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ABSTRACT

As one of the components of the Project ACTIVE (All Children Totally Involved Exercising) Teacher Training Model Kit, the manual is designed to enable the educator to organize, conduct, and evaluate individualized-personalized physical education programs for children (aged 6 to 18 years) with low physical vitality (including those with mental retardation and learning disabilities). An introductory chapter covers definitions and student and teacher behavioral objectives. Chapter II explains procedures for diagnosing the physical fitness needs of children. A systematic procedure for assessing student progress effectively is described in Chapter III. Chapter IV shows the interrelationship between the diagnostic and prescriptive processes. Chapter V focuses on the evaluation of student progress at the end of a specific block of time so that a decision can be made regarding subsequent programing. A final chapter outlines tasks and activities which provide a cluster of learning experiences that will enhance those factors listed in the physical fitness screening instrument (described in Chapter II). Among appendixes are a low physical vitality flow chart and activity list, time prescription test directions and form, activities recommended for basic body types, and a list of supply and equipment needs. (SBH)

Township of Ocean School District
Dow Avenue
Oakhurst, New Jersey 07755

"LOW PHYSICAL VITALITY

AN INDIVIDUALIZED PHYSICAL FITNESS PROGRAM

Thomas M. Vodola, Ed.D.
Project Director

Project ACTIVE: All Children Totally InVolved Exercising

Project Number: 72-341, Title III, ESEA

MEMO FROM THE COMMISSIONER

"On behalf of the Department of Education, State of New Jersey, I wish to bring Project ACTIVE to the attention of educators throughout the nation. The program has made a significant contribution to both physical and special education in New Jersey and thus will be of interest to both educators and parents."

Dr. Fred G. Burke
Commissioner of Education
New Jersey Department of Education

TOWNSHIP OF OCEAN SCHOOL DISTRICT
1975

PARTICIPATING SCHOOL DISTRICTS/AGENCIES

COUNTY	SCHOOL
Atlantic	Winchell Orthopedic
	Egg Harbor
	Association for Children with Learning Disabilities (ACLD)
Bergen	Dumont
	Paramus
	Rutherford
	Englewood Community
Burlington	Lenape Regional High School
	Maple Shade
	New Lisbon State
	Willingboro
Camden	Bellmawr
	Stratford
Cape May	Lower Township
	Ocean City
	Association for Children with Learning Disabilities
Cumberland	Bridgeton
	Vineland State
Essex	Glen Ridge
	Livingston
	Montclair
Hudson	Hoboken
	Jersey City
	Weehawkin
	St. Joseph School for the Blind
	Bayonne Parks & Recreation
Hunterdon	Hunterdon Central Regional
	Lebanon
	North Hunterdon Regional
Mercer	Trenton
	West Windsor Plainsboro Regional
Middlesex	Carteret
	Madison Township
	Woodbridge Township
	Woodbridge State
Monmouth	Township of Ocean
	Asbury Park
	Red Bank
	Wall Township
	Red Bank Catholic
	Association for Children with Learning Disabilities
	Association for Retarded Children
Morris	Madison
	Morris Hills
	Pequannock Township
Ocean	Lakehurst
	Long Beach Island
Passaic	Wayne
	Bonnie Brae School for Boys
	Eastern Christian Children's Retreat
Salem	Pennsville
	Salem City
	Ancora Psychiatric Hospital
Sussex	Newton
	Sparta Township
Union	Cranford
	Plainfield
	Kean College Institute of Child Study
Warren	Oxford Township

PREFACE

The development of the Project ACTIVE manual, *Developmental Physical Education: Low Physical Vitality* was a cooperative effort of the Township of Ocean School District and the Office of Program Development, Division of Research, Planning and Evaluation/Field Services, Department of Education, State of New Jersey.[1] The manual provides a sound basis for individualizing a physical education program for students who evidence physical fitness problems.

In 1975 the Project ACTIVE manual, *Developmental Physical Education: Low Physical Vitality* was validated by the standards and guidelines of the United States Office of Education as successful, cost-effective and exportable. As a result, the program is now funded through the New Jersey Elementary and Secondary Act, Title III program to offer interested educators the training and materials required for its replication. This manual was prepared as part of the program's dissemination effort.

The purpose of Title III is to encourage the development and dissemination of innovative programs which offer imaginative solutions to educational problems. Project ACTIVE achieved this purpose by disseminating its innovative program to 500 teachers and paraprofessionals through 24 regional workshops. Further, as of June 1975, 76 school districts and agencies in the State of New Jersey have adopted or adapted some aspect of the individualized physical education program in accordance with the educational needs of their districts – involving more than 10,000 individuals.

This manual has been prepared as one of the components of the Project ACTIVE Teacher Training Model Kit. Other component parts of the model kit which are available to those who are interested in adopting or adapting the project's individualized-personalized instructional concept are cited below:

- Developmental Physical Education: Low Motor Ability
- Adapted Physical Education: Postural Abnormalities
- Adapted Physical Education: Nutritional Deficiencies
- Adapted Physical Education: Breathing Problems
- Developmental & Adapted Physical Education: A Competency-Based Teacher Training Program
- Adapted Physical Education: Motor Disabilities or Limitations
- Adapted Physical Education: Communication Disorders
- Teacher Training Filmstrip: A Competency-Based Approach
- Motor Ability Filmstrip: An Individualized-Personalized Approach

These manuals have been validated for national dissemination and may be purchased from the project director.

[1] Developmental Physical Education is defined as that aspect of the physical education program which addresses itself to the provision of enrichment of physical activities for those students who are below normal in terms of physical fitness, motor performance and/or perceptual motor performance

Districts interested in establishing individualized physical education programs for the handicapped need assistance. The following dissemination-diffusion services are being provided to aid implementing schools during the initial phases of program installation:

- Individual pupil time prescriptions
- Certificates of merit for pupil achievement and/or improvement
- Monthly issue of the ACTIVE Newsletter
- Test instruments to assess pupil performance
- Development of school norms
- Other general consultant services

For additional information regarding the Model Kit, other awareness materials, or available services, the reader is requested to contact:

Dr. Thomas M. Vodola, Director
Project ACTIVE
Township of Ocean School District
Dow Avenue
Oakhurst, New Jersey 07755

ACKNOWLEDGEMENTS

The manual, *Developmental Physical Education: Low Physical Vitality* is based on the Developmental and Adapted (D&A) Program developed by the Project Director in the Township of Ocean School District, Oakhurst, N.J.

Appreciation is expressed to the Township of Ocean Board of Education, Superintendent of Schools, the D&A Council, teachers, students, and parents for their total commitment to the program. Special appreciation is accorded to the Township of Ocean Physical Education Department for their unstinting support and effort.

To Prentice-Hall, Inc., a special vote of thanks for granting the Project Director permission to include materials from his text, *Individualized Physical Education Program for the Handicapped Child.*

Sincere appreciation is also accorded to the Advisory Council members who assisted in the reviewing and editing process: Mr. Sal Abitanta, Consultant, New Jersey State Department of Education, Dr. David Bilowit, Professor, Kean College of New Jersey, Mrs. Edwina M. Crystal, School Psychologist, Township of Ocean School District, Mr. Al Daniel, Coordinator, Developmental Physical Education, Cherry Hill School District, Dr. George Gerstle, Assistant Professor, Glassboro State College, Mr. Paul Porado, Program Director, Office of Special Services, N.J. Department of Education, and Dr. Marion Rogers,* Professor, Glassboro State College. Also special thanks to the project consultants; Miles Drake, M.D.* representative of the New Jersey Chapter of the American Academy of Pediatrics; Dr. Raymond Weiss, Professor, Department of Health, Physical Education and Recreation, New York University; and Dr. Julian U. Stein, Director, Program for the Handicapped, American Association of Health, Physical Education & Recreation, Washington, D.C.

To Mrs. Jean Harmer, Mrs. Mary Kesperis, Mrs. Dorothy Smith, and Mrs. Ellen Kearney gratitude and appreciation for their painstaking devotion to the development of the intermediate "product."

Grateful appreciation is expressed to the New Jersey State Department of Education and the Title III staff members for their continued assistance and support.

Special thanks are extended to the Project ACTIVE cadre team, for the many hours they devoted to assisting in the restructuring of the "final" product. The synthesizing team consisted of: Mrs F. June Graf, Livingston School District; Mr. Robert Fraser, Wayne Township Public Schools; Mr. Robert Ekblom, Madison Township Public Schools; Mr. Thomas Cicalese, Morris Hills Regional District; Mr. Tim Sullivan, Montclair State College; Mr. G. "Buzz" Buzzelli,

*Retired as of July, 1973

Monmouth College; Mr. Roy Lipoti, New Lisbon State School (Garden State School District); Mr. Edward Korzun, Orange Public School System; Mr. Thomas Pagano, Township of Ocean School District; Mr. Lawrence A. Guarino, Newark School District; Mr. Al Daniel, Cherry Hill School District; and Dr. David Bilowit, Kean College of New Jersey. Credit for the art work is accorded to Mr. Athan Anest, Wall Township School District.

To the many authors and publishers who permitted the use of their materials in the manual, I express my sincere appreciation.

Finally, to Emil Praksta,** a representative of the South Jersey Educational Improvement Center, the co-director of this project and a personal friend, my sincere appreciation for his constant stimulation, support, and critiquing of all materials.

A final note: Although the aforementioned "team" made many constructive suggestions which were included in the manual, I accept full responsibility for the final product, and any criticisms thereof, because all final decisions were a reflection of my personal philosophy.

Thomas M. Vodola, Ed.D.
Title III, Project Director

**Recently deceased

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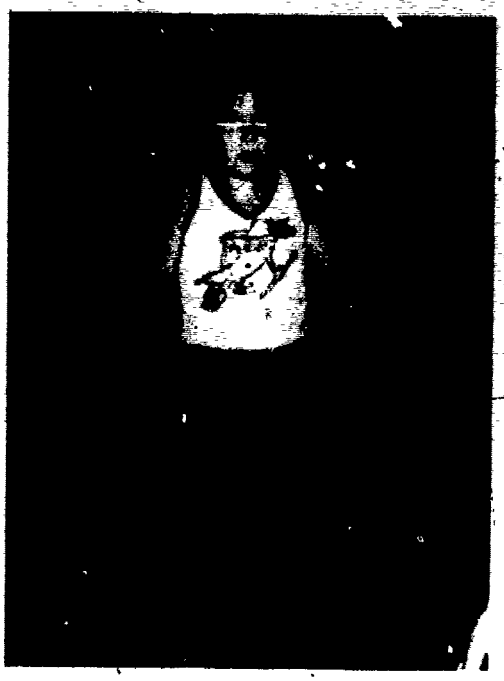


CHAPTER ONE

INTRODUCTION

OVERVIEW

Developmental Physical Education: Low Physical Vitality has been developed to serve two purposes:[1]

1. Provide a manual for training physical educators, special educators, recreation teachers, and paraprofessionals so they can achieve the minimal competencies necessary to implement an individualized physical fitness program for students from pre-kindergarten through grade 12.

2. Provide practitioners in the field with a structured procedure for individualizing and personalizing an instructional physical fitness program for students who exhibit deficiencies in arm strength, abdominal strength, leg strength, and cardiorespiratory endurance.

The program has been field-tested at several sites in New Jersey. The purpose of the studies was to compare the relative effects of individualized-personalized (I-P) and traditional physical education programming on students who evidence low physical vitality. All studies provided similar findings – the I-P approach was superior to the traditional teaching-learning process. Based on these findings, the program was validated according to the standards and guidelines of the United States Office of Education as innovative, successful, cost effective, and expendable.

The manual has been structured to provide the teacher with a sequential approach to initiating an individualized physical fitness program. The remaining sections of this chapter deal with definitions and criterion-referenced objectives which provide a basis for evaluating student and teacher performance. Subsequent chapters detail the individualized process via the acronym T.A.P.E., i.e., test, assess, prescribe and evaluate.[2] A detailed description of the step-by-step procedures necessary for program implementation is presented in the flow chart/activity checklist in Appendix A.

DEFINITIONS

This manual provides an individualized-personalized physical fitness program for all children, including those evidencing mental retardation and learning disabilities. Thus, it is advisable to define the parameters of the three variables discussed, plus the terms "individualized" and "personalized."

Mental Retardation

The American Association on Mental Deficiency (AAMD) defines the term as follows: "Mental retardation refers to subaverage general intellectual functioning which originates during the developmental period and is associated with impairment in adaptive behavior."[3]

[1] Note: Prior to admission into the Developmental Physical Education Program, the mentally retarded or learning disabled student must have a medical release signed by the family-school physician, the Child Study Team, or the school psychologist if there is no "Team." (The Child Study Team consisting of a psychologist, social worker, learning disability specialist, nurse, physician and coordinator, legally "classify" children in the state of New Jersey.) Further, the "Team" should either provide the prescriptive tasks, or approve the physical educator's recommendations.

[2] Frank Hayden, *Physical Fitness for the Mentally Retarded*, p. 9.

[3] Jean M. Moran and Leonard H. Kalakian, *Movement Experiences for the Mentally Retarded or Emotionally Disturbed Child*, p.7.

Learning Disability

The learning disabled child is one who is "usually deficient in academic achievement due to a limited intellectual capacity, or brain damage caused by disease or injury."[1]

Low Physical Vitality

Low physical vitality is defined as a deficiency in arm and shoulder strength, abdominal strength, explosive power of the legs, and cardiorespiratory endurance, or a composite deficiency thereof. Students with Physical Fitness Index (PFI) scores of 35 or below (approximately the bottom 10% of the population tested), or a single stanine score of 2 or below (approximately the bottom 5% of the population tested) are to be classified as evidencing *Low Physical Vitality*.[2]

Individualized Instruction

Diagnosis and prescription are the basic ingredients necessary for the provision of individualized instruction (II). The strategies involved include: formal and informal testing; formative and summative assessment; prescription; and evaluation.

Personalized Instruction

Personalized instruction deals with the humanistic aspects of the teaching-learning process. Primary consideration is devoted to the development of teacher-pupil and pupil-pupil rapport and to the enhancement of the child's self-concept.

STUDENT BEHAVIORAL OBJECTIVES

1. The normal student attains a minimum average standard score of 50 on the Township of Ocean Physical Fitness Test Battery (with no single component stanine score of less than 4) or a score that is satisfactory in terms of his somatotype (grades 1-12). Evaluative criteria: self-evident. (Student performance to be assessed by the teacher for grades 1-6 and by the partner for grades 7-12).
2. The mentally retarded or learning disabled student attains a minimum average standard score of 40, or a single component score of 3 on the Township of Ocean Physical Fitness Test Battery.[3]
3. The student identifies his primary and secondary somatotyping characteristics so that he can establish an aspiration level commensurate with his body structure (grades 9-12). Evaluative criteria: material distributed in class. (Student performance to be assessed by the partner.)
4. The student computes his stanine scores/time prescriptions and identifies his weaknesses and strengths on a continuum (grades 9-12). Evaluative criteria: materials distributed in class. (Student performance to be assessed by the teacher.)
5. The student demonstrates the correct techniques for performing the static arm hang, modified sit-ups, standing broad jump, and endurance run (grades 7-12). Evaluative criteria: directions in "Test" sub-section. (Student performance to be assessed by the partner.)

Fig. 1-1 Standing Broad Jump

TEACHER BEHAVIORAL OBJECTIVES[4]

1. Converts raw data to percentile scores. Evaluative criteria: Directions and tables of numbers provided in class.
2. Converts percentiles to stanine scores. Evaluative criteria: Stanine conversion chart provided in class.
3. Computes time prescriptions for a test battery. Evaluative criteria: Computational formula provided in class.

Fig. 1-2 Converting Raw Scores to Percentiles
(Awareness Workshop, University of Nebraska, Omaha)

[1] Thomas M. Vodola, *Individualized Physical Education Program for the Handicapped Child*, p. 42

[2] The computation of PFI and stanine scores is detailed in Chapter III, Assessment Procedures.

[3] Classified students who improve a minimum 20% on each physical fitness component and 20% on the total test battery are eligible to receive a Certificate of Merit. Refer to Appendix J for a sample copy of the certificate.

[4] Refer to Appendix K for a sample copy of the achievement certificate awarded to trainees in New Jersey who attain 20 of 25 competencies.

