

A STUDY OF THE MIRACLE JUNIOR OBSTACLE
COURSE BY THE SIXTH AND SEVENTH GRADE BOYS AT SEVEN DOLORS
GRADE SCHOOL IN MANHATTAN, KANSAS

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INTRODUCTION

Physical fitness is a concept that man has had to deal with since the earliest times. During these times it took all of his reserves to survive. The law of this existence was "survival of the fittest." In these early ages man did not worry much about maintaining physical condition because the efforts of his daily existence were enough to keep his body as rugged as his life. As time went on man found ways to lessen his daily work load. He soon found it possible to do his daily tasks with the aid of such conveniences as the wheel, fire and slaves.

With the age of automation entering the realm of life there was little physical work left to give man's body the conditioning to do the tasks the machines were not capable of performing. The machines took over the heavy labor that men did in the past. This left the conditioning of man to his own ingenuity. Thus he found it ever harder to meet the emergencies beyond his own daily routine. For example in 1963, 266,372 of the 532,286 draftees examined were rejected; of those rejected, half were disqualified for physical reasons.¹

Today we are beginning to realize the importance of keeping our bodies in good physical condition, and that our daily existence is not adequate in itself to give our muscles their needed exercise. We are finding other ways of keeping the muscles in tone. The schools have played an important role in physical fitness since the "Seven Cardinal Principles of Education" were published in 1918. Since this time schools have held as an objective of

¹Physical Fitness Facts (President's Council on Physical Fitness, Washington: U. S. Government Printing Office, 1964).

education, the development of good health and physical efficiency.¹ In this manner schools have provided a way of keeping our children physically fit and teaching them ways of staying fit in later life. However, this idea did not mature until after World War I. Nixon and Frederickson show this in their book, An Introduction to Physical Education when they state:

Prior to World War I, the teaching of physical education in public schools was required in only a few states. Preparation for America's entrance into the war, the public reaction to the high percentage of rejections among drafted men, and pressures exerted by professional people brought about the enactment of legislation in many states for required public school physical education. To a large extent this legislation was sold on a health basis. The idea that physical education could make people "healthy" though erroneous, nevertheless gave the program an impetus which it could not have gained in any other way.²

As time went on people and schools realized the importance of physical education and it became more and more prominent in our leisure time. The schools, especially in their realization of the physical condition of the people in America, are continually doing a more thorough service. In 1961 and 1962 only forty-seven percent of the nation's high school juniors and seniors took part in physical activity programs in the schools.³ Because of the knowledge of how important physical activity is to the youth of America and such programs as the President's Physical Fitness program, there was a fifty-one percent increase in the number of children taking part in

¹Youth Physical Fitness (Suggested Elements of a School-Centered Program, Parts I and II. Washington: The President's Council on Youth Fitness, July, 1961), p. 3.

²Eugene W. Nixon and Frederick W. Conzens. An Introduction to Physical Education. (Philadelphia, London: W. B. Saunders Company, 1959), p. 127.

³Report to the President (Council on Physical Fitness, July, 1964), p. 1.

school physical activity programs. Of the 311,511,000 school children in grades four through twelve approximately 27,204,000, or eighty-six percent, participated in such programs during the 1963-64 school year.¹ Eighty-four percent of the high school juniors and seniors participated in physical activity programs this same year.²

The problem of physical fitness is a real one and will continue to become more of a problem as machines are invented to do the work that man now performs. The President's Council on Physical Fitness has this to say about the problem of physical fitness:

The ordinary tasks of daily living no longer provide enough vigorous exercise to develop and maintain good muscle tone or cardiovascular and respiratory fitness. In homes and factories, and on farms as well, machines now supply the "muscle power" for most jobs. They have all but eliminated the necessity for walking and climbing stairs, and one of them--the television set--holds our school children in captive idleness for approximately twenty-one hours a week.³

As the problem of physical fitness becomes more acute, and as more ways of lessening man's work load are devised, the schools and other agencies will have more and more to do to keep the youth of the country in physical condition. The remainder of this report will deal with a device used by some schools to enable the school youth to keep their bodies in good physical condition.

¹Report to the President (Council on Physical Fitness, July, 1964), p. 127.

²Ibid.

³Physical Fitness Facts (President's Council on Physical Fitness, Washington: U. S. Government Printing Office, 1964).

PURPOSE OF THE PROBLEM

The purpose of this problem is twofold. The main purpose is to obtain information pertaining to the Miracle Junior Obstacle Course designed by the Miracle Playground Equipment Company to strengthen those muscles tested by the Youth Physical Fitness Test as suggested by the President's Council on Physical Fitness. The other purpose of this problem is to test the physical fitness of the sixth and seventh grade boys at Seven Dolors Grade School, in Manhattan, Kansas. The results of these tests will be used to determine the worth of this particular obstacle course as used in connection with the Seven Dolors physical education program rather than for playground equipment only. These test results will be also used to determine the physical fitness of the sixth and seventh grade students.

PROCEDURES

In order to acquire the necessary information this problem was divided into three phases--testing, participation, and retesting. Each of these phases is dependent upon the others to form a whole picture. If any one were omitted the end result would not be obtainable.

The sixth and seventh grade boys' physical education classes at Seven Dolors Grade School in Manhattan, Kansas, were given a complete orientation in the problem to be considered. They were informed of this because it was felt that if the participants knew reasons why the testing was being conducted, they would then feel more a part of it, and interest would be stimulated to help promote a much greater effort. For the sake of convenience this report will deal with both the sixth grade class and the seventh grade

class as being two separate groups for testing purposes and recording, but will be combined as one group to determine the final conclusions.

The group of twenty-four sixth graders and twenty-seven seventh graders was then given the Youth Physical Fitness test which the President's Council on Physical Fitness was devised. This test was to first establish the original fitness of the students. By establishing this it can then be determined how much improvement takes place. The test consisted of seven different test items listed as follows: pullups, situps, shuttle run, standing broad jump, fifty-yard dash, softball throw, and the six-hundred yard run-walk. This test was administered during four class periods over a two-week period of time. Results of the test were then compiled for each individual student on a sample physical fitness testing score sheet provided by the President's Council on Youth Fitness. An example of this score sheet is on Table One.

The second phase of the problem entailed the student's running through the Miracle Junior Obstacle Course three times a day, five days a week, for six weeks. Since these participants only had a physical education class two times a week, their noon hour, or before or after school, was used to run the obstacle course. The decision as to when to run the course was left to the discretion of each individual. A description and example of the obstacle course used for this problem follows:

The Miracle Playground Equipment Company has this to say about their obstacle course: "an interesting, diversified course for elementary grades, the Miracle Junior Obstacle Course is designed to spark a student's competitive spirit, to maintain his interest, and to develop his entire body."

TABLE I (A)
 SAMPLE PHYSICAL FITNESS TESTING SCORE SHEET¹
 (For Boys 12 years of age)

Pupil _____		School _____		Instructor _____		
Situps	Pull ups	Standing Broad Jump	50-Yard Dash	Shuttle Run	Softball Throw	600 Yard Run-Walk
Excellent 78	7	6'2"	7.0	10.0	151'	2:5
Good						
77	6	6'1"	7.1	10.1	150'	2:6
74					146'	2:8
71		6'0"			144'	2:10
67		5'11"	7.2	10.2	142'	2:12
64	5	5'10"	7.3	10.3	140'	2:14
57		5'9"			138'	2:16
54			7.4	10.4	134'	2:18
51	4	5'8"	7.5	10.5	132'	2:19
Satisfactory						
50	3	5'7"	7.6	10.6	131'	2:20
48					129'	2:22
47			7.7	10.7	128'	2:23
46					127'	2:24
45		5'6"		10.8	126'	2:25
44			7.8		124'	2:26
42				10.9	123'	2:27
41		5'5"			122'	2:28
40			7.9	11.0	121'	2:29
39					120'	2:30
37	2	5'4"	8.0	11.1	118'	2:32
Poor						
36		5'3"	8.1	11.2	117'	2:33
35					115'	2:35
34		5'2"			113'	2:37
33				11.3	111'	2:38
	1			11.4	110'	2:39
32		5'1"	8.2	11.5	109'	2:40
31				11.6	108'	2:41
30		5'0"			106'	2:42
29					104'	2:44
28		4'11"	8.3	11.7	102'	2:46

¹Youth Physical Fitness (Suggested Elements of a School-centered Program, Parts I and II. Washington: The President's Council on Youth Fitness, July, 1961), pp. 44-54.

