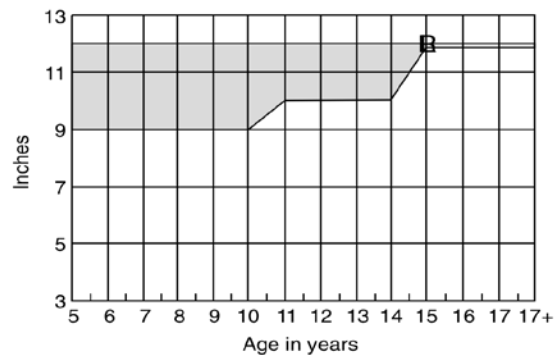
Girl's Modified Pull-Ups



Girl's Flexed Arm Hang

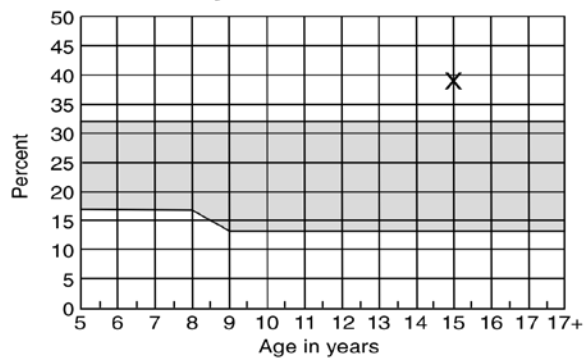


Girl's Back-Saver Sit and Reach

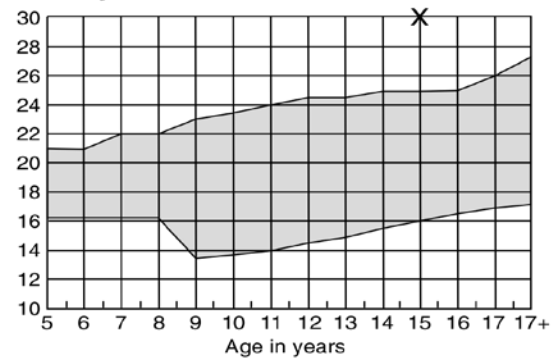


BODY SIZE AND BODY COMPOSITION

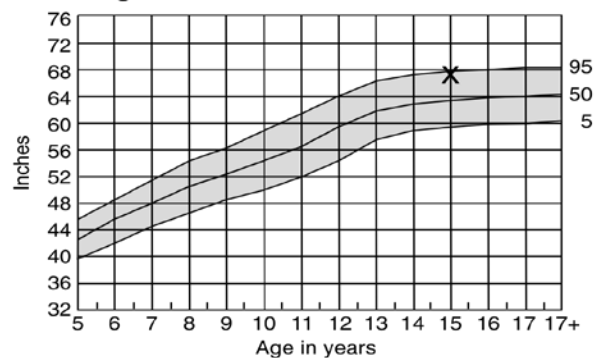
Girl's Percent Body Fat



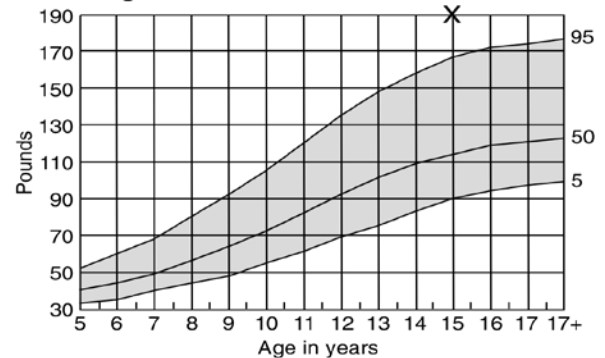
Girl's Body Mass Index



Girl's Height



Girl's Weight



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Height and weight charts adapted from the National Center for Health Statistics and National Center for Chronic Disease Prevention and Health Promotion, 2000. www.cdc.gov/growthcharts

Participant Interview SN063124

SN063124 is a seventh grade African American teenager that began the program weighing 177 pounds. Her height and weight were calculated by the national Institutes of Health guidelines revealing her body composition to be 30.0 per cent overweight, classifying her as being in the category of Class I Obesity.

During the pre-test this teenager scored 23 laps on the PACER test, which placed her in the Healthy Fitness Zone (HFZ). She has the ability to run for long time when doing high level sports. When she started her abdominal curl ups she had a very lackadaisical approach and did not start her test at all. She gave an excuse that she had pre-menstrual cramps and could not do this portion of the fitness test. Her upper body strength was very poor. Her fitness score was below the Healthy Fitness Zone (HFZ) with a score of 5. The back-saver sit and reach test on the right and left leg was scored on twelve inches. She had great flexibility, which allows the ability of her joints to move fluidly through the range of motion and important to her general health and physical fitness.

Her body composition is based on the guidelines from the National Institutes of health. Her height and weight was used to determine her Body Mass Index (BMI). Her body weight is 178 pounds, which is made up of 104 pounds of lean mass (bone, muscle and connective tissue), 73 pounds of fat mass. During her exit review she discussed how she enjoyed working out with the other girls. Everyone in the after school program supported each other and got along well. She explained that she liked the program but she did not like to sweat. The sweating was annoying to her because perspiration was always running down her face. She realizes that it takes dedication to lose weight. She decided to attend Daughters on the Rise and Robotics group. Whenever she decided to stay after school for the weight program she came too late to work out.

Daughters on the Rise served food after school and that was a hindrance for losing weight. When Robotics and Daughters on the Rise cancelled their activities this teenager would go home. She may have lost a few pounds at the beginning but stopped attending and was observed eating in physical education class. The mother said she would help support her in eating nutritionally. The teenager explained that she did not receive any support from home to encourage her to continue to work out physically. The mother would prepare home cooked meals during the week and every other week the family would eat out.

Her outside activities included a basketball team and practice in the evening. Whenever the girls on the team would make mistakes during plays the coach would have them do extra laps.

Figure 4.9 FitnessGram Results for Pre/Post Test SN063124

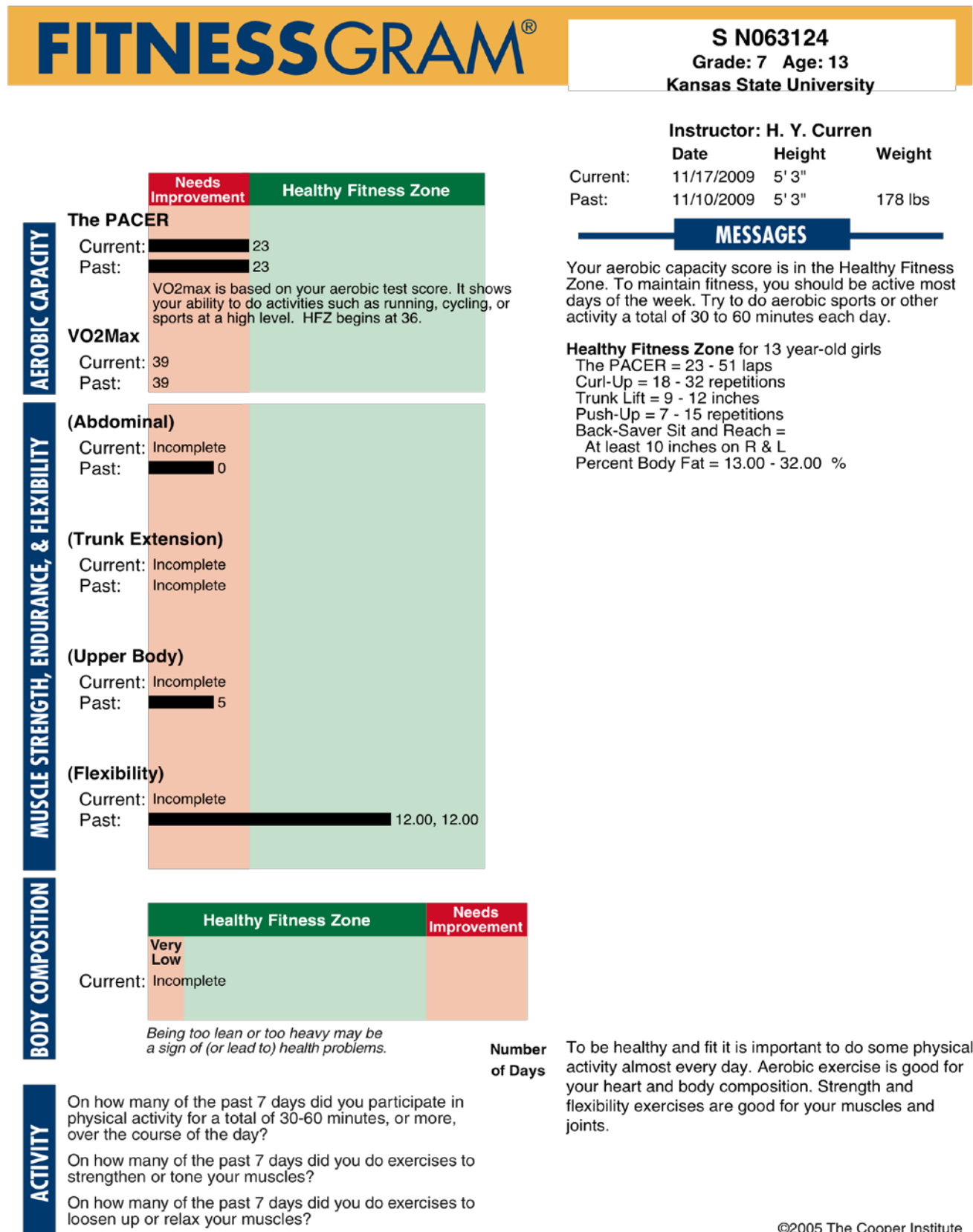


Table 4.59 FitnessGram Results for Longitudinal Tracking Chart SN063124

Understanding the Tracking Charts

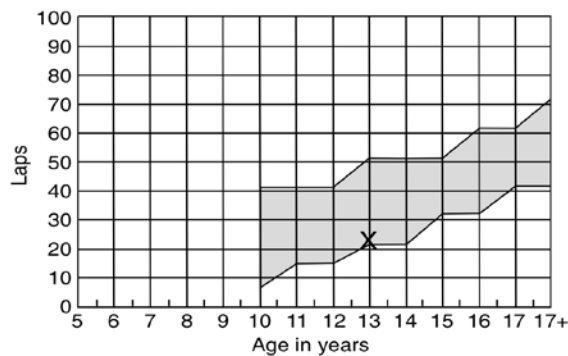
The *FITNESSGRAM* Longitudinal Tracking Chart is used to graph the fitness level of each individual from the first *FITNESSGRAM* testing experience to the most recent. The report includes a graph for every test item plotted and the scores for each test date. Scores from two test dates can

be plotted each year. The gray shaded area in each graph indicates the Healthy Fitness Zone for that test item. This chart communicates long-term progress in achieving and maintaining healthy fitness levels.