4. Identifies the primary and secondary somatotyping characteristics of a subject. Evaluative criteria: Material distributed in class.
5. Names, demonstrates, and teachers a task/activity for a student who is primarily an endomorph, mesomorph or ectomorph. Evaluative criteria: Materials distributed in class.
6. Administers the Township of Ocean Physical Fitness Test Batteries (norm-referenced and criterion-referenced). Evaluative criteria: Test directions distributed in class.
7. Enhances a child's self-concept through personalizing instruction. Evaluative criteria: Positive reinforcement; structuring tasks so that success is always achieved; and providing experiences which focus on abilities as well as disabilities.

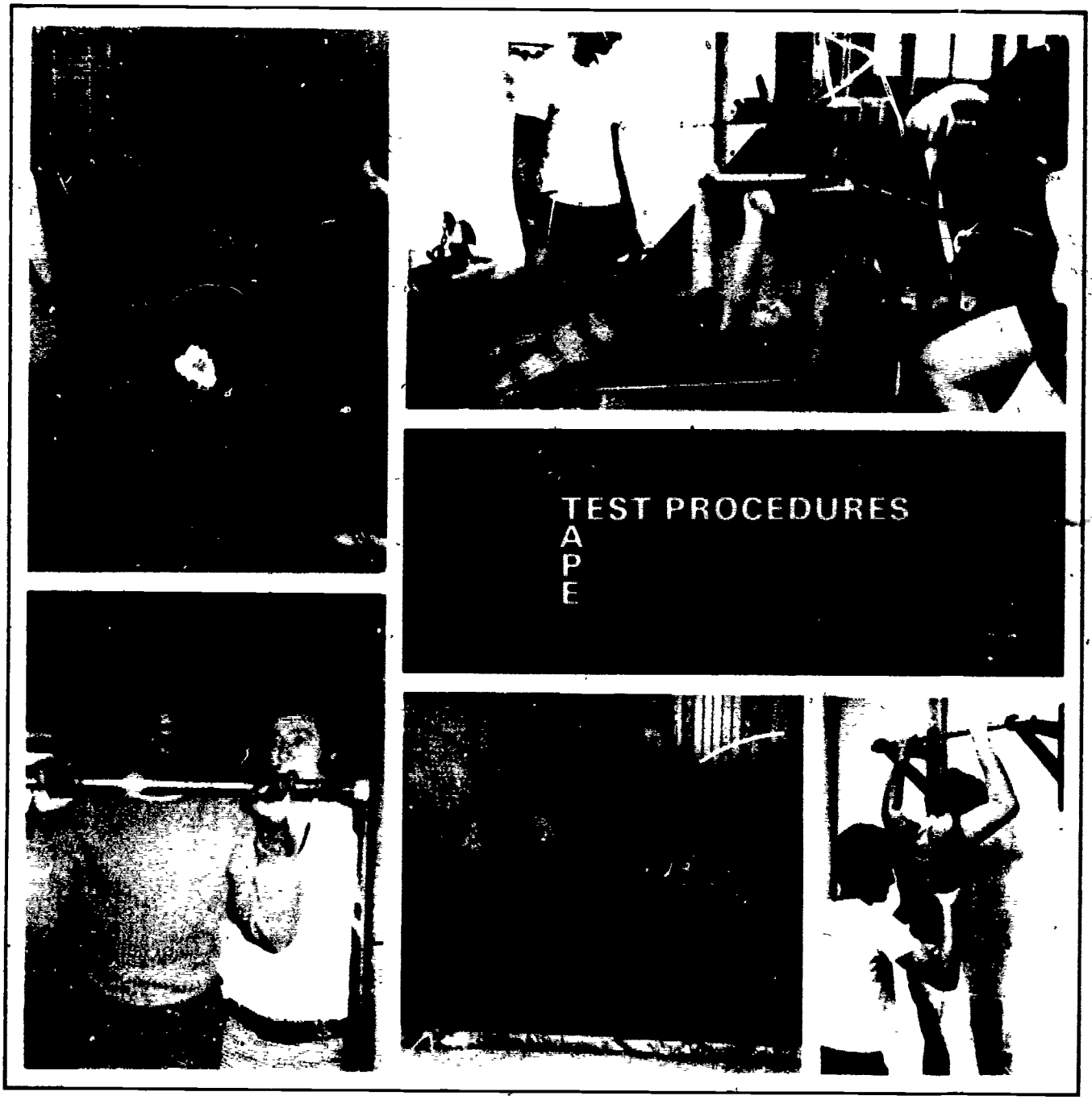
a. Establishing Rapport

b. Assisting and Motivating

Fig. 1-3 Enhancing Child's Self-Concept

Fig. 1-4 Assessing Self-Concept

(Training Program, University of Northern Iowa, Cedar Falls)


TEST PROCEDURES
TAPE

CHAPTER TWO

TEST PROCEDURES

TAPE

The primary objective of physical education should be the development of an optimum level of physical fitness for each student. During the years encompassing World War I and II, vigorous physical activity was stressed. In recent years, however, physical fitness has been deemphasized as the focus of activity programs has shifted to the development of leisure time skills and socio-emotional adjustment. Although these objectives are important, nevertheless, in this era there is a greater need for identifying and prescribing activity programs for students who manifest low physical vitality, i.e., a low level of physical fitness. The need arises from the increasing production of equipment which diminishes the demands for physical effort, and also from the fact that most children who are mentally retarded or learning disabled are two to four years below the physical performance level of the normal population.

This chapter provides an instrument for diagnosing the physical fitness needs of children ages 6-18. The sections of the chapter explain the procedures necessary for administering and scoring each item of the test.

Teachers in New Jersey report that some of the Township of Ocean Physical Fitness Test items are too complex for the severely or profoundly, ambulatory mentally retarded individuals and thus do not provide the necessary diagnostic information. The battery has therefore been revised to reflect criterion-referenced goals in order to enhance assessment of performance. The last section of this chapter provides the modified battery.)

TEST ADMINISTRATION

The proposed program identifies students who exhibit low physical vitality through scores which reflect performance in terms of: arm and shoulder strength; abdominal strength; explosive power of the legs; and cardio-respiratory endurance. The composite score resulting from the administration of the test battery is converted to a physical fitness index score (PFI)[1] which provides a means of determining cut-off scores for assigning students to, and releasing students from, the D&A Program (Developmental and Adapted Physical Education Program); and comparing individual performance with group norms. Directions for administering the Township of Ocean Physical Fitness Test are herewith provided for each test item.

[1]Patterned after a technique designed by Edwin A. Fleishman *The Structure and Measurement of Physical Fitness*, p. 142

Physical Fitness Test

Test Item No. 1: *Static arm hang*
Factor: Arm and Shoulder Strength

After demonstration, the subject is assisted to the starting position (with arms flexed and chin above bar). The subject is not allowed to touch any part of his head to the bar, to kick, struggle, or move his body. Palms are to face away from the body. Special efforts are to be made to keep the subject in the starting position, especially as they begin to tire. The score recorded is the *number* of seconds from the signal "go" (starting position) until the arms are "locked" completely straight (finished position).
Attempts: 1
Scoring: Total suspension time in seconds

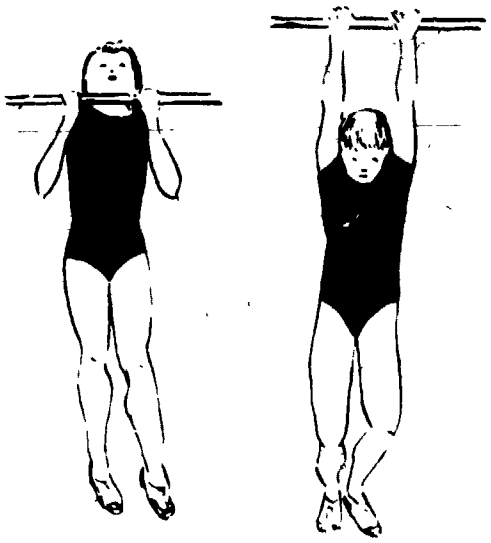


Fig. 2-1 Static Arm Hang

Test Item No. 2: *Modified sit-ups (curl-ups)*
Factor: Abdominal Strength

After demonstration, the subject assumes a supine position on a mat, with arms straight and palms resting on the thighs. On the command "go," the subject raises his head and shoulders and slides his hands forward until he touches the upper edges of his kneecaps; he, then, immediately returns to the supine position. To increase reliability and objectivity, the instructor places his hand across the child's kneecaps and counts as the child touches his arm.

The subject is not permitted to "bounce" up, raise hands off legs, or rest between curl-ups (s ess a steady rhythm). The score recorded is the number of times the student touches the extended arm properly. Repeat the count when performing incorrectly.
Attempts: 1
Scoring: Total correct curl-ups

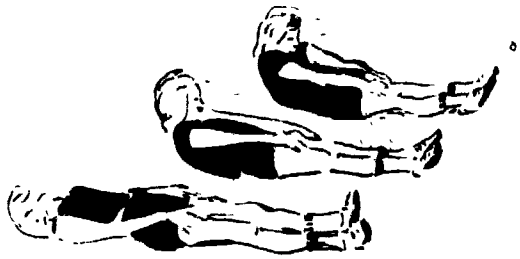


Fig. 2-2 Modified Sit-Ups

Test Item No. 3: *Standing broad jump*
Factor: Explosive Leg Power

After demonstration, the subject stands with his toes behind the take-off line, his feet several inches apart. He is to jump as far forward as possible. Before jumping, he bends his knees and swings his arms forward. No restrictions are placed on his arm movements. However, the student is informed the jump will not count if he falls backward. The score recorded is the best jump of three attempts, measured and *recorded in total inches.* Measurements are taken from the back of the take-off line to the back of the heel nearest the take-off line. The scorer should stand to the side of the subject to observe the exact point of contact of the rear heel.
Attempts: 3
Scoring: Best distance recorded in inches

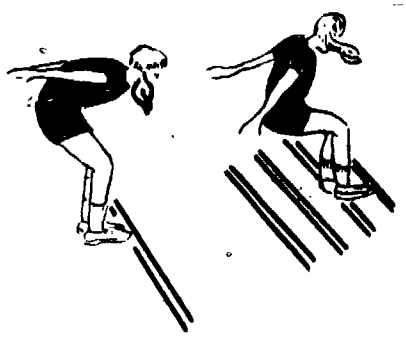


Fig. 2-3 Standing Broad Jump

Test Item No. 4:

200 Yard run; 8-minute run; 12-minute run

Factor: Cardiorespiratory Endurance

a. 200 Yard run, ages 6-11 (grades 1-6)

After demonstration of the sprint start, the subjects are requested to assume the starting position with fingertips behind the starting line. Commands are: "take your mark," "get set," and "go." The instructor should start the the time when the subject "moves" rather than on the command "go." Encourage the students to run at full speed beyond the finish line. If a student does not run as fast as he can, do not record his score, as the time will be invalid. For consistency, run the 200 yard dash in a straight line (preferably on turf). Gym shoes or shoes may be worn; stockings or bare feet are not permitted.

Attempts: 1 or more, if necessary

Scoring. Time in seconds

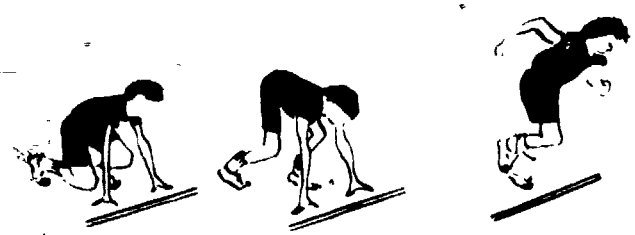


Fig. 2-4 200 Yard Run

b. 8-Minute run, ages 12-13 (grades 7-8)

(1) Sub-divide the 440 yard track into eight equal sections 55 yards each section. (2) Place a flag marker at each section, e.g., "1," "2," "3," etc. (3) "Pair" all students as "1's" and "2's," prior to testing. (4) On command have all of the "1's" (half the class) run for an 8-minute period. The No. 2's are to keep a record of the distance covered by their partners. (5) At the termination of the 8-minute period, the instructor blows the whistle, terminating the run. The No. 2's report their partner's scores to the recorder, e.g., 3.6 would indicate three complete laps, plus the passing of six markers. (Table 2-1 provides a reliable means for converting laps to yards and miles.) (6) Reverse the procedure and have the No. 2's run and the No. 1's act as recorders.

Attempts: 1

Scoring: Total laps, plus flags passed in 8 minutes

c. 12-Minute run, ages 14-18 (grades 9-12) The same test directions as for the 8-minute run except that the students continue running for a 12-minute period

Attempts: 1

Scoring: Total laps, plus flags passed in 12 minutes

TEST SCORING

Norm-Referenced Battery

The Township of Ocean Physical Fitness Test form (Table 2-2) includes test items that measure: arm and shoulder strength, abdominal strength; explosive leg power; and cardiorespiratory endurance. The student's raw score in each area should be recorded in the appropriate "raw score" column (three of which have been provided for the recording of test scores administered at periodic intervals. Anecdotal remarks describing how the task is performed are included in the area provided.

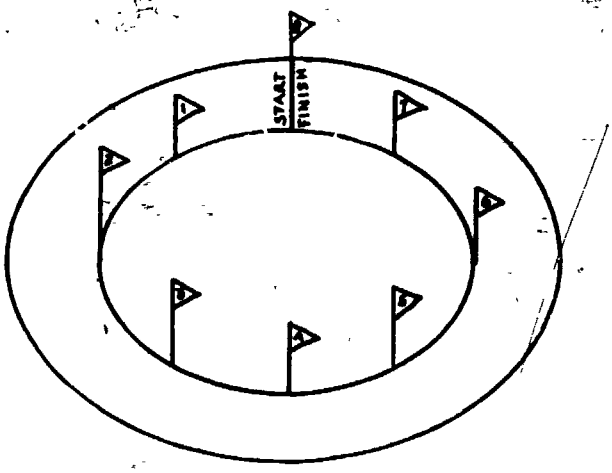


Fig. 2.5 8-Minute Run

The raw scores will later be converted into percentile scores, stanine scores and a PFI score so that a student's performance can be appraised in terms of his or her age and sex. These procedures and somatotyping are explained in Chapter III – Assessment Procedures.

Criterion-Referenced Battery

The Township of Ocean Physical Fitness Test was modified so that it could be used with low trainable, severely, or profoundly ambulatory retarded children who cannot perform the tasks without assistance. It is recommended that the instrument be used as a screening device rather than as a test.

The test score is the sum of the four scores attained on the four task items. Thus, a student's composite score can range from 0-16. Progress can be noted by making a pre-post comparison. However, the instrument is of greater value if individual progress is analyzed on each of the items.

TABLE 2-1

DISTANCE RUNNING CONVERSION CHART

(Courtesy of the Township of Ocean School District)

Laps	Yards	Miles	Laps	Yards	Miles	Laps	Yards	Miles	Laps	Yards	Miles
0.1	55		2.1	935		4.1	1,815		6.1	2,695	
.2	110		2.2	990		4.2	1,870		6.2	2,750	
.3	165		2.3	1,045		4.3	1,925		6.3	2,805	
.4	220		2.4	1,100		4.4	1,980		6.4	2,800	
.5	275		2.5	1,155		4.5	2,035		6.5	2,915	
.6	330		2.6	1,210		4.6	2,090		6.6	2,970	
.7	385		2.7	1,265		4.7	2,145		6.7	3,025	
1.0	440	¼	3.0	1,320	¾	5.0	2,200	1¼	7.0	3,080	1¾
1.1	495		3.1	1,375		5.1	2,255		7.1	3,135	
1.2	550		3.2	1,430		5.2	2,310		7.2	3,190	
1.3	605		3.3	1,485		5.3	2,365		7.3	3,245	
1.4	660		3.4	1,540		5.4	2,420		7.4	3,300	
1.5	715		3.5	1,595		5.5	2,475		7.5	3,355	
1.6	770		3.6	1,650		5.6	2,530		7.6	3,410	
1.7	825		3.7	1,705	1	5.7	2,585		7.7	3,465	
2.0	880	½	4.0	1,760		6.0	2,640	1½	8.0	3,520	2
									8.1	3,575	
									8.2	3,630	
									8.3	3,685	
									8.4	3,740	
									8.5	3,795	
									8.6	3,850	
									8.7	3,905	
									9.0	3,960	2¼

Modified Physical Fitness Test[1]

Directions: Circle appropriate response

Test Item No. 1: *Static arm hang*

Factor: Arm and Shoulder Strength

Position and Procedure: Bent arm hang, with overhand grasp. Suspension time is the number of seconds from the signal "go" (starting position) until the arms are "locked" completely straight.

