



***The Obesity Epidemic in Children –
An Alarming Trend***

How is Obesity Determined?

Body Mass Index

BMI =	$\frac{\text{(Weight in pounds)}}{\text{(Height in inches)} \times \text{(Height in inches)}}$	x 703
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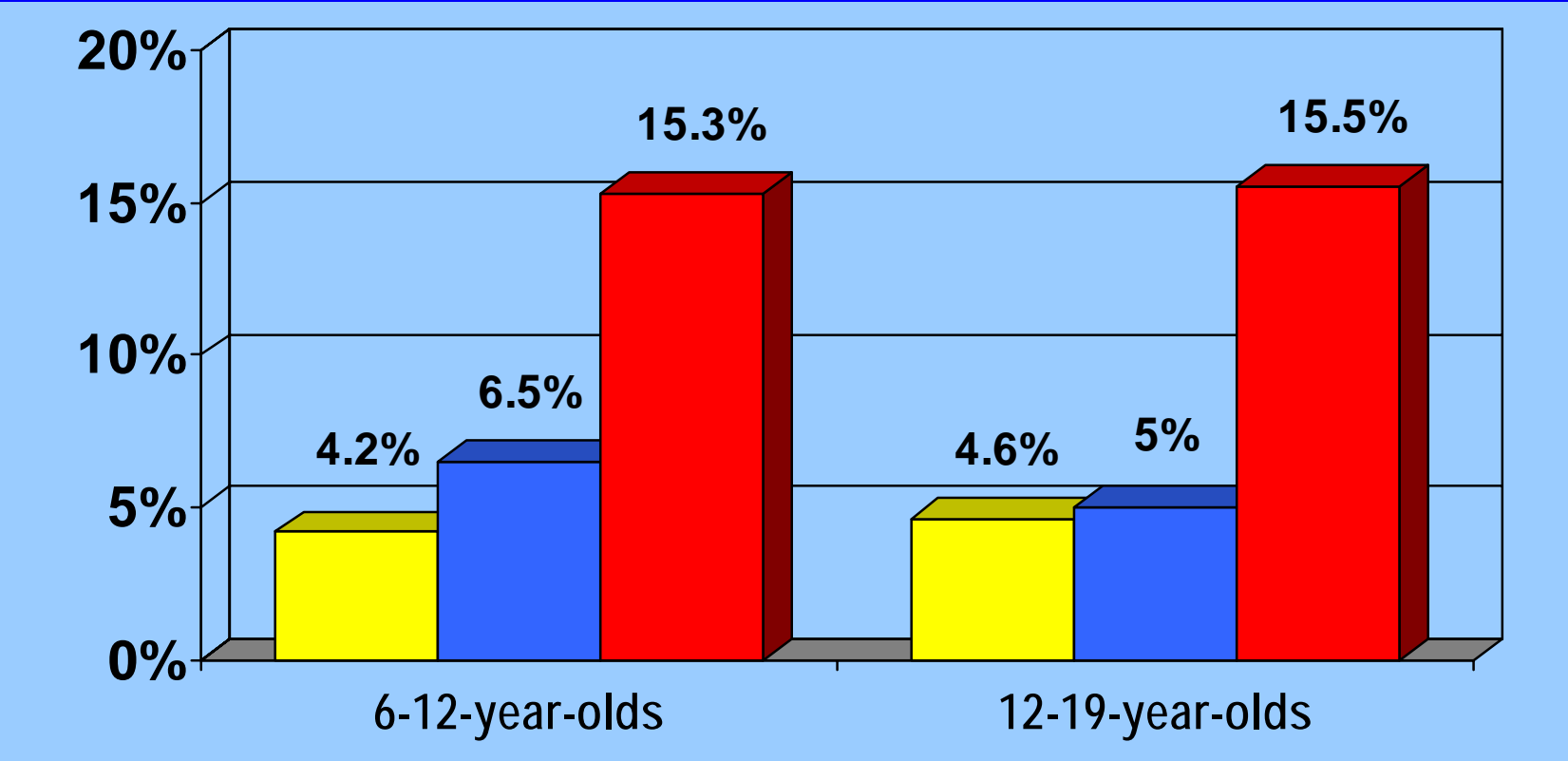
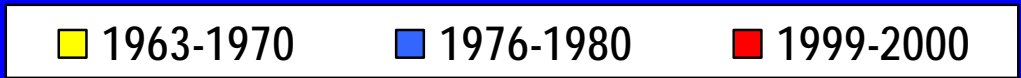
OR

PERCENT BODY FAT as determined by skinfold measurements

Obese: Top 5 percentile

Overweight: Top 15 percentile

Proportion of Overweight Children in the United States



Source: Centers for Disease Control and Prevention, 2003.

“... obesity rates for children 6 to 11 years old are estimated to have increased from 15.1 to 18.8 percent between 1999 and 2004. The Department of Health and Human Services estimates that 20 percent of children and youth in the United States will be obese by 2010.

“ ... According to one estimate, insured children treated for obesity are approximately three times more expensive for the health system than the average insured child.”

— USGAO, “Childhood Obesity and Physical Activity,” Dec. 6, 2006

States with Highest Obesity Rate (Children 10 – 17 Years)

Ranking	State	% of Children
1	District of Columbia	22.8
6	Texas	19.1
8	Mississippi	17.8

Obesity Among Texas Children (Overweight & Obese), 2005

4th Grade	8th Grade	11th Grade
42 %	39 %	36 %

70 % of these children will become obese as adults.

There is an epidemic of adult-onset diabetes being seen in children. It is estimated that among children born after the year 2000:

- 1 out of 3 children will develop diabetes (higher in Hispanics and African-Americans)

If they develop adult-onset diabetes before 14 years of age, it is estimated that that will shorten their lifespan by 17 to 27 years. As a result, this may be the first generation in which parents live longer than their children.

***Stanford Achievement Test
Ninth Edition
(SAT-9)
2004***

FITNESSGRAM[®] Tests

AEROBIC CAPACITY

#1 *PACER* (Progressive Aerobic Cardiovascular Endurance Run)

Set to music, a paced, 20-meter shuttle run increasing in intensity as time progresses.

Or:

- ***One-Mile Run***

Students run (or walk if needed) one mile as fast as they can.

- ***Walk Test***

Students walk one mile as fast as they can (for ages 13 or above since the test has only been validated for this age group).

FITNESSGRAM® Tests

BODY COMPOSITION

#2 Skin Fold Test

Measuring percent body fat by testing the triceps and calf areas.



Or:

- *Body Mass Index (BMI)*
Calculated from height and weight

FITNESSGRAM[®] Tests

MUSCULAR STRENGTH AND ENDURANCE

#3 Curl-Up

Measuring abdominal strength and endurance, students lie down with knees bent and feet unanchored.

Set to a specified pace, students complete as many repetitions as possible to a maximum of 75.



FITNESSGRAM® Tests

MUSCULAR STRENGTH AND ENDURANCE

#4 Trunk Lift

Measuring trunk extensor strength, students lie face down and slowly raise their upper body long enough for the tester to measure the distance between the floor and the student's chin.



FITNESSGRAM[®] Tests

MUSCULAR STRENGTH AND ENDURANCE

#5 Push-Up

Measuring upper body strength and endurance, students lower body to a 90-degree elbow angle and push up. Set to a specific pace, students complete as many repetitions as possible.

Or:

- *Modified Pull-Up (proper equipment required)
With hands on a low bar, legs straight and feet touching the ground, students pull up as many repetitions as possible.*
- *Flexed Arm Hang
Students hang their chin above a bar as long as possible.*



FITNESSGRAM[®] Tests

FLEXIBILITY

#6 *Back-Saver Sit and Reach*

Testing one leg at a time, students sit with one knee bent and one leg straight against a box and reach forward.



Or:

- *Shoulder Stretch*
With one arm over the shoulder and one arm tucked under behind the back, students try to touch their fingers and then alternate arms.



The FITNESSGRAM Parent Reports explains the importance of fitness and physical activity to parents.

FITNESSGRAM®

Report for Parents

People come in all shapes and sizes, but everyone can benefit from regular physical activity and a healthy level of physical fitness. The FITNESSGRAM fitness test battery evaluates five different parts of health-related fitness, including aerobic capacity, muscular strength, muscular endurance, flexibility, and body composition. Parents play an important role in shaping children's physical activity and dietary habits. This report will help you evaluate your child's current level of health-related fitness and help you identify ways to promote healthy lifestyles in your family.

AEROBIC CAPACITY

Aerobic capacity is a measure of the ability of the heart, lungs, and muscles to perform sustained physical activity. In general, the more your child exercises, the higher his or her aerobic capacity level will be. Aerobic capacity is measured with the PACER test, the one-mile run, or the walk test.
Importance: Good aerobic capacity can reduce risks of heart disease, stroke, and diabetes. Although generally not present in children, these diseases can begin during childhood and adolescence.

Healthy Fitness Zone for 11 year-old girls = 15 - 41 laps

MUSCLE STRENGTH, ENDURANCE, & FLEXIBILITY

These components of health-related fitness measure the overall fitness of the musculoskeletal system. A variety of tests are used to assess these different components.
Importance: The 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.

