

MTEF Measurement Testing 2010

MTEF's metrics system was developed in late 2008, and implemented in June of 2009, as part of the Ford Foundation's "Community Building Through Facilities" initiative. The three-year project, which was awarded to only four NJTL chapters across the United States in a competitive bidding process, explored the impact of tennis in mixed-race, mixed income communities. The Milwaukee mission of this initiative was to use tennis and other recreational facilities to 1) Reduce childhood obesity and enhance the health and wellness of the Sherman Park community, 2) Increase interaction between different racial and economic classes, and 3) Bring community partners together to improve the quality of life for all.

Through trial and error, many lessons were learned during this highly publicized project. Combating childhood obesity through fitness and nutrition, not part of the original proposal, was added in November of 2008, in response to observations and community surveys.

While Milwaukee was touted as a success story, MTEF leadership realized that although there were some very quantitative results, like participation, many of the other successes were much harder to define. Racial interaction was achieved, and documented, through Jr. Team Tennis play, and a more active and resurgent park was the result of increased safety through programming and twenty-two business and community partnerships, the majority of which are still in place today.

Although the results (and successes) of the project were detailed in a series of position papers, matrixes, and testimonials, many potential local donors asked for more "hard" evidence, so in response to that *the list of 39* was formed. MTEF committed to developing this comprehensive metrics system, with the assistance of the USTA and a team of experts from the Washington's Energy and Urban Policy Group.

The list originally started out with over fifty metrics, but as MTEF further defined its goals, the number of measurements were paired down to thirty-nine, centered around our four main objectives – academics, tennis, fitness/nutrition, and attitude (life skills).

Now, two years after the initial inception of this project, we are able to present our findings and tell our story. On the ensuing pages you will find a description of the item being measured along with a brief explanation of how and why we decided to measure a particular category. Each measurement coincides with one of MTEF's four goals.

While the descriptions make this document a little lengthy, we found them necessary to explain their relevance and value. Of the 678 children that we attempted to measure, there were complete results for 434. Our goal for 2011 is to improve and standardize our systems so that everyone gets measured. This was harder than we anticipated. Of course we need something to measure our results against. To measure improvement we administered most of the tests twice. Tests that were measured twice were always administered at the beginning and end of each programming period. We also measured the large group against our year-round High Performance student athletes to show the importance of dosage and consistent programming.

Metric #1: Participation

Participation is one of the cornerstones in non-profit tracking, and for good reason. It is important to so funders see the depth and dosage of programming along with overall size.

Total Participants – All programs	4,239	4,419
Total Unique TEAM Participants	678	345
Summer TEAM Participants	1,305	805
CLC Participants	2,374	3,264
CLC Unique Participants	1,187	1,632
High Performance Participants	56	34
School In-Service Participants	560	350
NJTL Kids Day Rally Participants	300	250

Metric #2: Participant Age

Average Age (years)	9.7	9.2
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Metric #3: Program Gender

% Male	34%	38%
% Female	66%	62%

Metric #4: Participant Ethnicity

Minority Ethnicity	98%	96%
African American	48%	49%
Hispanic	43%	41%
Mixed	4%	2%
Hmong	3%	1%
Caucasian	1%	4%
Other	1%	3%

Metric #5: Average Weight

Average Weight (pds.)	93.54	101.55
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Metric #6: Average Height

Average Height (inches)	55.79"	56"
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Metric #7: BMI

Body Mass Index (BMI) is one common method used to measure overweight and obesity. BMI is a measure of body fat based on a person's weight and height. The BMI chart lists four ranges: underweight, healthy, overweight, and obese.

Below 18.5 – underweight

18.5 – 24.9 – healthy

25 – 29.9 – overweight

30 and above – obese

Average BMI of TEAM Participants	20.86	21.60
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Grades – Metric #8-12:

MTEF tracks quarterly grades in the following subjects: Mathematics, Literary Arts (English, Reading), History, and Science. The submission of quarterly report cards and attendance records is a mandatory requirement for all MTEF after-school and summer TEAM programs. Grades will be assigned according to the scale used by the USTA NJTL National office. It is as follows: A+, A, A- = 4.0 / B+, B, B- = 3.0 / C+, C, C- = 2.0 / D+, D, D- = 1.0 / F = 0