0- Makes no attempt to grasp bar

1- When assisted, grasps bar and assumes the correct hanging position

2- Assumes the correct hanging position

3- Assumes the correct hanging position (unassisted) for a minimum of 5 seconds

4- Assumes the correct hanging position (unassisted) for 10 seconds

Fig. 2-6 Static Arm Hang

[1]The test format is based on the design developed at the Mansfield Training School, Connecticut, published in H.F. Fait, *Special Physical Education: Adapted, Corrective, Developmental*, pp. 208-210; and modified at Texas Woman's University.

TABLE 2-2

PHYSICAL FITNESS TEST FORM (Courtesy of the Township of Ocean School District)

NAME Jane Doe AGE 13 INSTRUCTOR Mrs. P. Galatro

SCHOOL Ocean Township School MALE _____ FEMALE x

GRADE 8 HEIGHT 5'4" WEIGHT 135

STARTED PROGRAM: Date September 74

COMPLETED PROGRAM: Date _____ SOMATOTYPE Endo-Mesomorph

TEST ITEM	FACTOR	RAW SCORE			PERCENTILE			STANINE		
		Test 1	Test 2	Test 3	Test 1	Test 2	Test 3	Test 1	Test 2	Test 3
Static Arm Hang	Arm Strength	24 Sec.	Sec.	Sec.	60			5		
Modified Sit-Ups	Abdominal Strength	30			20			4		
Standing Broad Jump	Leg Strength	53"	in.	in.	4			2		
200 Yard[1] Dash	Endurance	Sec.	Sec.	Sec.						
8-Minute[2] Run	Endurance	1.6			0			1		
12-Minute[3] Run	Endurance									
	Number of Tests							Total Points		
TOTALS	4							12		

$$PFI = \frac{\text{Total Stanines} \times 10}{\text{Number of Tests}} = \frac{12 \times 10}{4} = 30 \text{ PFI Score}$$

Anecdotal Remarks

Supports body weight primarily with the right arm. Favors the right side of the body when performing modified sit-ups.

Table for Converting Percentiles to Stanines

Percentile Intervals	Stanines	
97 and above	9	Very High
90–96	8	
80–89	7	High
65–79	6	
35–64	5	Average
20–34	4	Low
10–19	3	
4–9	2	Very Low
3– and below	1	

[1] Administered to students, ages eleven and below

[2] Administered to students ages twelve and thirteen

[3] Administered to students ages fourteen and above

Test Item No. 2: *Modified sit-ups (curl-ups)*
Factor: Abdominal Strength
Position and Procedure: Supine position on a mat, with arms straight and palms resting on the thighs.

0- Makes no attempt to rise to a sit-up position
1- Rises to a sit-up position, when assisted
2- Raises head off the mat unassisted
3- Raises head and shoulders off the mat unassisted
4- Raises body and touches fingertips (arms extended) to kneecaps

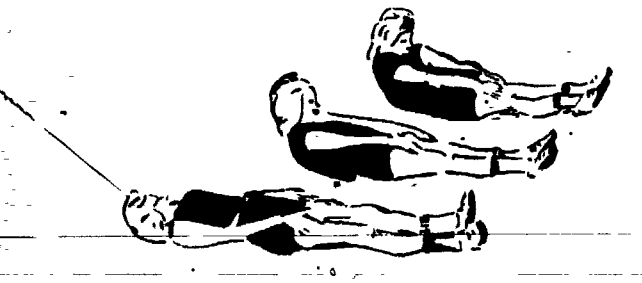


Fig. 2-7 Modified Sit-Ups

Test Item No. 3: *Standing broad jump*
Factor: Explosive Leg Power
Position and Procedure: Toes behind the take-off line. Measurements are taken from the back of the take-off line to the back of the heel nearest the take-off line.

0- Makes no attempt to jump
1- Hops or leaps rather than jumps, i.e., one-foot take-off and lands on the same foot, or on the other foot
2- Jumps in an uncoordinated fashion (without arm swing and knee flexion)
3- Coordinates arm swing with jump
4- Bends knees and swings arms forward in unison with jump and lands with knees flexed

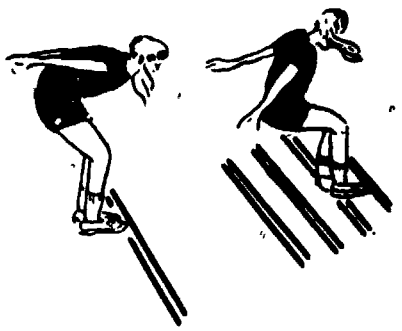


Fig. 2-8 Standing Broad Jump

Test Item No. 4: *Running*
Factor: Cardiorespiratory Endurance
Position and Precedure: Runs a pre-determined distance, upon command.

0- Makes no attempt to run
1- Runs only when assisted
2- Runs and stops in an irregular pattern
3- Runs the pre-determined distance in an awkward manner, i.e., irregular stride and a lack of total body coordination
4- Responds on command and runs the pre-determined distance with proper form

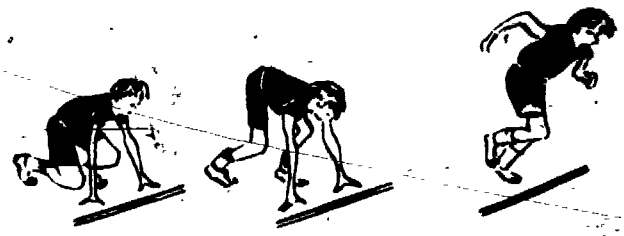


Fig. 2-9 Running

Anecdotal Remarks

Total Points (Maximum of 16 points) _____

CHAPTER THREE

TAPE ASSESSMENT PROCEDURES

The second step in the individualization of a physical fitness program is the proper assessment of student performance. Pupil performance must be properly diagnosed to determine individual strengths and weaknesses.

Unfortunately, a major weakness of many teacher training programs is that teachers are taught to diagnose performance almost solely on the basis of "product" information (test scores). Teachers are seldom provided the skills necessary to procure "process" information (i.e., how the child performs the specific task).

The Project ACTIVE Teacher Training Program incorporates both appraisal strategies — objective and subjective. Teachers have been trained to assess "product" and "process" information so that they can compile a complete "picture" of each child's performance. Each practicum experience is structured to develop the observational powers of the participants. The following pages provide a systematic procedure for assessing pupil progress efficiently.

OBJECTIVE APPRAISAL

Chapter II described how to administer the Physical Fitness Test. Using the raw scores and anecdotal remarks provided for the pupil in Table 2-2 on page 9, we can now establish a sequential procedure for converting the information into a meaningful appraisal.

Conversion of Raw Scores to Percentile Scores

To assess an individual's performance or to compare his performance with other individuals on the basis of raw test scores, a mathematically sound procedure must be devised. Vodola[1] developed a procedure whereby teachers can attain the following competencies

Convert raw scores to percentile scores via a table of numbers. Any number of scores can be converted to percentiles in a matter of *minutes.* Permits student comparisons on the same test.

Convert percentiles to normalized standard scores. A matter of *seconds* to convert percentiles to standard scores. Permits student comparisons on different test items or test batteries.

Individualize student instruction. Develop student profile charts for parental reports. Grade students on an individualized basis, i.e., on the basis of achievement or improvement. Group students for instructional purposes on the basis of varying abilities.

The mathematical computations in the following "steps" were achieved by utilizing sections of the manual

[1] Thomas M. Vodola, *Descriptive Statistics Made Easy for the Classroom Teacher,* pp. 1-11.

dealing with the conversion of raw scores to percentiles and stanine scores.

Step No. 1:

Check the raw scores for each factor.

1. arm/shoulder strength	24
2. abdominal strength	30
3. explosive leg power	53
4. cardiorespiratory endurance	1.6

Step No. 2:

Identify the percentile score for each raw score by referring to the Physical Fitness Index charts in Appendix B. Locate the chart for age 13. Your results should be as follows:

	Factor	Raw Score	Percentile
1.	Arm/shoulder strength	24	60
2.	Abdominal strength	30	20
3.	Explosive leg power	53	4
4.	Cardiorespiratory Endurance	1.6	1

Explanation: The norms in Appendix B were based on the scores of pupils, grades K-12, in the Township of Ocean School District. Appendix C provides norms based on data submitted from a variety of school districts in New Jersey. As soon as it is feasible, it is recommended that districts establish their own norms. (Appendix D provides the details, tables of numbers, and a tally sheet so that the reader can establish the norms for his school district without the need for any mathematical background.[1])

Conversion of Percentile Scores to Stanine Scores

Step No. 1:

Identify the stanine scores for each factor by referring to Appendix B. Your results should be as follows:

	Raw Score	Percentile	Stanine
1. Arm/shoulder strength	24	60	5
2. Abdominal strength	30	20	4
3. Explosive leg power	53	4	2
4. Cardiorespiratory endurance	1.6	1	1

Explanation: Percentile norms provide a basis for assessing a student's status in relation to the number of subjects that were tested. Thus, the arm/shoulder strength percentile score of "60" indicates that the subject tested scored better than 60 per cent of the population that took the test. Percentile scores are not additive or divisible because each score is not based on a common denominator – thus the recommended use of stanine scores. Stanine scores, normalized standard scores of nine units, permit one to compare scores for each factor; add all scores; and then divide to obtain an average score. (Stanine scores are not "true" standard scores, but if the stanines are based on a normal distribution of raw scores, they can be used with reasonable accuracy.)

Plotting Profile Chart

Step No. 1:

Plot the stanine scores for each factor. Table 3-1 provides a profile of the stanine scores based on the original data. (Provision also has been made for plotting Motor Ability scores.)

Explanation: The profile chart technique provides a highly visible means of comparing a student's relative strengths and weaknesses in terms of the factors being measured for any test battery. Further, by plotting pre- and post-test scores, the teacher can obtain progress information relative to each factor. (Stanine scores are expressed as unit scores "1" through "9." However, zeroes (0) have been added in the profile chart because they have been found to make the scores more interpretable to parents.)

Computing Physical Fitness Index (PFI)[2]

Step No. 1:

Internalization of the concept: Add the stanine scores for each test factor. Total all stanine scores.

5
4
2
1
12

Step No. 2:

Multiply the total by ten. 12 x 10 = 120

Divide the result by the number of test factors.

$$4\overline{)120}\quad 30$$

Step No. 1;

Short method: Add all stanine scores together (12).

Step No. 2:

Refer to the Physical Fitness Index Conversion Chart on page 14.

Step No. 3:

Locate the number "12" in the second composite stanine column; the number to the right, "30" is the Physical Fitness Index (PFI) score.

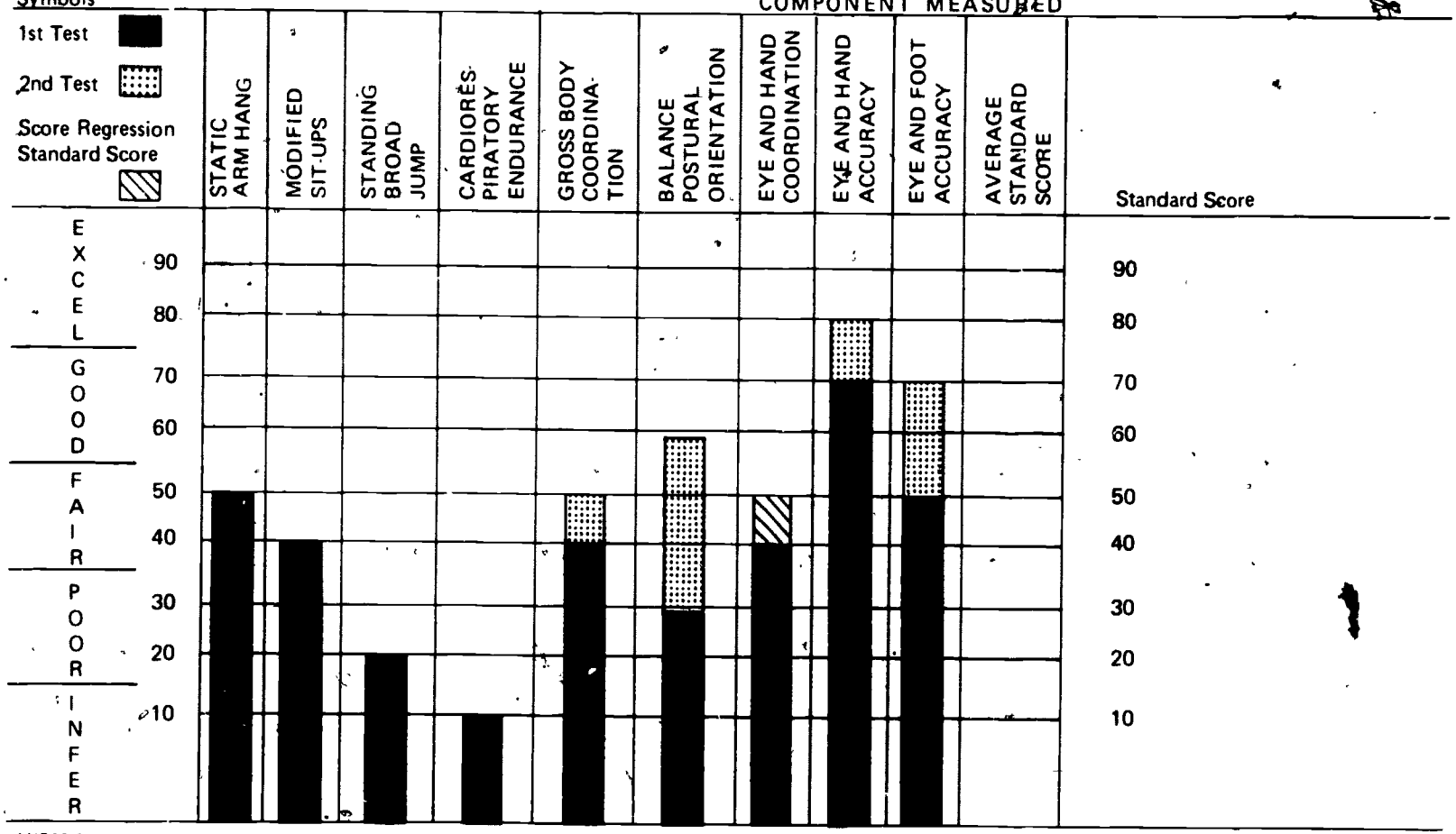
[1] The Tables in Appendix D are included in a manual published by the Project Director, *Descriptive Statistics Made Easy for the Classroom Teacher.* For additional information, contact: Dr. Thomas M. Vodola, P.O. Box 93, Neptune City, N.J. 07753

[2] Edwin A. Fleishman, *The Structure and Measurement of Physical Fitness,* pp. 141-142.

TABLE 3-1

PHYSICAL FITNESS AND MOTOR ABILITY PROGRESS PROFILE (Courtesy of the Township of Ocean School District)

STUDENT'S NAME Doe (Last) Jane (First) AGE 13 CLASSIFICATION L.P.V. SCHOOL Ocean Township



ANECDOTAL REMARKS

Difficulty with bilateral movements Rigid gross body movements Balancing Problem Fearful of height Balancing problem may be attributable to inability to align body parts in accordance with principles of center of gravity Eye and foot accuracy needs work

Supports body weight primarily with the right arm
Favors the right side of the body when performing modified sit ups

N Y Posture Screening Test
Asthmatic (Vital Capacity)
Weight Control (lbs)
Orthopedic (See Anecdotal Remarks)

TABLE 3-2
PHYSICAL FITNESS INDEX CONVERSION CHART

COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI
4	10	12	30	20	50	28	70
5	13	13	33	21	53	29	73
6	15	14	35	22	55	30	75
7	18	15	38	23	58	31	78
8	20	16	40	24	60	32	80
9	23	17	43	25	63	33	83
10	25	18	45	26	65	34	85
11	28	19	48	27	68	35	88
						36	90

Explanation: While individual stanine scores are of more value to the teacher in presenting vital information for prescriptive purposes, there is also a need for one score which reflects a child's performance on the total test battery. The Physical Fitness Index serves that function; it provides a score which can be used to determine whether a student should be scheduled in an enrichment program. It also provides a baseline score which can be used later for evaluative purposes. (This should clarify the student behavioral objective in Chapter I which states that a student shall be released from the developmental program if he attains a PFI of 50, with no single component score of less than 4. The Township of Ocean School District recommends that pupils be scheduled for enrichment activities if they have a pre-test PFI score of 35 or below, and/or a single component stanine score of 2 or below. The recommended scheduling scores are not arbitrary, but are based on the fact that these "cut-off" points include the bottom 10 per cent of the student population in the district.)