TABLE I (B)

SAMPLE PHYSICAL FITNESS TESTING SCORE SHEET¹
(For boys 13 years of age)

Pupil	School	Instructor				
Situps	Pull ups	Standing Broad Jump	50-Yard Dash	Shuttle Run	Softball Throw	600 Yard Run-Walk
Excellent						
73	8	6'8"	6.5	9.7	171'	2:0
Good						
72	7	6'7"	6.6	9.8	170'	2:1
68		6'6"	6.7		166'	2:3
66		6'5"	6.8	9.9	162'	2:5
64		6'4"		10.0	160'	2:6
62	6	6'3"	6.9	10.1	158'	2:8
60		6'2"	7.0	10.2	156'	2:9
58		6'1"	7.1		152'	2:11
54	5	6'0"	7.2	10.3	148'	2:13
Satisfactory						
53	4	5'11"	7.3	10.4	147'	2:14
51					144'	2:15
50					143'	2:16
49			7.4	10.5	141'	2:17
48		5'10"			140'	2:18
47				10.6	138'	2:20
45					136'	2:21
44		5'9"	7.5	10.7	135'	2:22
43					133'	2:23
42					132'	2:24
40	3	5'8"	7.6	10.8	129'	2:25
Poor						
39		5'7"	7.7	10.9	128'	2:26
38					127'	2:27
37		5'6"		11.0	125'	2:28
36			7.8	11.1	124'	2:29
35	2	5'5"			122'	2:30
34		5'4"		11.2	121'	2:32
33			7.9	11.3	119'	2:33
32		5'3"		11.4	118'	2:34
31					116'	2:35
30		5'2"	8.0	11.5	115'	2:36

¹Ibid.

The course consisted of thirteen obstacles which are numbered and listed below:

# 1-----	Tower Climber
# 2-----	Swing Around Post
# 3-----	Bar Slide
# 4-----	Swing Around Post
# 5-----	Ladder Slide
# 6-----	Swing Around Post
# 7-----	Space Ladder
# 8-----	Swing Around Post
# 9-----	Shimmy Pole
#10-----	Fence Climber
#11-----	Balancing Beam
#12-----	Swing Around Post
#13-----	Hand-Walking Bars

Tower Climber

This particular obstacle consisted of a platform raised into the air by poles with a chain ladder leading up to the platform. The chains were protected to keep the pupils' hands from being pinched by the chains. A single pipe about two feet above the platform enclosed the perimeter of the platform. Two chinning bars were placed on either side at different heights between the poles that held the platform in place. The students were to climb up the ladder, go over or under the pipe around the platform, across the platform and down the other side. After the students returned to the ground again they ran around to the chinning bars, did a pullup, then advanced to the next obstacle.

Swing Around Post

This obstacle was merely a pole placed in the ground for the students to grasp and swing around as they ran from one obstacle to the other. The swing around posts were placed throughout the course. The placement of these were obstacle numbers Two, Four, Six, Eight and Twelve mentioned earlier

in the list of obstacles in the course. The placement of these posts can also be seen on Table Two.

Bar Slide

This obstacle consisted of a fiber glass board built on an upgrade; above this board were placed three pipes arranged so as to form a triangle. The pipes were held above the board by supporting pipes placed in the ground. The students could choose one of three methods depending on his choice of difficulty. He could grasp the two lower pipes forming the base of the triangle and pull himself along the board, or he could grasp the top pipe forming the apex of the triangle and pull himself along the board, or he could grasp the top pipe and wrap his legs around the same and pull himself along using only the top pipe.

Ladder Slide

This obstacle is built on much the same manner as the bar slide. The differences in the two is the board, which, instead of slanting up, is placed parallel to the ground and instead of bars above the board, a metal ladder is placed parallel above the board. The students go through the obstacle hand over hand, taking each rung on the ladder in turn. Thus, he pulls himself on the back along the board.

Space Ladder

The space ladder is constructed of two pipes built parallel to one another extending from the ground up, then leveling off parallel to the ground, then extending downward again where they are secured firmly in the ground. Rungs are spaced at intervals connecting the two pipes, forming a suspended ladder which was parallel to the ground. The students went

through this obstacle by grasping the rungs with the hands and traveling hand over hand without skipping any rung or without touching the ground.

Shinny Pole

The Shinny pole was built with four pipes planted securely in the ground, three of which formed a tripod and the fourth connected with the others at the top of the tripod and then went perpendicular to the ground. The less capable students could go up the slanted poles and then graduate to the middle pole which went straight up from the ground. The students could also go up the outside poles and down the middle pole or up the middle pole and down one of the outside poles.

Fence Climber

The fence climber obstacle was constructed by anchoring two-foot poles, about six feet apart, perpendicular to the ground. Horizontal bars connected the two poles. The bars formed steps so that the student had to climb from one to the other. The two uprights were bent in a wave-like fashion so as to allow the student to climb on the bars with less difficulty and danger. The students were to go up one side of the erected fence and down the other side. The bars were spaced wide enough so that the less capable students could at any time climb through the fence and descend down the other side. As each one developed more confidence and became more capable they could climb higher in future attempts.

Balance Beam

The balance beam obstacle was a curving length of pipe with a narrow walking surface attached to the upper part of the pipe. The pipe was parallel to the ground; however, it was not in a straight line. It was

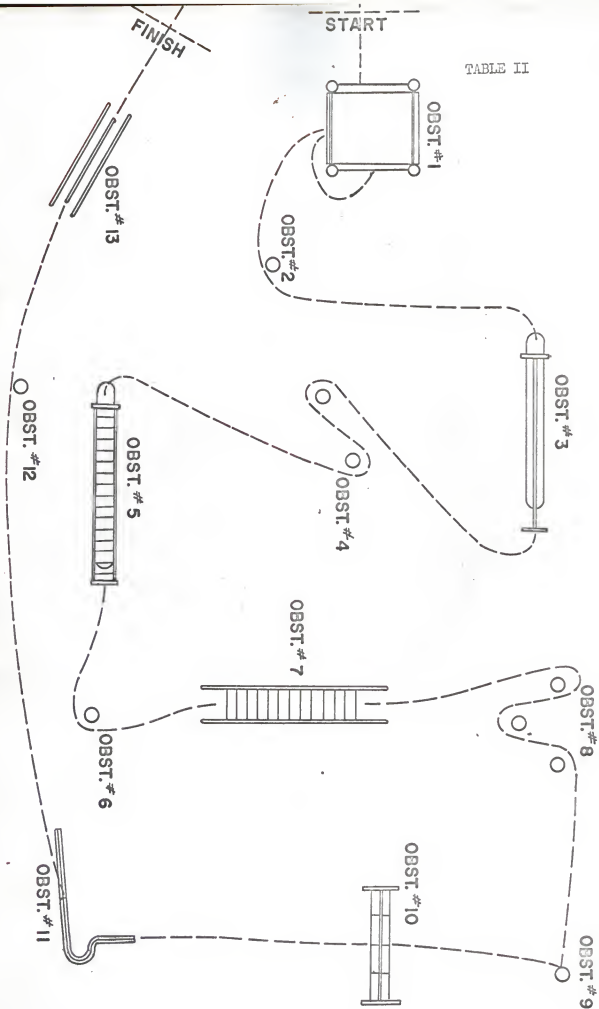
raised about eight inches off the ground. The students would start at one end and walk, trot or run to the other end as fast as possible, without falling off. The obstacle continued to contain a degree of difficulty, for as the students became more adept at it they increased their speed. As the speed is increased, so is the degree of difficulty.