Healthy Fitness Zone for 11 year-old girls

- Curl-Up = 15 - 29 repetitions
- Trunk Lift = 9 - 12 inches
- Push-Up = 7 - 15 repetitions
- Back-Saver Sit and Reach =
At least 10 inches on R & L

BODY COMPOSITION

The body composition measure refers to the relative proportion of fat and lean tissue in the body. Body fat percentage can be estimated by skinfold calipers or other measuring devices. The Body mass index (BMI) is another indicator that determines if a person is at a healthy weight for his or her height.

Importance: Overweight youth are at high risk for being overweight adults. Adult 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.

Healthy Fitness Zone for 11 year-old girls = 13.00 - 32.00 %

INTERPRETING THE FITNESSGRAM REPORT

Health-related fitness includes a variety of factors. With regular physical activity most children will be able to score in the Healthy Fitness Zone for most of the tests. It is important for all children to be physically active every day (a total of 60 minutes is recommended) even if they are already fit. If your child 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.

Please refer to the back page of the parent report for a description of the Healthy Fitness Zone and for tips on promoting physical activity in your family.

Jane Jogger
Grade: 5 Age: 11
Cooper Institute Elementary School

Instructor: Jan Smith

	Date	Height	Weight
Current:	10/05/2006	5' 1"	105 lbs
Past:	05/05/2006	5' 0"	100 lbs

The PACER

Current: 20
Past: 12

VO2max is based on your aerobic test score. It shows your ability to do activities such as running, cycling, or sports at a high level. HFZ begins at 38.

VO2Max

Current: 42
Past: 42

(Abdominal) Curl-Up

Current: 6
Past: 7

(Trunk Extension) Trunk Lift

Current: 10
Past: 9

(Upper Body) Push-Up

Current: 12
Past: 10

(Flexibility) Back-Saver Sit and Reach R, L

Current: 10.00, 10.00
Past: 9.00, 9.00

Percent Body Fat

Current: 20.86
Past: 22.08

Being too lean or too heavy may be a sign of (or lead to) health problems. However, not all people who are outside the Healthy Fitness Zone are at risk for health problems. For example, a person with a lot of muscle may have a high BMI without excess fat.

FITNESSGRAM also provides a record of students height, weight, and current and previous test dates.

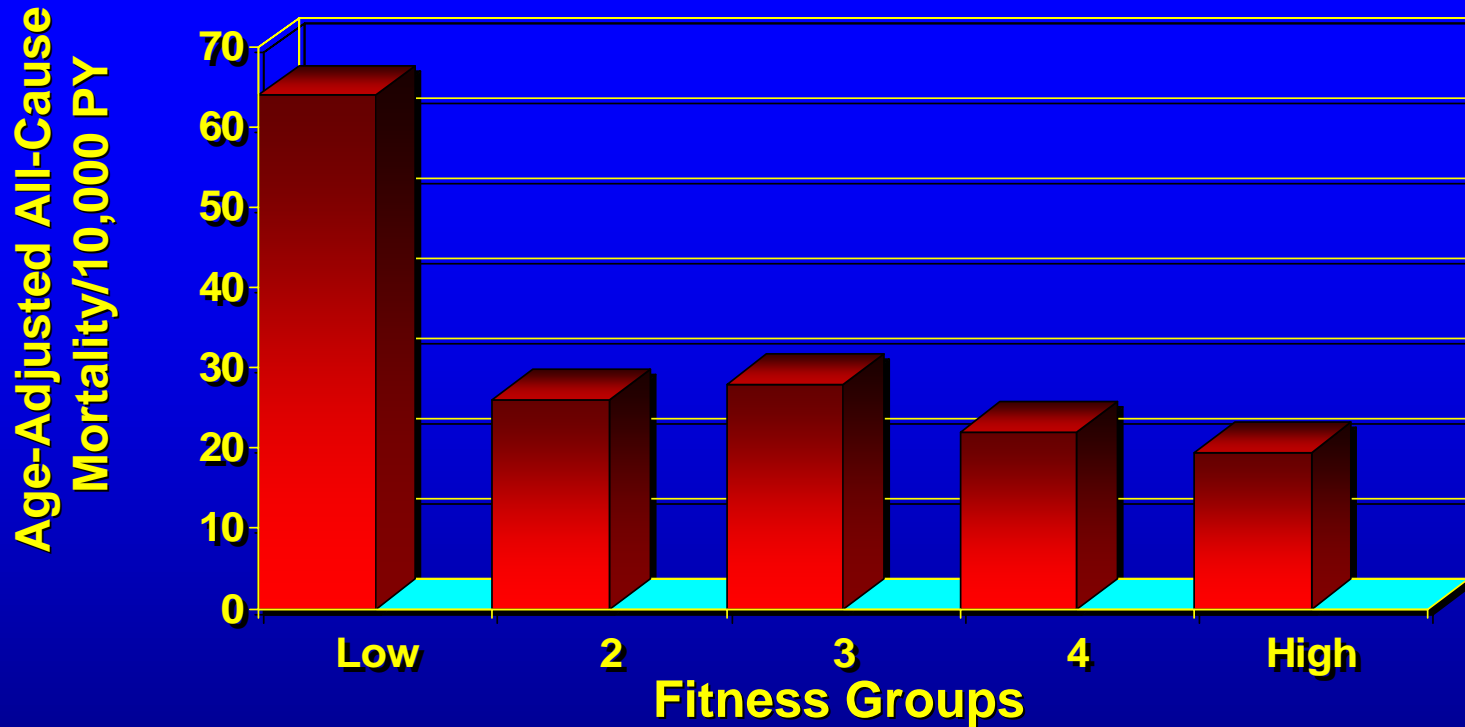
Current and past scores are included in the report so students can observe their improvement over time.

Each of the three areas of health-related fitness are explained, and the report gives parents their child's score for each test given.

The parent report gives more information about the relevance of the healthy fitness zones and the importance of daily physical activity.

Age-Adjusted All-Cause Mortality by Fitness Groups, Men

Rationale for Using 80 Percentile as Being the Healthy Fitness Zone



- Fitness determined by age-adjusted treadmill times
- 13,600 healthy men followed for 8.6 years

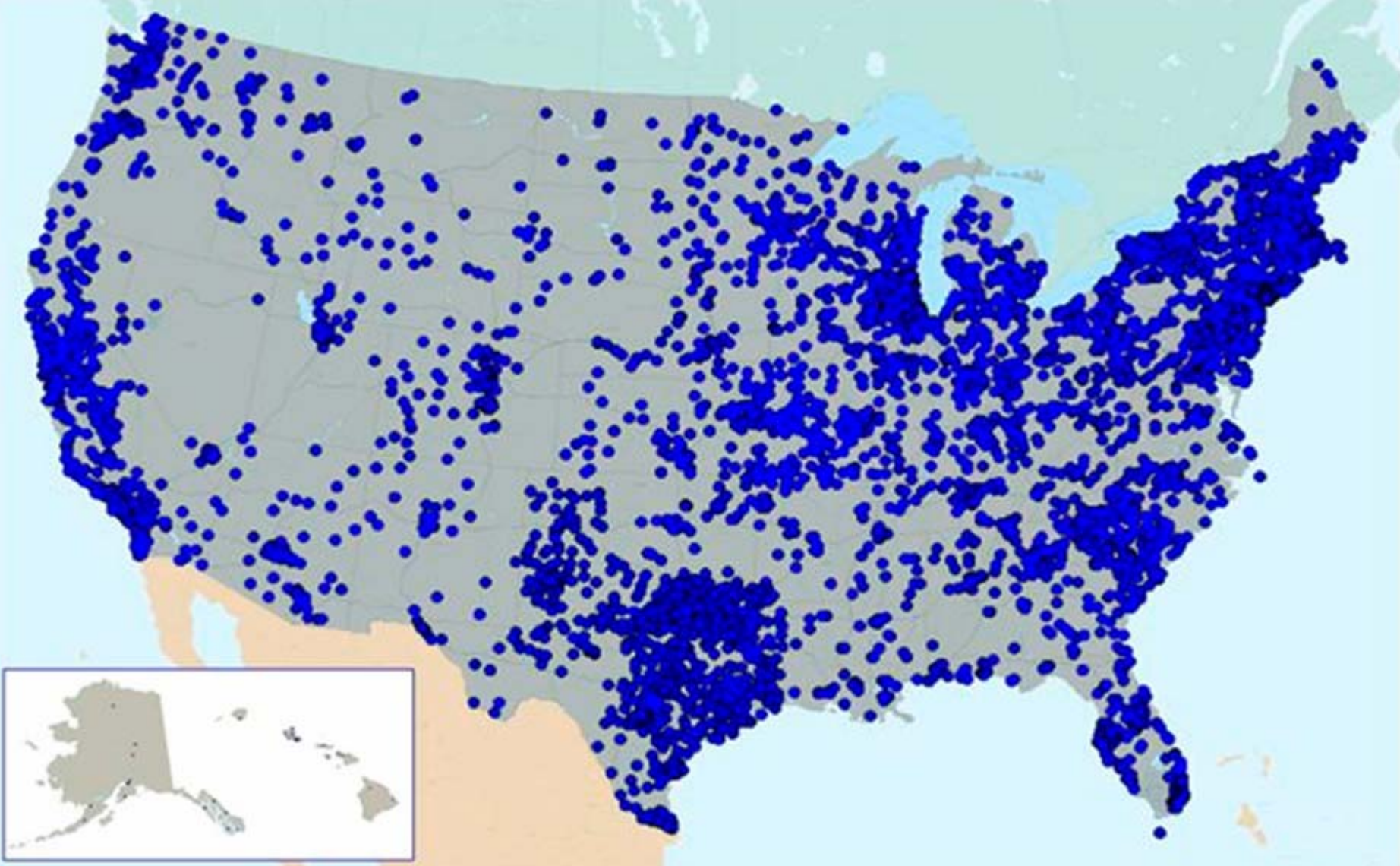
Source: JAMA, Nov. 3, 1989

FITNESSGRAM
Standards for Healthy Fitness Zone*
Revision 8.x
11-Year-Old Girls

One-Mile Run (min:sec)	12:00	9:00
20-Meter PACER (# laps)	15	41
Percent Fat	13	32
Body Mass Index	14	24
Curl-Up (# completed)	15	29
Trunk Lift (inches)	9	12
90° Push-Up (# completed)	7	15
Back Saver Sit & Reach (inches)	10	