Fig. 3-1. Subjective Appraisal of Pupil Performance
(Awareness Workshop, Slayton, Minnesota)

SUBJECTIVE APPRAISAL

Extreme caution must be exercised when using normative data for prescribing instructional programs because of these factors: an awareness that children are individuals with different developmental needs that cannot be truly reflected in any table of norms; normative data only provides summative information: (i.e., product, or after-the-fact-information); the potential error inherent in the administration of any test; and the limitations of any test instrument (i.e., the information provided is limited by the factors being assessed.)

In order to ensure maximum development of each child's physical fitness capabilities, it is recommended that "process" information be continually assessed so that prescriptive programs can be modified according to varying developmental needs.

Recording Process Information

Refer back to Tables 2-2 and 3-1 on pages 9 and 13 respectively. On each form, a place has been provided to record summary or anecdotal remarks. An example will highlight the importance of observing a child's performance carefully.

On the arm strength test (Table 2-2), Jane achieved a percentile score of "60." Thus, one could conclude she performed reasonably well on that task item, as she scored as well as, or better than, 60 percent of the population. However, throughout the performance of the test battery, the teacher observed that the child manifested a similar problem – a general weakness in the left side of the body. For example, when performing the static arm hang, Jane shifted her body weight to her right side and arm. Similarly, she performed her curl-ups by twisting her trunk and using the muscles on the right side of her body.

Developing the ability to assess pupil performance subjectively requires training designed specifically to cultivate the teacher's observational powers. One technique found to be successful in the Project ACTIVE Teacher-Training Program is to pair two teachers with one child during the testing periods. Thus, one teacher can observe terminal behavior and record the raw score while the partner observes how the child performed the specific components of the test and records anecdotal remarks. After a period of time, the teachers reverse their assignments. At the end

of each session, the teachers discuss the total performance of the child on each task.

Somatotyping: An Integral Part of the Appraisal Process

A grievous error committed by physical educators is the establishment of a rigid set of norms and the comparison of *all* students, regardless of their body structures, to the same standards. For example, Jane only achieved the 4th percentile on the standing broad jump test. Would it be fair to state that she must attain the 90th percentile to achieve an "A"? Or, to state that she must attain a PFI score of 50 for release from the D&A Program? The answer in either case would be an unequivocal "no" because a major factor which must be considered, namely body structure, was not included in the decision. In Jane's case, she was classified as an endo-mesomorph. Possibly, her excess weight would seriously hamper her ability to broad jump. Thus, it is recommended that the teacher somatotype each student prior to making any assessment of performance and establish a standard or aspiration level that is consistent with the individual's capabilities.

Somatotyping procedure. Sheldon[1] has devised a precise procedure for determining a student's body structure. The procedure, however, is rather complex and time-consuming. The writer has developed a simplified procedure which involves the identification of a student's primary and secondary body structure components. Using Figure 3-2 as the student to be somatotyped, the procedure would be as follows:

Step No. 1: Identify the student's primary component, i.e., the single-most pronounced body structure type. The three basic body types are frail (ectomorph), husky (mesomorph), or obese (endomorph). By comparing Figure 3-2 with Table 3-3, you will note the subject has an excess of fatty tissue throughout the body area. However, careful observation indicates the subject is predominantly muscular; thus his primary body structure type would be classified as "mesomorphic."

Step No. 2: Identify the student's secondary component, i.e., body structure characteristics which would be indicative of either ecto- or endomorphy. In the illustration, the student possesses a preponderance of adipose tissue, and as such should be classified as "endomorphic."

Step No. 3: Combine the information from the screening procedure into a simple term that is descriptive of the student's body structure. In the example cited, the description would be "ENDO-MESOMORPH," that is the student is primarily muscular with evidence of obesity. (Confusion arises when teachers, requested to write the description, list the primary component first. The rule to remember: the primary component is the noun; the secondary component is the adjective; thus, the secondary component is placed before the hyphen. For example, the description for the student in Figure 3-2 indicates he is primarily a mesomorph with endomorphic tendencies.

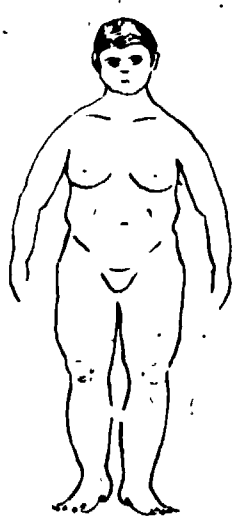


Fig. 3-2 Endo-Mesomorph

[1] William H. Sheldon, *Atlas of Men.*

SUMMARY

The following points should be considered when subjectively assessing the physical fitness performance of pupils:

1. Observe *all* physical performance patterns carefully
2. Reduce each task to its simplest, discrete parts
3. Focus attention on *process* information as well as *product* information

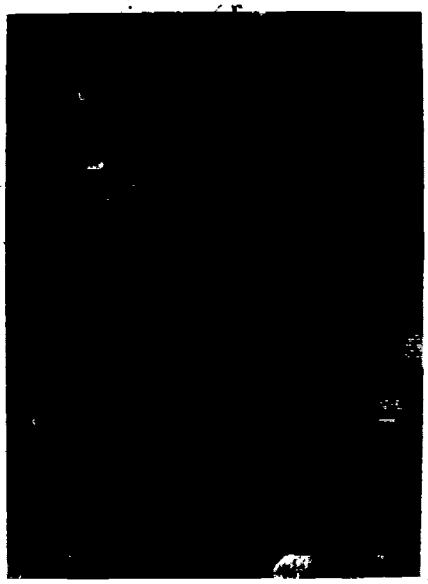


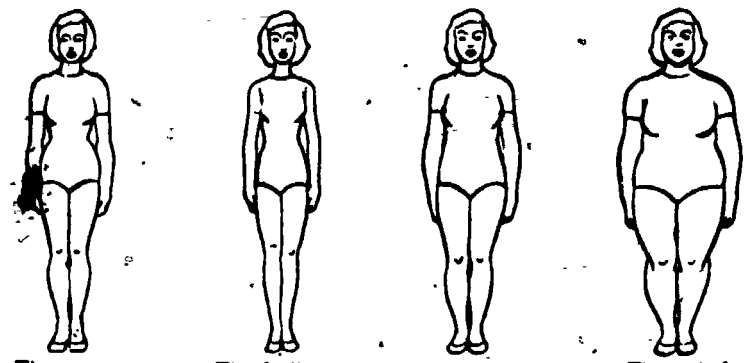
Fig. 3-3. Focus Attention on Process Information
(Training Program, University of Northern Iowa, Cedar Falls, Iowa)

4. Record anecdotal remarks regarding any atypical patterns manifested
5. Try to identify common problems, such as:
   a. Tense, restricted movements
   b. The inability to perform bilateral movements
   c. The inability or unwillingness to perform any of the tasks
   d. The lack of the skill required to perform the standing broad jump
   e. The tendency to favor one side of the body when performing tasks
   f. The ability to perform discrete tasks, but the inability to integrate two or more tasks
6. Identify and record the primary and secondary body structure types of each student.
7. Review the individual's overall performance on the test battery. If the student attains all stanines of 8 or 9, it is indicative that the instrument is too easy. Conversely, if all stanines are 1's and 2's, the implications are that the items are too complex. In either event, the test administered *will not* provide the information that is necessary to individualize instruction.

One final note regarding the utilization of subjective appraisal techniques. An effective individualized instructional program requires the daily assessment and frequent modification of pupil tasks. The incorporation of subjective appraisal techniques in the overall assessment process provides a viable means of achieving that goal.

TABLE 3-3

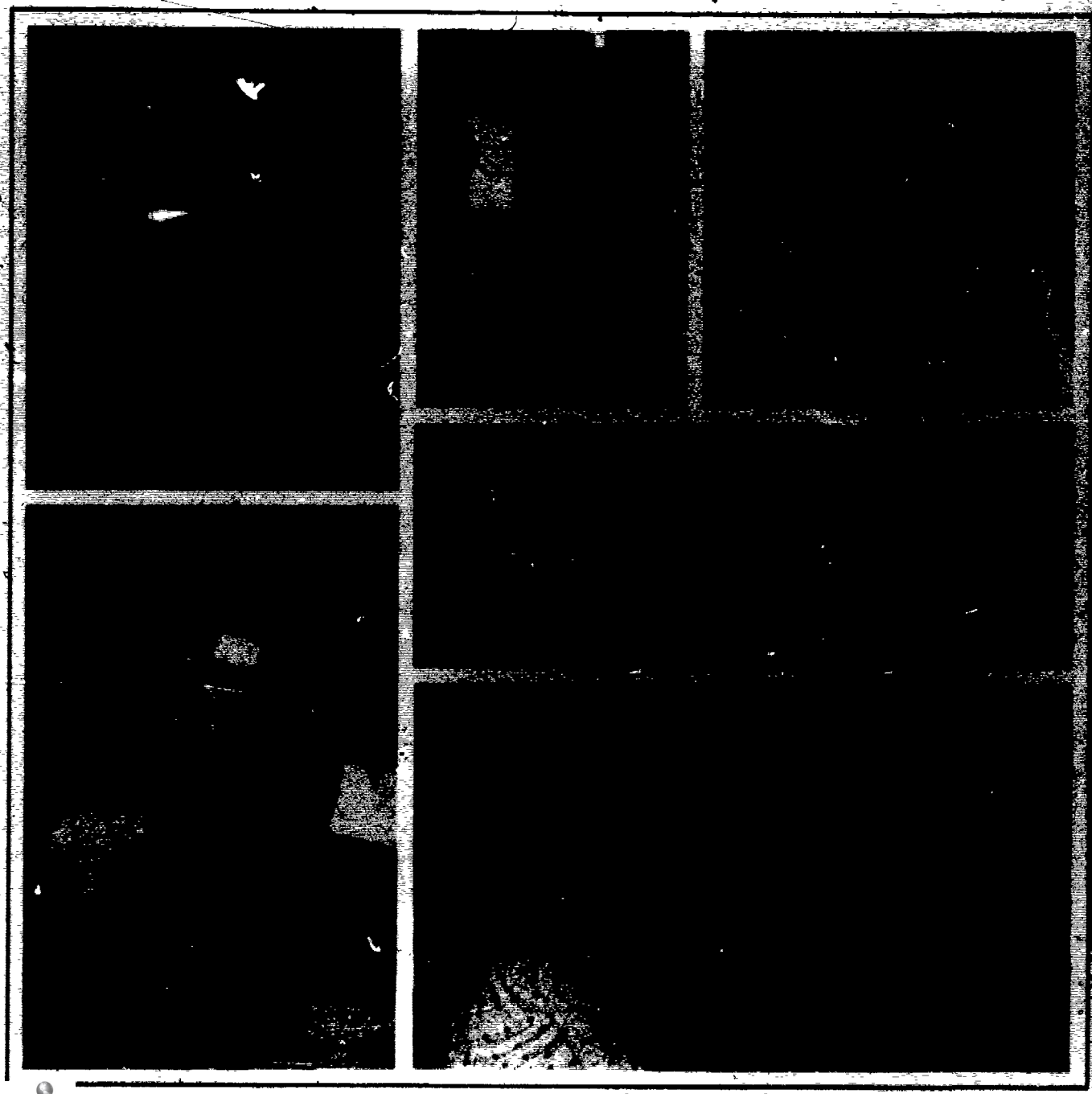
DETERMINATION OF BASIC BODY STRUCTURE (SOMATOTYPE)



The most common type | The frail type | The husky type | The soft fat type

The Most Common Type 5 3 3	*The Frail Type* 1 1 7	*The Husky Type* 1 7 1	*The Soft Fat Type* 7 1 1
Extremely thin Low in fat tissue Small front to back dimensions of trunk 1 2	Average 3 4 5	Most obese Large fat deposits Thick abdomen region, cheeks, hips, thighs 6 7
Extremely underdeveloped muscles with poor tone Muscles squeezed or pushed in contracted state—arms, buttocks, calves, thighs. 1 2	Average 3 4 5	Extremely developed muscles large and firm with good tones in biceps, buttocks, calves, thighs, abdomen 6 7
Extremely thick and heavy bones of ankle, knee, elbow, wrist joints 1 2	Average 3 4 5	Extremely thin and frail linear skeleton with small wrist, ankle, knee, and elbow joints 6 7

Source Adapted from Janet Wessel, *Movement Fundamentals: Figure, Form, Fun,* 3rd. ed. C 1970, pp. 17-18. Reprinted by permission Prentice-Hall, Inc., Englewood Cliffs, New Jersey.



CHAPTER FOUR

TAPE PRESCRIPTION PROCEDURES

Previous chapters have stressed the role that "testing" and "assessing" play in the process of individualizing instruction. Chapter IV shows the interrelationship between the diagnostic and prescriptive processes.

IDENTIFICATION OF PRIORITY NEEDS

To prepare a prescriptive program for a pupil, it is necessary to review all previous information gathered, determine the amount of time that should be devoted to each indicated deficiency, and prescribe those tasks or activities that will remediate the deficiencies.

Review Physical Fitness Profile Chart

A review of Jane's profile on page 13, Table 3-1, reveals the following stanine scores:

Arm/Shoulder Strength	50
Abdominal Strength	40
Explosive Leg Power	20
Cardiorespiratory Endurance	10

Further, the following anecdotal remarks were noted:

> Supports body weight primarily with the right arm. Favors the right side of the body when performing sit-ups.

From the above data, it is obvious that Jane's weakest area is Cardiorespiratory Endurance. In prescribing activities for Jane it would seem logical that less time be devoted to her proficiencies than would be devoted to her deficiencies. Also, consideration should be given to prescribing activities suggested by the teacher's anecdotal remarks.

Given this information, is there a procedure for determining the amount of prescriptive time that should be applied to each area? Vodola[1] has developed a procedure for writing time prescriptions based on stanine scores. The sequential steps are detailed in the following section. (Refer to Table 4-1 for the procedure for converting raw scores to time prescriptions.)

Fig. 4-1. Determining Pupil Time Prescriptions
(Awareness Workshop, University of Nebraska, Omaha)

[1] Thomas M. Vodola, *The Effects of Participation Time Variations on the Development of Physical Fitness, Motor Skills and Attitudes*, p. 170.

Convert Physical Fitness Stanine Scores to Time Prescriptions[1]

Step No. 1:

Plot all stanine scores on time prescription chart ("0's" have been added for easier interpretation by parents): Arm/Shoulder strength *50;* Abdominal strength *40;* Explosive leg power *20;* and Cardiorespiratory endurance *10.*

Step No. 2:

To determine deviation points subtract each stanine score from 90 (Arm strength: 90-50=40).

Step No. 3:

Total deviation points are obtained by adding all deviation points below 90 (Arm strength *40,* Abdominal strength *50,* Explosive leg power *70,* and Endurance *80,* Total 240.

Step No. 4:

To obtain the prescription time multiplier, divide the total exercise time in seconds by the total deviation points (900 seconds ÷ 240 = 3.7). Drop all decimals in the multiplier. The remainder of 180 will be utilized later as the adjustment time.

Step No. 5:

To obtain total prescription time per exercise in seconds, multiply the deviation stanine points for each factor by the prescription time multiplier (e.g., Arm Strength, 40 x 3 = 120).

Step No. 6:

To obtain exercise time in minutes and seconds, divide total prescription time in seconds by 60 (e.g., Arm strength, 120 ÷ 60 = 2:00).

Step No. 7:

To obtain adjustment time, divide total exercising time in seconds by total deviation points below 90 (900 ÷ 240 = 3, plus a remainder of 180). The whole number (3) becomes the multiplier and remainder (180) becomes the time adjustment factor which is added to the lowest score.

[1] As of September 1974, school districts and agencies in New Jersey implementing the Project ACTIVE Physical Fitness Program have been provided a computerized print-out of time prescriptions and recommended tasks and activities. The information required for computer programming is the amount of instructional time (in minutes) and the stanine scores for each factor. (School districts in New Jersey are also requested to submit mental ages and raw scores for "classified" students – to aid in the development of state norms.) Refer to Appendix E for the form and test directions.

