

**REGIONAL YMCA OF WESTERN CONNECTICUT**

# **Students Can Run and Move**

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## **S.C.R.A.M.**

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Outcomes Report for the 2012-2013 School Calendar Year and Summer Program

### Summary of Program Activities

SCRAM (Students Can Run And Move), an after-school physical fitness/nutrition and parent engagement program designed to educate Danbury Title 1 school students (grades 1-5) and their families about good nutrition and exercise. The goals of the SCRAM program are to:

- increase the knowledge that participating children and their families have of the benefits of good nutrition and physical exercise;
- enable participating children and their families to eat more nutritious foods, including fruits and vegetables;
- increase the amount of time participating children and their families devote to physical activity.

During the school year, via three 8 week sessions (24 weeks in total), SCRAM children are given a fruit or vegetable every day and are offered 45 minutes of exercise 5 days a week after school; SCRAM provides more than 90 hours of physical activity over 24 weeks, far exceeding the 28 hours of physical education per student offered by Danbury Public Schools annually. The families of SCRAM students are encouraged to participate in special parent nights to obtain information (in both English and Spanish) about community resources and recreational activities available to them, learn from healthy cooking demonstrations, hear from guest health speakers, and learn the 5,2,1,0 healthy living message (5 fruits and vegetables daily, limit screen time to 2 hours, 1 hour of play every day, drink 0 beverages that contain sugar). The Coalition for Healthy Kids promotes this message throughout the community.

At the end of the 24 weeks, it is expected that students will show improvement in physical fitness testing, be more knowledgeable about good nutrition and will increase their fruit and vegetable consumption, and that their parents will reinforce healthy behaviors at home.

In the Summer, SCRAM partners with Danbury Public School Enrichment Camps at Ellsworth School and South Street School (most of our school year students attend) The YMCA also partners with the Danbury Parks and Recreation Camp Programs at Rogers Park (incoming 6th graders) and this year also at South Street School. The camps are in place at these schools to address academic gaps, childcare needs for working parents and the free summer meal program. Our partnerships allow us to reach elementary age children with SCRAM programming in Danbury for 7 weeks over the summer months. Campers participate in 45 minutes of physical activity twice weekly with YMCA instructors. On Wednesday's the children receive nutrition programming around seasonal fruits and vegetables including at Ellsworth School, tending their summer garden. The children conduct garden observations, keep journals and prepare healthy recipes with seasonal fruits and vegetables. On Fridays, led by community volunteers a group of 50 to 60 children wear pedometers and walk from their camp for 1 mile to the Farmer's Market. The summer camps alternate in their participation in the walk over 7 weeks totaling over 300 student trips to the market. Each child receives wooden coins that total \$10.00 to spend for their family on the day of their designated walk. Upon their return, children can select healthy recipes to match the produce choices they made with their purchases. The Farmer's Market Walking program helps to advertise the local Farmer's Market at Kennedy Park who double the value of SNAP vouchers.



## Students Can Run and Move (S.C.R.A.M.) Results Fall 2011 through June 2013

The S.C.R.A.M. Program started at Ellsworth School as a pilot program from 2010-2011 with 30 students from 3<sup>rd</sup> to 5<sup>th</sup> grade in the afterschool Extended Learning Program (ELP). After the pilot year, with funding from Strong Heart, Healthy Children, the S.C.R.A.M. Program was expanded to three ELP afterschool programs located at Ellsworth School, Park Avenue School, and Hayestown School. From the Fall of 2011 to the Spring of 2013, a total of 283 students (grades K-5) have participated and have had assessments completed at some point during the time period at these three Title One schools. Enrollment from 2011 to 2013 fluctuated at the schools as 21<sup>st</sup> Century funding was obtained and ELP included more at risk children. An additional 47 students were enrolled at the South Street school in the Fall of 2012. Due to the cost and time constraints of conducting assessments, the students are only measured in the Fall and Spring of each school calendar year. One setback of collecting data only two times per school year is that the students may not be present during assessment times even though they have participated for all or most of the program during the year. Our assessment team goes back as many as four times in an effort to collect as much data as possible. Table 1 shows the median BMI % in the Fall 2012 and in the Spring of 2013. The letter "N" demonstrates the number of students that were assessed during that time period.