Hand-Walking Bars

The hand-walking bars obstacle was built on the same principle as the gymnastic parallel bars. These bars were about waist high with a pipe directly between them about three inches off the ground. The students walked on the middle bar with their feet holding themselves with their hands by means of the two upper bars. As the student's talents and muscles became more accurate and accustomed to the obstacle, the less the students used the lower middle bar. This improvement continued until the students were able to walk across the two upper bars by using only their hands without their two feet touching the middle bar. When the students worked up to this level, developing speed was the challenging incentive in maintaining interest in this obstacle.

Since each obstacle is independent of the others, the Miracle Junior Obstacle Course can be set up to cover almost any sized area by changing the distance between the obstacles (Note Table Two). This author assumes that because of the limited space available for the course at Seven Dolors Grade School some attributes of the course were lost that would have been present had there been more space available for the course. The course would also have been more effective if all of the students had been able to complete all of the obstacles properly. The poor physical ability of a number of the students did not allow them to complete all of the obstacles. The students

TABLE II



who were unable to complete any obstacle were to exert their best effort on three trials before going on to the next obstacle. It is felt that even though the students did not fully complete certain obstacles the maximum effect of the three trials each time through the course did yield the students certain physical benefits.

The third phase of the problem consisted of giving the original fitness test again. The retesting was done to note the amount of improvement in fitness of the students, after six weeks on the obstacle course. This particular phase of the problem took three class periods to complete. The reason this phase took a shorter period of time than the first phase, even though it was the same test, is because the students learned and became acquainted with the procedures in administering the first test. The results of this test were again scored by the score sheet suggested by the President's Council on Youth Fitness. (Table One).

The facilities used in this problem were obstacle course, outdoor classroom space, and the devices needed to measure the fitness test which included the following: stop watches, a softball, chinning bar, two chalk board erasers, a yard stick, metal markers, and a pencil and paper for recording. Students were used as recorders and markers.

TESTS AND RESULTS

Even though two separate tests were given, to accumulate the needed data for the complete picture of the problem, the tests themselves and their results will be interpreted together. The treatment of the data of these two tests together is possible because the same test was given but at different times. It was given first to establish the fitness of the students and second to note their improvement. The test consisted of seven separate

parts including the following:

1. Pull ups
2. Sit ups
3. Shuttle Run
4. Broad Jump
5. Fifty-Yard Dash
6. Softball Throw (for distance)
7. 600-Yard Run-Walk

The students' individual scores for the seven parts of the physical fitness test are shown in the Appendix.

Since each part of the test was a separate test in itself, it will be treated as such in the following paragraphs. The instruction for administering these tests are presented and described in the President's Council on Youth Fitness publication, Youth Physical Fitness.

PULL UPS

The starting position for the pull ups test was done by having the students hang by the hands from a bar with their feet off the ground, palms forward, and legs and arms extended. The students then pulled their bodies up until their chins cleared above the bar. This was done without jerking, swaying, raising knees, or kicking legs. They then lowered their bodies until their arms were again fully extended to the original position. Each student completed this procedure as many times as possible. Each time the body was lowered, one pull up was registered to the credit of the individual. The results of the first and second pull up tests are shown on Table Three A.

TABLE III (A)

RANGES FOR INITIAL AND FINAL TEST OF THE PULL UPS

	High		Low		Mean	
	Score		Score		Score	
Grade	Initial	Final	Initial	Final	Initial	Final
Group	Test	Test	Test	Test	Test	Test
6	6	9	0	0	1.9	3.2
7	5	10	0	0	1.1	2.3

According to the fitness score sheet produced by the President's Council on Youth Fitness (Table I), Table III (B) shows that both groups were rated poor in pull ups with the averages being 1.9 for the sixth grade and 1.1 for the seventh grade. After the obstacle course was run the averages showed a slight rise to 3.2 pull ups for the sixth grade and 2.3 for the seventh grade.

TABLE III (B)

COMPARISON OF INITIAL TEST AND FINAL PULL UP TEST TO THE NORMS OF THE PRESIDENT'S COUNCIL ON YOUTH FITNESS FOR TWELVE YEAR OLDS

Council		Initial		Final	
Norms		Test		Test	
(12)		Subjects	Per Cent	Subjects	Per Cent
Excellent	7-up	0	- 0	4	- 16.7
Good	4-6	6	- 25	4	- 16.7
Satisfactory	2-3	5	- 20.8	7	- 29.1
Poor	1-down	13	- 54.2	9	- 37.5

TABLE III (C)

COMPARISON OF INITIAL AND FINAL PULL UP TEST TO NORMS OF PRESIDENT'S
COUNCIL ON YOUTH FITNESS FOR THIRTEEN YEAR OLD BOYS

Council Norms (13)		Initial Test Subjects Per Cent		Final Test Subjects Per Cent	
Excellent	8-up	0	- 0	4	- 14.8
Good	5-7	1	- 3.7	1	- 3.7
Satisfactory	3-4	3	- 11.1	4	- 14.8
Poor	2-down	23	- 85.2	18	- 66.7

The results of Table III (B) and Table III (C) show that the students were below average in upper body and arm strength; however, they did improve; an indication that the obstacle course was instrumental in this improvement. This author feels that these tests and their results were a true indication of the pull up power of this particular group. However, the improvement indicated was felt to be only in part the result of the obstacle course. This improvement might have been due to a spirit of competition among the students to better their own records and those of the others.

SIT UPS

The technique used to complete the sit up test consisted of having the pupils lie flat on the back with their legs extended, feet about one foot apart, and their hands clasped behind their heads. The student's partner held the participant's ankles in contact with the ground and counted the number of completed sit ups. From the starting position the students sat up, turned their trunk to the left, and touched their right elbow to the left knee, then returned to the starting position. This same procedure was followed except the opposite elbow touched the right knee. Then by alternating each time, the student performed as many sit ups as possible not exceeding

the number of sit ups required to meet the standards for the highest classification for his age and sex. One sit up was counted each time the student returned to the starting position. The results of the sit up test are shown on Table IV.

TABLE IV (A)
GROUP SCORE RANGES FOR INITIAL AND FINAL TEST OF SIT UPS

	High		Low		Mean	
	Score		Score		Score	
Grade Group	Initial	Final	Initial	Final	Initial	Final
	Test	Test	Test	Test	Test	Test
6	78	78	11	11	54	56.7
7	78	78	11	15	52.8	57.1

Table IV (B) and Table IV (C) show that the students' muscles used in doing sit ups were more fit than those used in doing the pull ups. In the first test the average rating for the sixth and seventh grades were fifty-four sit ups (good) and fifty-two sit ups (satisfactory) respectively. The second test showed an improvement of 2.7 sit ups for the sixth grade and 4.3 sit ups for the seventh grade placing this group in the category of Good (Table I). The improvement in this test could be accredited to the use of the obstacle course and to the personal pride of the students by stimulating them to do better.