Select Physical Fitness Tasks and Activities

Based on Jane's objective and subjective assessment, the following time prescriptions and activities are recommended:[2]

Factor	Tasks and Activities	Time
Arm/shoulder strength (2 minutes)	1. Mountain climbing	1:00
	2. Hand walking, parallel bars	1:00
Abdominal strength (2 minutes, 30 seconds)	1. Inverted cycling	1:00
	2. Curl-ups	1:30
Explosive leg power (3 minutes, 30 seconds)	1. Bend the knee	1:00
	2. Blast off	1:00
	3. Jumping the square	1:30
Cardiorespiratory Endurance	1. Eundurance hopping	2:00
	2. Windmill and jog	2:00
	3. Jumping jack	2:00
	4. Rope skipping	1:00

When writing individual prescriptions, consideration should also be given to the following sound teaching strategies:

1. Vary the student learning experiences for each factor so that the child develops a broad-based competency rather than competency in a few discrete skills.
2. Include tasks that are designed to remedy problems revealed by the subjective assessment.
3. Structure each task to insure success.
4. Include tasks that will reinforce pupil strengths.

Teacher Learning Experiences

Up to this point, step-by-step procedures have been described for administering the Physical Fitness Test, assessing the results objectively and subjectively, and planning an individualized physical activity program (time basis) to remedy deficiencies and reinforce strengths. This section provides the teacher with a viable prescriptive learning experience which, stated behaviorally, is as follows:

Given an individual's raw scores on the Township of Ocean Physical Fitness Test (and all pertinent forms), the teacher will:

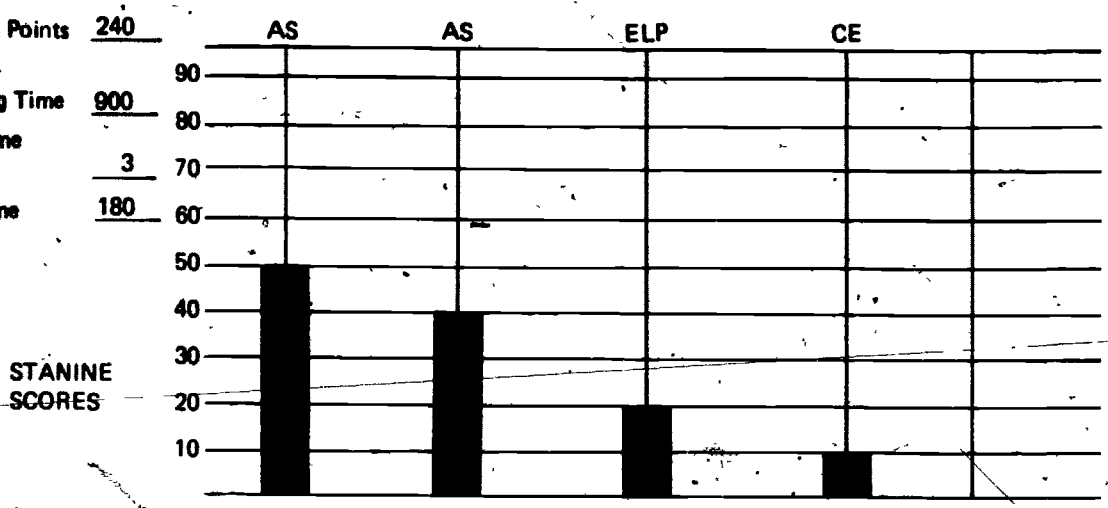
1. Compile raw scores based on the Physical Fitness Test
2. Determine percentile and stanine scores
3. Determine Physical Fitness Index (PFI)
4. Construct an Individual Profile Chart
5. Convert stanine scores to time prescriptions
6. Select tasks and activities based on time prescriptions

[2] The activities recommended are explained in detail in Chapter VI. Chapter VI provides a sequential list of tasks and activities for each physical fitness factor.

TABLE 4-1

PHYSICAL FITNESS TIME PRESCRIPTION CHART

Total Deviation Points Below 90 — 240
Total Exercising Time — 900
Prescription Time Multiplier — 3
Adjustment Time — 180



	Arm Strength	Abdominal Strength	Explosive Leg Power	Cardiorespiratory Endurances	Total
Deviation Points Below 90	40	50	70	80	240
Prescription Time Multiplier	3	3	3	3	
Sub Total	120	150	210	240	720
Adjustment Time				180	180
Total Prescription Time Per Exercise (In Seconds)*	120	150	210	420	900
In Minutes and Seconds	2:00	2:30	3:30	7:00	15:00

*To determine prescription time for each factor: (1) find prescription time multiplier by dividing total exercising time (900 seconds) by total stanine points below 90 (drop all decimals in the multiplier) (2) multiply deviation stanine points for each factor by the prescription time multiplier; (3) add adjustment time to the lowest factor; (4) total prescription time in seconds; and, (5) convert times to minutes and seconds.

(Source: Thomas M. Vodola, "The Effects of Participation Time Variations on the Development of Physical Fitness, Motor Skills and Attitudes," unpublished doctoral dissertation, Temple University, 1970, p. 150.)

Each problem will include a behavioral statement of all information that is needed to solve the particular problem. Answers to the problems are located in Appendix F.

Problem No. 1: Determine Percentiles and Stanine Scores

Given the data and the format provided below, the student will: 1) convert raw scores to percentiles; 2) convert percentiles to stanines; and 3) determine the composite stanine score. (Use the Physical Fitness Test norms, Appendix B to convert raw scores to percentiles and percentiles to stanines.)

Test Factors	Raw Score	Percentile	Stanine
Arm/shoulder strength	1		
Abdominal strength	30		
Explosive leg power	35		
Cardiorespiratory Endurance	34		

Sex; *Male* Somatotype: *Meso-ectomorph* Age: *8*
Anecdotal Remarks: *Unable to support body weight on chinning bar. Uncoordinated jumping performance. Natural running stride.*

Problem No. 2: Determine the Physical Fitness Index (PFI)

Given the composite stanine score from Problem No. 1 and the information provided below, the student will compute the PFI.

Formula for computing the PFI

$$PFI = \frac{\text{Composite Stanine Score} \times 10}{\text{Number of test factors}}$$

$$PFI = \frac{(\quad) \times 10}{4}$$

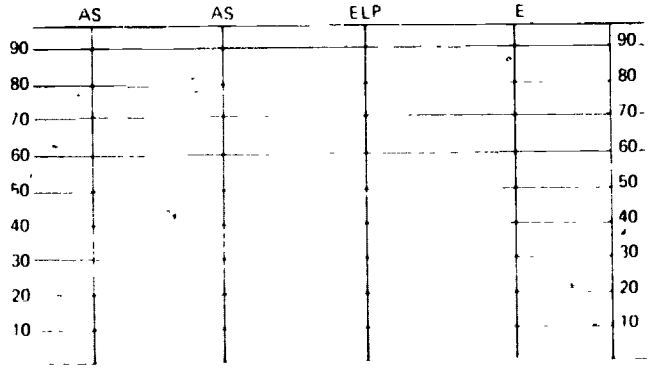
PFI =

Problem No. 3: Construct an Individual Profile Chart

Given the individual stanine scores from Problem No. 1, the student will plot the information on Table 4-2.

TABLE 4-2

PHYSICAL FITNESS TIME PRESCRIPTION CHART



Problem No. 4: Convert Stanine Scores to a Time Prescription

Given the individual stanine scores from Problem No. 1, the student will compute individual Time Prescriptions for a 15-minute period. (Compute time prescriptions on Table 4-3, page 22.)

Problem No. 5: Select Tasks and Activities

Given the information provided in Problems No. 1 through No. 4, the student will prescribe appropriate tasks, and activities. Please refer to Chapter VI, Tasks and Activities. (Place an asterisk (*) adjacent to those tasks that have been prescribed in accordance with the "Anecdotal Remarks" and somatotyping information.

Factor	Tasks and Activities	Time
Arm/shoulder strength		
Abdominal strength		
Explosive leg power		
Cardiorespiratory Endurance		

PROGRAM IMPLEMENTATION

Thus far, the manual has dealt with the TAPE procedure. Many other factors must also be considered in initiating a successful individualized program. For example, "What is the role of the teacher in this highly structured environment?" "How can one motivate a student frustrated by a failure to accomplish his tasks?" "What other factors must be considered to enhance program success?" Such questions are considered in the remaining pages of this chapter.

The role of the teacher. To individualize instruction the teacher must modify his teaching style so that he becomes a "partner" in the educational process. Instead of devoting most of the instructional time to lecturing and "telling" the students what to do, he must guide, assist,

stimulate, motivate, and act as a resource person constantly. He must, in fact, make the student the "center" of the learning process. The teacher seldom answers questions; but, he skillfully guides the student through a series of questions until the individual inductively arrives at the solution to the problem. Further, the teacher does not provide experiences which result in rote learning. All tasks and activities are designed to develop the child's ability to comprehend, apply knowledge previously learned, analyze problems, synthesize information, and intelligently arrive at solutions.

Strategies to Motivate Students

Assuming one has incorporated all of the strategies listed above, will the students be motivated? Not necessarily. Consideration must also be given to "personalizing" instruction and providing "student learning experiences."

Many educators view the terms "individualized instruction" and "personalized instruction" synonomously. The Project ACTIVE Training Program defines "individualized" in terms of the TAPE process – the focus is on instruction. "Personalized," on the other hand, relates to teacher-pupil rapport – the focus is on the human element. It is believed that many highly innovative, individualized programs have not been successful because they have lacked the personalization factor. Thus, it is recommended that throughout the physical fitness unit, the teacher be continually aware of each child as a human being with whom he must constantly strive to enhance his relations. Some techniques recommended to enhance personalization of instruction would be:

1. to refer to each pupil by his or her first name
2. to look for opportunities to reinforce tasks performed reasonably well
3. to structure all tasks so that every child can achieve a degree of success
4. to empathize with each child in his performance and behavior
5. to provide opportunities for each child to perform tasks he or she enjoys
6. to structure all experiences so as to ensure maximum involvement for each child

Repeated learning experiences are necessary for the child to "internalize" the concept by creating an environment conducive to a high level of cognition

The eight tasks presented below serve a dual purpose helping the child internalize facets of the physical fitness program; and providing parameters for teacher and pupil roles.

Task No. 1:

Perform the Township of Ocean School District Physical Fitness Test, Grades K-2

Teacher's Role. (a) Explain and demonstrate the correct technique for performing each item (b) Record raw scores.

Student's Role (a) Perform test items as directed

Task No. 2:

Determine Percentile, Achievement and PFI Scores; Plot Scores on Profile Sheets; Plan Prescriptive Program, K-2

Teacher's Role. (a) Determine all scores. (b) Plot scores on profile sheets. (c) Plan prescription programs.

Task No. 3:

Design Tasks to Improve Arm/Shoulder Strength, Abdominal Strength, Explosive Leg Power, and Cardiorespiratory Endurance, Grades 3-12.

Teacher's Role. (a) Explain and demonstrate tasks and activities designed to improve physical fitness. (b) Assist students in their choice.

Fig. 4-2. Assisting Student on Bicycle Ergometer
(Courtesy of North Hunterdon Regional High School, Annandale, New Jersey)

Student's Role. (a) Devise an original task to improve each physical fitness factor. (b) Devise an original task to improve a physical fitness factor that is appropriate for his developmental level

Task No. 4:

Demonstrate a Physical Fitness Skill, Grades K-4.

Teacher's Role. (a) Structure the situation so that each student is a "leader." (b) Assist "followers" who have difficulty performing skills

Student's Role (a) Serve as a "leader" in the game "Follow the Leader." (b) Participate as a "follower."

Games of this type reinforce the competencies of the "leaders" and provide practice in weak areas for "followers."

TABLE 4-3

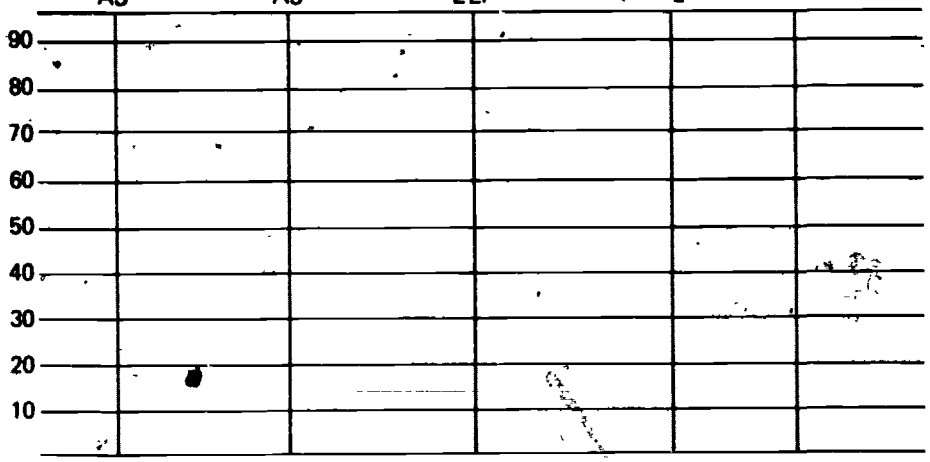
PHYSICAL FITNESS TIME PRESCRIPTION CHART

Total Deviation Points Below 90 _____

Total Exercising Time 900

Prescription Time Multiplier _____

Adjustment Time _____



	Arm Strength	Abdominal Strength	Explosive Leg Power	Cardiorespiratory Endurances	Total
Deviation Points Below 90					
Prescription Time Multiplier					
Sub Total					
Adjustment Time					
Total Prescription Time Per Exercise (In Seconds)*					
In Minutes and Seconds					

*To determine prescription time for each factor: (1) find prescription time multiplier by dividing total exercising time (900 seconds) by total stanine points below 90 (drop all decimals in the multiplier) (2) multiply deviation stanine points for each factor by the prescription time multiplier, (3) add adjustment time to the lowest factor; (4) total prescription time in seconds, and, (5) convert times to minutes and seconds.

(Source Thomas M Vodola, "The Effects of Participation Time Variations on the Development of Physical Fitness, Motor Skills and Attitudes," unpublished doctoral dissertation, Temple University, 1970, p 150)

Task No. 5:

Participate in Movement Education, Exploration, and Activities and Games, K-6.

Teacher's Role. (a) Structure a task and then encourage students to implement creatively. (b) Permit students to structure subsequent tasks and activities. (c) Assist students who have difficulties with certain movement patterns.

Student's Role. (a) Implement tasks as structured. (b) Serve as a "leader" in structuring new tasks.

Task No. 6:

Assess Your Physical Fitness Performance in Game Situations, Grades 9-12.

Teacher's Role. (a) Provide a variety of individual and group activity games. (b) Note student deficiencies and assist on an individual basis. (c) Assist students with their personal analysis.

Student's Role. (a) Keep a record of game infractions and violations (such as "traveling" and repeated fouling in basketball.) (b) Analyze possible cause(s) of infractions or violations; for example, repeated "traveling" and fouling may be attributable to poor body balance, lack of endurance, etc. Make a list of his areas of weakness (based on analysis).

Task No. 7:

Participate in Tasks, Activities Designed to Improve Specific Deficiencies, Grades 9-12.

Teacher's Role. (a) Provide a variety of tasks and activities designed to improve specific fitness deficiencies. (b) Guide and assist the student in his selection.

Student's Role. (a) Select tasks and activities to improve his areas of weakness. (b) Participate in the tasks and activities. Keep a record of progress.

Task No. 8:

Identify Your Primary and Secondary Somatotyping Characteristics and Select and Participate in Appropriate Activities, Grades 9-12.

Teacher's Role. (a) Explain and demonstrate assessment procedure. Pair students and provide opportunity for somatotyping of one another. (b) Provide activity suggestions for each basic body type as per Appendix G.

Student's Role. (a) Identify his partner's primary and secondary body structure types and recommend activities to enhance successful performance. (b) Repeat process in terms of his own physique.

All of the above experiences will enhance the child's self-concept if tasks and activities are structured to insure success and are supported by immediate, positive reinforcement.

Structuring the Learning Environment

Establishing a program to meet the varied needs of any group of students requires the restructuring of the traditional gymnasium or classroom setting. The technique recommended is to create several mini-instructional centers within the gymnasium or classroom as seen in Figure 4-3. This affords the teacher flexibility in programming whereby he can prescribe individualized and/or group activities within the same environment.