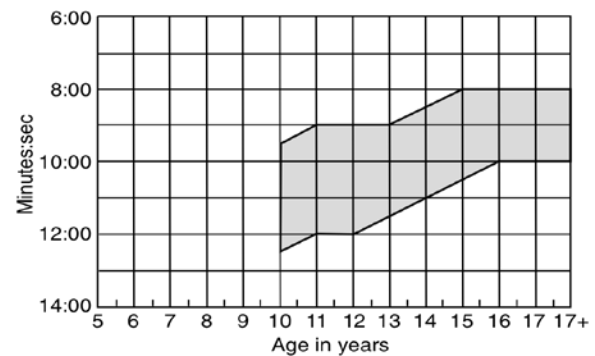
Left side = L Right side = R

AEROBIC CAPACITY

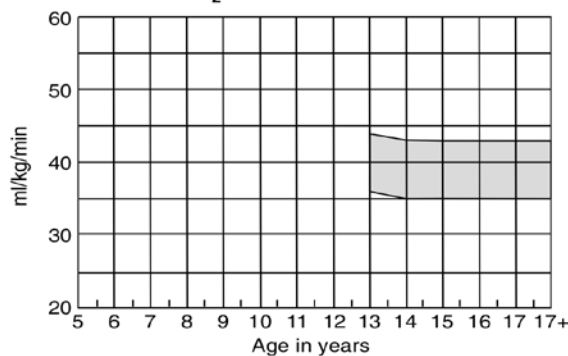
Girl's PACER



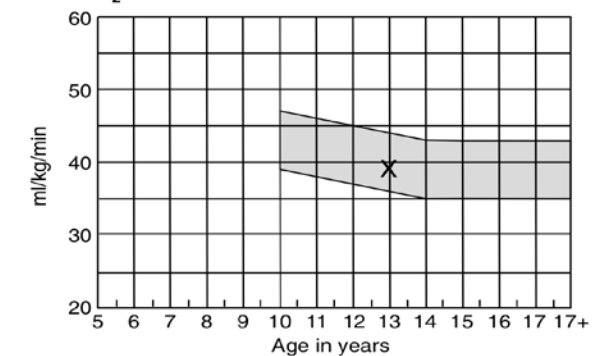
Girl's One-Mile Run/Walk



Girl's Walk Test $\dot{V}O_2$ max

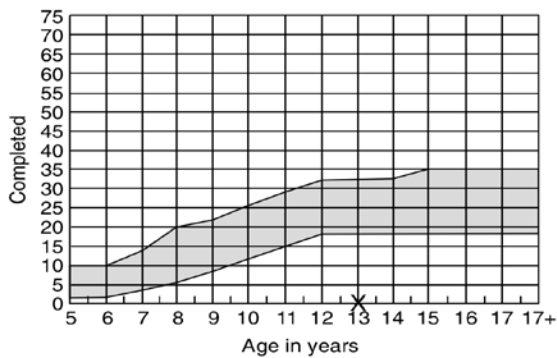


Girl's $\dot{V}O_2$ max

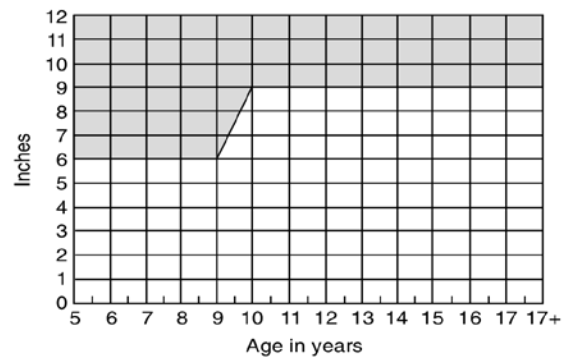


MUSCLE STRENGTH, ENDURANCE, AND FLEXIBILITY

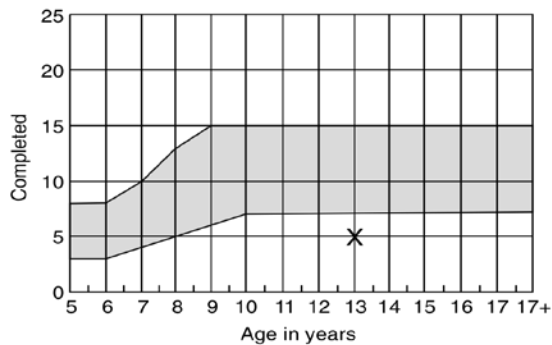
Girl's Curl-Up



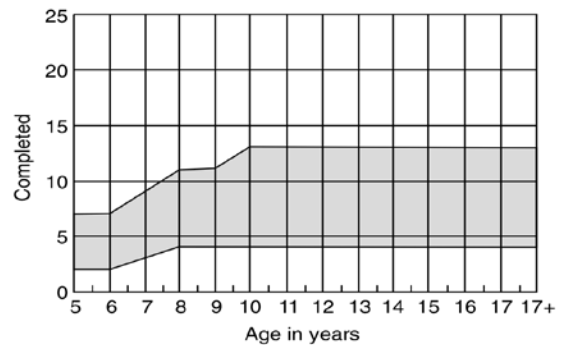
Girl's Trunk Lift



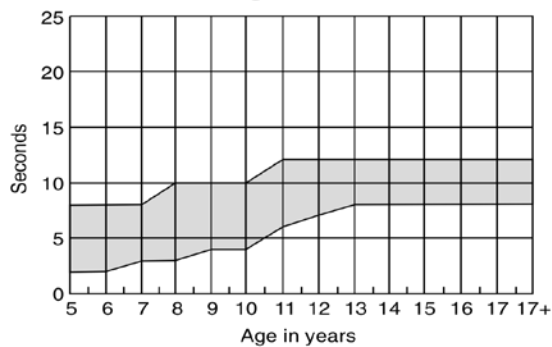
Girl's Push-Ups



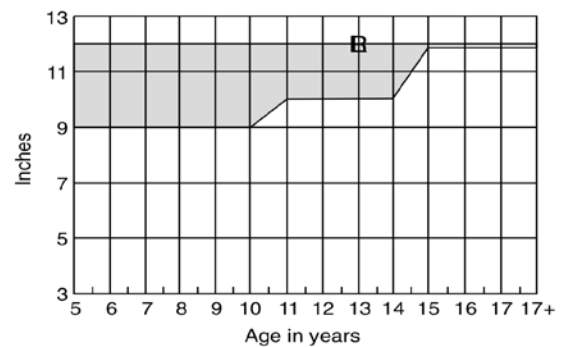
Girl's Modified Pull-Ups



Girl's Flexed Arm Hang

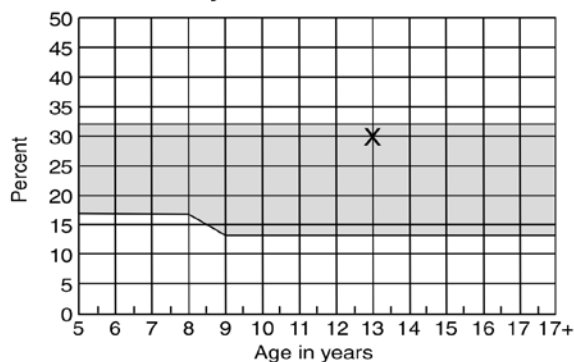


Girl's Back-Saver Sit and Reach

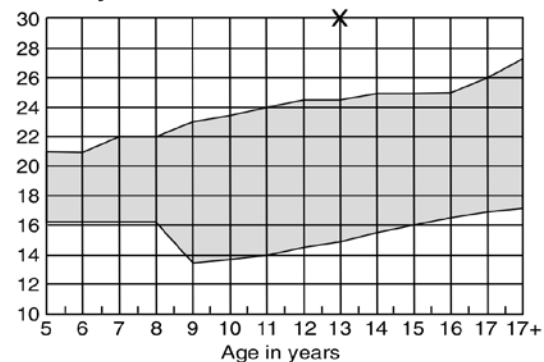


BODY SIZE AND BODY COMPOSITION

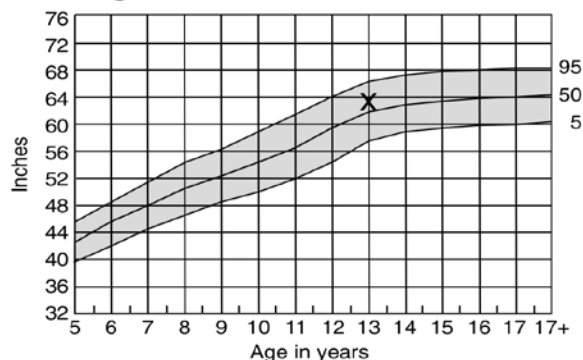
Girl's Percent Body Fat



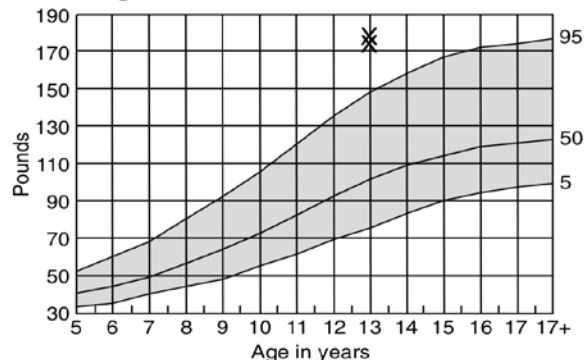
Girl's Body Mass Index



Girl's Height



Girl's Weight



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Height and weight charts adapted from the National Center for Health Statistics and National Center for Chronic Disease Prevention and Health Promotion, 2000. www.cdc.gov/growthcharts

Participant Interview KNJ076708

KNJ076708 was placed in the program at her mother's request. The mother is struggling with her own weight issues. This parent was supportive of the program and really wanted her daughter to be able to control her weight by diet and exercise. At the beginning of the pre-test she scored below the Healthy Fitness Zone (HFZ) with only 21 laps for the PACER Test.

When she performed abdominal curl ups she exceeded the expectations of this test. She scored 75 curl ups on the pre-test. Upper body strength is in the Healthy Fitness Zone (HFZ) and compared to teenagers her age, she has scored in a higher classification 12 push-ups. Being able to train on the weight machines after school and include one core exercise for the lower body and two core exercises for the upper body will help improve strength.

Her pre-test showed that this teenager scored 9 inches on the right and left leg. This portion of the pre-test showed that this individual needs improvement on her flexibility.