	N	Fall 2012	N	Spring 2013
Ellsworth	64	81.3	83	82.4
Park Avenue	34	91.8	42	90.6*
South Street	47	95.2	45	93.8
Hayestown	45	73.3	35	88.7*
Total Measured	190		205	

\*Hayestown added 4 obese, 1 overweight, 2 normal weight students Spring 2013  
 \*Park Avenue added 4 obese students, 4 overweight, 7 normal weight students Spring 2013

Table 1 shows the Median BMI data of all the students measured Fall 2012 and Spring 2013. The number of children (N) reflects children in attendance on assessment days but may not be same children Fall 2012 and Spring 2013 due to roster changes in children enrolled in ELP Program.

	FALL 2012 N=190		Spring 2013 N=205		Pre/Post data Student Improved BMI
	>85%	>95%	>85%	>95%	
Ellsworth Ave	42%	25%	41%	23%	77%
Park Avenue	62%	35%	52%	26%	58%
South Street	67%	51%	67%	47%	81%
Hayestown	57%	40%	53%	37%	62%

Table 2 below demonstrates the percentage of children who are overweight or obese in the Fall of 2012 and the Spring of 2013. The students measured were those on the roster and present on the day of the assessments. The roster of students did fluctuate during the school year. The highlighted section of the table shows the percentage of "at risk" students who had complete data sets for fall and spring and showed improvement in BMI percentile during the year.

### **DATA Cohorts:**

In order for a comparative data analysis to be valid, it was necessary to compile two complete data sets to track the SCRAM Program fitness and BMI outcomes for students from Fall 2011 through May 2013. Our first data set is a 2 year program cohort consisting of data from students attending the SCRAM program through ELP registration at Ellsworth, Park Avenue and Hayestown School (2 year cohort, N=46). The roster within the 2 year cohort consists of two-thirds Ellsworth School students and one-third Park and Hayestown School students. Selection into the data set was based on completeness of the data collected from each student each year in attendance. Our second data set is a 1 year cohort with data collected from South Street School which started the SCRAM program in the Fall of 2012. (1 year cohort, N=47). We compared the progress of the 2 year cohort with the progress of the 1 year cohort. Fortunately, we were able to have two cohorts with data sets greater than 30 to strengthen the validity of the data we have collected and compared.

The CDC provides Tools for Schools used to determine the prevalence of overweight and obesity by age and gender. To properly use this tool, accurate height, weight, birthdate and collection date needs to be entered. Using this tool, we were able to determine the percentage of children in the 2 year cohort who were overweight and obese and compare them with the children in the 1 year cohort (South Street) for the Fall of 2012 and the Spring of 2013.

Table 3.

Prevalence of Overweight and Obesity based on BMI Status combined genders					
		2 year cohort		1 year cohort	
		>85%	>95%	>85%	>95%
Fall 2012		44%	23%	67%	51%
Spring 2013		46%	24%	65%	44%

Table 3 reflects the total percentage of children who measured overweight or obese in both cohorts. It demonstrates that more than 1/3 of the students in the 2 year cohort are overweight or obese and 2/3 of the students in the 1 year cohort are overweight or obese. Improvements in BMI were seen in the two year cohort from Fall 2012 to Spring 2013.

Table 4.

Prevalence of Overweight and Obesity based on BMI status Boys and Girls					
		2 year cohort		1 year cohort	
		>85%	>95%	>85%	>95%
Fall 2012	Boys	40%	25%	59%	45%
Spring 2013	Boys	40%	27%	53%	37%
Fall 2012	Girls	48%	22%	81%	63%
Spring 2013	Girls	50%	23%	80%	53%

Table 4 illustrates the rate of overweight and obesity at South Street ELP exceeds current CT state reported prevalence of overweight and obesity rates in Hispanic minorities of 33% often quoted as a Danbury rate. Overweight and obese status for girls is very high in the 1 year cohort group.



The data in tables 3 and 4 suggests that there is an urgent need to address these children's nutrition and their physical environments with the 1 year cohort. The neighborhood near South Street School in which these children live was without a grocery store for 1.5 years prior to the opening of Price Right grocery store in the Spring of 2013. The high rates of overweight and obesity was present at the South Street School (1 year cohort) prior to SCRAM officially starting in the Fall of 2012. Some of these children are at risk or may already have Type II Diabetes based on CDC reports that minority children are at higher risk for diabetes compared with their white peers. The data also underscores the need for early intervention to prevent obesity before elementary years.