Other Factors to be Considered

Record keeping poses a problem for the teacher. It is recommended that the teacher prepare an individual folder for each child to file all test forms. Further, to minimize prescriptive error, some form should be devised so that tasks, time duration, attendance, and anecdotal remarks can be recorded on a daily basis. The Individual Participation Card (Table 4-4) provides one form that can be used for record-keeping. The reverse side of the 5 x 8 card can be kept blank for entering anecdotal remarks. Other considerations would include teacher-pupil ratio (1-10), size of the teaching station (30' x 60'), supply and equipment needs (refer to Appendix H), and time allotment for the program (a minimum of two, 30-minute periods per week.

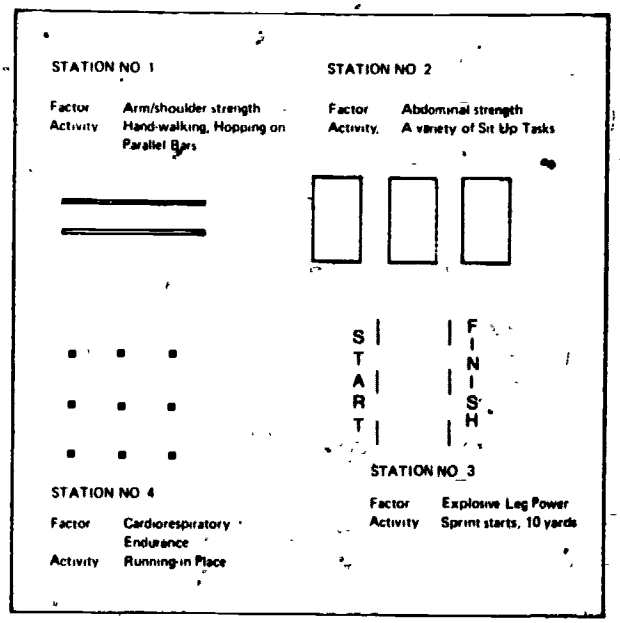


Figure 4-3 Mini-teaching Stations

Sample Lesson Plan

John Doe is enrolled in a developmental physical education class. He is scheduled for a thirty-minute class period on Tuesdays and Thursdays in addition to his regular physical education program. The period is structured so that John receives fifteen minutes of individualized instruction based on his time prescription and fifteen minutes of group activity designed to reinforce his strengths and to develop social interaction and emotional growth. A copy of John's program is presented below:

Period 1	30 min.	Tuesday and Thursday
Individual Activity: 15 minutes		**Time Prescription**
Arm/shoulder strength		5 min.
Abdominal strength		1 min.
Explosive leg power		3 min.
Cardiorespiratory endurance		6 min.
		15 min. Total

TABLE 4-4

INDIVIDUAL PARTICIPATION CARD

(Courtesy of the Township of Ocean School District.)

NAME _____ DAY _____ PERIOD _____ INSTRUCTOR _____ SCHOOL _____

SOMATOTYPE _____ CLASSIFICATION _____

Motor Skills		Participation Time (Minutes)													
Bilaterality	3														
Balance and Postural Orientation	4														
Eye and Hand Coordination	2														
Eye and Hand Accuracy	2														
Ocular Pursuits	2														
Eye and Foot Accuracy	2														
Physical Fitness															
Arm/shoulder strength	5														
Abdominal strength	3														
Explosive leg power	2														
Cardiorespiratory endurance	5														
Dates	9/30														
Handedness R L Footedness R L															
Anecdotal Remarks															

OR

Group Activity: 15 minutes

Activity: Fitness circuit

Equipment: Parallel bars

Description: The teacher designs the following circuit: hand-walking, hopping and swinging dips on the parallel bars; twenty modified sit-ups; broad-jumping the width of the gym; and shuttle run (six repetitions, the width of the gym). The time duration of the activities are to be consistent with the student's time prescription (15 minutes).

Elective Activity: 15 minutes

The student elects an activity of his choice for the balance of the period from the following: handball; paddle-ball; basketball; or gymnastics.

CHAPTER FIVE

TAPE EVALUATION PROCEDURES

Previous chapters have focused on gathering baseline information, assessing performance and prescribing activities. This chapter evaluates student progress at the end of a specific block of time so that a decision can be made regarding subsequent programming. Evaluation differs from assessment in that "assessment" implies the constant gathering of "process" information so that the prescription can be modified as needed; whereas "evaluation" is viewed as the gathering of "product," or terminal information so that an administrative decision can be made.

The first section of this chapter provides suggested guidelines for ascertaining whether a student should: (1) be returned to the unrestricted program; (2) continue in the Developmental Program with the same prescription; (3) continue in the Developmental Program with a modified prescription; or, (4) be scheduled in the unrestricted program and the Developmental Program. Other sections describe a procedure for informing parents of their child's progress and provide a summary of the TAPE process based on an actual case study.

SUGGESTED EVALUATIVE GUIDELINES

To evaluate pupil progress properly, it is necessary to review all data collected. The evaluation should be conducted every nine weeks.[1] At each terminal period, the teacher should:

1. Readminister the Township of Ocean Physical Fitness Test
2. Compute the Physical Fitness Index (PFI)
3. Record anecdotal remarks regarding process changes
4. Compare the pre- and post-test objective and subjective appraisals in light of the student's somatotype

If a student achieves a PFI score of 50 or more, with no single component stanine score of less than 4, he is to be released from the D & A program. (The mentally retarded or learning disabled child need only attain a PFI of 40, with no stanine score less than 3.) If these minimal standards are not achieved, further evaluation is necessary. Attempt to discern whether the lack of improvement was attributable to improper prescription. If this is the case, determine why the prescriptive tasks did not improve performance. Were the tasks too easy, too difficult, not performed correctly, or not practiced sufficiently? Represcribe to correct the problem. If the problem is attributable to poor motivation, then prescribe other tasks which focus on the same factors, but may be more appealing to the student. (See Chapter VI for sequential tasks.) Other approaches to solving the motivation problem: Make the tasks more meaningful by having students test one another; record their daily progress; and use any other comparable strategy which enables the pupils to note the concrete benefits derived therefrom. (Note: The student

[1] The teacher should always recognize the fact that evaluation is a continuous process and cannot be restricted to a precise testing schedule. It might be advisable to retest a student prior to the pre-planned schedule because of his performance. An interim evaluation ensures that the individual prescriptive process is being implemented to the fullest extent.

may be released from the program with scores below the established standards if the accomplishments are compatible with the individual's body structure.)

If the student has not achieved the appropriate PFI score, but shows steady progress toward his goal the teacher may elect to continue the present prescriptive program for another nine weeks. This decision should be based on all data available on the student such as: (1) personal and medical history, as it relates to physical development; (2) the teacher's subjective observations, (3) rate of improvement in specific component areas, and (4) the student's somatotype.

PUPIL PROGRESS REPORT TO PARENTS

It is important that parents be made aware of the progress of their child in the Developmental Physical Education Program. Table 5-1 provides a suggested format for reporting to parents. The form provides a means of indicating the progress the child makes in terms of each test item and each factor. Provision is also made for parental comments and requests for a conference.

SUMMARY OF THE TAPE PROCESS

The sequence the teacher uses for individualizing instruction involves:

- **T** Testing the student to gather baseline data
- **A** Assessing the individual performance of the student
- **P** Prescribing a sequentially developed program of individualized activities
- **E** Evaluating student progress at periodic intervals

Case Study: John was referred for testing by his physical education teacher who noticed he displayed an extremely low fitness level. In tests conducted by the D&A teacher, John scored a 22 on the Physical Fitness Test. A parental permission slip was sent home and John was scheduled in the program for two periods a week (80 minutes).

John's prescription focused on a variety of physical fitness tasks as he scored low on all four factors. After nine weeks John was retested. It was noted that his overall performance improved, but there was need for further development. Thus, he remained in the program for the second quarter, with a modified prescription. After nine more weeks John was tested a third time. His composite Physical Fitness Index (PFI) rose to 54. Upon the recommendation of the D&A teacher, John was released from the program.

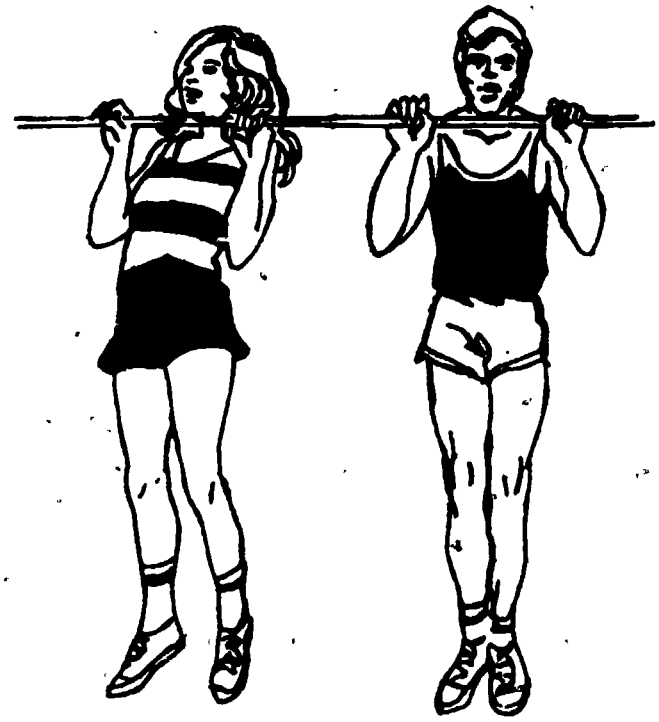
John's case study demonstrates a synthesis of the individualization of a physical activity program via the TAPE process. The process involves: testing; assessing performance; D&A program enrollment, when necessary; prescribing tasks and activities; evaluating performance periodically; and modifying subsequent strategies on the basis of the evaluative results.

TABLE 5-1

PARENT'S SIGNATURE _____

PARENT WISHES CONFERENCE ( )

TEACHER/PARENT COMMENTS



Physical Education

Grades 1 - 8

Report of Pupil Progress

Pupil _____

Grade _____ Year _____

Classroom Teacher _____

Dear Parent

The Township of Ocean Physical Fitness Test is administered twice a year in all physical education classes, grades one through twelve

The purpose of the fall test is to identify weak areas so that activities can be prescribed accordingly The spring test provides a basis for determining progress.

Compare your child's fall and spring scores with the District norms to determine his/her relative status and progress

Assistance will be available by contacting the Physical Education Staff in your school

TEST PERFORMANCE

FALL	SPRING	
sec	sec	Flexed Arm Hang– Measures arm strength
		Sit up – Measures abdominal strength
inches	inches	Standing Broad Jump– Measures leg power
sec	sec.	8 Minute Run – Measures endurance

Please use the back of this report for comments

TABLE 5-1 (cont.)

Boys

DISTRICT NORMS						
STUDENT AGE	%	ARM HANG	SIT-UPS	STANDING BROAD	200 YD.	8 MIN./12 MIN. RUN
11	75	51	100	63	31	
	50	29	60	58	34	
	25	15	45	52	36	
12	75	45	138	70		1870 Yds.
	50	30	100	66		1760 Yds.*
	25	16	60	60		1540 Yds.
13	75	53	134	73		1980 Yds.
	50	34	100	68		1815 Yds.
	25	23	64	61		1595 Yds.
14	75	60	125	78		1980 Yds.
	50	46	100	70		1815 Yds.
	25	35	66	64		1595 Yds.

Girls

DISTRICT NORMS						
STUDENT AGE	%	ARM HANG	SIT-UPS	STANDING BROAD	200 YD.	8 MIN./12 MIN. RUN
11	75	33	98	64	33	
	50	21	60	60	36	
	25	13	41	52	41	
12	75	31	103	66		1595 Yds.
	50	19	65	61		1430 Yds.
	25	9	50	56		1265 Yds.
13	75	34	100	68		1540 Yds.
	50	21	61	63		1375 Yds.
	25	10	50	59		1265 Yds.
14	75	32	60	69		1540 Yds.
	50	21	50	64		1375 Yds.
	25	15	35	59		1265 Yds.

*1760 Yds. = 1 mile

RESOURCE TASKS AND ACTIVITIES

CHAPTER SIX

RESOURCE TASKS AND ACTIVITIES

The tasks and activities in this chapter were structured to be of maximum value to the teacher. Each section provides a cluster of student learning experiences that will enhance those factors listed in the physical fitness screening instrument. Thus, as the teacher identifies deficiencies, he need only refer to the appropriate section for prescriptive tasks. A word of caution: Although an effort has been made to sequence the tasks from the simple to the complex, they should be used with discretion. The unique needs of each learner may necessitate modifications of the tasks, or of their sequential arrangements. The overriding concern of the educator should be to select and *prescribe those tasks that insure that each individual will achieve success*

PHYSICAL

FITNESS

FACTORS

ARM/SHOULDER STRENGTH[1]

1. Name: Puppy Dog
   Equipment: Mat
   Description: Have the student assume a "puppy" position on the mat. On command, the student:
   - Raises and extends his left hand forward and places it on the mat.
   - Brings left knee forward.
   - Repeats movement with his right hand and right leg.
   - Repeats the task.

   Teaching Hints:
   - Tell the student he is a puppy and he is to use his imagination in moving.
   - Have "puppies" move to various auditory stimuli, i.e., bongos hand clapping, music, etc.

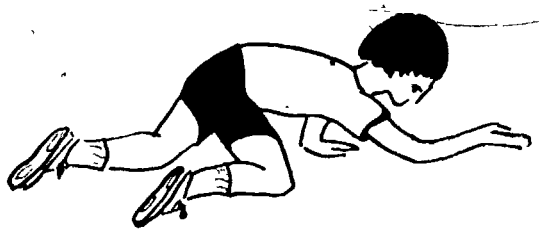


Fig. 1 Puppy Dog

2. Name: Turtle Walk
   Equipment: Mat
   Description: Have the student assume the "turtle" position, with hands, knees and toes touching the mat. On command, the student:
   - Moves left knee forward to heel of left hand.
   - Extends right hand forward and places on the mat.
   - Brings right knee forward in line with left hand. Repeat.

   Teaching Hints:
   - Refer to No. 1 above.

3. Name: Frog Hop
   Equipment: Mats, Shoe Polish
   Description: Have the student assume the "frog" position on the mat. On command, the student.
   - Extends both hands forward and places them on the mat.
   - Transfers body weight to arms.
   - Lifts both feet simultaneously and places them behind the heels of the hands (hopping fashion).
   - Repeat

   Teaching Hints:
   - Vary the task by placing a series of patterns on the floor for the students to follow.

[1] Refer to Appendix K for arm strength equipment which can be constructed by a local school district.

Fig. 2 Frog Hop

4. Name: Crab Walk
   Equipment: None
   Description: Have the student sit on the floor and assume a "crab" position, with his hands placed adjacent to his buttocks. On command, the student:
   - Raises his trunk from the floor so that body weight is supported by the hands and feet.
   - Moves forward.
   - Moves backward.
   - Moves sideward.

   Teaching Hints:
   - Stress moving slowly at first, t ng short steps, and keeping the body off the floor.
   - Introduce the game of "crab soccer" as soon as the students become proficient, "crab walkers." Crab soccer involves two teams who face each other in the crab-sitting position. The object of the game is to propel a large cage ball across your opponent's end line.

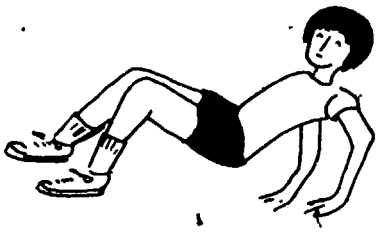


Fig. 3 Crab Walk

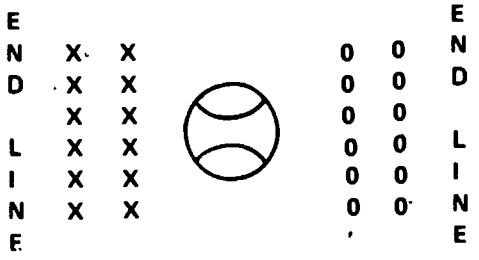


Fig. 4 Crab Soccer

5. Name: Seal Crawl
Equipment: Mat
Description: Have the student assume a "seal" position by lying face down on the mat. On command, the student:
- Places his hands under his shoulders, with palms down and elbows bent.
- Raises his upper body, by straightening his arms.
- Travels forward by alternately extending the arms and dragging the legs.

Teaching Hints:
- Have the students make seal sounds as they move.
- After the skill has been mastered, add the competitive element by conducting seal races.