TABLE IV (B)

COMPARISON OF INITIAL AND FINAL SIT UPS TEST TO NORMS OF PRESIDENT'S
COUNCIL ON YOUTH FITNESS FOR TWELVE YEAR OLDS

Council Norms (12)		Initial		Final	
		Test	Per Cent	Test	Per Cent
		Subjects		Subjects	
Excellent	73-up	8	- 29.7	9	- 33.3
Good	54-72	3	- 11.1	6	- 22.2
Satisfactory	40-53	9	- 33.3	5	- 14.8
Poor	39-down	7	- 25.9	7	- 25.9

TABLE IV (C)

COMPARISON OF INITIAL AND FINAL SIT UP TEST TO NORMS OF PRESIDENT'S
COUNCIL ON YOUTH FITNESS FOR THIRTEEN YEAR OLDS

Council Norms (13)		Initial		Final	
		Test	Per Cent	Test	Per Cent
		Subjects		Subjects	
Excellent	78-up	6	- 25	8	- 33.3
Good	51-77	10	- 41.7	7	- 29.2
Satisfactory	37-50	3	- 12.5	4	- 16.7
Poor	36-down	5	- 20.8	5	- 20.8

SHUTTLE RUN

The shuttle run test was given in the following manner: Two parallel lines were drawn thirty feet apart with two blackboard erasers placed behind one of the lines. Each student took a starting position behind the other line. On the signal "go" the pupil ran to the erasers, picked one up, returned and placed it behind the starting line without throwing or dropping it. He then returned, picked up the remaining eraser, and carried it back

across the starting line. The students were allowed two trials with the best of the two being recorded. If the student threw or dropped an eraser, the trial was not counted. The times were recorded in seconds to the nearest tenth. The results of this test are shown on Table V (A).

TABLE V (A)

GROUP SCORE RANGES FOR INITIAL AND FINAL TEST OF THE SHUTTLE RUN

	High		Low		Mean	
	Score		Score		Score	
Grade Group	Initial	Final	Initial	Final	Initial	Final
	Test	Test	Test	Test	Test	Test
6	15.7	13.3	10.3	10.4	11.4	11.6
7	13.8	14.4	9.9	10.3	12.0	12.1

The shuttle run test results shown on Table V indicate that the times recorded for the second test were slower than those for the first test. The averages for the sixth grade were 11.4 seconds for the first test and 11.6 seconds for the second test. The seventh grade averages were 12 seconds for the first test and 12.1 seconds for the second test. All of these test averages remain in the poor category (Table I). The fact that the second tests of the students showed a slower time than the first tests must be accredited to the Miracle Junior Obstacle Course. Since the improvements in the other tests were assumed to be influenced by the Miracle Junior Obstacle Course and individual competition so it may be implied that these same factors were responsible for slower times in the shuttle run. It might also be assumed that the obstacle course is lacking in developing of agility skills or that each individual was not up to peak of maximum performance at the time the test was given.

TABLE V (B)

COMPARISON OF INITIAL AND FINAL SHUTTLE RUN TEST TO NORMS OF
PRESIDENT'S COUNCIL ON YOUTH FITNESS FOR TWELVE YEAR OLDS

Council Norms (12)		Initial		Final	
		Test Subjects	Per Cent	Test Subjects	Per Cent
Excellent	10.0-up	0	- 0	0	- 0
Good	10.5-10.1	2	- 8.3	3	- 12.5
Satisfactory	11.1-10.6	10	- 41.7	3	- 12.5
Poor	11.2-down	12	- 50	18	- 75

TABLE V (C)

COMPARISON OF INITIAL AND FINAL SHUTTLE RUN TEST TO NORMS OF
PRESIDENT'S COUNCIL ON YOUTH FITNESS FOR THIRTEEN YEAR OLDS

Council Norms (13)		Initial		Final	
		Test Subjects	Per Cent	Test Subjects	Per Cent
Excellent	9.7-up	1	- 3.7	0	- 0
Good	10.3- 9.8	0	- 0	1	- 3.7
Satisfactory	10.8-10.4	0	- 0	0	- 0
Poor	10.9-down	26	- 96.3	26	- 96.3

The standing broad jump test was performed on the outdoor classroom space. To perform the jump, each student stood with his feet comfortable. With the toes just behind the take off line, he then flexed his knees with the arms extended. From this starting position the arms were forceably swung forward and upward at the same moment springing forward off the balls of his feet. Each student was allowed three jumps. The furthest jump was measured and recorded, in feet and inches from the nearest point of the take off line to where the back of the heel landed for each student's performance. The results of the standing broad jump test are shown on Table VI (A).

TABLE VI (A)

GROUP SCORE RANGES FOR INITIAL AND FINAL TEST OF STANDING BROAD JUMP

Grade Group	High Score		Low Score		Mean Score	
	Initial Test	Final Test	Initial Test	Final Test	Initial Test	Final Test
	:	:	:	:	:	:
6	5'7"	6'2"	3'3"	4'1"	4'4.4"	5'3.5"
7	7'1"	7'1"	4'0"	4'5"	5'0.8"	5'3.8"

Table VI(B) and Table VI (C) show that fifty percent or over of both the sixth and seventh grades fell in the poor category on both tests. There was, however, an improvement of four tenths inches up to five feet and eight tenths of an inch for the sixth grade, and from five feet three and five tenths inches up to five feet three and eight tenths inches for the seventh grade. Even though the second test's averages were still in the poor category, it can be assumed that improvement in this category might continue to improve with the use of the obstacle course.

TABLE VI(B)

COMPARISON OF INITIAL AND FINAL STANDING BROAD JUMP TEST TO NORMS OF THE PRESIDENT'S COUNCIL ON YOUTH FITNESS FOR TWELVE YEAR OLDS

Council Norms (12)	Initial Test		Final Test	
	Subjects	Per Cent	Subjects	Per Cent
	:	:	:	:
Excellent	6'2"-up	0	1	4.2
Good	5'8"-6'1"	0	1	4.2
Satisfactory	5'7"-5'4"	1	10	41.6
Poor	5'3"-down	23	12	50

TABLE VI (C)

COMPARISON OF INITIAL AND FINAL STANDING BROAD JUMP TEST TO THE NORMS OF
THE PRESIDENT'S COUNCIL ON YOUTH FITNESS FOR THIRTEEN YEAR OLDS

Council Norms (13)		Initial		Final	
		Test		Test	
		Subjects	Per Cent	Subjects	Per Cent
Excellent	6'8"-up	1	- 3.7	1	- 3.7
Good	6'0"-6'7"	2	- 7.4	2	- 7.4
Satisfactory	5'8"-5'11"	10	- 37	5	- 18.5
Poor	5'7"-down	14	- 51.8	19	- 70.4

50-YARD DASH

Testing the students on the fifty-yard dash was done by the following procedure. They first took a starting position behind the starting line. The starter placed himself fifty yards away at the finish line with a stopwatch. To start the runners, the starter raised his hand for the preparatory command to get set; the hand was then dropped quickly to the thigh as a signal to leave the starting line. Each individual ran the fifty yards to the starter in their quickest possible time. As each runner crossed the finish line, his time was recorded in seconds to the nearest tenth. The results of the fifty-yard dash test are recorded on Table VII (A).

TABLE VII (A)

GROUP SCORE FOR INITIAL AND FINAL TEST OF THE FIFTY-YARD DASH

Grade Group	High		Low		Mean	
	Score		Score		Score	
	Initial	Final	Initial	Final	Initial	Final
	Test	Test	Test	Test	Test	Test
6	10.4	10.9	7.6	7.4	8.7	8.2
7	9.4	10.5	7.1	7.0	8.4	8.3

The results of the fifty-yard dash on Table VII (B) and Table VII (C) show an improvement of speed in running after the students' participation in the obstacle course routine for six weeks. There was a five tenths of a second improvement after the obstacle course training for the sixth grade and an improvement of one tenth of a second for the seventh grade. As in previous test items the majority of the scores fell in the bottom two categories (poor or satisfactory) on the standards shown in the President's Council on Physical Fitness (Table I). As in most physical condition comparisons of this age group, there was a wide distribution of times turned in by the students. Perhaps this may be due to the fact that some of the students were more mature physically than others.