**Using the median of a data set:**

To further evaluate progress and fitness of the 2 year cohort and the 1 Year South Street Cohort, the median BMI % was identified and entered into the table below. The median represents the middle 50% of students in the data set. The median of a set of data is the middlemost number in the set. When you find the median of a data set, there is high probability that at least 50% of the data lies on either side of the median. Therefore the number reflects the middle 50% of the group of numbers. It was decided not to compare the Mean of the data set because the mean would include the outliers or extreme on each end of the data sets possibly skewing the data set in one direction instead of representing the middle of the data set.

Table 5.

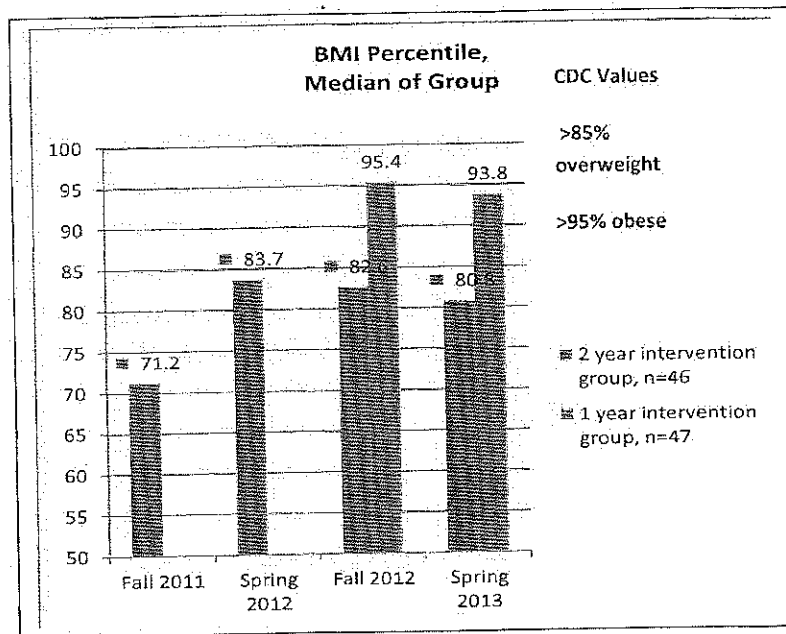
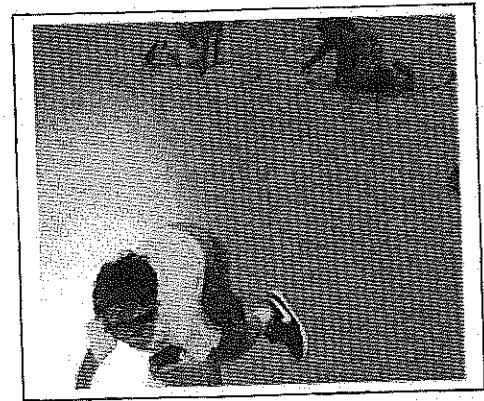
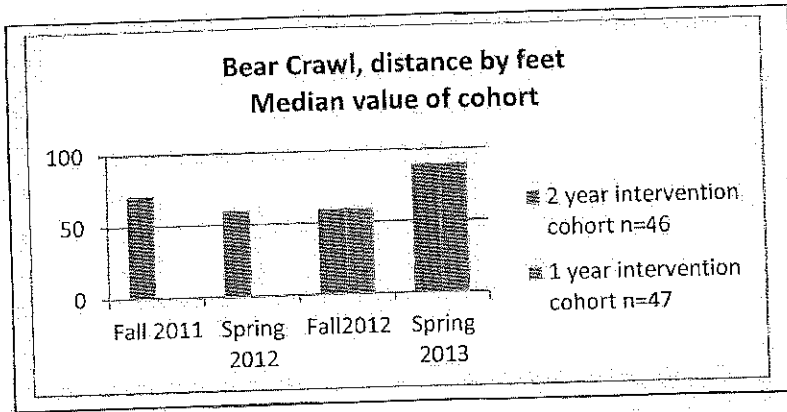


Table 5: Median BMI in the 2 year cohort is within the normal BMI range as compared to the 1 year cohort. The one year cohort improved in BMI status from the Fall of 2012 to the Spring of 2013, however these children remain at risk due to their elevated weight status.