**Number on left is lower end of HFT; number on right is upper end of HFZ.*

*** Test scored Pass/Fail; must reach this distance to pass.*

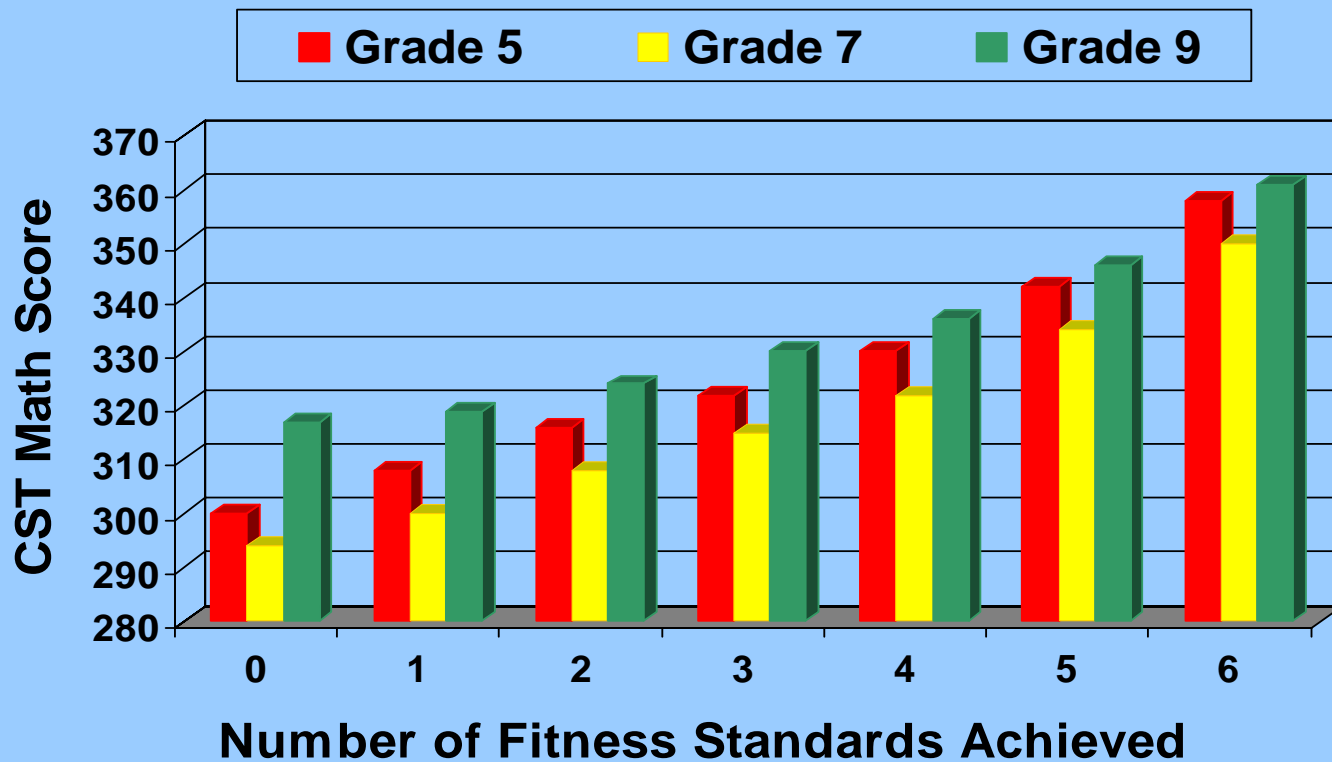


FITNESSGRAM® /ACTIVITYGRAM® across the United States

Each dot on this map represents a FITNESSGRAM® /ACTIVITYGRAM® purchase (some dots represent multiple purchases). More than 30,000 FITNESSGRAM® /ACTIVITYGRAM® licenses and more than 68,000 copies of the test administration manual have been sold.

2004 CST* Scores in Math by Number of Fitness Standards

Grade 5 – 371,198 Students
Grade 7 – 366,278 Students
Grade 9 – 63,028 Students**



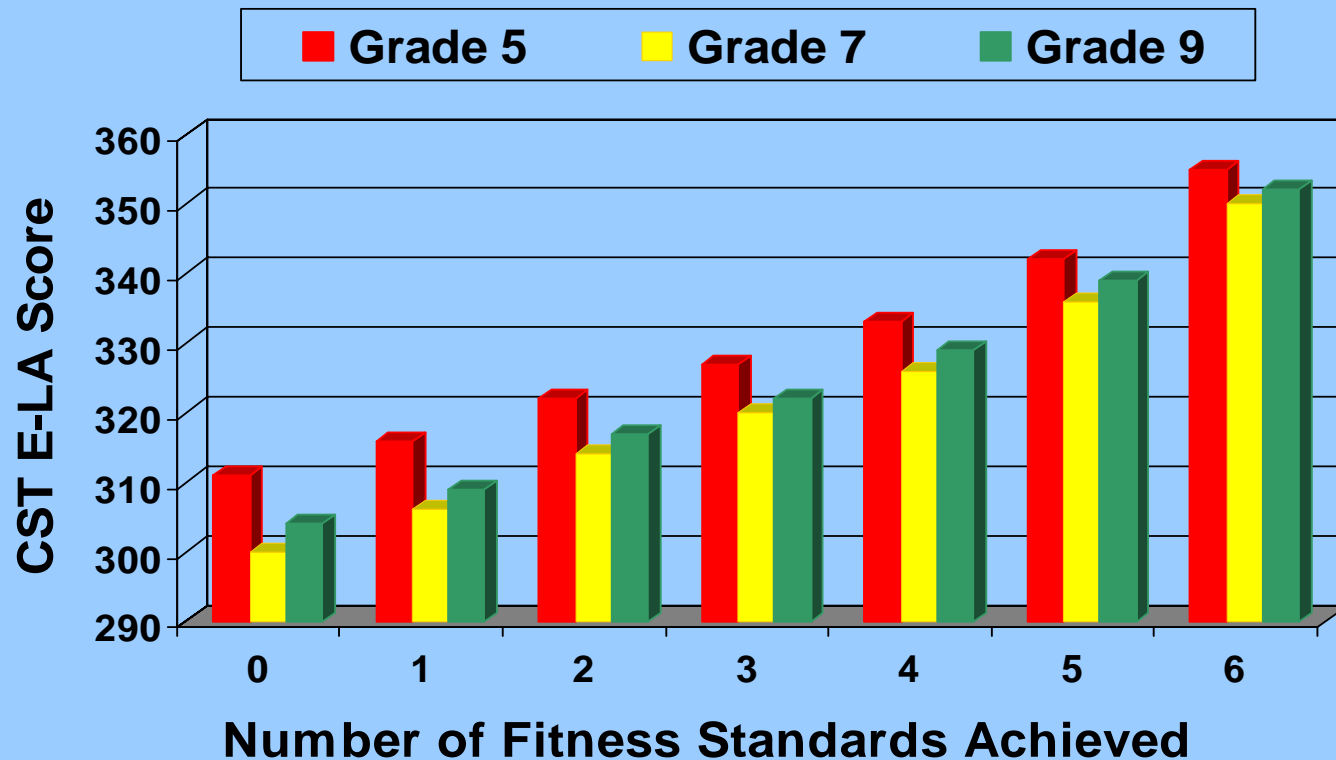
*California Standards Test

** Grade 9 Students who took CST geometry

Source: California Physical Fitness Test, 2004 Results, Calif. Dept. of Ed., April 2005