Metric #8: Overall GPA – Four Subjects

Overall GPA (4.0 scale)	2.80	2.28
Average GPA - Male	2.72	2.36
Average GPA - Female	2.84	2.19
Average GPA - High Performance	3.37	3.03
Average GPA – Merrill Park	2.92	N/A
Average GPA – Custer High School	2.90	N/A
Average GPA – Kosciuszko Park	2.68	2.36
Average GPA - Sherman Park	2.79	2.44
Average GPA - MCC	2.58	2.23
Average GPA - Summit	2.86	2.71

Metric #9: Average Math GPA

Average GPA - Math	2.73	2.34
Average GPA – High Performance	3.37	3.95

Metric #10: Average Literacy GPA

Average GPA - English	2.81	2.62
Average GPA – High Performance	3.35	3.05

Metric #11: Average Science GPA

Average GPA - Science	2.79	2.33
Average GPA – High Performance	3.37	3.01

Metric #12: Average History GPA

Average GPA - History	2.85	2.51
Average GPA – High Performance	3.38	2.98

Metric #13: Homework Tutoring Hours

MTEF tracks the number of hours a child spends being tutored on homework during the school year, and the number of hours spent in our academic component during the summer. The hours listed below list three categories – summer only, after school only, and High Performance, which is our year-round program. Classroom time plus extra one-on-one tutoring are part of these totals.

Summer Academic Help	72.0 hrs.	35 hrs.
After School Homework Tutoring	248	182
High Performance Tutoring	320	217

Metric #14: Arthur Ashe Essay Contest (AAEC)

Every child will enter the AAEC and will receive a rubric writing score which will be graded by the following terminology: minimal (1), basic (2), basic (3), and advanced (4).

AAEC Rubric (4point scale)	2.33	1.89
High Performance AAEC Rubric	3.34	2.97
Percentage of AAEC's Completed	67%	54%
% High Performance AAEC's Completed	100%	85%

Metric #15: Tennis Knowledge Test

The Tennis Knowledge Test is a comprehensive 10-page exam that consists of 100 questions on tennis rules, history, trivia, and overall tennis knowledge in a combination of true/false, multiple choice, and fill-in the blank questions. The test was originally developed by the USTA and then modified by MTEF over the last decade. Non-tennis and novice players will find the exam difficult.

Tennis Knowledge Test	44.77	40.33
Tennis Knowledge Test 2	57.50	47.66
High Performance	72.81	67.81

Metric #16: National Junior Tennis Rating Program (NJTRP) Rating

The NJRP rating system is a set of guidelines developed and published by the USTA to help determine a participant's ability level. Head coaches at our respective sites used these guidelines along with competitive match play results in determining a player's level.

NJTRP Rating of TEAM Participants	1.83	1.54
NJTRP High Performance Rating	3.60	3.16

Flexibility – Metric #17

Flexibility is the motion available (how far you can move around) at a joint (shoulder, wrist, hip, knee, ankle). It is an important measurement in tennis because increased flexibility enhances performance and helps to eliminate injuries. Most young athletes do not understand the importance of proper stretching.

Metric #17: Sit and Reach

The sit and reach test measures hamstring and lower back flexibility. If the athlete does not reach his/her toes, then the score is recorded negatively in inches. If the athlete reaches past his/her toes, the figure is expressed positively in inches.

Low back flexibility affects your tennis serve, forehand, and backhand, but it also affects many daily activities. Good range of motion in your back is important, especially since the lower back is a common area of injury in tennis.

Sit n' Reach	1.92	-1.00
Sit n' Reach 2	2.42	N/A
High Performance	2.76	1.97

Agility & Speed – Metric #18-21

Agility and speed are your ability to move around the court quickly and smoothly to position yourself for a shot. Agility is crucial to good court movement. It allows you to be in the correct position and provides a solid platform from which to hit the ball. Speed is important to get to the ball. Though some people have natural speed, other athletes can achieve this by training their muscles and nervous system to produce the same effect. The faster you can get to the ball the more time you have to prepare for the shot.

Metric #18: Hexagon Test

The Hexagon test measures the time it takes to jump over a “24 taped hexagon three times around. Your score is in seconds. It measures foot quickness in changing direction backward, forward, and sideways while facing in one direction (facing the same direction during the test simulates facing the net during play). The hexagon also tests your ability to stabilize before the next jump can be performed. If the body is not stabilized, you will lose balance.

Hexagon	17.81	15.86
Hexagon 2	17.09	N/A
High Performance	16.83	15.01

Metric #19: 20-Yard Dash

The 20-yard dash measures the time it takes a player to go 20 yards from a standing position. Your score is in seconds. This test measures velocity and acceleration. Velocity is how fast you can go at any one time. Acceleration is your ability to get going up to that speed. Acceleration is an important part of tennis because many times you take the shot from nearly a stopped position.