Based on the National Institutes of Health Guidelines this human subject Body Mass Index was determined by using her height and weight and her BMI is 26.22 percent and according to these standards her category is in between 25-29.9 percent. Body composition refers to the proportions of body weight in terms of lean body mass and body fat.

This human subject dropped out of the program after four visits to the program. She did not keep her appointment for her exit interview and the mother stopped contacting the researcher. From the previous conversations with the parent, she and her daughter worked out in the evenings at another fitness center. Both mother and daughter felt the double workouts were over the top. This human subject was involved in several other activities after school such as Kauffman Foundation, and Daughters on the Rise.

The mother prepared all of the meals and made sure all meals were nutritionally balanced. Many of the days were missing on her food diary. The mother often brought her lunch to school during the lunch hour. One of her goals was to be able to wear a two-piece bathing suit.

Figure 4.10 FitnessGram Results for Pre/Post Test KNJ076708

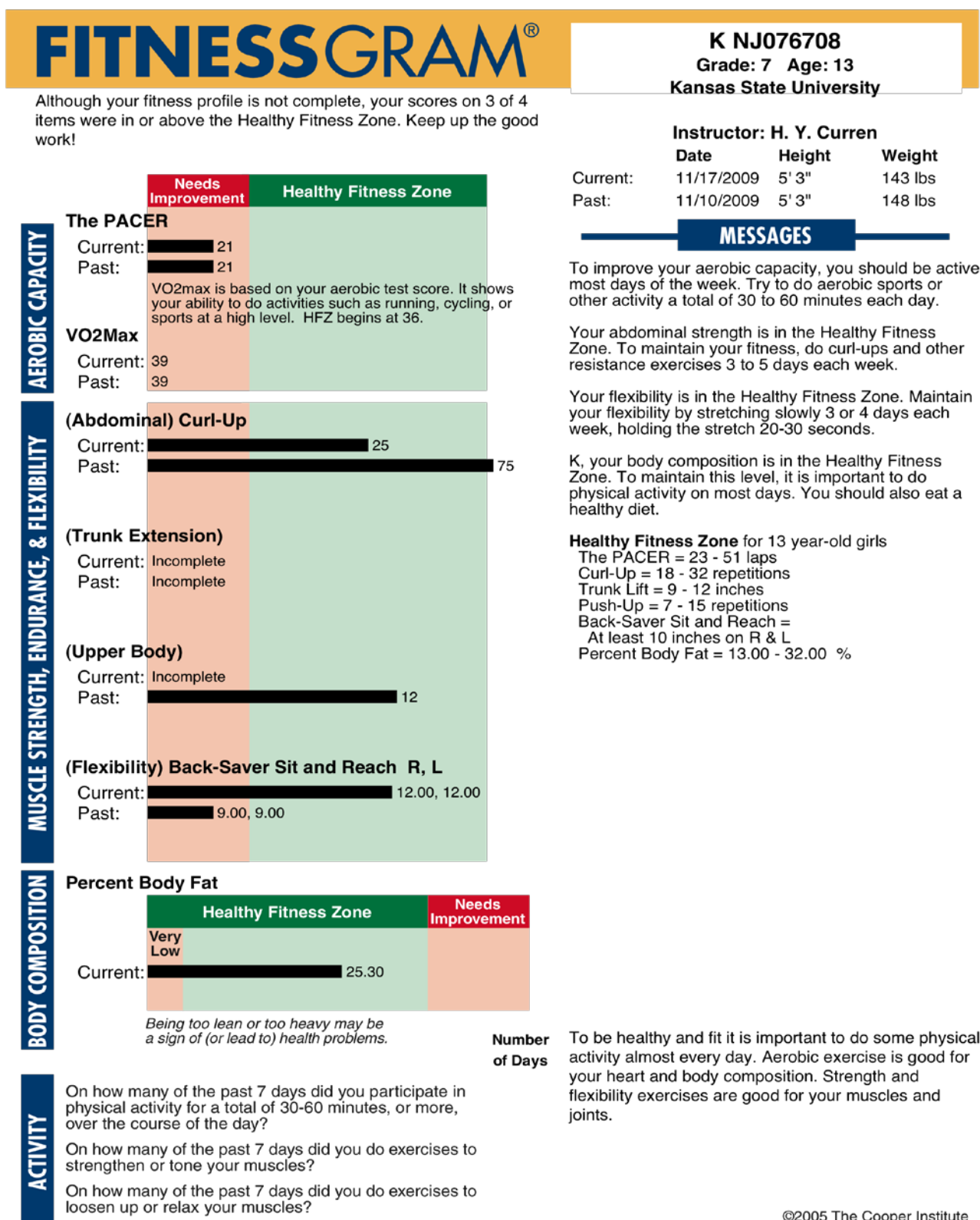


Table 4.60 FitnessGram Results for Longitudinal Tracking Chart KNJ07670

FITNESSGRAM®
ACTIVITYGRAM®

Longitudinal Tracking Chart

11/09

USA HigherEd school District

K NJ076708

Understanding the Tracking Charts

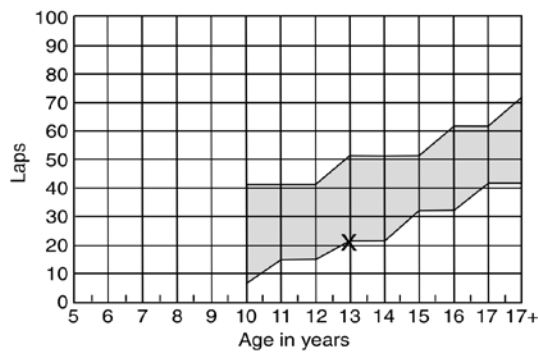
The *FITNESSGRAM* Longitudinal Tracking Chart is used to graph the fitness level of each individual from the first *FITNESSGRAM* testing experience to the most recent. The report includes a graph for every test item plotted and the scores for each test date. Scores from two test dates can

be plotted each year. The gray shaded area in each graph indicates the Healthy Fitness Zone for that test item. This chart communicates long-term progress in achieving and maintaining healthy fitness levels.