2004 CST* Scores in English-Language Arts by Number of Fitness Standards

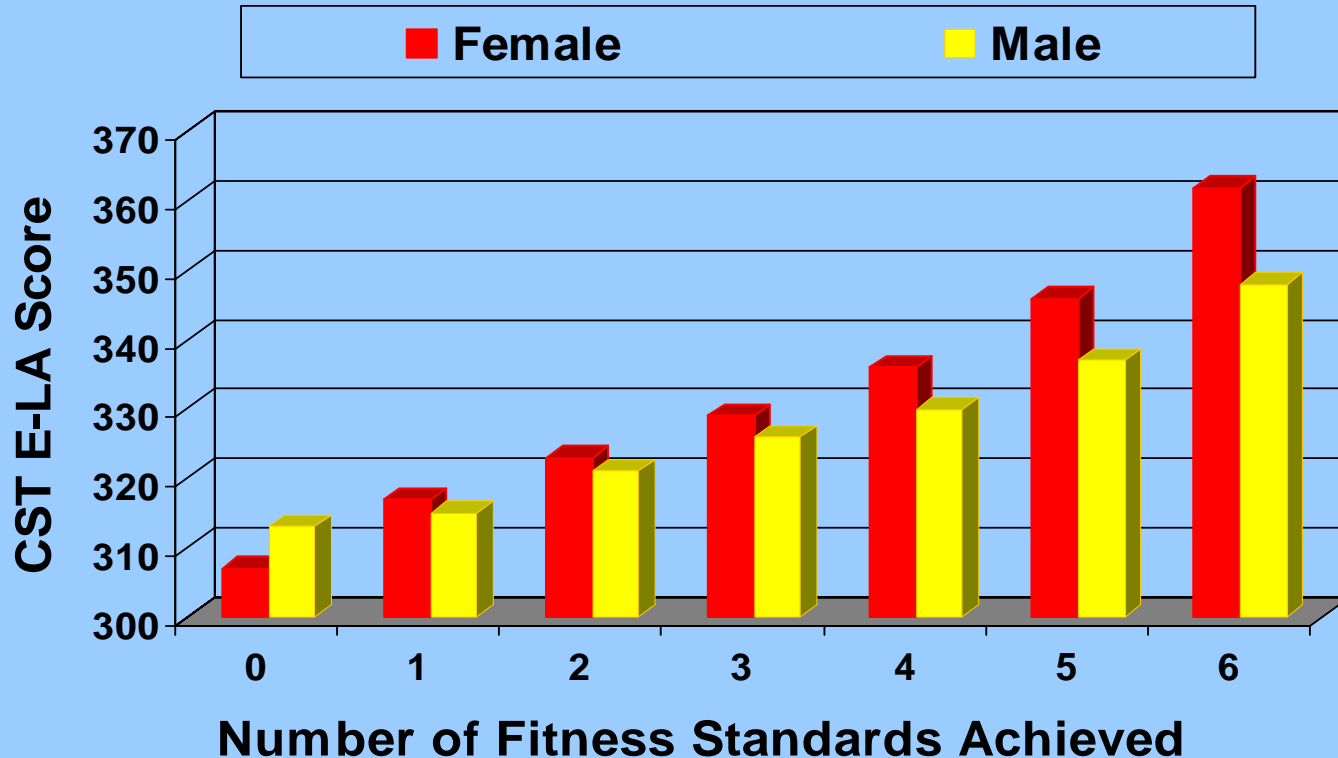
Grade 5 – 371,198 Students
Grade 7 – 366,278 Students
Grade 9 – 298,910 Students



*California Standards Test

2004 CST* Scores in English-Language Arts in Grade 5 By Gender and Number of Fitness Standards

371,198 Students
(182,287 Female and 188,921 Male)

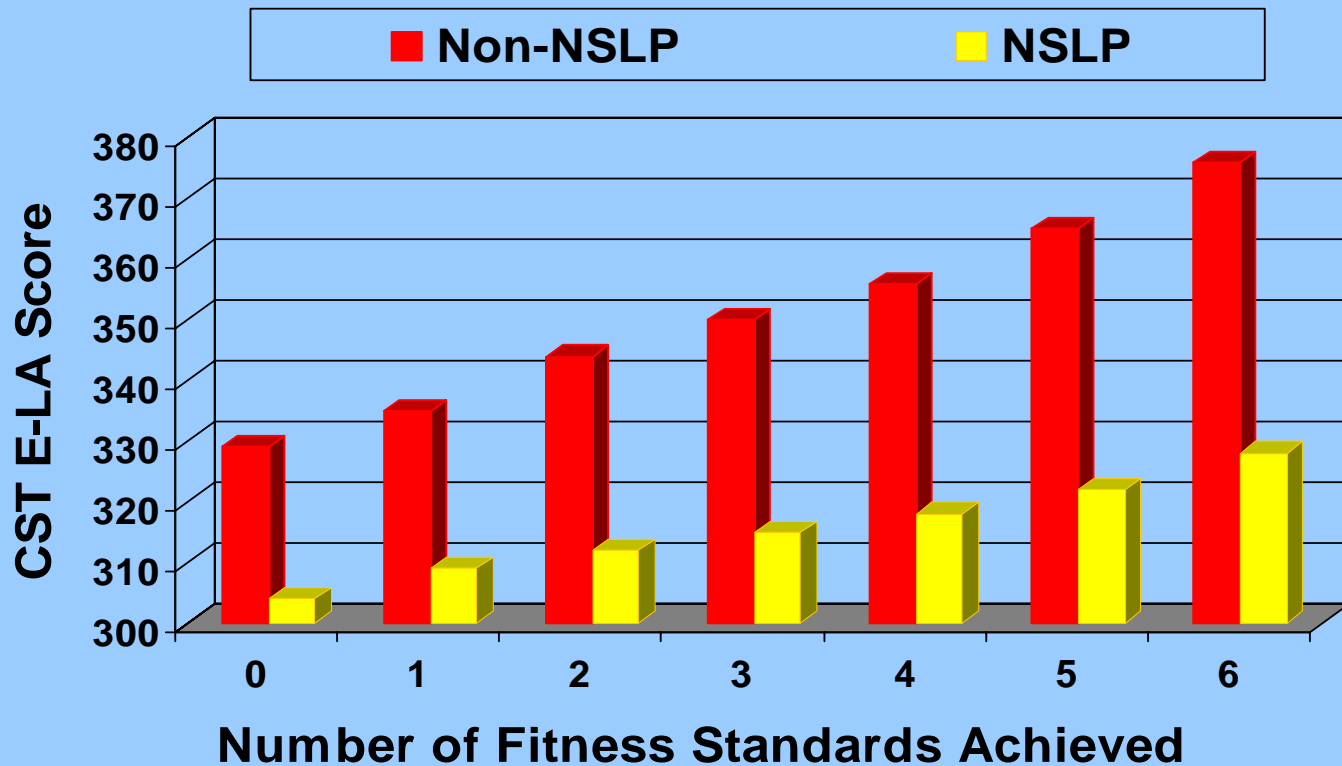


*California Standards Test

Results using math scores were consistent with those using English-Language Arts scores.
Results for seventh- and ninth-grade students were consistent with those for fifth graders.

2004 CST* Scores in English-Language Arts in Grade 5 by Socioeconomic Status** and Number of Fitness Standards

371,198 Students (203,726 NSLP and 167,472 Non-NSLP)



*California Standards Test

**National School Lunch Program

Results using math scores were consistent with those using English-Language Arts scores.

Results for seventh- and ninth-grade students were consistent with those for fifth graders.

Source: California Physical Fitness Test, 2004 Results, Calif. Dept. of Ed., April 2005

California Annual Fitness Test (2006)

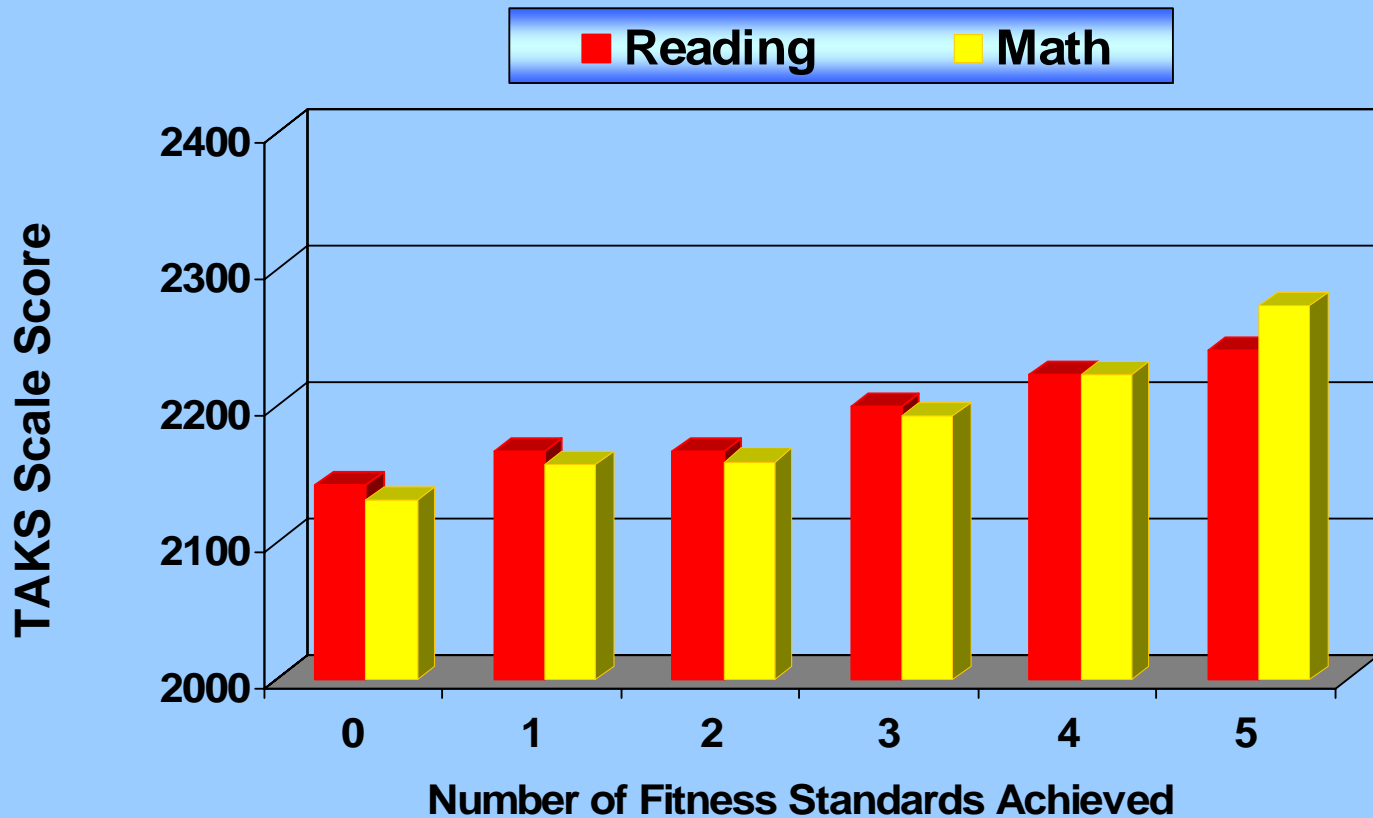
Results: Grades 5, 7 and 9 - 1.3 million students