TABLE VII (B)

COMPARISON OF INITIAL AND FINAL FIFTY-YARD DASH TEST TO NORMS OF THE
PRESIDENT'S COUNCIL ON YOUTH FITNESS FOR TWELVE YEAR OLDS

Council Norms (12)		:	Initial		:	Final	
		:	Test		:	Test	
		:	Subjects	Per Cent	:	Subjects	Per Cent
		:			:		
Excellent	7.0-up		0	- 0		0	- 0
Good	7.5-7.1		0	- 0		1	- 4.2
Satisfactory	8.0-7.6		3	- 12.5		4	- 16.7
Poor	8.1-down		21	- 87.5		19	- 79.1

TABLE VII (C)

COMPARISON OF INITIAL AND FINAL FIFTY-YARD DASH TEST TO NORMS OF THE
PRESIDENT'S COUNCIL ON YOUTH FITNESS FOR THIRTEEN YEAR OLDS

Council Norms (13)		Initial Test		Final Test	
		Subjects	Per Cent	Subjects	Per Cent
Excellent	6.5-up	0	- 0	0	- 0
Good	7.2-6.6	1	- 3.7	1	- 3.7
Satisfactory	7.6-7.3	3	- 11.1	3	- 11.1
Poor	7.7-down	23	- 85.2	23	- 85.2

SOFTBALL THROW FOR DISTANCE

The softball throw for distance test was again administered to the students on the outdoor classroom space. The students stood behind a line marked on the ground, and each one ran forward, and threw the ball overhand as far as possible without stepping over the line. Each throw was marked where the ball hit the ground. The students were given three trials, with the best of the three measured to the nearest foot and accounted to their record. On any throw where the student stepped over the restraining line, the throw was disqualified. The results of the softball throw test are recorded on Table VIII (A).

TABLE VIII (A)

GROUP SCORE RANGES FOR INITIAL AND FINAL TEST OF SOFTBALL THROW

	High		Low		Mean	
	Score		Score		Score	
Grade Group	Initial	Final	Initial	Final	Initial	Final
	Test	Test	Test	Test	Test	Test
6	166'	159'	97'	96'	126.6'	130'
7	174'	174'	95'	84'	124.2'	126.1'

Table VIII (B) and Table VIII (C) show that there was an increase in the number of feet that both groups were able to throw the softball after training on the obstacle course. The averages before and after the obstacle course training showed that the average sixth grader threw the softball three and two tenths feet farther during the second test than the first test. The average seventh grader in turn threw the softball one and nine tenths feet farther on the second test. It is assumed that the improvement shown in the softball throw is mainly credited to the obstacle course training program. There is still, however, the individual's competitive spirit to be considered. The table also shows that the softball test was the one the students rated second highest according to the standards provided by the President's Council on Physical Fitness (Table I). It is further assumed that some of this improvement might be due to the student's participation in softball games during their recess periods and noon hours after lunch period. This pattern followed by most of the students at Seven Dolores Grade School at the very early grade levels.

TABLE VIII (B)

COMPARISON OF INITIAL AND FINAL SOFTBALL THROW TEST TO NORMS OF THE
PRESIDENT'S COUNCIL ON YOUTH FITNESS FOR TWELVE YEAR OLDS

Council Norms (12)		Initial			Final	
		Test	Per Cent		Test	Per Cent
		Subjects			Subjects	
Excellent	151'-up	1	-		5	- 20.8
Good	132'-150'	9	-		9	- 37.4
Satisfactory	118'-131'	7	-		2	- 8.4
Poor	117'-down	7	-		8	- 33.3

TABLE VIII (C)

COMPARISON OF INITIAL AND FINAL SOFTBALL THROW TEST TO NORMS OF THE
PRESIDENT'S COUNCIL ON YOUTH FITNESS FOR THIRTEEN YEAR OLDS

Council Norms (13)		Initial			Final	
		Test	Per Cent		Test	Per Cent
		Subjects			Subjects	
Excellent	171'-up	1	- 3.7		1	- 3.7
Good	148'-170'	4	- 14.8		1	- 3.7
Satisfactory	129'-147'	4	- 14.8		6	- 22.2
Poor	128'-down	18	- 66.7		19	- 70.4

600 YARD RUN-WALK

The 600 yard run-walk test was set up by marking the distance off around the outdoor classroom area. The pupils paired off according to the buddy system. To begin the test the runners lined up behind the starting line and on the command, "ready-go", the runners took off and covered the six hundred yards in the shortest possible time. As a runner crossed the finish line the timer, who was also the starter, called out the time and each runner's "buddy" would listen for, and remember, the time for the run-walk. After

all of the runners of the first group had finished the times were given to the recorder. The groups then switched and the process was repeated with the second buddy. The results of the six hundred yard run-walk test are shown on Table IX.

TABLE IX (A)

GROUP SCORE RANGES FOR INITIAL AND FINAL TEST OF 600 YARD RUN-WALK

	:	High		:	Low		:	Mean	
	:	Score		:	Score		:	Score	
Grade	:	Initial	Final	:	Initial	Final	:	Initial	Final
	:	Test	Test	:	Test	Test	:	Test	Test
Group	:			:			:		
6		4:13	3:52		2:13	2:04		2:26.9	2:25.3
7		3:27	2:55		2:02	2:02		2:29.6	2:27.7

The averages for the two groups also showed an improvement on the second test. The average sixth grader showed a full one and six tenths second improvement on the second test. The seventh graders average improved one and nine tenths seconds on the second test. The main credit for the improvement on the 600 yard run-walk was probably due to the endurance building of the obstacle course since the students went through three times a day.

TABLE IX (B)

COMPARISON OF INITIAL AND FINAL 600 YARD RUN-WALK TEST TO NORMS OF THE
PRESIDENT'S COUNCIL ON YOUTH FITNESS FOR TWELVE YEAR OLDS

Council Norms (12)		Initial		Final	
		Test	Per Cent	Test	Per Cent
		Subjects		Subjects	
Excellent	2:5-up	0	- 0	2	- 8.3
Good	2:19-2:6	9	- 37.5	10	- 41.7
Satisfactory	2:32-2:20	10	- 41.7	6	- 25
Poor	2:33-down	5	- 20.8	6	- 25

TABLE IX (C)

COMPARISON OF INITIAL AND FINAL 600 YARD RUN-WALK TEST TO NORMS OF THE
PRESIDENT'S COUNCIL ON YOUTH FITNESS FOR THIRTEEN YEAR OLDS

Council Norms (13)		Initial		Final	
		Test	Per Cent	Test	Per Cent
		Subjects		Subjects	
Excellent	2:0-up	0	- 0	0	- 0
Good	2:11-2:1	5	- 18.5	6	- 22.2
Satisfactory	2:25-2:14	10	- 37	7	- 25.9
Poor	2:26-down	12	- 44.5	14	- 51.9

Table IX shows that the 600 Yard Run-Walk Test was another of the students' better performance. Thirty-seven and five tenths per cent of the sixth grade group had a rating of good on the first test and fifty per cent good or better on the second test. The seventh grade group did not show as much improvement. However, eighteen and five tenths per cent rated good on the first test and twenty-two and two tenths per cent rated good on the second test.

SUMMARY

In the introduction to this report evidence was given to substantiate the fact that a great number of the youth in the United States are in very poor physical condition. The results of the Youth Physical Fitness Test provided by the President's Council on Youth Fitness show that the group of sixth and seventh grade students at Seven Dolors in Manhattan, Kansas were a good example of the poor physical condition of the youth in this country. This group's average scores for each test given, except for the sit up test, the softball throw test and the 600 yard run-walk test, rated poor on the score sheets provided by the President's Council on Youth Fitness. Of the tests in which the students rated above the poor category on the Council's score sheet, the sit up test was the only one in which both the sixth and seventh grade group average scored in the good category. In the pull up and softball throw tests, only the sixth grade group averages rated in the satisfactory level. This group average rating is shown on Table X (A) and Table X (B).