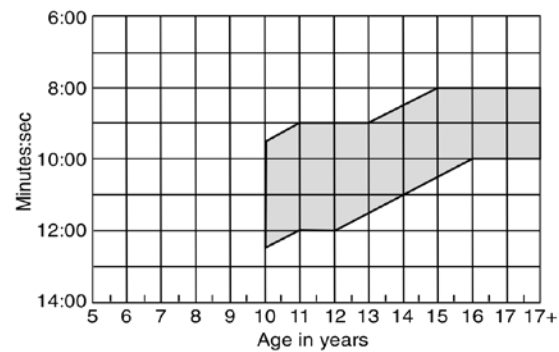
Left side = L Right side = R

AEROBIC CAPACITY

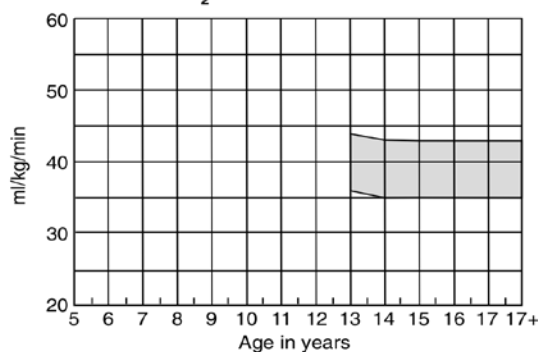
Girl's PACER



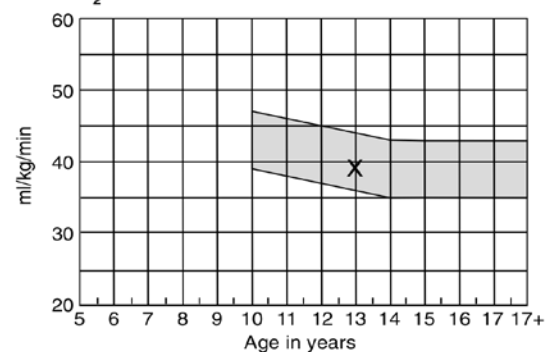
Girl's One-Mile Run/Walk



Girl's Walk Test $\dot{V}O_2$ max

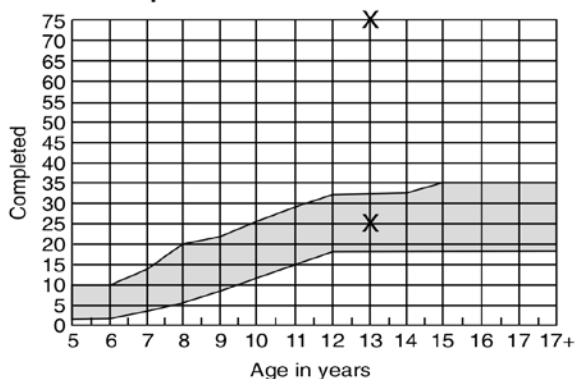


Girl's $\dot{V}O_2$ max

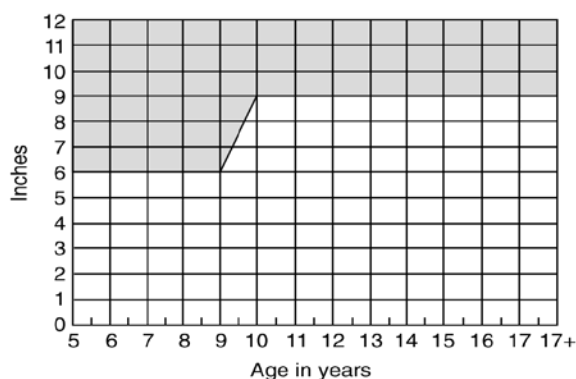


MUSCLE STRENGTH, ENDURANCE, AND FLEXIBILITY

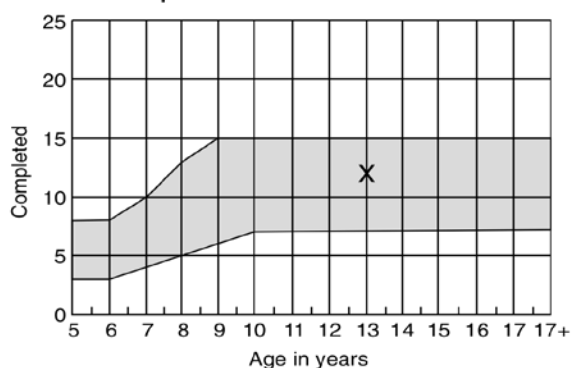
Girl's Curl-Up



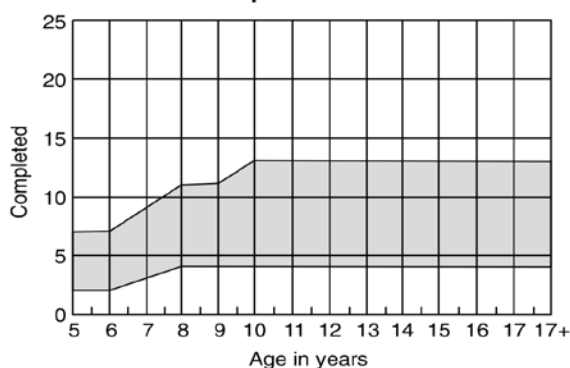
Girl's Trunk Lift



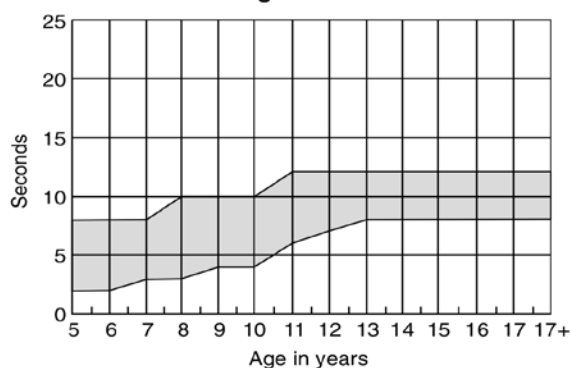
Girl's Push-Ups



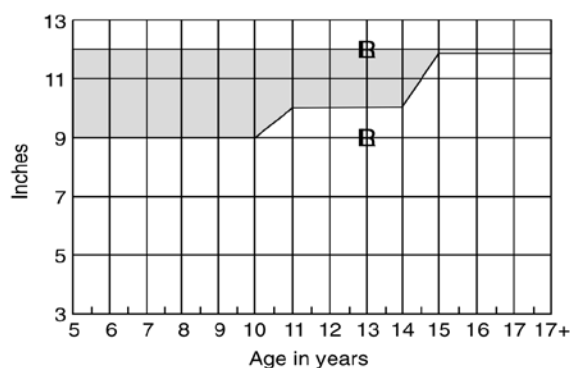
Girl's Modified Pull-Ups



Girl's Flexed Arm Hang

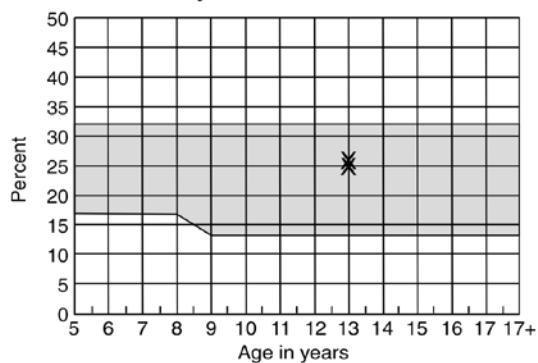


Girl's Back-Saver Sit and Reach

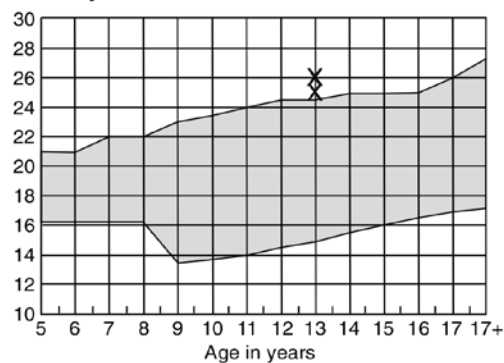


BODY SIZE AND BODY COMPOSITION

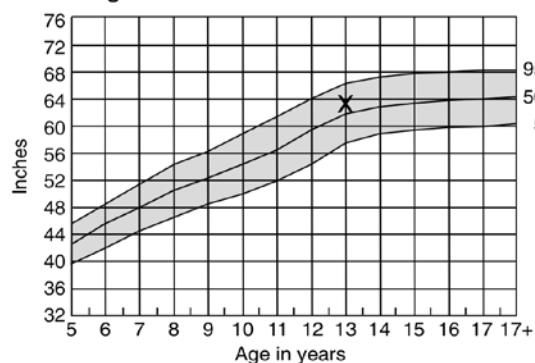
Girl's Percent Body Fat



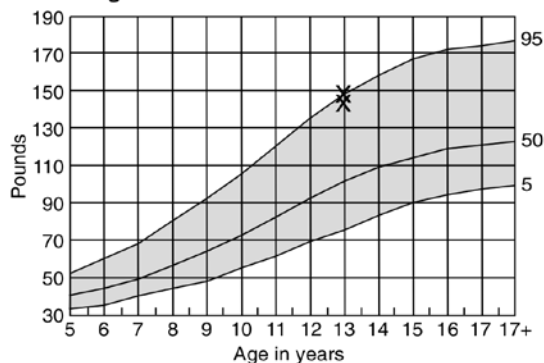
Girl's Body Mass Index



Girl's Height



Girl's Weight



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Height and weight charts adapted from the National Center for Health Statistics and National Center for Chronic Disease Prevention and Health Promotion, 2000. www.cdc.gov/growthcharts

Participant Interview DT502365

An interview with human subject DT502365 revealed many interesting facts about her family history. Both parents are deceased and her grandmother is raising her. The researcher spoke with the grandmother on several occasions about her granddaughter and how she wants her to lose weight because her parents passed away from heart disease and other health complications. When this teenager was walking to class she was always late to class and soon after she arrived she would ask if she could be excused to go to the restroom. Because she had a very weak bladder she had to be released immediately.

This African American teenagers' overall fitness was very poor. Whenever she workouts on any of the machines, such as the elliptical and treadmill, she must have her heart rate checked often. On December 17, she had only been on the treadmill for a couple of seconds and her heart rate had escalated to 188 BPM. She started breathing really hard and we slowed her treadmill down and made other adjustments to her machine. She was very determined and dedicated to her mission and she rarely missed a session unless afterschool was cancelled. Her beats per minute for her target heart rate zone is 123-164 and she realized that she were out of her zone.

DT502365 would begin her warm up activities with a stability ball workout. Exercises on the stability ball helps strengthen core muscles and shape the entire body. She was spotted the entire time while she was on the ball working out. All exercise routines would change every day to break the boredom of the same workout. The warm up session would begin with step aerobics or core exercise so that she could reach her range of motion during her workout session. Her workout session would last for 20 to 30 minutes and the last hour she would spend on the weight machines during circuit training.

She worked diligently on the multi-press, abdominal crunch machines, leg extensions and the bicep curls. She would complete a circuit training sixty seconds and move to another machine. She was committed to losing weight and improving her overall fitness. She has a wonderful disposition and gets along with all students. While she was giving her interview she did express some concerns about eating lunch in the cafeteria. New students to the school made fun of her after the movie "Precious" was released. Some young man would pester her for her lunch in the cafeteria. He would call her names as well as beg for her food. She believed that they teased her more after the movie came out. This is the only time that she had been harassed by students at school. Regardless of all the harassment from some male students, her self-esteem remains intact. Following this incident she asked if she could eat lunch in the researcher's office away from prying eyes of all students. She started bringing her lunch to school. The grandmother would prepare breakfast for her, which consisted of 2 boiled eggs, wheat toast, and grapefruit. She would bring her lunch a sandwich and salad with an apple. She would always have an apple before her work out to supply her body with a little fuel. After awhile she began skipping her lunch and by the end of the day she was starving. She was told that missing meals was not good for her diabetes and could cause some serious problems. Her weight began to escalate, because she was missing meals and indulging in the wrong types of unhealthy foods.

On the first day that she attended the wellness program she weighed in at 304 pounds. She liked the idea that she could weigh herself every day before or after the workout. She could keep up with her progress as she lost weight and be able to keep in touch with her fluctuating weight. The schools' band director wrote some

accomplishments that she witnessed of this participant. The ACECC Instrumental Music Program offered a wide variety of performing ensembles. One of the major performing groups was the marching band, which requires an enormous amount of physical activity and conditioning. One of the collaborative goals was to chart the physical fitness of a few of the scholars that participated in the school's physical education wellness program, orchestrated by the health and physical education teacher.

The participant began with a weeklong band camp. This camp started two weeks before the start of school. Students participating in the camp were not in good physical condition. The camp participants were unable to complete basic fitness exercises such as sit-ups, push-ups, mile/walk run and aerobics. This individual had a specific conditioning regiment designed especially for her because of her poor physical condition. After following this intense conditioning program, she was able to meet the projected camp goals. Her behavior and physical stamina began to reflect positive changes. As a part of the conditioning program this teenager had to climb the stairs to the fifth floor before and after school. During the down time of the marching band this participant came and worked out in the wellness program and changes were noticed by the band director and the researcher. The wellness program proved to be beneficial for this teenager and hopefully she continues to make progress with decreasing her weight and health issues.