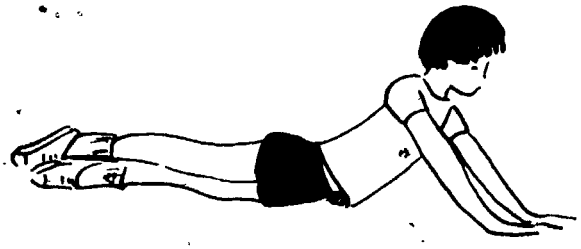


Fig. 5 Seal Crawl

6. Name: Inch Worm
Equipment: None
Description: Have the student assume a "worm" position by lying face down on the floor, with the arms extended forward and the palms on the floor. On command, the student:
- "Walks" the legs toward his hands, keeping the hands and forearms in place until the body forms a bridge.
- "Walks" the arms away from the feet until the body is in the original position.
- Repeat the tasks.

Teaching Hints:
- Demonstrate the task before having students perform.
- Encourage "walking" forward as far as possible to create a "high bridge."

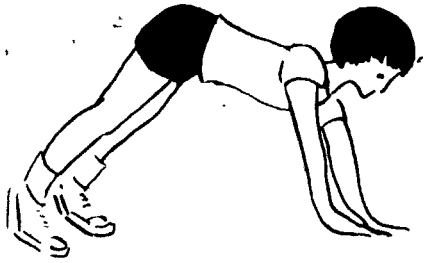


Fig. 6 Inch Worm

7. Name: Cheese[1]
Equipment: Parachute (mousehouse), two-four balls of any size (cheese).
Description: Students form a circle around a parachute and hold the edges. One student is selected as the *mouse,* another student is the *cat.* The object of the game is for the cat to catch the mouse before the mouse brings all of the cheese (the balls) into his house. On the command:
- "Up" the parachute is lifted and the mouse leaves his house in an effort to retrieve the cheese while the cat tries to catch him.
- "Down," the parachute is lowered. If the cat catches the mouse, he has the option of becoming the mouse (and select a new cat), or selecting a new mouse. If the mouse gets all the cheese in his house, he may select a new cat, or be the cat and select a new mouse.

Teaching Hints:
- Increase the time the "house" must be held in the "up" position.
- Make the task more strenuous by requiring the students to raise and lower the parachute continuously.

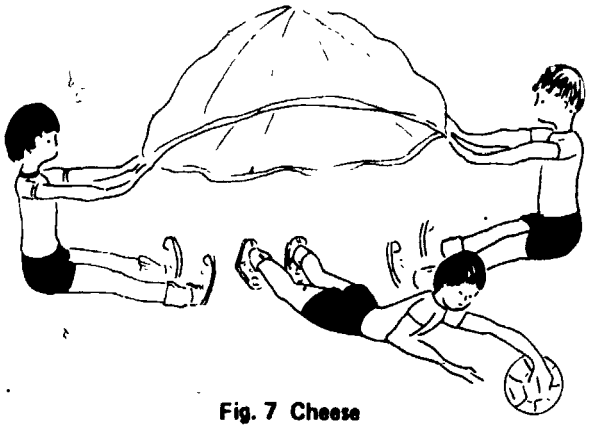


Fig. 7 Cheese

8. Name: Hand Push
Equipment: None
Description: Pair two students and have them face one another, toe-to-toe. On command, both students:
- Place their hands in front of their shoulders, with palms facing away from their bodies, in contact with the partner's hands.
- Exert maximum pressure against each other's hands.
- Relax.
- Repeat.

Teaching Hints:
- Pair students according to size and strength.
- Remind students to keep their feet in place at all times.

[1] Devised by first grade classes at the Alan B. Shepard Elementary School, Madison Township, New Jersey.

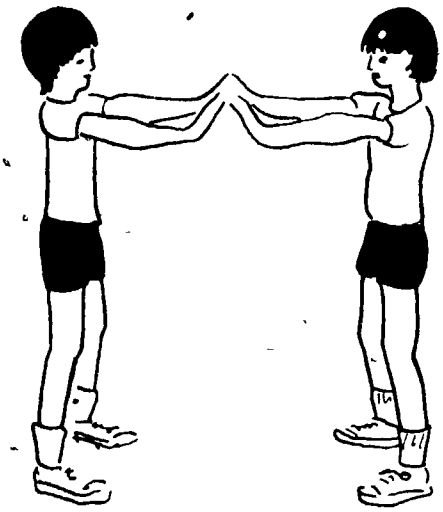


Fig. 8 Hand Push

9. Name: Wall Push-up
   Equipment: None
   Description: Have student assume a standing position facing the wall, with the toes six to twelve inches from the wall. On command, the student:
   - Places his plams on the wall, shoulder height, with his hands shoulder width apart.
   - Leans forward and flexes his elbows until his chin touches the wall.
   - Returns to the starting position by extending his arms.
   - Repeats the exercise.

   Teaching Hints:
   - Stress proper body alignment at all times to prevent postural problems. (Proper alignment implies straight back, with the neck and head directly over the shoulders.)
   - Increase the difficulty of the task as arm strength develops by increasing the distance of the feet from the wall and/or the spacing of the hands on the wall.

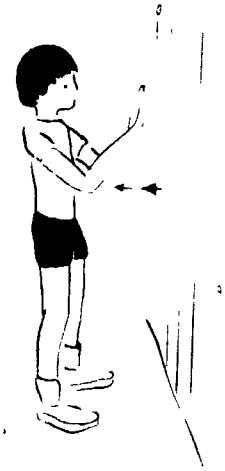


Fig. 9 Wall Push-Up

10. Name: Modified Push-up
    Equipment: Mat
    Description: Have the student assume a six-point stance on the mat (i.e., toes, knees, and palms of the hands in contact with the mat). On command, the student:
    - Lowers his body to the floor by bending his elbows until his chin contacts the mat.
    - Returns to the upright position.
    - Repeats the exercise.

    Teaching Hints:
    - Stress proper body alignment throughout the movement.
    - Increase the difficulty of the task as arm strength develops by placing the hands farther forward, increasing the space between the hands and/or increasing the number of repetitions.

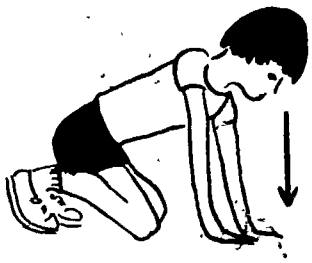


Fig. 10 Modified Push-Up

11. Name: Stall Bar Bench Push-up
    Equipment: Stall Bar Bench, or Stool
    Description: Have the student assume a regular push-up position, with hands grasping the sides of the bench. On command, the student:
    - Lowers his body until his chest contacts the bench.
    - Returns to the original position by extending his arms.
    - Repeats the exercise.

    Teaching Hints:
    - Reduce the height of the bench to increase stress on the arms and shoulder girdle.

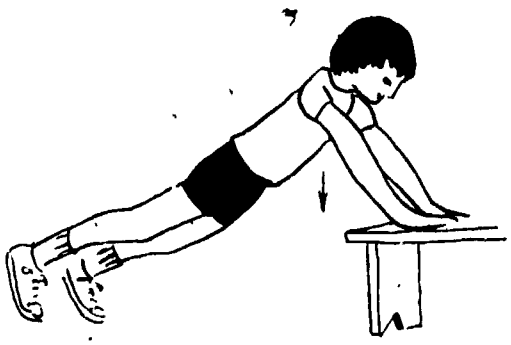


Figure 11 Stall Bar Bench Push-Up

12. Name: Regular Push-up
Equipment: None
Description: Have the student assume a regular push-up position on the floor, with palms of the hands directly under the shoulders. On command, the student:
- Lowers his body until his chest touches the floor.
- Returns to the upright position.
- Repeats the exercise.

Teaching Hints:
- The difficulty of the task can be increased by: moving hands forward, increasing the space between the hands and/or raising the level of the feet above the hand position (e.g., inverted push-up).
- Remind student to touch chest rather than chin to the floor.

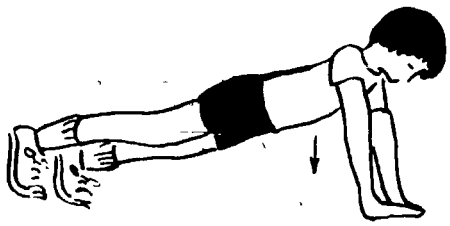


Fig. 12 Regular Push-Up

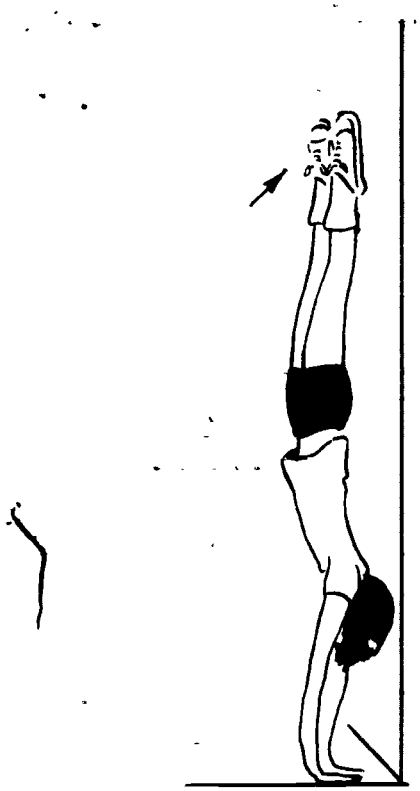


Fig. 12a Inverted Push-Up

13. Name: Overhead Ladder Traveling
Equipment: Overhead Ladder
Description: Have the student jump and grasp a ladder rung with an overhand grip. On command, the student:
- Releases the rung with his right hand and grasps the second rung with the right hand.
- Release the rung with his left hand and grasp the second rung with the left hand.

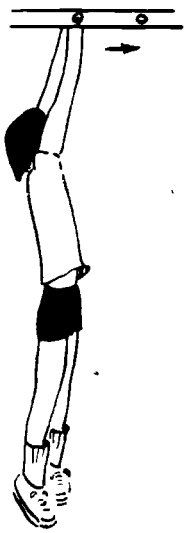


Fig. 13 Overhead Ladder

14. Name: Parallel Bar Traveling
Equipment: Parallel Bars
Description: Have the student jump to a support position, with the arms extended. On command, the student:
- "Hand walks" the length of the bar.

Teaching Hints:
- Apply hand chalk.
- Shift body weight to the side opposite the hand being lifted to permit ease of movement.
- Raise the forward end of the bar to make the task more difficult.

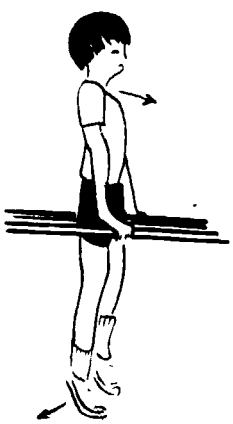


Fig. 14 Parallel Bar Traveling

15. Name: Static Arm Hang
Equipment: Pull-up Bar, Stall Bar Bench
Description: Assist the student to the flexed arm hang position on the bar, with overhead grip and head above the bar. On command, the student:

- Endeavors to maintain the flexed arm hang position for as long as possible.

Teaching Hints:

- Use of a stop watch will permit the teacher to "time" the student's performance. Start the timer when the student assumes the flexed arm hang position; stop the timer when the arms are completely extended.
- The task can be made easier by having the student use the underhand grip (i.e., palms facing toward the body).
- Use hand chalk.

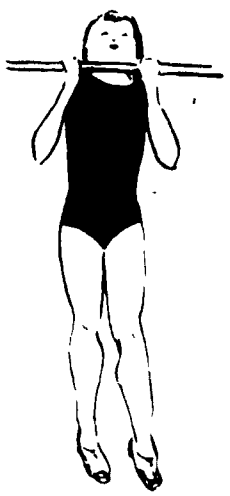


Fig. 15 Static Arm Hang

16. Name: Pull-ups
Equipment: Pull-up Bar
Description: Have the student grasp the bar, overhand grip, with his body extended and feet off the floor. On command, the student:

- Pulls with his arms until his chin is above the bar.
- Lowers his body until his arms are completely extended.
- Repeats the exercise.

Teaching Hints:

- Use of the underhand grasp will make the task easier.
- Stress full arm extension before starting the next pull-up.
- Use hand chalk.

17. Name: Parallel Bar Dips
Equipment: Parallel Bars
Description: Have the student jump to a cross support position on the parallel bars. On command, the student:

- Lowers his body by flexing his arms until his shoulders contact the bars.
- Return to the cross support position.
- Repeats the exercise.

Teaching Hints:

- Use hand chalk.
- Extremely difficult task. If the student cannot perform, start with only partial flexing of the arms.
- Vary the task by having the student perform "swinging dips" (i.e., flexing the elbows on the forward swing and extending the elbows as the body moves to the rear).

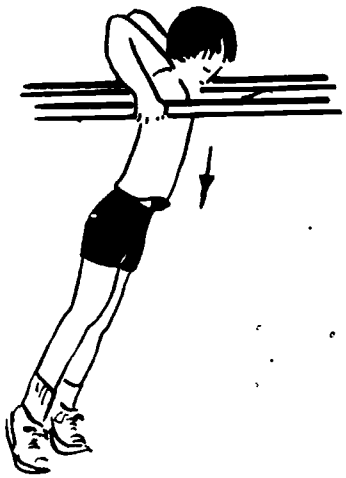


Fig. 16 Parallel Bar Dips

18. Name: Shoulder Shrugs
Equipment: Barbell, Weights
Description: Have the student grasp a barbell with the overhand grip, stand upright, with the arms extended and the barbell resting on the thighs. On command, the student:

- Raises the barbell by lifting his shoulders while maintaining the arm extension position.
- Adducts shoulders (brings shoulder blades together).
- Maintains raised and adducted position for five seconds.
- Returns to original position.
- Repeats the task.

Teaching Hints:

- Tell the student to try to touch his ears with his shoulders.
- Emphasize arms straight at all times.
- When the skill is mastered, include the proper breathing procedure (i.e., inhale during lifting phase and exhale during lowering phase).
- Adjust weights according to individual needs.

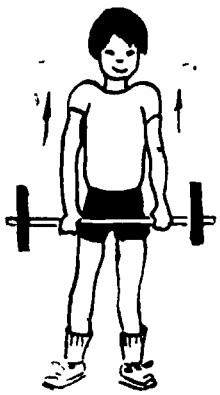


Fig. 17 Shoulder Shrugs

19. Name: Curl-Up
    Equipment: Barbell, Weights
    Description: Have the student grasp the barbell underhand and assume a standing position, with feet shoulder width, arms extended and the barbell resting on his thighs. On command, the student:
    - "Curls" the barbell upward, by flexing his arms, until it touches his chest.
    - Lowers the barbell, by extending his arms, until it touches his thighs.
    - Repeats the task.

    Teaching Hints:
    - Avoid "arching" the back to prevent injury. The teacher can minimize this problem by having the student stand with his back to a wall.
    - Emphasize full extension of the arms, when the weight is lowered.
    - Add the proper breathing procedure when the skill is mastered.
    - Adjust weight according to individual needs.

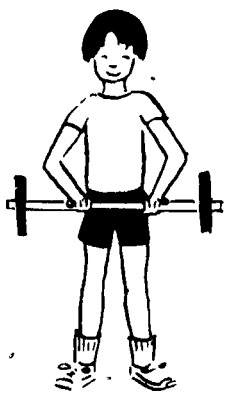


Fig. 18 Curl-Up

20. Name: Reverse Curl-Up
    Equipment: Barbell, Weights
    Description: The same procedure as when performing curl-ups except the student grasps the barbell with an *overhand grip.*

    Teaching Hints:
    - The same as for curl-up exercise.
    - The overhand grip places more emphasis on developing the strength of the wrists and forearms.

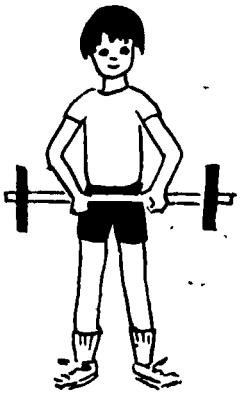


Fig. 19 Reverse Curl-Up

21. Name: Overhead Press
    Equipment: Barbell, Weights
    Description: Have the student grasp the barbell with an overhand grip and raise to the shoulder support position, i.e., feet shoulder width apart and the barbell resting against the upper chest. On command, the student:
    - Raises the barbell to the full arm extension position.
    - Maintains the position for five seconds.
    - Returns the barbell to the original position.
    - Repeats the exercise.