TABLE X (A)
MEAN SCORE AND IMPROVEMENT FOR THE SIXTH GRADE

Activity	: Initial	: Classification	: Final	: Classification	: Improvement
Pull ups	1.9	Poor	3.2	Satisfactory	1.3
Sit ups	54.0	Good	56.7	Good	2.7
Shuttle Run	11.4 sec.	Poor	11.6 sec.	Poor	-0.2
Standing Broad Jump	4'4.4"	Poor	5'3.3"	Poor	0'10.9"
50-Yard Dash	8.7 sec.	Poor	8.2 sec.	Poor	0.5 sec.
Softball Throw	126.8'	Satisfactory	130'	Satisfactory	3.2'
600 Yard Run-Walk	2:26.9	Satisfactory	2:25.3	Satisfactory	0:01.6

TABLE X (B)
MEAN SCORE AND IMPROVEMENT FOR THE SEVENTH GRADE

Activity	: Initial	: Classification	: Final	: Classification	: Improvement
Pull ups	1.1	Poor	2.3	Poor	1.2
Sit ups	52.8	Satisfactory	57.1	Good	4.3
Shuttle Run	12.0 sec.	Poor	12.1	Poor	-0.1
Standing Broad Jump	5'0.8"	Poor	5'3 .8"	Poor	0'3"
50-Yard Dash	8.4 sec.	Poor	8.3 sec.	Poor	0.1 sec.
Softball Throw	124.2'	Poor	126.1'	Poor	1.9'
600 Yard Run-Walk	2:29.6	Poor	2:27.7	Poor	0:01.9

The Miracle Equipment Company constructed an obstacle course, which is called The Miracle Junior Obstacle Course, designed to strengthen all parts of the body. The Junior Course is especially geared for elementary youth, however, the Miracle Equipment Company has also constructed an obstacle course for the older group. This study was to investigate the value of the Miracle Junior Obstacle Course for use in the physical education program, to develop physical fitness in the children, rather than using it for playground equipment at Seven Dolors Grade School. The results of the tests given after the students had completed six weeks use of the obstacle course show a definite improvement over the test results obtained prior to the use of the obstacle course. After training on the course the students showed improvement in six of the seven items of the Youth Physical Fitness test.

The shuttle run was the one item in which no improvement was shown on the second test. In fact the average time was slower than the first testing. The difference between the group averages on each test is shown on Table X. From this chart and other results stated in this study, certain conclusions may be drawn about the Miracle Junior Obstacle Course, which will be helpful to other physical educators when dealing with similar circumstances.

CONCLUSIONS

The Miracle Junior Obstacle Course can be assumed to have definite possibilities in the physical development of the students in physical education classes at Seven Dolors Grade School in Manhattan, Kansas. This assumption is based on the fact that of the seven test items given to the students, six showed an improvement after training on the obstacle (Table X). The test not showing an improvement was the shuttle run test. This lack of improvement could indicate a number of things, one being that possibly the obstacle course was lacking in qualities that develop agility or stopping and starting; another possible reason for the lack of improvement could be low morale for this test, lack of motivation in stimulating students for the test, or what is known to the baseball players as a "slump"; still another reason for the students' lack of improvement could have been because there was not enough emphasis placed on the necessity of covering the distance between the obstacles as quickly as possible. This could make a difference in the effectiveness of the course.

The six parts of the fitness test that showed an improvement were the pull up test, sit up test, broad jump test, fifty-yard dash, softball throw for distance, and the 600 yard run-walk test. The improvement in these parts

of the fitness test shows a definite increase in body strength, speed and endurance. Even though the obstacle course was given credit for the improvement on these tests it is difficult to justify this because the groups used were not controlled. There was no way of determining the physical activities that students participated in after leaving school. Another possible reason for the students' improvement, other than the obstacle course, could be that of the pride in wishing to excel.

The poor physical condition shown by rating the score of Youth Fitness Test for the sixth and seventh graders at Seven Dolors Grade School is typical of many of the youth today. These groups are in great need of all types of muscular development. If this group is an example of other physically inadequate youth, more devices comparable to the Miracle Junior Obstacle Course developed by the Miracle Equipment Company could be used in the physical education classes in our schools.

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APPENDIX

APPENDIX I

SCORE TABLE

GRADE 6

PULL UPS

Subject Number	:	Initial Test	:	Final Test	:	Score Difference
1	:	2	:	3	:	+1
2	:	1	:	3	:	+2
3	:	1	:	5	:	+4
4	:	6	:	9	:	+3
5	:	0	:	3	:	+3
6	:	0	:	2	:	+2
7	:	0	:	1	:	+1
8	:	3	:	2	:	-1
9	:	2	:	1	:	-1
10	:	3	:	5	:	+2
11	:	0	:	0	:	0
12	:	5	:	6	:	+1
13	:	0	:	0	:	0
14	:	5	:	9	:	+4
15	:	1	:	1	:	0
16	:	0	:	0	:	0
17	:	4	:	7	:	+3
18	:	0	:	2	:	+2
19	:	0	:	0	:	0
20	:	2	:	1	:	-1
21	:	1	:	2	:	+1
22	:	0	:	0	:	0
23	:	6	:	9	:	+3
24	:	4	:	5	:	+1

APPENDIX II

SCORE TABLE

GRADE 7

PULL UPS

Subject Number	:	Initial Test	:	Final Test	:	Score Difference
1	:	0	:	0	:	0
2	:	0	:	0	:	0
3	:	0	:	1	:	+1
4	:	2	:	1	:	-1
5	:	1	:	1	:	0
6	:	1	:	0	:	-1
7	:	0	:	0	:	0
8	:	1	:	4	:	+3
9	:	1	:	3	:	-2
10	:	0	:	3	:	+3
11	:	0	:	0	:	0
12	:	1	:	3	:	+2
13	:	0	:	2	:	+2
14	:	2	:	8	:	+6
15	:	0	:	1	:	+1
16	:	0	:	0	:	0
17	:	2	:	2	:	0
18	:	1	:	3	:	+2
19	:	0	:	6	:	+6
20	:	2	:	2	:	0
21	:	1	:	1	:	0
22	:	0	:	0	:	0
23	:	3	:	2	:	-1
24	:	5	:	6	:	+1
25	:	0	:	1	:	+1
26	:	4	:	10	:	+6
27	:	3	:	2	:	-1

APPENDIX III

SCORE TABLE

GRADE 6

SIT UPS

Subject Number	:	Initial Test	:	Final Test	:	Score Difference
1	:	78	:	70	:	- 8
2	:	60	:	68	:	+ 8
3	:	55	:	30	:	-25
4	:	60	:	78	:	+18
5	:	45	:	32	:	-13
6	:	60	:	39	:	-21
7	:	60	:	40	:	-20
8	:	25	:	60	:	+35
9	:	55	:	78	:	+23
10	:	78	:	78	:	0
11	:	11	:	11	:	0
12	:	60	:	49	:	-11
13	:	43	:	33	:	-10
14	:	78	:	78	:	0
15	:	37	:	53	:	+16
16	:	55	:	65	:	+10
17	:	32	:	54	:	+22
18	:	30	:	43	:	+13
19	:	56	:	60	:	+ 4
20	:	60	:	78	:	+18
21	:	78	:	78	:	0
22	:	78	:	78	:	0
23	:	78	:	78	:	0
24	:	25	:	30	:	+ 5

APPENDIX IV

SCORE TABLE

GRADE 7

SIT UPS

Subject Number	:	Initial Test	:	Final Test	:	Score Difference
1	:	35	:	31	:	- 4
2	:	30	:	31	:	+ 1
3	:	30	:	38	:	+ 8
4	:	40	:	43	:	+ 3
5	:	50	:	58	:	+ 8
6	:	78	:	78	:	0
7	:	40	:	43	:	+ 3
8	:	11	:	15	:	+ 4
9	:	68	:	71	:	+ 3
10	:	78	:	78	:	0
11	:	78	:	78	:	0
12	:	25	:	28	:	+ 3
13	:	75	:	74	:	- 1
14	:	63	:	58	:	- 5
15	:	45	:	45	:	0
16	:	78	:	78	:	0
17	:	78	:	78	:	0
18	:	30	:	28	:	- 2
19	:	50	:	58	:	+ 8
20	:	75	:	78	:	+ 3
21	:	50	:	66	:	+16
22	:	66	:	66	:	0
23	:	50	:	78	:	+28
24	:	78	:	78	:	0
25	:	50	:	50	:	0
26	:	45	:	48	:	+ 3
27	:	29	:	31	:	+ 2