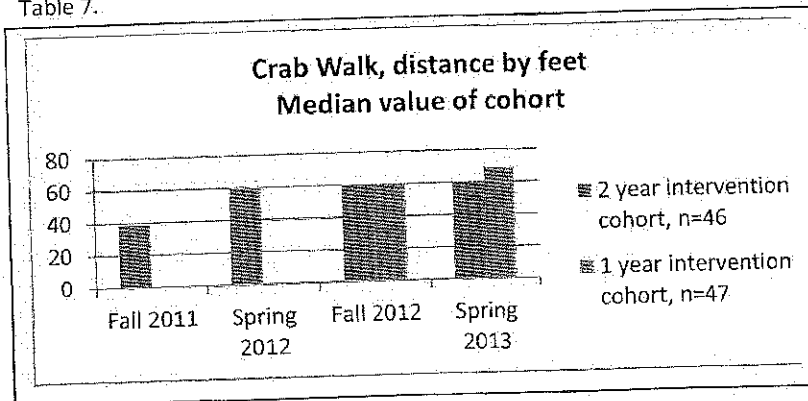
**Fitness Testing:**

Fitness Testing is conducted in the Fall and Spring of each school year. Selected tests were chosen to track progress made by students for core strength, limb strength and ability to pass fitness parameters set by the 2009 3<sup>rd</sup> generation fitness testing established by the Connecticut Department of Education. It is important to know that students in the Danbury public elementary schools are not expected to take the Connecticut Fitness Test until the third grade or the age of 8. That being said, all students regardless of age who participate in the SCRAM program are taught how to perform and practice all the fitness tests throughout the school year. Fitness testing was performed on 190 children in the Fall of 2012 and 205 children Spring of 2013. In evaluating the progress of all students in each school on the Fitness tests, they have performed well and improved in bear crawl, crab walk, wall sit, abdominal crunches, and the Sit and Reach. Emphasis on skill building for the Plank, Push Up and the Pacer Cardio Fitness Test is very important as these skills seem to be the hardest for the overweight and obese children. To best demonstrate progress of children in the SCRAM program the following graphs demonstrate the fitness performance of the 2 year cohort (46 children) the 1 year cohort (47 children at South Street school).



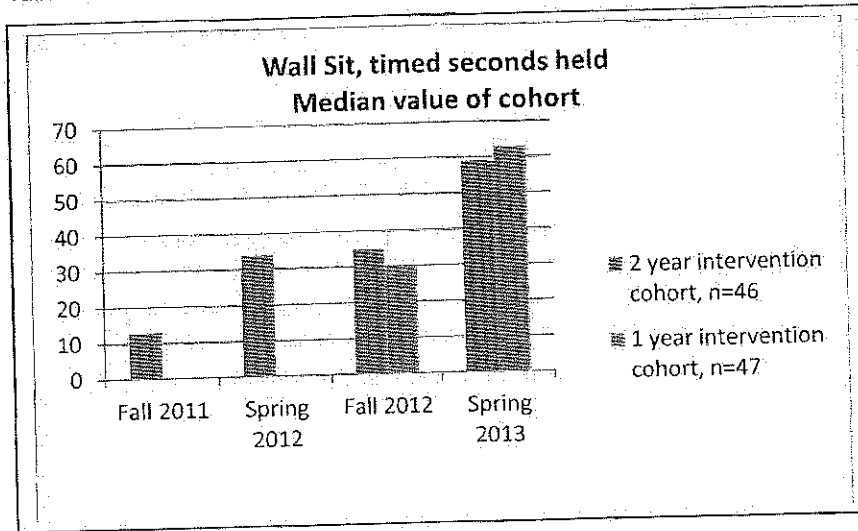
Children measured at all four SCRAM sites made progress with the Bear Crawl throughout the school year. It is a fitness parameter that measures the ability to bear weight on arms and legs as well as flexibility in the hips and hamstrings. The median distance traveled by all students June of 2013 was 95 feet in all four schools. 93% of all students improved their traveled distance in the bear crawl.