20 yd. dash	4.63	4.55
20 yd. dash 2	4.36	N/A
High Performance	4.22	4.47

Metric #20: Spider Test

The spider test measures the time it takes you to pick up five tennis balls and return them individually to a specific zone. Your score is in seconds. The spider tests measures a players agility and speed. In this test you are allowed to face in any direction and move in whatever direction possible. The spider test includes stopping, starting, and changing direction. The spider tests also measures a players vertical motion (bending your knees to pick up and put down balls).

Spider Test	20.44	24.08
Spider Test 2	19.56	N/A
High Performance	18.07	20.42

Metric #21: Sideways Shuffle

The sideways shuffle measures the time it takes a player to shuffle to each of the doubles sidelines and back to the center service line. Your score is in seconds. This test measures your ability to move laterally. Fast lateral movements occur very frequently in a tennis match and many times you are forced to stop this type of movement in one step in order to prepare for the strokes following. This test uses lateral motion on both sides.

Description & Metric	2010	2009
Sideways Shuffle	9.45	8.23
Sideways Shuffle 2	11.01	N/A
High Performance	9.76	7.36

Strength & Endurance – Metric #22-23

Strength is the amount of weight you can lift or handle at any one time. Muscular endurance is the number of times your muscles can lift a weight or how long your muscles can hold an amount of weight.

Metric #22: Push-Ups

Push-ups test your upper body strength and endurance. Upper body strength and endurance are important for tennis. The upper body connects your motion from your legs and torso to your racquet.

Push Ups (60 sec.)	19.72	17.70
Push Ups 2	22.86	N/A
High Performance	25.41	22.65

Metric #23: Sit-Ups

Sit-ups test your abdominal strength and endurance. The score below is the number of sit-ups completed in one minute. Abdominal strength is important to reduce the risk of lower back pain. Abdominal strength also helps your strokes because torso is the connection of power between your legs and arms.

Sit Ups (60 sec.)	23.71	26.85
Sit Ups 2	27.37	N/A
High Performance	31.49	28.88

Aerobic Endurance – Metric #24

Aerobic endurance is the ability to take in, transport and use oxygen. Aerobic endurance is used during prolonged, steady-paced activities mainly using the large muscle groups. Aerobic endurance is important in tennis because when you are aerobically fit you can recover faster between points even when you are tired. As your endurance improves your ligaments and tendons will become tougher, reducing the threat of injury and laying the groundwork for more intense training.

Metric #24: 1.5 Mile Run

The mile and a half run is an accurate predictor of one's aerobic endurance. It is the amount of time that it takes a player to run 1.5 miles. The 1.5 mile run is scored in minutes and seconds.

1.5 Mile Run	21.53	23.42
1.5 Mile Run 2	20.36	N/A
High Performance	18.44	19.55

Power – Metric #25

Power is the amount of work you can perform in a given time period. Power is required during activities requiring both strength and speed. Tennis requires you to move with explosive movements. Greater power allows you to respond quicker and produce forceful movements with less effort. Players with explosive first steps get into position quickly, set up well and hit effect shots. Both upper and lower

body power are necessary in tennis. In order to maximize your power, lower body power must be transferred to the upper body.

Metric #25: Vertical Jump

The vertical jump is a measure of lower body power. It is the height you can jump from a standing position minus the height you can reach when standing. It is measured in inches.

Vertical Jump	7.44	8.86
Vertical Jump 2	8.28	N/A
High Performance	9.66	10.45

Metric #26: Nutrition

The 20-question nutrition test is part of the summer curriculum, developed by Wheaton Franciscan Nurse, Jenny Ovide, as part of a \$13,000 in-kind donation. The curriculum, which has been refined to meet MTEF's needs, educates children on the importance of eating healthy foods.

Nutrition Test (out of 20 Questions)	48.80%	47.55%
Nutrition Test 2 (out of 20 questions)	61.75%	N/A
High Performance (out of 20 questions)	79.60%	72.36%

On-Court Tennis Skills Tests – Metric #27-36

The on-court tennis skills test was developed to test a child's progress with the four basic tennis fundamentals – groundstrokes, volleys, overheads, and serves. While actual match play is a more accurate test of one's ability level, basic technique is necessary for success. In addition, a format had to be developed for testing improvement with children in the beginner and advanced-beginner stage.