Figure 4.11 FitnessGram Results for Pre/Post Test DT502365

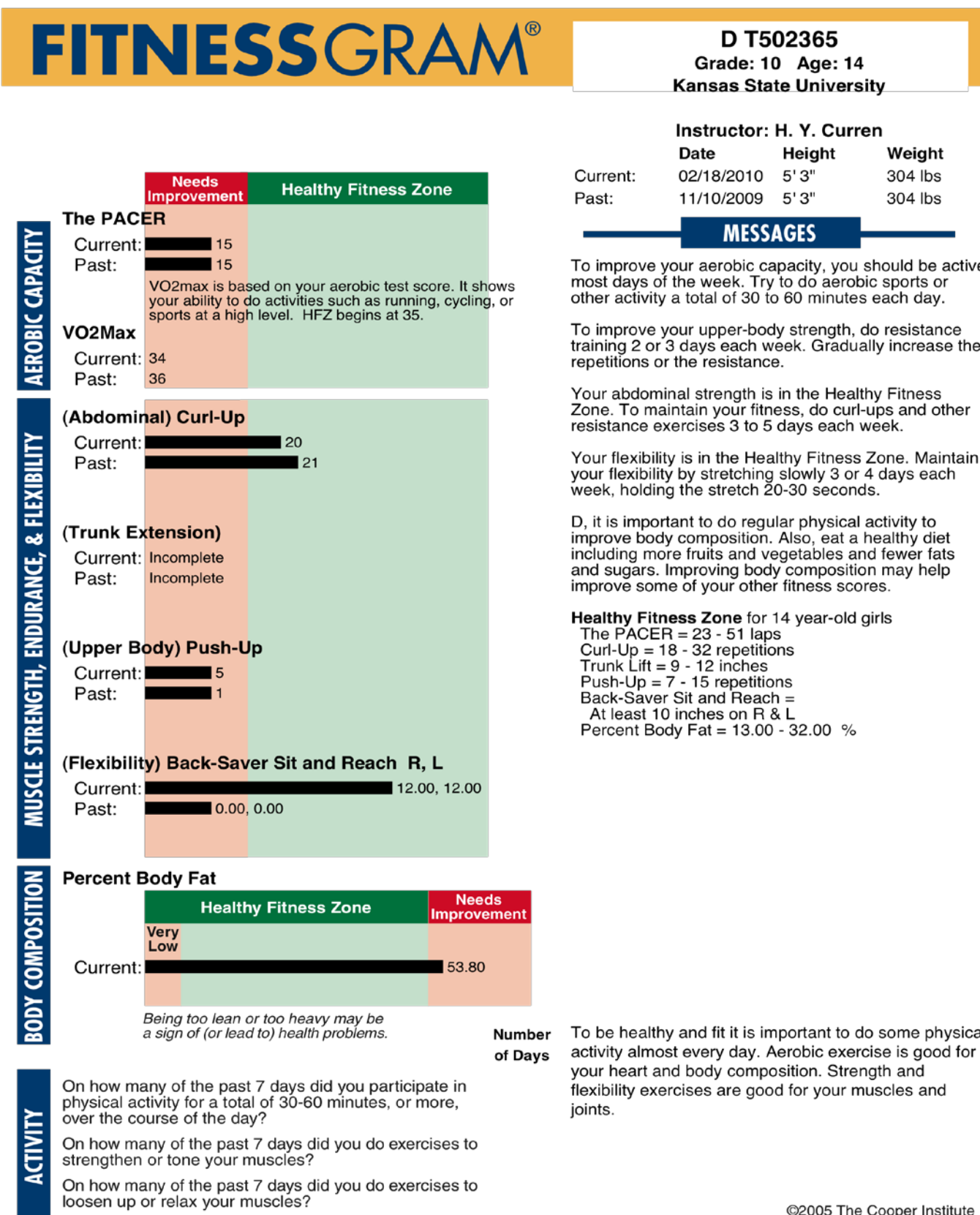


Table 4.61 FitnessGram Results for Longitudinal Tracking Chart DT502365

FITNESSGRAM®
ACTIVITYGRAM®

Longitudinal Tracking Chart

11/09

USA HigherEd school District

D T502365

Understanding the Tracking Charts

The *FITNESSGRAM* Longitudinal Tracking Chart is used to graph the fitness level of each individual from the first *FITNESSGRAM* testing experience to the most recent. The report includes a graph for every test item plotted and the scores for each test date. Scores from two test dates can

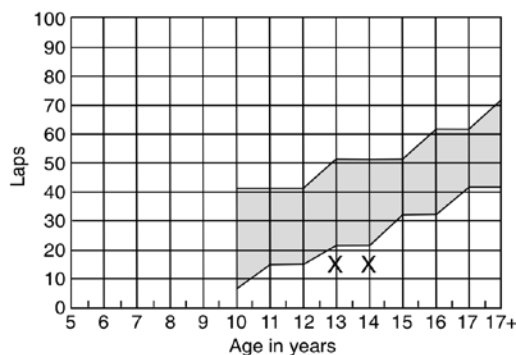
be plotted each year. The gray shaded area in each graph indicates the Healthy Fitness Zone for that test item. This chart communicates long-term progress in achieving and maintaining healthy fitness levels.