Table 7.



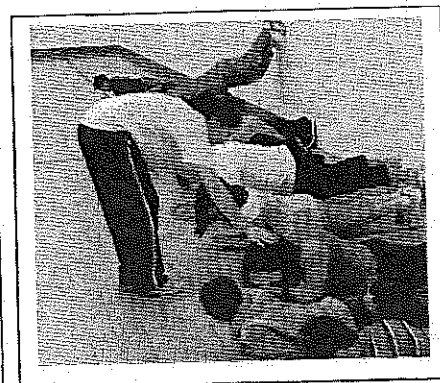
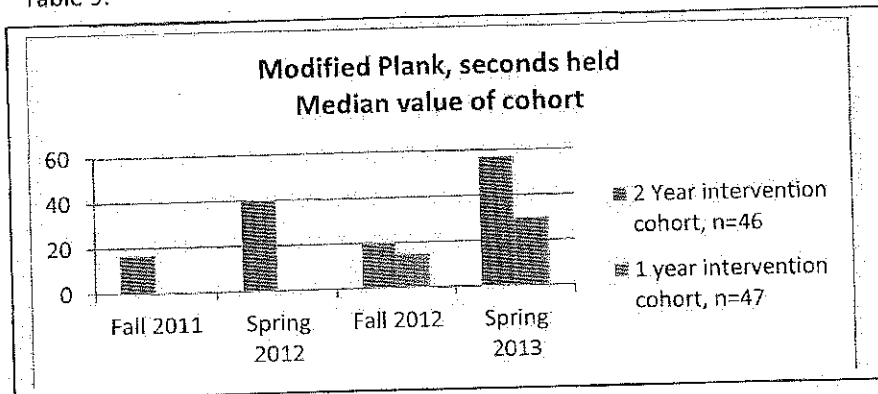
In table 7, the children (n=205) demonstrated that 85% of the students improved on the distance on the crab walk they were able to travel from the fall of 2011. The median distance traveled by all students in Spring 2013 was 60 feet. The crab walk is a good measure of core strength and limb strength.

Table 8.



The Wall Sit is a strength test for the quadriceps and core strength. The children are tested on the number of seconds that they can hold their form with their backs firmly against the back wall. In the Spring of 2013, on average the children held the wall sit for 63 seconds at all four schools.

Table 9.



The most useful part of instructing children to do a modified plank is that it helps to build upper body strength which can improve the ability of the child to perform a push up. Younger children are also taught how to do a push up from the floor to help them understand how to sustain and hold form. In the Spring of 2013, 80% of children (n=205) at all four SCRAM sites showed improvement in demonstrating this skill.

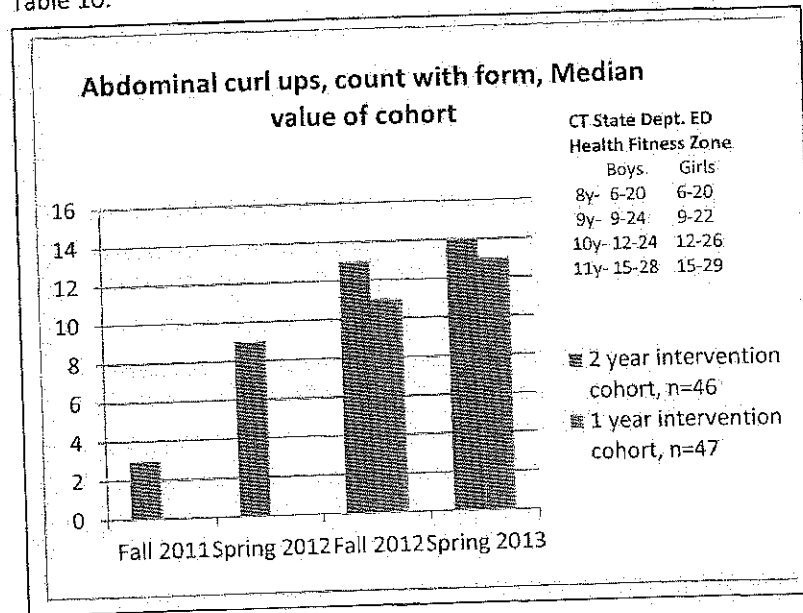
**Fitness goals for children 8 years and older in Connecticut:**