Metric #27: Forehand Groundstroke

Children were given 20 forehand groundstrokes and 1 point was allocated for hitting in the service box, and two points for hitting past the service line, as consistency, depth and accuracy were measured in this on-court test. Misses were recorded as zero points. The maximum score is 40 points.

Forehand Groundstroke	18.98	17.41
Forehand Groundstroke 2	23.24	N/A
High Performance	29.55	26.31

Metric #28: Backhand Groundstroke

Children were given 20 backhand groundstrokes and 1 point was allocated for hitting in the service box, and two points for hitting past the service line, as consistency, depth and accuracy were measured in this on-court test. Misses were recorded as zero points. The maximum score is 40 points.

Backhand Groundstroke	16.6	14.79
Backhand Groundstroke 2	20.0	N/A
High Performance	26.56	19.88

Metric #29: Forehand / Backhand Groundstroke

This combination forehand and backhand test measures the students ability to focus on two separate strokes, which requires an all-important grip change between strokes. The maximum score is 40 points.

Fh / Bh Groundstroke	16.9	15.44
Fh / Bh Groundstroke 2	20.4	N/A
High Performance	24.89	17.32

Metric #30: Forehand Volley

Children were given 20 forehand volleys and one point was allocated for hitting in the service box, with two points for hitting past the service line, as consistency, depth and accuracy were measured in this on-court test. Misses were recorded as zero points. The maximum score is 40 points.

Forehand Volley	19.4	17.62
Fore hand Volley 2	21.6	N/A
High Performance	31.45	25.94

Metric #31: Backhand Volley

Children were given 20 backhand volleys and one point was allocated for hitting in the service box, with two points for hitting past the service line, as consistency, depth and accuracy were measured in this on-court test. Misses were recorded as zero points. The maximum score is 40 points.

Backhand Volley	16.8	13.38
Backhand Volley 2	19.6	N/A
High Performance	26.77	22.64

Metric #32: Forehand / Backhand Volley

This combination forehand and backhand volley test measures the students ability to focus on two separate strokes, which requires an all-important grip change between strokes. The maximum score is 40 points.

BH / FH Volley	15.4	14.93
BH / FH Volley 2	17.8	N/A
High Performance	25.03	19.77

Metric #33: Overhead

Each student was given 20 overheads with the same scoring as in all of the other tests. Along with serving, overheads are one of the most difficult shots to learn. The maximum score is 40 points.

Overhead	14.0	12.44
Overhead 2	17.6	N/A
High Performance	22.68	16.22

Metric #34: Serve (Deuce Court)

Each child hit twenty serves into the deuce court, receiving a point for each serve made. The results show that the most difficult stroke to learn is the serve.

Serve – Deuce Court	8.5	6.90
Serve – Deuce Court2	9.4	N/A
High Performance	11.18	9.95

Metric #35: Serve (Ad Court)

Twenty serves were hit to the ad court, with one point awarded for each serve that was made.

Serve – Ad Court	7.2	7.05
Serve – Ad Court2	8.5	N/A
High Performance	10.25	8.28

Metric #36: Consistency

Players are given the opportunity to rally with an instructor in order to assess how many consecutive shots a child can hit. Each player has three chances, with only the highest score recorded. When rallying, only balls that land in the singles court are counted. Each court will have a court monitor count each child's score. The feed ball does not count.

Rally	4.83	3.48
Rally 2	6.34	N/A
High Performance	12.97	9.61

Metric #37: Attendance Percentages

Summer Attendance	77%	72%
After School Attendance	84%	77%
High Performance Attendance	93%	86%

Metric #38: Life Skills

Through our partnership with the USTA, MTEF utilizes the First Serve Life Skills Curriculum, a one-million dollar comprehensive life skills manual developed by researchers from Stanford University. While our year-round program requires passing a level test each year, the summer program consists of a pre and post-test based on a curriculum developed especially for summer programming.

First Serve Life Skills Test	58.59%	54.03%
First Serve Life Skills Test 2	68.45%	N/A
High Performance 2	91.17%	85.64%

Metric #39: Participant Attitude Rubric

MTEF places great importance on every participant's attitude and we have developed a three tiered system to measure individual attitudes. Site teams were assembled to formulate a number that encompassed the different components of the TEAM program. This rating was completed at the end of summer programming. The criteria for evaluation is:

- Individual **sometimes** work well with others – denoted by the number 1;
- Individual **often** works well with others – denoted by the number 2;
- Individual **consistently** works well with others – denoted by the number 3;

Summer Participants	2.46	2.21
High Performance Participants	2.85	2.61