- **Only 25% of students could pass all 6 of the Fitnessgram tests.**
- **43% could not run or walk 1 mile in the allotted time.**
- **Budget 2006 allows an extra \$40 million for physical education teachers**
- **\$500 million for fitness supplies and physical education teacher training**

2006 TAKS Scores in Reading and Math

Austin, Texas ISD

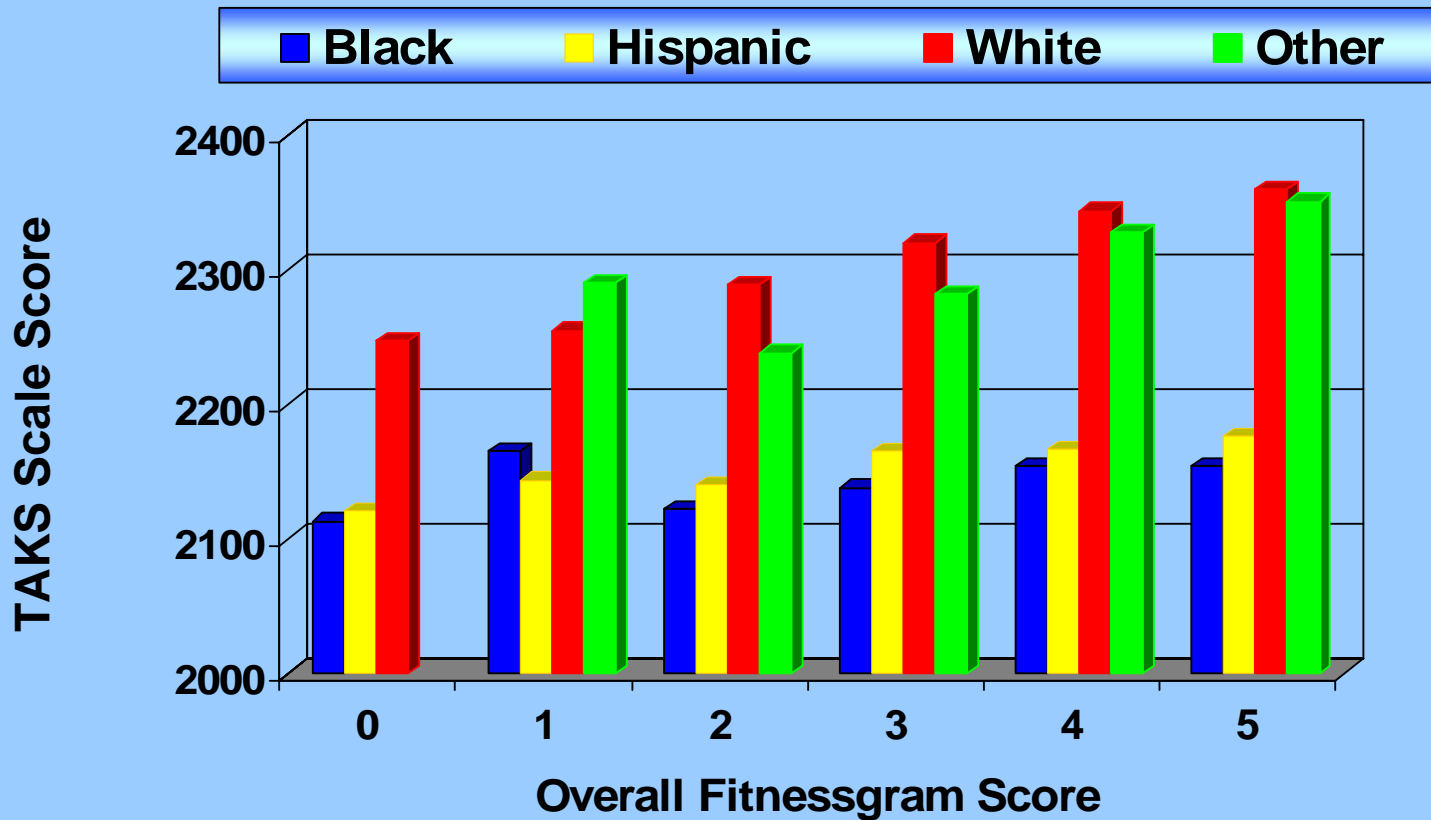
8189 5th and 7th Grade Students



2006 TAKS Reading Scores by Ethnicity

Austin, Texas ISD

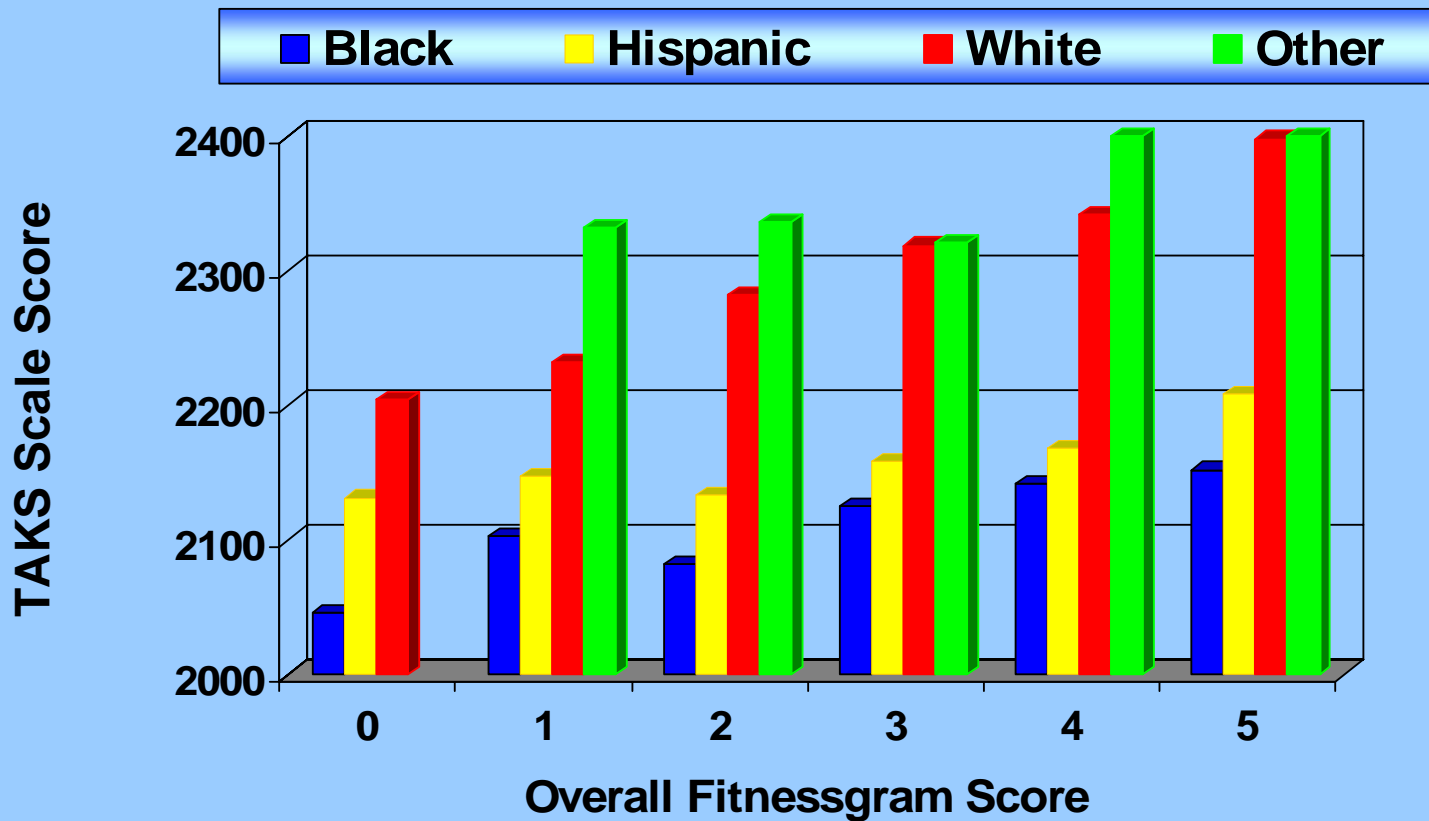
8189 5th and 7th Grade Students



2006 TAKS Math Scores by Ethnicity

Austin, Texas ISD

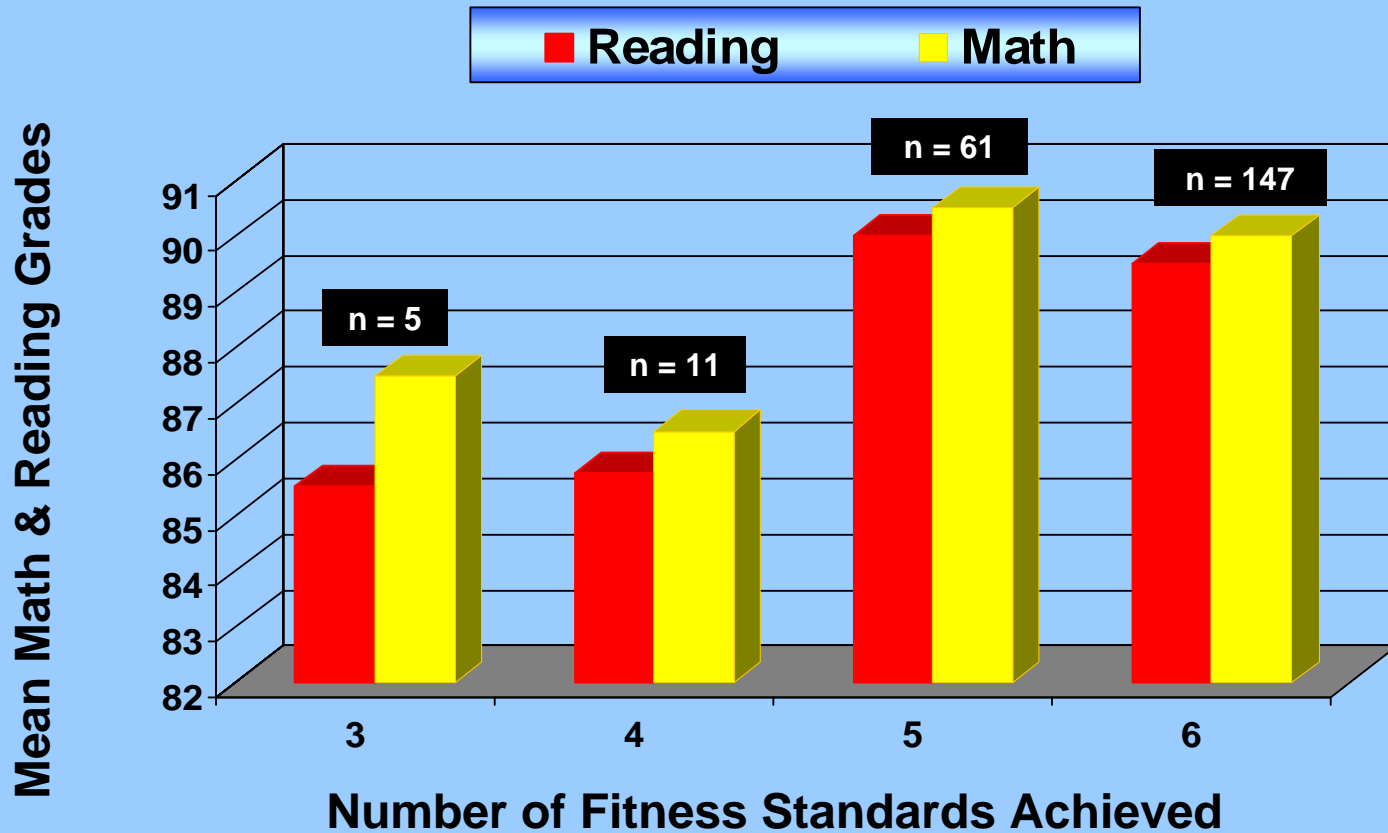
8189 5th and 7th Grade Students