The Connecticut State Department of Education Fitness Test standards may be viewed at

<http://www.sde.ct.gov/sde/cwp/view.asp?a=2618&q=320980>

The following three graphs demonstrate the performance of the 2 year cohort and 1 year cohort on the fitness standards. All fitness testing since the beginning of SCRAM have been performed by Kerry Swift, Personal Trainer for the Regional YMCA of Western Connecticut who has 15 years' experience. To protect the reliability of the data, all post tests are done blindly by the trainer. She does not have access to previous test results produced by any of the students. The 3<sup>rd</sup> generation fitness test no longer requires BMI data in the performance standards. The 3<sup>rd</sup> generation testing does include either a 1 mile timed run or performance data on the 15 or 20 meter PACER test. The latter is used by the Regional YMCA to monitor cardio performance. The following four graphs show the median results of the two cohorts on the 4 tests recommended by the CT State Department of Education. The Health Fitness Zone recorded on each graph is the minimum performance for health expected by the state beginning at age 8 years.

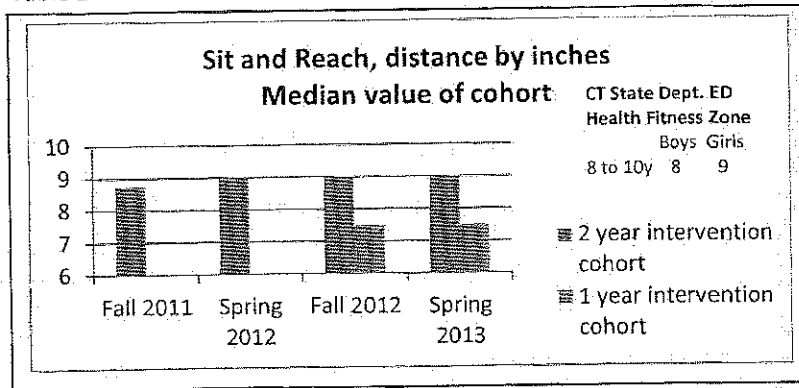
Table 10.



66% of all the children (n= 205) tested at the four school sites attained the health goal level for the abdominal crunch or curl up.

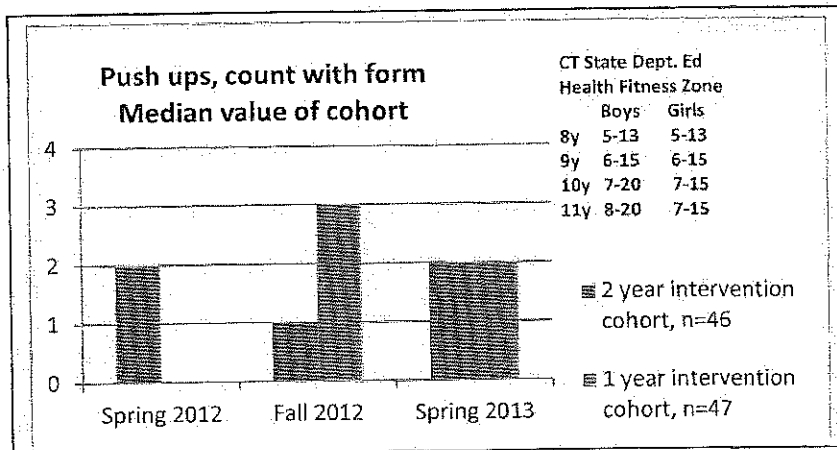


Table 11.



Sit & Reach is a measure of flexibility. There is a wide range of results between students at each of the schools in attaining the health goal of 8 inches for boys and 9 inches for girls. At Ellsworth School, 75% of the children tested attained the health goal. 56% of Park Avenue Students attained the health goal and 48% of the students at South Street and Hayestown attained the health goal.