Left side = L

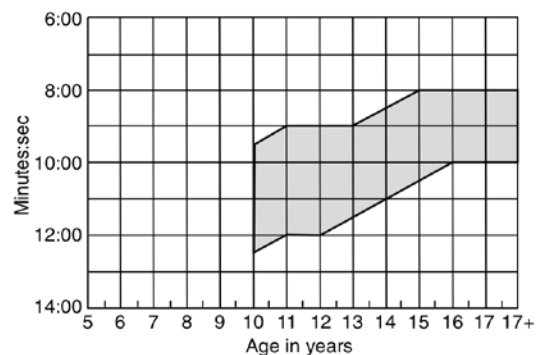
Right side = R

AEROBIC CAPACITY

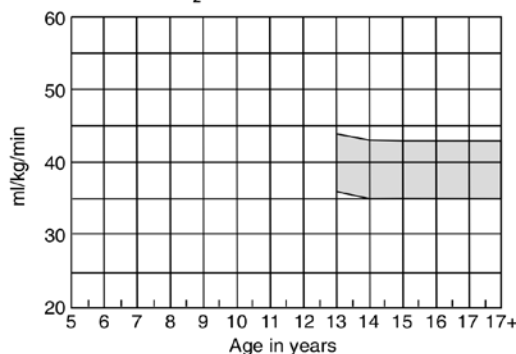
Girl's PACER



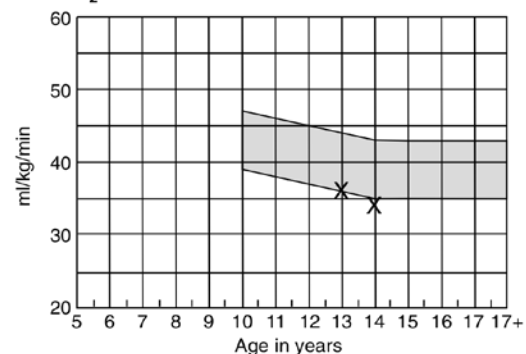
Girl's One-Mile Run/Walk



Girl's Walk Test $\dot{V}O_2$ max

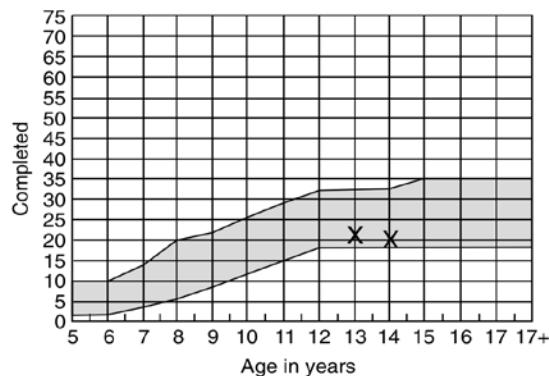


Girl's $\dot{V}O_2$ max

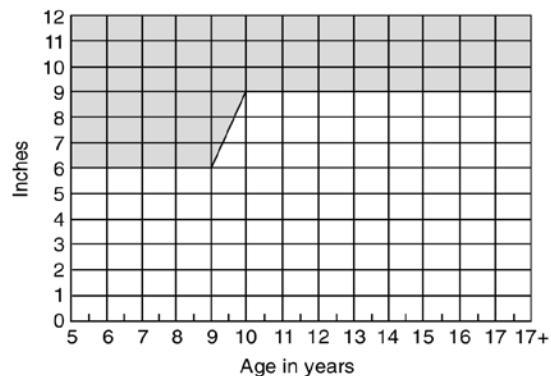


MUSCLE STRENGTH, ENDURANCE, AND FLEXIBILITY

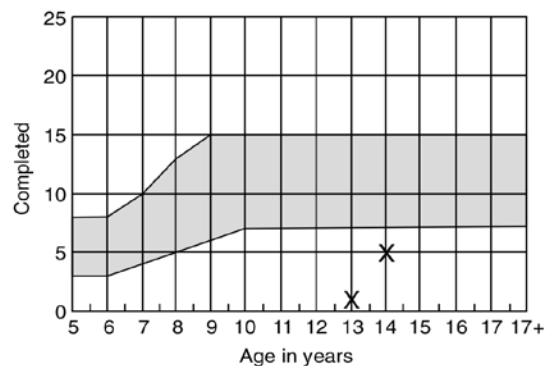
Girl's Curl-Up



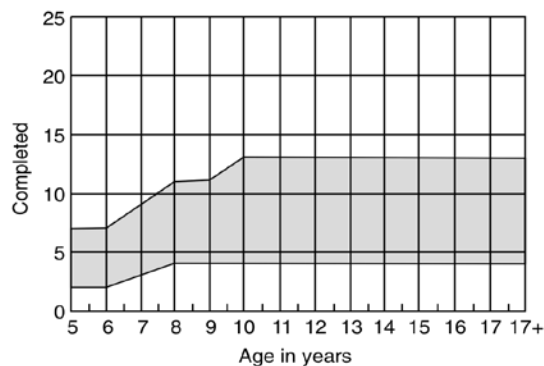
Girl's Trunk Lift



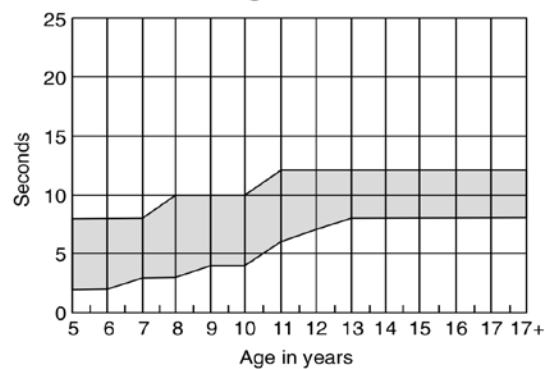
Girl's Push-Ups



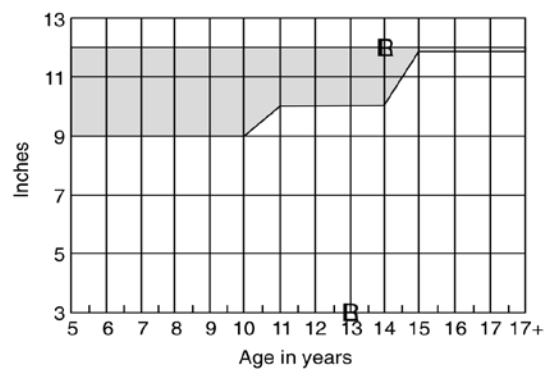
Girl's Modified Pull-Ups



Girl's Flexed Arm Hang

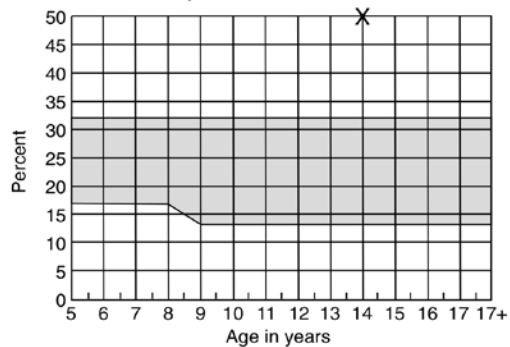


Girl's Back-Saver Sit and Reach

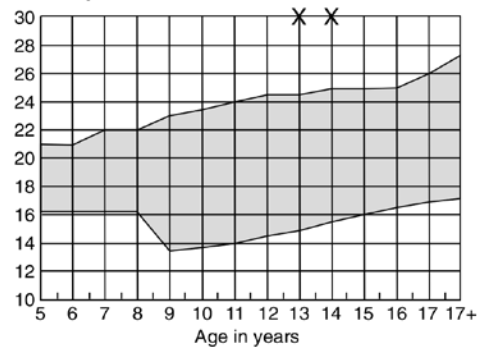


BODY SIZE AND BODY COMPOSITION

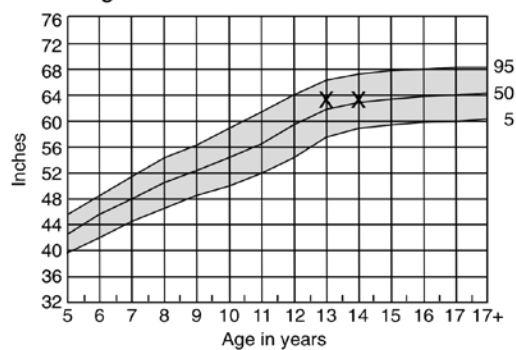
Girl's Percent Body Fat



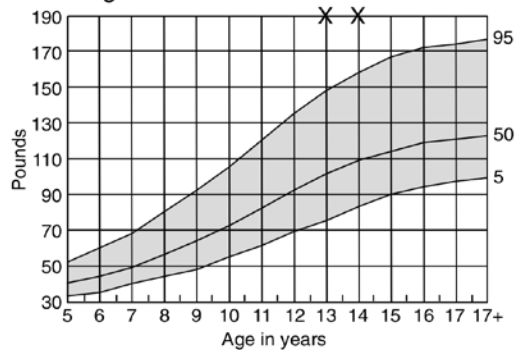
Girl's Body Mass Index



Girl's Height



Girl's Weight



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Height and weight charts adapted from the National Center for Health Statistics and National Center for Chronic Disease Prevention and Health Promotion, 2000. www.cdc.gov/growthcharts

Participant Interview LW501686

LW501686 is a fifteen-year-old teenager that came to the wellness program very late. She promised that she would attend regularly. She belonged to the marching band and was trying to stay in shape and stay physically fit until the band started practicing for the St. Patrick's parade. The pre-test was administered to her and the results revealed that her fitness level was not good. Her cardiovascular and lung endurance for the PACER test needs improvement. She only scored 16 laps and she needed to score 32 laps to be in the Healthy Fitness Zone (HFZ). Her score on the abdominals (curl-ups) the score of 19 curl-ups was just one over to be in the Healthy Fitness Zone (HFZ). Her upper body strength is just one push over in the Healthy Fitness Zone (HFZ). Her flexibility is very poor and overall fitness is definitely a concern.

This teenager is also classified as being overweight at 25.37 percent. It is important that this young lady does regular physical activity to improve body composition. She must also eat a healthy diet including more fruits and vegetables and fewer fats and sugars. Improving body composition may help improve some of her scores.

This participant spoke with the researcher and only attended 4 weight loss sessions but never set any realistic goals. It was unfortunate that she did not have a chance to see any improvements.

Figure 4.12 FitnessGram Results for Pre/Post Test LW501686

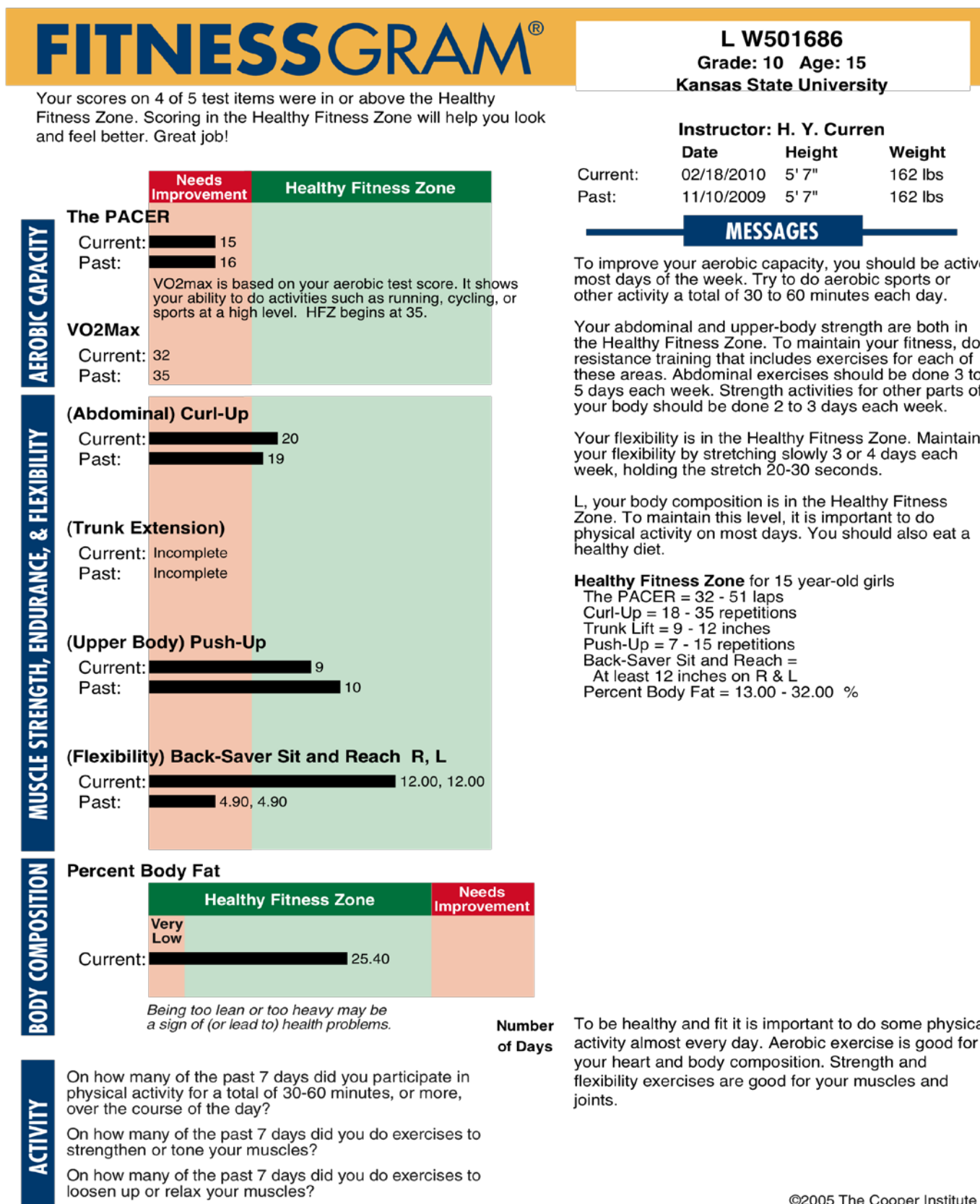


Table 4.62 FitnessGram Results for Longitudinal Tracking Chart LW501686

FITNESSGRAM[®] ACTIVITYGRAM[®]	Longitudinal Tracking Chart	11/09
USA HigherEd school District		L W501686

Understanding the Tracking Charts

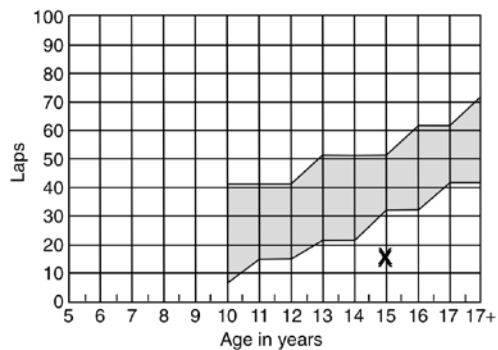
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be plotted each year. The gray shaded area in each graph indicates the Healthy Fitness Zone for that test item. This chart communicates long-term progress in achieving and maintaining healthy fitness levels.