2007 Grades in Reading and Math

Dallas ESD

224 Students, Ages 9 - 15 Years

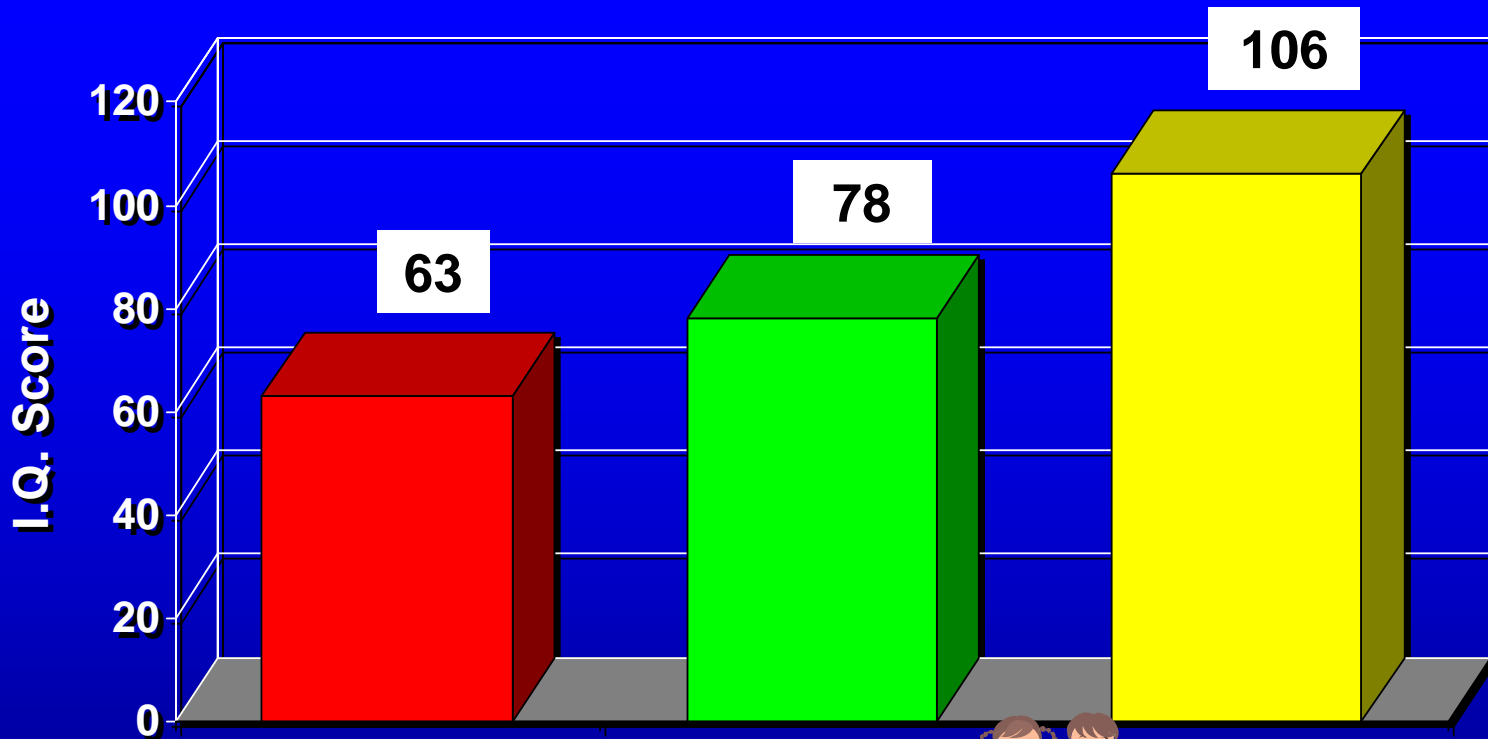


Categories 0, 1 & 2 are empty

Episcopal School of Dallas

Ages 3 – K	25 minutes 2 x / week
Grades 1 – 4	30 minutes 5 x / week
Grades 5 – 6	45 minutes 5 x / week (concentrating on physical fitness and motor skills)
Grades 7 – 8	45 minutes 5 x / week (P.E. classes can be replaced with a sport, either team or individual.)
Grades 9 – 12	6 trimesters over 4 years, but all students are encouraged to participate in daily activities. Athletic participation will be given credit as a P.E. class. All athletic teams meet for 2 hours and 15 minutes daily.

Early-Onset Obesity and Its Effect on I.Q.