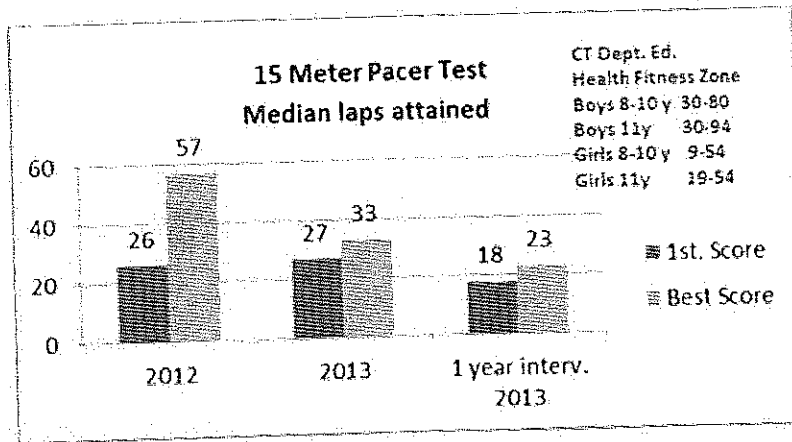
Table 12.



The median in table 12 shows that neither the 2 year cohort nor the 1 year cohort are meeting the Health Fitness Standard for Push Ups documenting upper body strength. This needs to be a continued focus of the SCRAM program as it proceeds into the next two years. It also would be worthwhile to discuss this issue with the physical education staff at these schools.

When evaluating push up performance at each individual school in the Spring of 2013, 58% of the children at Park Avenue, 30% at Ellsworth School, 0% at Hayestown and 23% at South Street were able to meet the standard set by the state for their age. Further instructor training on teaching push ups is necessary to improve outcomes for this fitness test.

Table 13.



The Connecticut Department of Education allows the 15 meter Cardio Pacer Test to be administered instead of the 1 mile timed run to demonstrate cardio fitness performance. This is useful where students may not have access to large fields to run a mile. In the timed PACER test, the children run timed laps between two sets of cones 15 meters apart. The child is allowed 1 missed finished length before scoring out of the timed test. The more lengths completed, the higher the level of cardio fitness. The Cardio PACER test may be performed in a gymnasium ideal for the SCRAM Program. The Health Fitness Zones for age are also illustrated in Table 12. The first two data sets show the median results of the 15 meter Pacer test administered to the 2 year cohort in the Spring of 2012 and again in 2013. The third data set are the results for the 1 year cohort (South Street) who completed the Pacer Test for this first time this Spring with the SCRAM program. While all three graphs show improvement in scores, the results remind us of how important it is for students to participate in daily aerobic activities to promote and sustain cardio fitness.

In evaluating the progress on the pacer for the students who participated in 2012 and 2013, the data reported for 2013, includes the increased enrollment at Ellsworth, Hayestown and Park Avenue ELP program due to the 21<sup>st</sup> Century funding.

**NUTRITION:**

Nutrition Education is a component of the S.C.R.A.M.. During the school year, nutrition activities are conducted on a weekly basis with students. Most of the nutrition activities still include movement and physical activity. The following table is a reflection of the nutrition knowledge scores from the Spring of 2013.

Table 13.

Spring 2013 Testing Results for SCRAM	Scores based on the Median in the series by Grade				Average No Park Ave
	Ellsworth Spr 2013	Hayestown Spr 2013	Park Ave Spr 2013	South St Spr 2013	
Kindergarten	60	100	none tested	none tested	80%
1st Grade	68	68	none tested	none tested	68%
2nd Grade	91	100	82.5	84	92%
3rd Grade	87	100	90	86	91%
4th Grade	93	100	85.4	91	95%
5th Grade	97	none tested	89.5	100	98.5%

\* It was determined that 15 children were added to the Park Avenue Roster in the Spring of 2013. The Nutrition scores at Park Avenue may be reflective of the new children who did not spend enough time in nutrition classes.

This past spring 2013, children were asked to keep track of the fruits and vegetables they consumed every day for one week. On average, children who returned their week-long daily fruit and vegetable tracking sheets were eating about 3 servings of fruits and vegetables per day, still below the recommended 5 servings per day.

A survey conducted with parents of children in the SCRAM Program revealed some learning opportunities for parents of children who are enrolled in S.C.R.A.M. The questions inquired about the behavior reinforced at home that is consistent with the 5,2,1,0 Coalition for Healthy Kids Health message of 5 fruits and vegetables daily, limiting TV and media to less than 2 hours daily, 1 hour of play daily, 0 intake of sugar sweetened beverages. The following are the findings.