APPENDIX V

SCORE TABLE

GRADE 6

SHUTTLE RUN

Subject Number	:	Initial Test	:	Final Test	:	Score Difference
1		11.1		12.1		-01.0
2		11.2		13.3		-02.1
3		10.9		11.9		-01.0
4		10.8		11.6		-00.8
5		10.8		11.4		-00.6
6		10.6		11.0		-00.4
7		11.2		11.9		-00.7
8		11.8		12.0		-00.2
9		11.2		11.4		-00.2
10		10.9		11.5		-00.6
11		13.3		11.7		+01.6
12		11.2		10.5		+00.7
13		11.2		12.1		-00.9
14		10.7		10.5		+00.2
15		11.9		11.1		+00.8
16		15.7		12.3		+03.4
17		11.1		11.7		-00.6
18		10.4		11.0		-00.6
19		11.3		12.0		-00.7
20		11.0		11.9		-00.9
21		11.3		11.5		-00.2
22		10.9		12.0		-01.1
23		10.3		10.4		-00.1
24		11.8		11.9		-00.1

APPENDIX VI

SCORE TABLE

GRADE 7

SHUTTLE RUN

Subject Number	:	Initial Test	:	Final Test	:	Score Difference
1	:	13.8	:	11.4	:	-00.6
2	:	12.2	:	13.8	:	-01.6
3	:	13.7	:	12.8	:	+00.9
4	:	11.4	:	12.1	:	-00.7
5	:	11.0	:	11.8	:	-00.8
6	:	13.0	:	12.4	:	+00.6
7	:	12.2	:	12.3	:	-00.1
8	:	13.2	:	11.4	:	-01.8
9	:	11.5	:	11.4	:	+00.1
10	:	11.9	:	12.2	:	-00.3
11	:	13.3	:	12.6	:	+00.7
12	:	12.9	:	12.5	:	+00.4
13	:	11.7	:	11.4	:	+00.3
14	:	11.0	:	11.4	:	-00.4
15	:	12.5	:	11.7	:	+00.8
16	:	11.1	:	13.2	:	-02.1
17	:	11.6	:	12.4	:	-00.8
18	:	13.2	:	11.9	:	-01.3
19	:	12.8	:	11.4	:	+01.4
20	:	11.7	:	12.0	:	-00.3
21	:	11.3	:	11.3	:	00.0
22	:	12.0	:	12.4	:	-00.4
23	:	11.7	:	10.9	:	+00.8
24	:	09.9	:	10.3	:	-00.4
25	:	11.6	:	12.5	:	-00.9
26	:	11.8	:	12.3	:	-00.5
27	:	11.5	:	11.8	:	-00.3

APPENDIX VII

SCORE TABLE

GRADE 6

STANDING BROAD JUMP

Subject Number	:	Initial Test	:	Final Test	:	Score Difference
1	:	4' 1"	:	4' 10"	:	+0' 9"
2	:	4' 7"	:	5' 5"	:	+0' 10"
3	:	4' 2"	:	5' 5"	:	+1' 3"
4	:	4' 2"	:	5' 3"	:	+1' 1"
5	:	3' 8"	:	5' 6"	:	+1' 10"
6	:	4' 3"	:	5' 6"	:	+1' 3"
7	:	4' 8"	:	5' 1"	:	+0' 5"
8	:	4' 5"	:	4' 10"	:	+0' 5"
9	:	4' 8"	:	4' 1"	:	-0' 7"
10	:	4' 9"	:	4' 9"	:	0' 0"
11	:	3' 7"	:	5' 3"	:	+1' 8"
12	:	4' 7"	:	5' 5"	:	+0' 10"
13	:	4' 1"	:	5' 4"	:	+1' 3"
14	:	5' 7"	:	6' 2"	:	+0' 7"
15	:	4' 9"	:	4' 7"	:	-0' 2"
16	:	3' 3"	:	5' 3"	:	+2' 0"
17	:	5' 1"	:	5' 5"	:	+0' 4"
18	:	4' 10"	:	5' 5"	:	+0' 7"
19	:	4' 10"	:	5' 5"	:	+0' 7"
20	:	5' 0"	:	5' 1"	:	+0' 1"
21	:	4' 5"	:	5' 1"	:	+0' 8"
22	:	4' 0"	:	5' 6"	:	+1' 6"
23	:	5' 1"	:	5' 10"	:	+0' 9"
24	:	4' 0"	:	5' 3"	:	+1' 3"

APPENDIX IX

SCORE TABLE

GRADE 6

FIFTY-YARD DASH

Subject Number	:	Initial Test	:	Final Test	:	Score Difference
1	:	8.8	:	8.5	:	+0.3
2	:	8.4	:	10.9	:	-2.5
3	:	8.5	:	8.2	:	+0.3
4	:	8.4	:	8.2	:	+0.2
5	:	8.6	:	8.1	:	+0.5
6	:	8.1	:	7.6	:	+0.5
7	:	8.3	:	8.1	:	+0.2
8	:	8.7	:	8.8	:	-0.1
9	:	8.6	:	9.0	:	-0.4
10	:	8.1	:	8.2	:	-0.1
11	:	10.4	:	9.0	:	+1.4
12	:	9.0	:	9.0	:	0.0
13	:	9.6	:	9.5	:	+0.1
14	:	8.0	:	8.0	:	0.0
15	:	9.0	:	8.7	:	+0.3
16	:	9.9	:	9.8	:	+0.1
17	:	9.1	:	8.5	:	+0.6
18	:	7.6	:	7.6	:	0.0
19	:	9.1	:	8.8	:	+0.3
20	:	8.7	:	8.5	:	+0.2
21	:	8.4	:	8.2	:	+0.2
22	:	8.3	:	8.0	:	+0.3
23	:	7.8	:	7.4	:	+0.4
24	:	9.0	:	8.8	:	+0.2

APPENDIX X
SCORE TABLE
GRADE 7
FIFTY-YARD DASH

Subject Number	:	Initial Test	:	Final Test	:	Score Difference
1		9.2		8.1		+1.1
2		8.4		8.2		+0.2
3		9.4		9.7		-0.3
4		8.6		8.8		-0.2
5		8.8		8.5		+0.3
6		7.9		8.1		-0.2
7		8.3		8.2		+0.1
8		8.4		8.6		-0.2
9		8.2		8.0		+0.2
10		8.5		8.1		+0.4
11		9.1		8.5		+0.6
12		9.4		8.5		+0.9
13		8.8		8.5		+0.3
14		7.9		7.6		+0.3
15		8.3		8.1		+0.2
16		7.9		7.8		+0.1
17		8.5		8.2		+0.3
18		8.8		8.6		+0.2
19		7.6		7.7		-0.1
20		8.3		9.1		-0.8
21		7.6		7.8		-0.2
22		9.2		8.5		+0.7
23		7.3		7.1		+0.2
24		7.1		7.0		+0.1
25		8.9		10.5		-1.6
26		8.9		7.9		+1.0
27		8.1		7.5		+0.6

APPENDIX XI
SCORE TABLE
GRADE 6
SOFTBALL THROW

Subject Number	:	Initial Test	:	Final Test	:	Score Difference
1	:	128'	:	138'	:	+10'
2	:	150'	:	159'	:	+ 9'
3	:	141'	:	138'	:	- 3'
4	:	132'	:	123'	:	- 9'
5	:	132'	:	117'	:	-15'
6	:	147'	:	147'	:	0
7	:	129'	:	123'	:	- 6'
8	:	98'	:	99'	:	+ 1'
9	:	138'	:	114'	:	-24'
10	:	131'	:	135'	:	+ 4'
11	:	130'	:	150'	:	+20'
12	:	117'	:	102'	:	-15'
13	:	117'	:	138'	:	+21'
14	:	135'	:	156'	:	+19'
15	:	123'	:	132'	:	+ 9'
16	:	101'	:	102'	:	- 1'
17	:	99'	:	123'	:	+24'
18	:	144'	:	153'	:	+ 9'
19	:	126'	:	135'	:	+ 9'
20	:	99'	:	96'	:	- 3'
21	:	118'	:	105'	:	-13'
22	:	166'	:	153'	:	-13'
23	:	144'	:	147'	:	+ 3'
24	:	97'	:	99'	:	+ 2'