Prader-Willi Syndrome*
(19 children & 5 adults)

**Prader-Willi Syndrome is a genetic deficiency which causes marked obesity before age 6.*

Siblings:
150% Ideal Weight
before age 6
(18 children & adults)



Siblings:
Normal Weight
(24 children & adults)

“... discovered a link between marked obesity in toddlers and lower IQ scores, cognitive delays, and brain lesions similar to those seen in Alzheimer’s disease patients.”

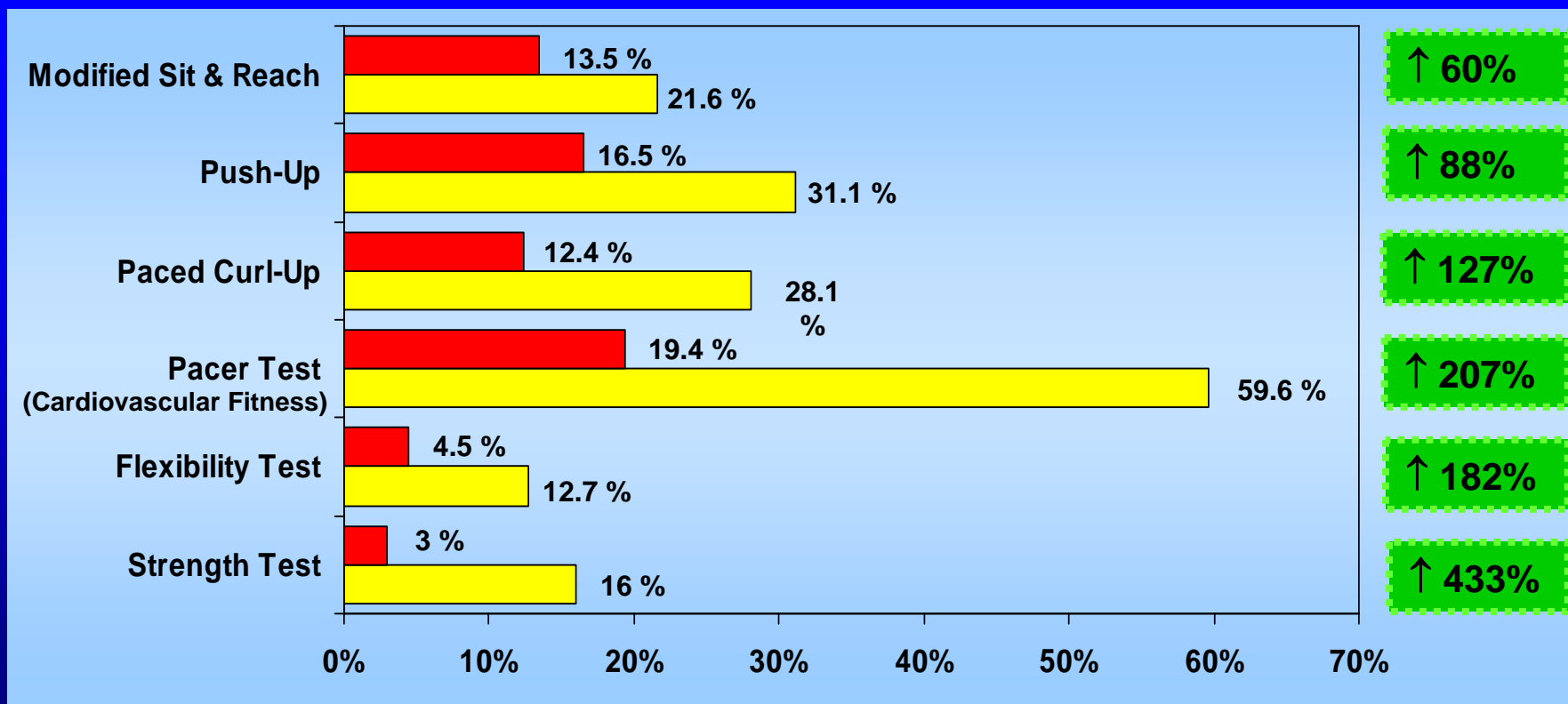
" ... emerging research showing that physical activity sparks biological changes that encourage brain cells to bind to one another. For the brain to learn, these connections must be made."

" ... exercise provides an unparalleled stimulus, creating an environment in which the brain is ready, willing, and able to learn."

"Exercise is fertilizer for the brain."

Fitnessgram Results: Percentage of Students in Healthy Fitness Zone

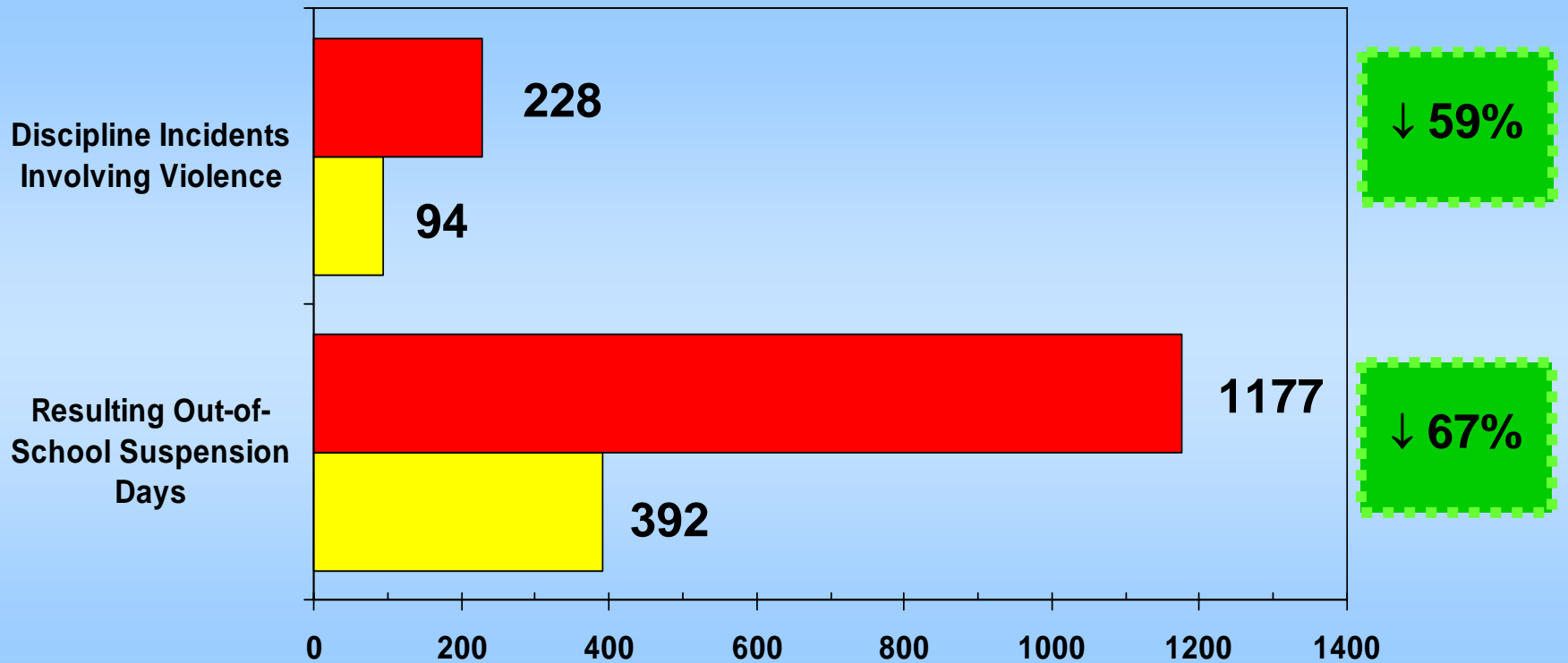
***Woodland Elementary School, Kansas City PSD #33
Fall 2005 – Spring 2006, Grades 4 and 5***