28% of families consume sugar-sweetened beverages more than 5x per week.

40% of families report sugar-sweetened beverage consumption less than 1x week.

82% of families still serve juice at home more than 3 times per week.

100% percent of the students enrolled in the SCRAM program are offered 225 minutes of physical activity per week.

60% of parents are reporting their children play in their neighborhood at least 3 times per week. TV

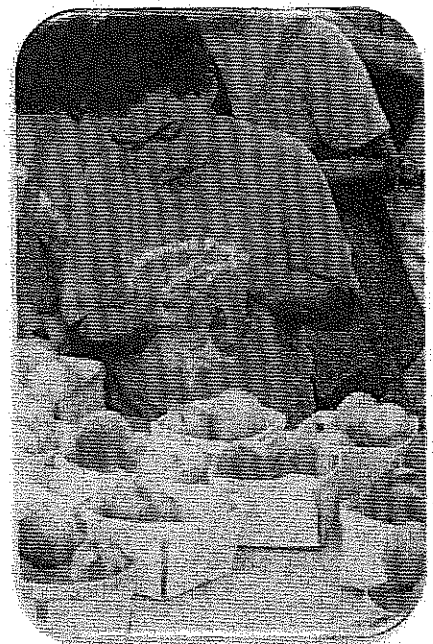
91% of parents reported that viewing media is limited to less than 2 hours per week by 91%.



**Summer Programming for SCRAM:**

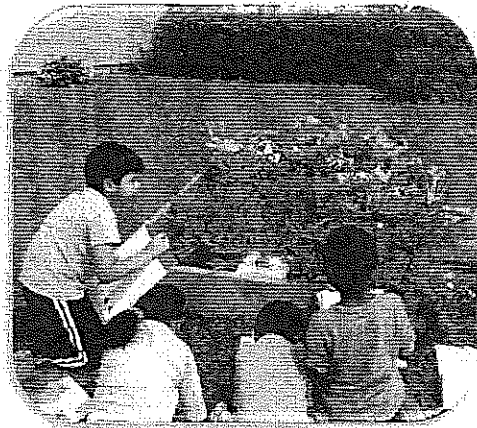
This summer the S.C.R.A.M. Program ( Students Can Run and Move) operated out of two different off site locations. The Danbury Public Schools Extended Learning Program (ELP), which S.C.R.A.M. operates out of, held summer camps at both South Street and Ellsworth Elementary Schools. 55% to 60% of students who participate in S.C.R.A.M. in the fall also attend these summer camps, providing an excellent opportunity for year round fitness and nutrition education to Danbury students.

As in years past, campers in the S.C.R.A.M. program had the opportunity to walk to the City Center Farmers Market in down town Danbury. Students who participated in the one mile walk were given pedometers to track their steps and \$10.00 on each trip to the market to purchase fresh produce for their families. This summer approximately 300 individual trips to the market were made (South Street campers walked three times, Ellsworth campers twice, and campers in the Danbury Park & Rec camps at Rogers Park and South Street walked once). Over 20 staff and community volunteers helped make these trips possible.



Students participating in the ELP summer program also received 90 minutes a week of physical education from YMCA instructors. Our summer fitness program mirrors the one offered through the school year where students participate in activities that increase core strength, flexibility, and cardiovascular endurance.

This year the nutrition education piece of the program was greatly expanded on. In years past nutrition activities only focused on preparing students for a trip to the market. This year both sites were visited weekly to teach about local gardening and plant growth cycles. Students at both sites were given journals to chronicle activities and observations over the course of five weeks. This spring our Y partnered with the Land for Public trust to provide 5 new garden beds at Ellsworth school along with seeds and plants to make an extensive 11 bed garden. Ellsworth summer campers logged the growth of the garden in their journals and were able to harvest some of their produce.



Students at Ellsworth School in Danbury .

Due to building renovations a garden could not be planted at South Street School. Instead a virtual garden was created on a bulletin board to show how plants grow over time. The images of crops were swapped each week so students could observe plant development from seed to fruit. Samples of real produce were brought in so students could get their hands on real fruits and vegetables and make comparisons to the virtual garden. South Street campers also kept journals to record their experience.