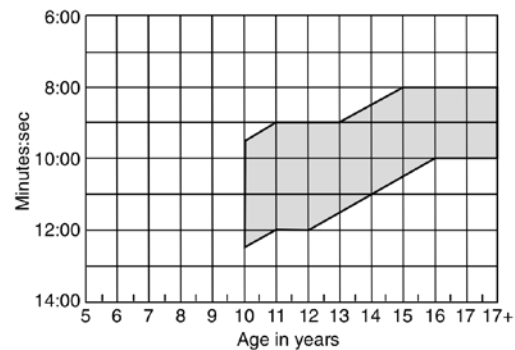
Left side = L Right side = R

AEROBIC CAPACITY

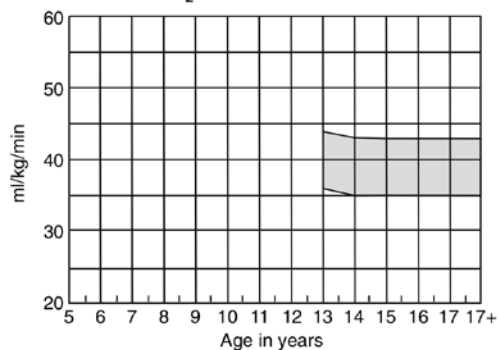
Girl's PACER



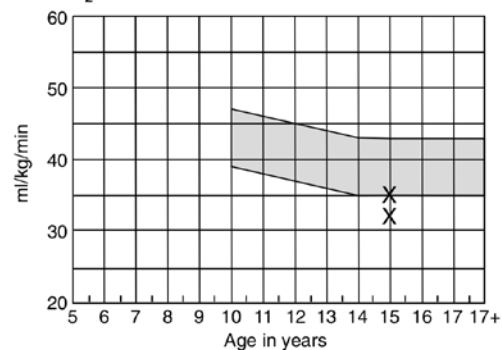
Girl's One-Mile Run/Walk



Girl's Walk Test $\dot{V}O_2$ max



Girl's $\dot{V}O_2$ max

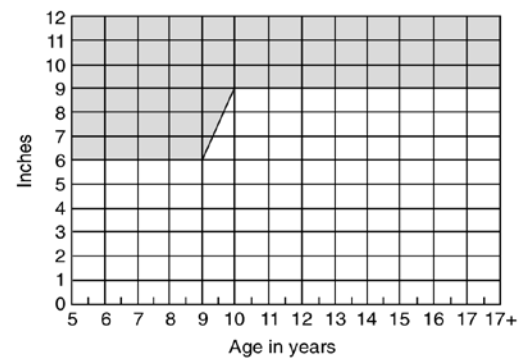


MUSCLE STRENGTH, ENDURANCE, AND FLEXIBILITY

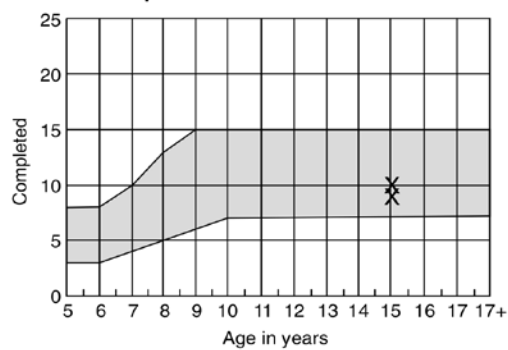
Girl's Curl-Up



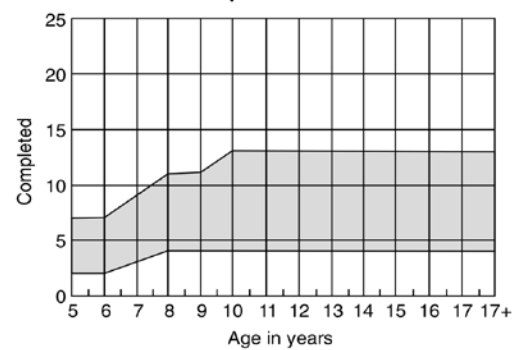
Girl's Trunk Lift



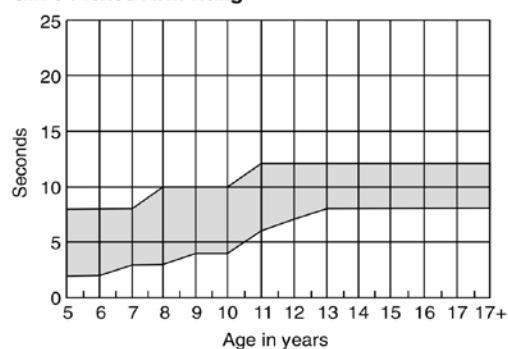
Girl's Push-Ups



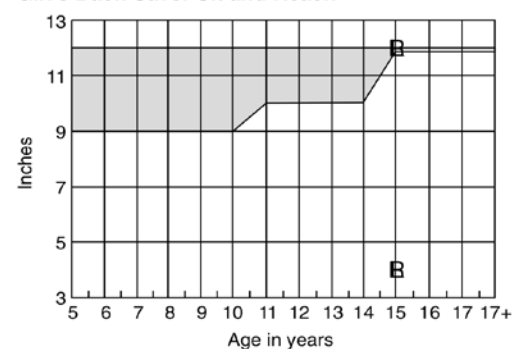
Girl's Modified Pull-Ups



Girl's Flexed Arm Hang

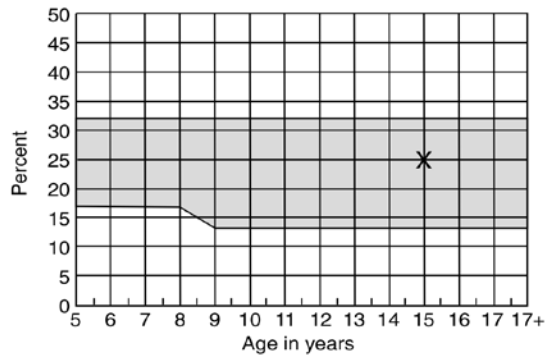


Girl's Back-Saver Sit and Reach

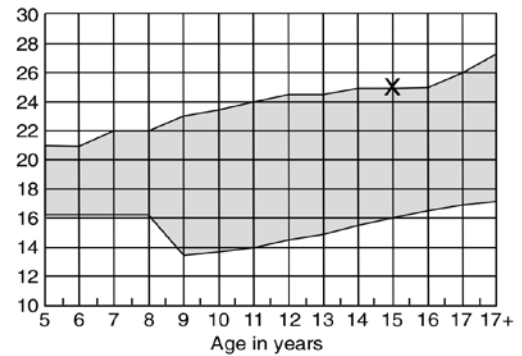


BODY SIZE AND BODY COMPOSITION

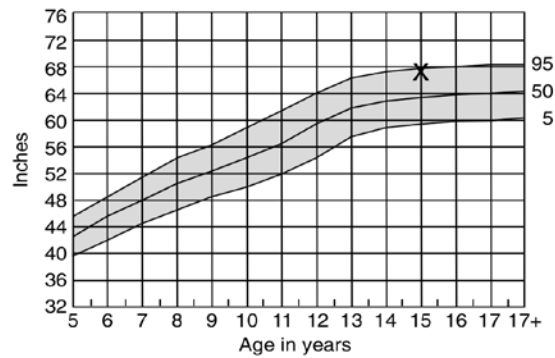
Girl's Percent Body Fat



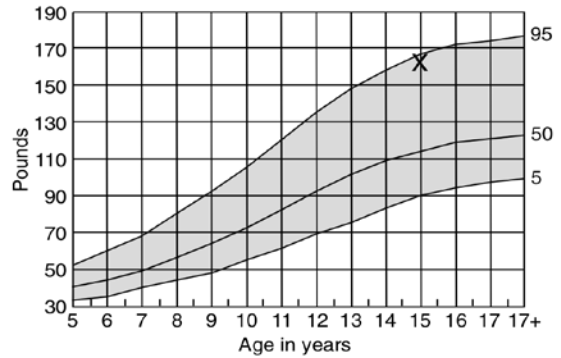
Girl's Body Mass Index



Girl's Height



Girl's Weight



© 1994, 1999, 2004, 2005 The Cooper Institute.

Developed by The Cooper Institute, Dallas, Texas. Endorsed by The American Alliance for Health, Physical Education, Recreation and Dance.

All rights reserved. School districts and youth agencies have permission to reproduce any part of this chart for use within the local school district or youth agency only.

Height and weight charts adapted from the National Center for Health Statistics and National Center for Chronic Disease Prevention and Health Promotion, 2000. www.cdc.gov/growthcharts

CHAPTER 5 - Discussion of Findings, Recommendations, Suggestions, and Summary

The purpose of this study was to examine the impact of a voluntary after school health and physical fitness program among African American females aged 11 -17. What effect, if any, does a weight loss program for middle and high school students have on the ability of African American females to assess their personal fitness levels and nutrition behaviors? Variables that influence intentions were observed to obtain a more complete understanding of intentions of adolescents to change health behaviors in view of the study aims and limitations.

Discussion of Findings

Interviews were conducted using the following information: What effect, if any does a voluntary, after-school weight loss program have on the ability of adolescent African American females (ages 11-17) to assess their *caloric intake*?

During the interviews with participants it was discovered that many meals were missed. Sometimes the participants would go all day without eating. By not having enough calories during the day would cause their energy level to be very low. As they participated in the after-school weight loss program they could not focus on giving their physical best. The interpretation of the researcher is that after a long day and now having to physically be active is difficult because of a lack of fuel in the body. Students must understand you must eat nutritious food for energy.

What effect, if any, does a voluntary, after-school weight loss program have on the ability of adolescent African American females (ages 11-17) to assess their *energy output*?

Before conducting interviews with the participants the researcher would visit other after-school activities. The participants could be found in the after-school program, Daughters on the Rise. Participants would indulge in unhealthy snacks and then leave this program and spend the remainder of the time in the weight loss program. This choice was made after the school day was over and school lunch was missed. The participants would get their energy level boosted, but some would have some discomfort because of snacks that had been consumed. This sponsor was non-supportive of the weight loss program and the unhealthy snacks were direct cause of participants weight fluctuations.

Twelve participants were screened for the study based on their BMI at 25.30 or above 53.80 percent. These participants were selected from 167 students. The screening was done in a physical education class in the Greater Kansas City area public school. Five out of 12 participants attended consistently. Seven out of 12 participants attended only two or four sessions and stopped participating. The participation of these African American females was unacceptable to the findings of the researcher. A lack of commitment to attend consistently after school affected the impact that could have been attained in reducing the participants' BMI category.

Other uncontrollable factors that contributed to the lack of success were inclement weather (The most detrimental week was the week after the first of January, due to a horrible snowstorm that paralyzed the city), site administrators cancelling after school activities, and Daughters on the Rise (which provided unhealthy snacks and no physical activity). During the course of the program there were three major holidays that were significant factors that caused problems for the participants to control the consumption of foods. These participants lost sight of their goals, did not exercise, and ate unhealthy foods as well as no documentations in their food diary (African American females did not document daily food consumption).

Neither the participants consistently attending nor the drop out participants changed their BMI category. Both groups' motivation to engage in the prescribed program for physical activity was low, even the students who attended. A larger sample size may demonstrate a significant effect on BMI measures. The lack of changes in BMI status for this study can also be explained due to the fact that participants failed to make a commitment in the after school physical activity sessions because of Kauffman Foundation, Robotics, Debate, and Tutoring activities. Low participation rate in regular physical education class contributed to missing after school physical activity sessions. Physical education graduation requirements need to be increased from 1 unit to 8 units so that schools are required to provide the time necessary to address the obesity issue in our secondary students. We should not be sending over half of our high school graduates into the next phase of life with obesity issues.

The five participants who attended the after school sessions recorded time in target heart rate zone, total exercise time, and intensity during activity. The participants realized from using the heart rate monitors that they could quickly reach a very high exercise heart rate in a short time. Instruction helped them understand that at high heart rates and the majority of calories burned were a carbohydrate, which was defeating their purpose to exercise to burn fat calories.

The screenings also identified students who had various health issues, including problems with Type II diabetes, insulin resistance and blood pressure. Parents of these participants had parents who were overweight to morbidly obese as well as health issues related to obesity. Two other participants had lost parents due to health issues associated with obesity.

Recommendations

The following recommendations are based on changing behavior for this study.

1. The primary objective of a fitness program is to develop and establish regular active habits through enjoyable fitness experiences. Four (25%) of these students enjoyed coming to the program after school and continued to strive to meet their goals.
2. Students should be provided with regular physical activity. Students should have an understanding why it is important to be active. Making certain that benefits cover the “here and now” of looking good, feeling good and enjoying more of life. With the advances in the understanding of how the brain functions, provide students the knowledge of the effect of nutrition, exercise, sleep, and water consumption on the brain. Students could also enroll in nutrition classes to develop an understanding of how nutrition and physical activity work together to reduce weight loss.
3. Provide continuous feedback regarding the FitnessGram current status. Pre/Post Test FitnessGram should be used to select areas for improving or maintaining good performance.
4. The researcher encouraged student to establish short and long-term goals. The participants and the researcher discussed realistic goals and decided which ones were attainable goals.
5. Helping students to identify a regular time and place for physical activity into a daily schedule.
6. Students should make a written commitment to participate in activities that are required to help reach their goals.
7. Have students create a log to record their participation.