■ Fall 2005 ■ Spring 2006

Fitnessgram Results: Percent Reduction in Disciplinary Issues

***Woodland Elementary School, Kansas City PSD #33
Fall 2005 – Spring 2006, Grades 4 and 5***



2004 - 2005

2005 - 2006

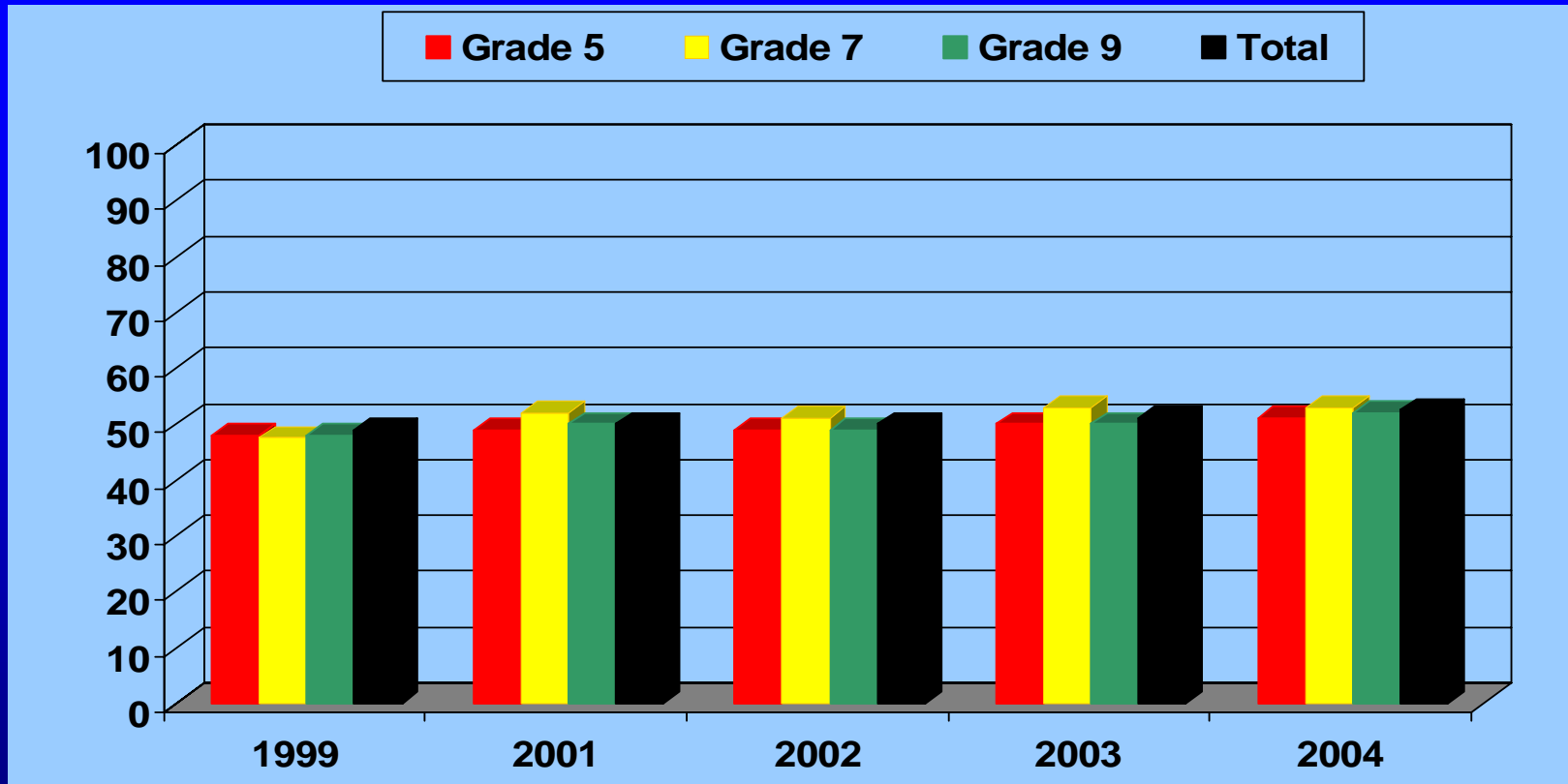
Results



“PE4Life has had a tremendous influence on the lives of our students. It’s not just the increased levels of fitness we are seeing in our kids which has everyone excited. Students are also more motivated throughout the day, their enthusiasm is way up, and discipline issues are way down.”

— Craig Rupert
(Principal, Woodland Elementary School)

Percentage of California Students Meeting 5 or 6 FITNESSGRAM Tests*



*California Physical Fitness Tests Results, 2005

Source: *Research Quarterly for Exercise and Sport*, Dec 2005, p. 383.



Senate Bill 530

***Passed by Texas State
House of Representatives and
Senate on May 27, 2007***

***Signed into Law by
Governor Rick Perry
on June 13, 2007***

***Fitnessgram[®] approved as official testing
vehicle by the Texas Education Agency
on September 27, 2007***

Senate Bill 530

Exercise Requirements (Sep 2007)

Grades K – 5

- **30 minutes 5 times/week or**
- **45 minutes 3 times/week (135 minutes total)**
- **225 minutes over 2 weeks (45 minutes 3 times the first week, 45 minutes 2 times the second week)**

Grades 6 – 8

- **Same as above, but only 4 of 6 semesters are required**

Grades 9 – 12

- **No physical education requirement**

Testing Requirements (using the Fitnessgram®)

- **Beginning in the 2007-08 school year, all students grades 3 - 12 will be required to be tested annually at some time during the school year.**

The Dallas Morning News

Texas' Leading Newspaper

75 cents

Dallas, Texas, Wednesday, July 2, 2008

dallasnews.com

Sunny



H 95
L 73

Metro, back page

METRO

Police seek link in traffic shootings

Police are investigating whether six suburban shootings that have injured three people this week are the acts of a gunman who is randomly picking his victims. **1B**

BUSINESS



Starbucks to close stores, cut jobs

Starbucks announced Tuesday that it will close 600 stores and cut up to 12,000 jobs, or 7 percent of its workforce. **3D**

Dallas restaurateur

FITNESS | ASSESSING TEXAS' SCHOOLCHILDREN

A backward lunge: Kids in sad shape



The Associated

Above: Kenneth Cooper of the Cooper Institute of Dallas said he hopes the results will "shock the state into reality and into action."

Texas Youth Evaluation Project 2008

Total # of Students Grades 3-12: 2,596,565

Grade	FITNESSGRAM® Test Total # of 2,596,565		
	Total	Girls	Boys
3	326007	159987	166020
4	318386	156358	162028
5	312249	153993	158256
6	291238	143580	147658
7	279972	137525	142267
8	257631	125456	132175
9	261671	125710	135961
10	211122	102738	108384
11	177354	87161	90193
12	145325	72234	73091

% of Districts submitting data: 83.66

% of Campuses submitting data: 70.32

Texas Youth Evaluation Project 2008

Total # of Students Grades 3-12: 2,596,565

Grade	FITNESSGRAM® Test (Passed all 6 tests) %		
	Total	Girls	Boys
3	97801	32.18	27.72
4	76727	27.48	20.42
5	63861	23.06	17.32
6	58596	22.65	17.14
7	53785	20.97	16.97
8	47585	18.74	17.60
9	37392	13.45	14.45
10	27106	11.97	13.16
11	19980	10.28	11.76
12	12253	7.83	8.58

% of Districts submitting data: 83.66

% of Campuses submitting data: 70.32

Texas Education Agency Physical Fitness Assessment Initiative

Additional Analyses – September 1, 2008

- % Passing each of the six tests
- Regional comparisons
- Ethnic comparisons
- Comparison with other states

Texas Education Agency Physical Fitness Assessment Initiative

10 Variables Compared with Levels of Fitness - Sep 1, 2008

- Attendance Rate
 - Eligible for free lunch program
 - Eligible for reduced lunch program
 - TAKS
 - Occurrence of substance abuse
 - Occurrence of violence
 - Occurrence of weapons
 - Occurrence of truancy
-
- Obesity
 - Diabetes

FITNESSGRAM[®] Test 2008
Achieved “Healthy Fitness Zone” in all 6 Tests
Boys: 25,000±

Grade	El Paso ISD	Statewide
3	55.79	27.64
4	53.89	20.36
5	55.90	17.29
6	44.35	17.10
7	38.43	16.93
8	39.34	17.55
9	27.60	14.40
10	19.43	13.12
11	20.73	11.71
12	11.65	8.56

FITNESSGRAM® Test 2008
Achieved “Healthy Fitness Zone” in all 6 Tests
Girls: 22,000±

Grade	El Paso ISD	Statewide
3	69.47	32.09
4	68.43	27.40
5	55.76	23.03
6	56.11	22.59
7	48.59	20.93
8	41.65	18.70
9	23.11	13.40
10	29.26	11.94
11	20.10	10.25
12	10.29	7.82

El Paso Independent School District

Physical Education Program Elements

Exercise Requirements

Grades K – 5

- **45 minutes/day taught by a Certified Physical Education Teacher**
- **Daily recess 15-20 minutes**
- **United States Tennis Association (USTA) Partnership – (provides skill development for students)**

Grades 6 – 7

- **50 minutes daily or 90 minutes every other day**
- **United States Tennis Association (USTA) Partnership**

Grade 8

- **One semester 50 minutes daily or 90 minutes every other day**

Grades 9 – 12

- **1-1/2 credits of physical education are required (less than 35% of the students actually take a P.E. class). Other activities allow them to waive this requirement.**

Testing Requirements (using the Fitnessgram®)

- **All students grades 3 – 12 will be tested annually.**



Fitness Testing of Texas Youth

Senate Bill 530

Signed into Law by Governor Rick Perry

June 13, 2007

Goals

- To start a fitness and wellness movement in Texas which will spread across the country, ultimately improving the health and longevity of all Americans.
- To measure the level of fitness and determine the amount of obesity of all students in Texas, grades 3-12.
- To compare fitness level with academic achievement, absenteeism, obesity, discipline problems, and school lunch programs.
- To implement a mandatory Physical Education program in all Texas schools for grades K-8.
- To then re-evaluate these students and repeat the above comparisons to monitor the effectiveness or lack of effectiveness of this program.

Responsible Organization

Primary responsibility for the Texas Youth Evaluation Project will be held by The Cooper Institute, a 501(c)(3) organization.

The Cooper Institute will be responsible for implementation of the program, testing, and training of the students, collection, and analysis of the data.