APPENDIX XII

SCORE TABLE

GRADE 7

SOFTBALL THROW

Subject Number	:	Initial Test	:	Final Test	:	Score Difference
1	:	105'	:	120'	:	+15'
2	:	127'	:	105'	:	-22'
3	:	102'	:	111'	:	+ 9'
4	:	105'	:	114'	:	+ 9'
5	:	138'	:	147'	:	+ 9'
6	:	107'	:	105'	:	- 2'
7	:	135'	:	147'	:	+12'
8	:	108'	:	99'	:	- 9'
9	:	128'	:	138'	:	+10'
10	:	127'	:	123'	:	- 4'
11	:	105'	:	99'	:	- 6'
12	:	103'	:	105'	:	+ 2'
13	:	97'	:	84'	:	+13'
14	:	156'	:	153'	:	- 3'
15	:	126'	:	117'	:	- 9'
16	:	131'	:	123'	:	- 8'
17	:	150'	:	141'	:	- 9'
18	:	108'	:	120'	:	+12'
19	:	150'	:	135'	:	-15'
20	:	144'	:	114'	:	-30'
21	:	111'	:	120'	:	+ 9'
22	:	95'	:	102'	:	+ 7'
23	:	111'	:	147'	:	+36'
24	:	174'	:	174'	:	0
25	:	156'	:	126'	:	-30'
26	:	119'	:	117'	:	- 2'
27	:	151'	:	111'	:	-40'

APPENDIX XIII

SCORE TABLE

GRADE 6

600 YARD RUN-WALK

Subject Number	:	Initial Test	:	Final Test	:	Score Difference
1	:	2:18	:	2:08	:	+0:10
2	:	2:21	:	2:09	:	+0:12
3	:	2:19	:	2:09	:	+0:10
4	:	2:18	:	2:17	:	+0:01
5	:	2:50	:	2:31	:	+0:19
6	:	2:26	:	2:15	:	+0:11
7	:	2:30	:	2:13	:	+0:17
8	:	2:36	:	2:33	:	+0:03
9	:	2:31	:	2:26	:	+0:05
10	:	2:28	:	2:04	:	+0:24
11	:	4:13	:	3:52	:	+0:21
12	:	2:29	:	2:23	:	+0:06
13	:	2:34	:	2:30	:	+0:04
14	:	2:13	:	2:20	:	-0:07
15	:	2:27	:	2:15	:	+0:12
16	:	2:45	:	2:37	:	+0:08
17	:	2:36	:	2:33	:	+0:03
18	:	2:24	:	2:29	:	-0:05
19	:	2:16	:	2:12	:	+0:04
20	:	2:18	:	2:33	:	-0:15
21	:	2:19	:	2:16	:	+0:03
22	:	2:18	:	2:04	:	+0:14
23	:	2:14	:	2:06	:	+0:08
24	:	2:22	:	2:33	:	-0:11

APPENDIX XIV

SCORE TABLE

GRADE 7

600 YARD RUN-WALK

Subject Number	:	Initial Test	:	Final Test	:	Score Difference
1		2:19		2:38		-0:19
2		2:44		2:35		+0:09
3		2:45		2:55		-0:10
4		2:14		2:28		-0:14
5		2:31		2:51		-0:20
6		2:15		2:38		-0:23
7		2:32		2:24		+0:08
8		2:48		2:46		+0:02
9		2:29		2:32		-0:03
10		2:15		2:11		+0:04
11		2:38		2:47		-0:09
12		2:51		2:30		+0:19
13		2:27		2:19		+0:08
14		2:07		2:07		0:00
15		2:30		2:23		+0:07
16		2:16		2:19		-0:03
17		2:08		2:11		-0:03
18		2:21		2:19		+0:02
19		2:14		2:19		-0:05
20		2:10		2:08		+0:02
21		2:25		2:22		+0:03
22		2:37		2:46		-0:09
23		2:06		2:06		0:00
24		2:02		2:02		0:00
25		2:44		2:49		-0:05
26		2:20		2:26		-0:06
27		2:21		2:35		-0:14

A STUDY OF THE MIRACLE JUNIOR OBSTACLE
COURSE BY THE SIXTH AND SEVENTH GRADE BOYS AT SEVEN DOLORS
GRADE SCHOOL IN MANHATTAN, KANSAS

by

JAMES K. COOPER

B.S., Kansas State University, 1964

AN ABSTRACT OF A MASTER'S REPORT
SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE
MASTER OF SCIENCE

Department of Physical Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1967

Since the beginning of time man has had to deal with nature's law of "survival of the fittest." The pre-historic man found his daily routine kept his body in condition. Today, however, this is not true; machines now do jobs that kept man's bodies in condition in the past. Since the Seven Cardinal Principles of Education were introduced, the schools have made physical fitness an objective of education. Even after the adoption of this objective, the schools were very lax in promoting a good physical education program. It was not until after World War I that states started requiring physical education in the schools. This was brought about by the number of draftees rejected because of physical reasons during World War I. Leaders in the field gave physical education the needed assistance by selling it to the country on a health basis.

Realizing schools and other agencies need help in their programs, the Miracle Equipment Company has developed an obstacle course called the Miracle Junior Obstacle Course to aid in physical fitness programs. The course is designed to spark students' competitive spirit, to maintain his interest and to develop his entire body. This course was used to experiment with twenty-four sixth grade boys and twenty-seven seventh grade boys at Seven Dolors Grade School in Manhattan, Kansas. The test was to develop an attitude toward the obstacle course in connection with the physical education program at Seven Dolors rather than using it as playground equipment only.

The procedure used in evaluating the course was to first establish the students' physical fitness. This was done by giving the fitness test provided by the President's Council on Youth Fitness. The phases of the fitness test included testing the following: pull-ups, sit-ups, shuttle run, broad jump, fifty-yard dash, softball throw for distance and the 600 yard run-walk. The students were ranked according to the physical fitness test score sheet also provided by the President's Council on Youth Fitness. According to the score sheet, the averages of both groups ranked poor in all phases of the fitness tests except one, the softball throw for distance. After the fitness of the students was determined, the participants then went through the Miracle Junior Obstacle Course three times a day, five days a week, for six weeks. The obstacle course included the following thirteen obstacles: Tower Climber, Three Swing Around Posts, The Bar Slide, Ladder Slide, Space Ladder, Skinny Pole, Fence Climber, Balancing Beam, and the Hand-Walking Bars. Next the students were retested to note any improvement in the fitness test scores. In this way it could be determined whether or not the obstacle course was an instrument that could be used to improve the physical fitness of the students. The retesting process was the same as the original testing. The scores of the second test showed an improvement in all phases except in that of the Shuttle Run Test. This could possibly indicate that the course lacks in agility development, hand-eye coordination for picking up small objects, and no power, or it could indicate a low level of student motivation in the second testing of the Shuttle Run.

It is felt that because the results of the testing showed an improvement in six of the seven items tested that the Miracle Junior Obstacle Course was beneficial in the physical education program at the Seven Dolors Grade School in Manhattan, Kansas for developing physical fitness. Other physical educators may find these results helpful in determining the usefulness of this particular obstacle in similar situations.

If the sixth graders at Seven Dolors Grade School are typical of many of the youth in America today, the Miracle Junior Obstacle Course developed by the Miracle Equipment Company might prove worthy of use to develop physical fitness education programs in other elementary schools.