8. Periodically ask students about their progress, showing that you are seriously interested.
9. Discuss progress and problems. Being active is not easy.
10. Praise students for small accomplishments.
11. Have students identify exercise partners. Students that have an exercise partner will have the support of a friend. They will become confident and self-assured as well as being physically, mentally, socially, and emotionally prepared.
12. Involve the parents as much as possible. Inform parents of their child's goals.
13. Be a role model and include your personal experience of being involved in regular physical activity as a part of your lifestyle.

Suggestions

These suggestions are to improve this fitness program to create successful outcomes for anyone that will utilize this program.

1. Incorporate nutrition courses through health and physical education curriculum.
2. Dietary and nutrition behavior topics that demonstrate the correlation between calories in calories out relationship of diet and exercise will support their healthy lifestyle.
3. Physical activities in a required health education course.
4. Require students to have daily physical activity (60 minutes) a minimum of 3 times a week to maintain fitness status, and 4 to 5 times a week to improve fitness status.
5. School lunches should provide a variety of fruits and vegetables, low fat protein, and low fat, low sugar complex carbohydrates (brown rice).

6. Include parents, administrators and the school nutritionist to be involved in preparing healthier meals at home and school.

Summary

Research evidence suggests that children are highly active and motivated while they are younger. (Laubach, 2002, Strategies Journal Vol.15 (No.4), p.23-25). As they mature and approach their middle years they become less active. Efforts are needed to maintain children's natural interest in physical activity over a long period of time so that they become active and healthy adults. A key concept to communicate at this point is that it does not require a tremendous amount of activity or time to maintain a healthy fitness level.

This study's results were significantly affected by the participants' perceived self-efficacy. Perceived self-efficacy knowledge is a factor that should be incorporated concurrently with fitness curriculum. Perceived self-efficacy for adolescents is how student's beliefs about their capabilities to produce designated levels of performance that influence their fitness goals affect their health status. Self-efficacy beliefs determine how students feel, think, motivate themselves and behave. Such beliefs produce these diverse effects through four major processes: cognitive, motivational, and affective and selection processes. Students with high assurance in their capabilities approach difficult tasks as challenges to be mastered rather than as threats to be avoided. Such an efficacious outlook fosters intrinsic interest and deep engrossment in activities. Students are capable of setting challenging goals and maintaining strong commitment to them. They heighten and sustain their efforts in the face of failure. They quickly recover their sense of efficacy after failures or setbacks. They attribute failure to insufficient effort or deficient knowledge and skills, which are acquirable. They approach threatening situations with assurance

that they can exercise control over them. Such an efficacious outlook produces personal accomplishments, reduces stress and lowers vulnerability to depression.

They have low aspirations and weak commitment to the goals they choose to pursue. When faced with difficult tasks, they dwell on their personal deficiencies, on the obstacles they will encounter and all kinds of adverse outcomes rather than concentrate on how to perform successfully. They slacken their efforts and give up quickly in the face of difficulties. They are slow to recover their sense of efficacy following failure or setbacks. They become easy victim to stress and depression. If students only experience easy successes they come to expect quick results and are easily discouraged by failure. Consequently, students need to be challenged and taught that setbacks and difficulties in reaching their fitness goals serve a purpose in teaching that success requires sustained effort over time. This supports the importance of students providing activity and nutrition logs for success in reaching their goals.

Modeling is a successful tool in improving a student's efficacy. Seeing a partner, fellow classmates, friends, and family members or teachers similar to one succeed raises a student's belief in his/her capability to attain success. In activities involving strength and stamina, people judge their fatigue, aches and pains as signs of physical debility. It is said that their body is capable of reproducing twice the effort of what the mind tells us we can produce.

Finally, by the choices (selections) students make, cultivate different competencies, interest and social networks that determine life courses. Any factor that influences choice behavior can profoundly affect the direction of personal development. During pre-teen and teenage years these peers have a tremendous influence on whether students chose healthy behaviors or risky behaviors.

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Appendix A - Personal Inventory

Assessing Your Fitness Behavior

Most people have a fitness level that is below their potential level. However, there are actions people can take to increase their fitness. How many of the following physical fitness building actions do you take?

Regular exercise helps develop physical traits.

- 1 I walk or bike to school.
- 2 When my friends are trying to decide what to do, I suggest an active game or activity, such as swimming, basketball, hiking, or bike riding.
- 3 I take the stairs rather than the elevator or escalator when I have a choice.
- 4 When traveling by bus a distance too far to walk, I get off early and walk part of the way. If I'm being driven, I suggest that we park and walk part of the way.
- 5 I participate in an active game. Sport, or work activity every day, either with others or alone.

Good nutrition helps develop physical fitness traits.

- 6 Generally, I eat a balanced diet.
- 7 When I snack I choose healthful foods such as fruit, rather than sweets or snacks high in fat or salt.
- 8 I choose portion sizes that are reasonable: not too large, not too small.
- 9 I never starve myself to lose weight.

Enough rest and relaxation helps develop physical fitness traits.

- 10 I get eight to nine hours of sleep each night.
- 11 I take time to sit and rest for a while after a vigorous game or activity.
- 12 I allow time daily to relax and do nothing.

Give yourself 1 point for each yes answer. A score of 10 -12 is very good. A score of 6 -9 is good. If you score below 6, your fitness behavior needs work.

Very good _____ Good _____ below _____

Appendix B - Figuring Target Heart Rate

Before starting check your pulse just before performing physical activity. Find your pulse in your radial artery (wrist) or your carotid artery (neck) and count the beats of your heart for sixty seconds. Count the number of beats that you feel this procedure will give you your Resting Heart Rate (RHR).

Start with the maximum heart rate of 220

Step 1 – Calculate the Maximum Heart Rate

$$\text{MHR} = 220 - 19 (\text{age in years}) \quad \text{MHR} = 220 - 19 = \underline{201}$$

Step 2 – Calculate Resting Heart Rate

Equals maximum times the heart can beat per minute multiply by 60%

$$\text{Multiply } 201 \times .6 (60 \text{ secs}) = 120$$

Step 3 Calculate again

$$\text{Multiply } 120 \times .6 (60 \text{ secs}) = 72$$

Step 4 Target Heart Rate = 72 (THR)

Figure Your Own Target Heart Rate

Use this formula to calculate your Target Heart Rate (THR)

$$\text{Step 1} \quad 220 - \underline{\hspace{1cm}} (\text{age}) = \underline{\hspace{1cm}}$$

$$\text{Step 2} \quad \underline{\hspace{1cm}} \times .6 (\text{beats per minute BPM}) = \underline{\hspace{1cm}}$$

$$\text{Step 3} \quad \underline{\hspace{1cm}} \times .6 (\text{beats per minute BPM}) = \underline{\hspace{1cm}}$$

$$\text{Step 4} \quad \underline{\hspace{1cm}} (\text{THR}) \text{ Target Heart Rate Zone}$$

Appendix C - Target Heart Rate Zone

Your cardiovascular workout can be exhausted, breathing hard at the end. Did you get a good workout? Did you work hard during that intensive workout? You may not be getting the results you want and need? Cardiovascular exercise is very important for a healthy heart and weight loss. Selecting an activity that you will enjoy; otherwise you will not stick to your program. Individuals should look at four components of a workout, which include intensity, frequency, duration, and volume. Intensity is the level of exertion used during cardiovascular exercise most commonly measured by the heart rate and perceived level of exertion.

	Example (THRZone)	My THRZone
Start with 220 Equals maximum times heart can beat per minute	220 <u>-19</u> 201	220 ___ (Age)
Maximum times the heart can beat per minute Multiply by 60 secs (.6) Low number of THRZone	201 <u>x.6</u> 120	<u>x .6</u>
Low number of THRZone	120 Beats per minute	Beats per minute
Maximum times heart can beat per minute Multiply by 80 secs (.8) High number of THRZone	201 <u>x . 8</u> 160	<u>x .8</u>
High number of THRZone	160 Beats per minute	Beats per minute

Example Target Heart Rate Zone	<u>120 (low # of THRZ)</u>	<u>160 (high # of THRZone)</u>
--------------------------------	----------------------------	--------------------------------

My Target Heart Rate Zone _____

(Low number of THRZone) (High number of THRZone)

Appendix D - My Health Journey



Student ID# _____ Date _____ Hr _____

Day # _____

A positive thing I can say about myself today is....

Water intake: _____ ounces **Sleep last night: Bedtime** _____ **Total hrs.** _____

Meal	Time	Healthy Choices	Choices That Could Have Been Healthier
Breakfast			
Lunch			
Dinner			

Appendix E - Informed Consent

Project Title: A Quality Health and Physical Education Program Making A Difference For Obese African American Teenagers

Approval Date of Project: October 30, 2009 Expiration Date of Project: February 23, 2010

Principal Investigator: CO-Investigator(s) John Hortin, PH.D

Contact and Phone For Any Problems/Questions: 1-785-532-5747

IRB Chair Contact/Phone Information: Rick Scheidt, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785)-532-3224.

Sponsor of Project: H. Yvonne Curren 816-591-5024

Purpose of the Research: The purpose of this research is to evaluate the personal fitness of teenagers and provide the students with an opportunity to learn fitness concepts while participating in physical activity that will help them reach a healthy fitness zone.

Procedures or Methods To Be Used: Students will use the FitnessGram Test pre/post evaluation as well as Personal Fitness Portfolios, a tool encouraging students to track their progress.

Alternative Procedures or Treatments, if Any, That Might be Advantageous to Subject: Subjects will be allowed to use the school fitness center to workout.

Length of Study: October 6, 2009 to February 17, 2010

Risks Anticipated: Subjects may have some muscle soreness due to lack of physical activity.

Subjects will be given safety-training procedures on how to use the exercise machines properly.

Benefits Anticipated: Subjects will have more energy, feel good, sleep better, and lose inches as well as a weight reduction.

Is Compensation or Medical Treatment Available if Injury Occurs: (All participants are required to have a MSHSAA Sports Physical on file). School nurse and Project Sponsor are certified in Emergency First Aid procedures.

Parental Approval For Minors: _____ Phone # _____

Terms of Participation: I understand this project is research, and that my participation is completely voluntary and without monetary compensation. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or loss of benefits, or academic standing to which I may otherwise be entitled.

I verify that my signature below indicates that I have read and understand this consent form, and willingly agree to participate in this study under the terms described, and that my signature acknowledges that I have received a signed and dated copy of this consent form.

Participate Name: (Please Print) _____

Participant Signature: _____ Date _____

Witness to Signature: (project sponsor) _____ Date _____