    Teaching Hints:
    - Preface task by teaching the student "how" to lift the barbell from the floor properly (i.e., raising the weight by extending the legs, with a straight back).
    - Place a "spotter" on both sides of the "lifter" and have them ready to grasp the barbell if the student weakens.
    - Minimize "arching" of the back.
    - Adjust weights according to individual needs.
    - Add weights as the student attains a pre-determined goal.

Fig. 20 Overhead Press

22. Name: Tube Tug
Equipment: Bicycle Tire Tubes, Goal Markers, Mats
Description: Set goal markers 30' apart 2 yards wide. Place mats beyond the goal markers. Have two contestants grasping a tube in the center between the goals. On command, the contestants:
- Lift the tube and begin tugging.
- Endeavor to place one foot beyond and between one of their goal markers.

Teaching Hints:
- Record one point each time a student steps over and between his goal markers.
- Establish a time limit for equally-matched contestants.
- Place mats to prevent injuries.

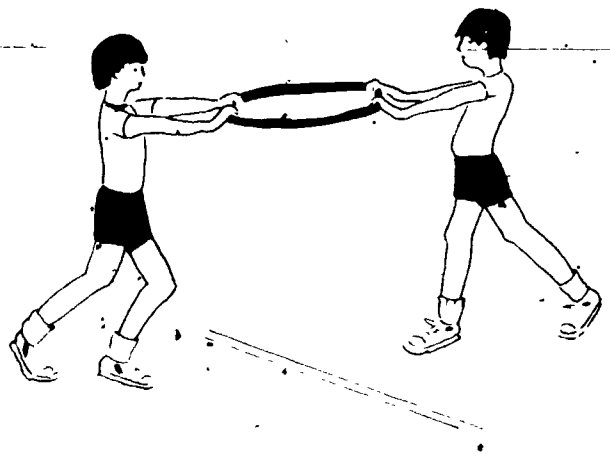


Fig. 21 Tube Tugging

23. Name: Tug-Of-War
Equipment: Long heavy rope with large loops at each end
Description. Place a team of 6 to 12 members at each end of the rope the last team member is inside the loop of rope at each end. Upon signal, the contestants:
- Tug until one team can pull the other team beyond a pre-determined distance.

Teaching Hints
- Conduct on grass to minimize accidents
- Be alert and call "time" if any player loses footing and falls down

Fig. 22 Tug-Of-War

24. Name: Scooter Race
Equipment: One Scooter Per Student
Description: The students lie on scooters in a prone position behind the starting line, with the scooters positioned under their hips; the students' legs are extended rearward or bent upward. On command, the students:
- Propel themselves forward by using both hands.
- Stop when they cross the finish line.

Teaching Hints:
- Award team points to increase the competitive element.
- Make the task more difficult by requiring the use of only one hand.
- Disqualify those students whose feet touch the floor.

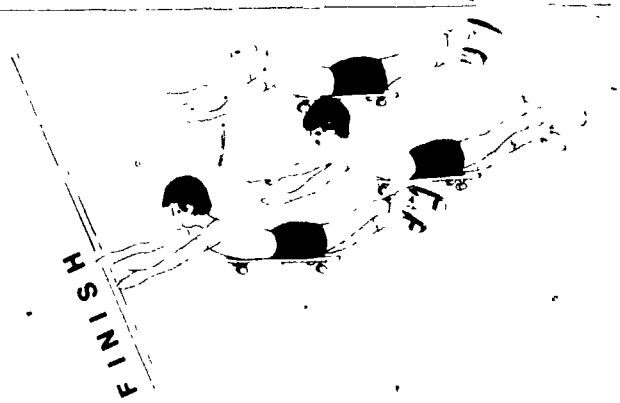


Fig. 23 Scooter Race

25. Name: "Pullovers"
Equipment: Barbell, Weights, Mat
Description. Have the student lie in a supine position, with arms extended overhead. On command, the student:
- Grasps the barbell, with the arm fully extended.
- Moves the barbell forward until it touches the thighs
- Returns the barbell to the original position.
- Repeats the exercise.

Teaching Hints.
- Have student observe the contraction of the chest muscles as the barbell approaches thighs – development of back muscles as the barbell nears the mat.
- If necessary, make the exercise achievable by having the student flex the arms slightly or use minimum weights.
- Maximize repetitions and minimize weight of barbell to increase expenditure of energy.
- Minimize repetitions and maximize weight of barbell to increase muscle bulk
- Minimize "arching" of the back.

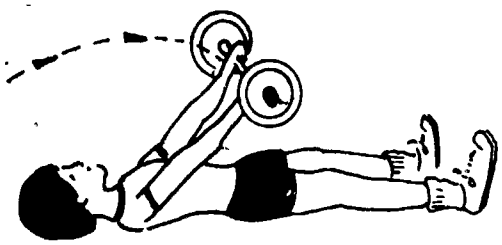


Fig. 24 Pullovers

ABDOMINAL STRENGTH

1. Name: Belly Dance
   Equipment: Mats
   Description: Have student lie on back, legs extended, place hands on abdominal wall, and contract muscles of the abdomen; then, relax muscles.
   Teaching Hints:
   - Concept to stress is that working muscles can be felt.
   - Vary task by performing in a standing position.
   - Place table tennis ball on abdomen and try to roll the ball off the stomach by contracting and relaxing the abdominal muscles.

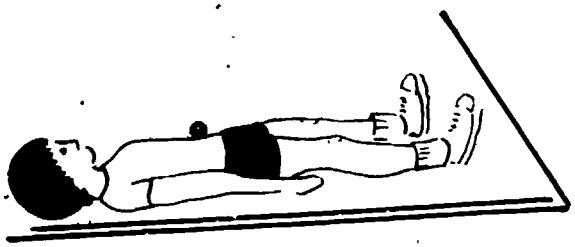


Fig. 1 Belly Dance

2. Name: Alternate Knee Bend
   Equipment: Mats
   Description: Have student lie on back with his legs extended and hands placed behind head. On command, have student:
   - Bring right knee up to chest.
   - Return to starting position.
   - Bring left knee up to chest.
   - Return to starting position.
   - Repeat.

   Teaching Hints:
   - Place hands on abdominal wall to feel muscles working.

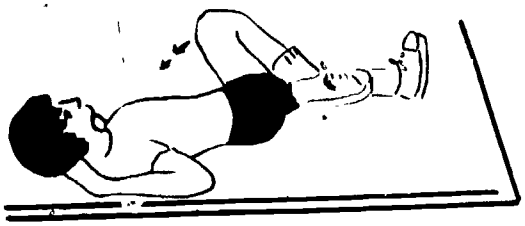


Fig. 2 Alternate Knee Bend

3. Name: Knee Bend
   Equipment: Mats
   Description: Have student lie on back, legs extended, and hands placed behind head. On command, have student.
   - Slide feet along mat or floor until heels touch buttocks.
   - Return to starting position.

   Teaching Hints:
   - Remind student to keep feet in contact with the floor and to keep lower black flat on the floor by rotating hips downward.

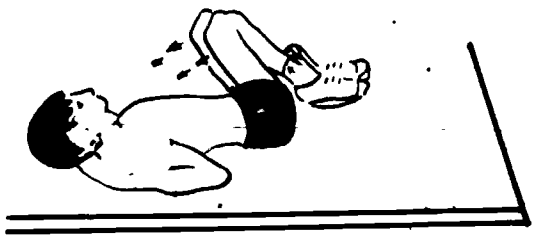


Fig. 3 Knee Bend

4. Name: Knee Raise
   Equipment: Mats
   Description: Have student lie on back, legs extended, feet together, heels on floor, with hands along side of the body. On command, have student:
   - Slide feet along the mat until heels touch the buttocks.
   - Bring knees to chest, keeping heels close to hips.
   - Raise hips by rounding back.
   - Hold position for three seconds.
   - Return to starting position.

   Teaching Hints:
   - Stress "tuck" rather than "arched" body position. Increase repetitions as abdominal strength improves.

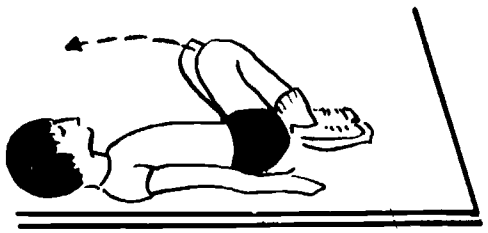


Fig. 4 Knee Raise

5. Name: Knee Circles
   Equipment: Mats
   Description: Have student lie on back, knees bent to chest, and hands behind head. On command, have student:
   - Rotate knees in small circular pattern to the right.
   - Reverse direction.
   - Rotate knees in alternate circles.

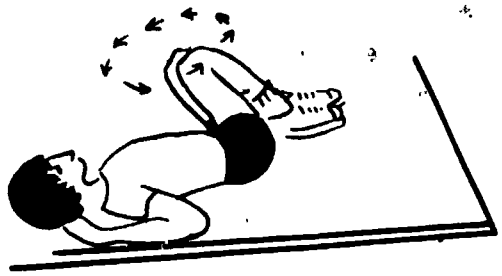


Fig. 5 Knee Circles

Teaching Hints:

- If abdominal muscles are weak, have students wrap arms around knees to hold legs in position.
- Increase the size of the circles as abdominal strength increases.

6. Name: Leg Stretcher
   Equipment: Mats
   Description: Have student lie on back, knees bent, feet flat on mat, and hands behind the head. On command, have the student:
   - Bring right knee to chest.
   - Extend right leg to vertical position.
   - Lower extended leg to the floor.
   - Repeat exercise with the left leg.

   Teaching Hints:
   - Dorsiflex and plantar flex feet to stretch and contract lower leg muscles.

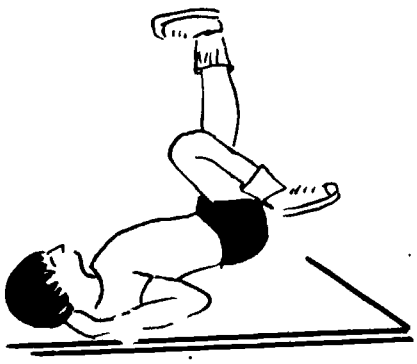


Fig. 6 Leg Stretcher

7. Name: Inverted Bicycle Ride
   Equipment: Mats
   Description: Have student lie on back, knees bent, buttocks raised off mat, with body weight supported by bent arms and hands under hips. On command, have the student:
   - Move legs as if riding a bicycle.

   Teaching Hints:
   - Elevate hips until they are above shoulders to maintain proper balance.
   - Increase cycling time duration at periodic intervals.

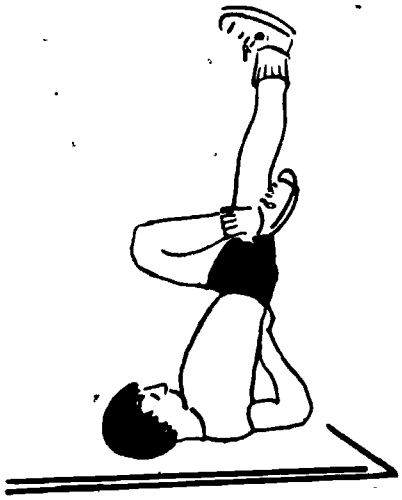


Fig. 7 Inverted Bicycle Ride

8. Name: Partial Curl-up
   Equipment: Mats
   Description: Have student lie in a supine position, hands resting on front of thighs, and elbows straight. On command, have the student:
   - Tuck chin in and lift head and shoulders until the shoulder blades are clear of the mat.
   - Hold curled position for five seconds.
   - Return to starting position.

   Teaching Hints:
   - Assist student with weak abdominals by holding his feet down and/or pulling him to the partial sit-up position.
   - Vary the exercise by having the student perform rhythmically.
   - Discourage "straight back" sit-ups as it can be injurious to the lower back.

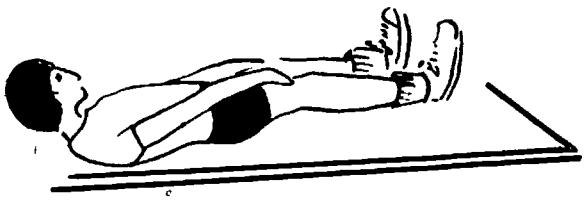


Fig. 8 Partial Curl-Up

9. Name: Curl-up
   Equipment: Mats
   Description: Have student lie in a supine position, with the palms of the hands resting on the thighs, and elbows straight. On command, have the student:
   - Tuck chin in and lift head and shoulders off the mat.
   - Slide palms forward, arms extended, until the fingertips touch the top of the kneecap.
   - Return to starting position.

   Teaching Hints:

- Stress maintenance of a steady rhythm, keeping palms in contact with the thighs, and only rising to fingertip-kneecap position.
- Have students work in pairs – one student performs the curl-up, the partner extends one arm across the performer's kneecaps and keeps record of the number of correct curl-ups.

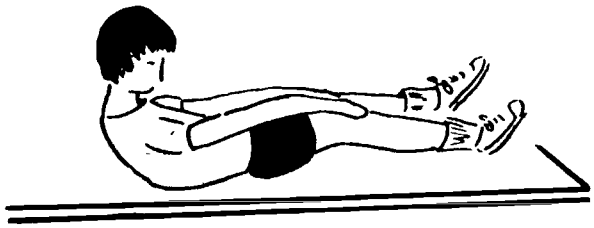


Fig. 9 Curl-Up

10. Name: Reverse Curl-up
    Equipment: Mats
    Description: Have the student sit in an upright position on the mat, arms extended, and palms resting on the thighs. On command, have the student:
    - Flex the lumbar spine.
    - Slowly assume the lying position on the back with the lumbar region touching the mat before the thoracic region.
    - Return to the upright position by reversing the process.

    Teaching Hints:
    - Vary the position of the hands according to individual capability. Placing palms on thighs requires less abdominal effort. Placing hands behind the head or overhead creates more abdominal stress.
    - The reverse curl-up should be sequenced before the curl-up because the performer is assisted by the pull of gravity in the former task.

11. Name: Bent Knee Sit-up
    Equipment: Mats
    Description: Have student lie on back, knees bent, feet flat on mat, and hands behind the head. On command, have the student:
    - Curl torso up to sit-up position.
    - Touch elbows to knees.
    - Hold sit-up position for five seconds.
    - Return to starting position.

    Teaching Hints:
    - Have students who have trouble with bent knee sit-ups work in pairs. One student holds his partner's feet securely on the mat.
    - Student can use wall, mats, and any other device to secure legs.
    - Increase difficulty of the task by having the student perform sit-ups on an incline board, or by placing a weight in the hands behind the head.

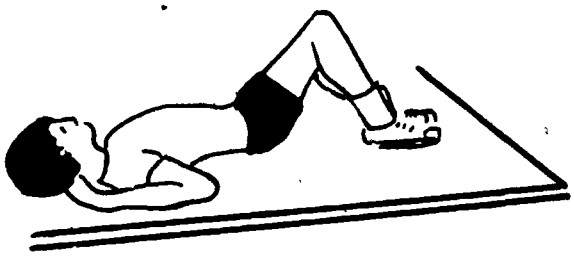


Fig. 10 Bent Knee Sit-Up

12. Name: Cross-over Sit-up
    Equipment: Mats
    Description: Have the student lie on back, knees bent, feet flat on the mat and hands behind the head. On command, have the student:
    - Curl torso up to sit-up position.
    - Touch right elbow to left knee.
    - Return to sit-up position.
    - Touch left elbow to right knee.
    - Return to sit-up position.
    - Return to supine position.
    - Repeat.

    Teaching Hints:
    - Remind student not to arch lower back.
    - Hands must remain clasped behind head. If hands are removed from behind the head, the student will tend to use the arms to add momentum to the sit-up. This action will minimize development of the abdominal muscles.

Fig. 11 Cross-Over Sit-Up

13. Name: Inclined Sit-Ups
    Equipment: Inclined Board
    Description: Have the student assume a supine position on the board. On command, have the student.
    - Curl to sit-up position and touch toes.
    - Return to the supine position.

    Teaching Hints:
    - Vary the exercise in accordance with the abdominal strength of the individual. A sample sequence might include: (board secured at the second notch).
    - Practice until 10 curl-ups can be performed.
    - Perform 10 sit-ups, with arms extended.
    - Perform 10 sit-ups, with hands behind neck.
    - Perform 10 cross-over sit-ups with a weight held behind the neck.

- Readjust the board to the third notch and repeat the sequence.
- Insure that students keep the knees in a flexed position throughout all exercises to minimize lower back strain.

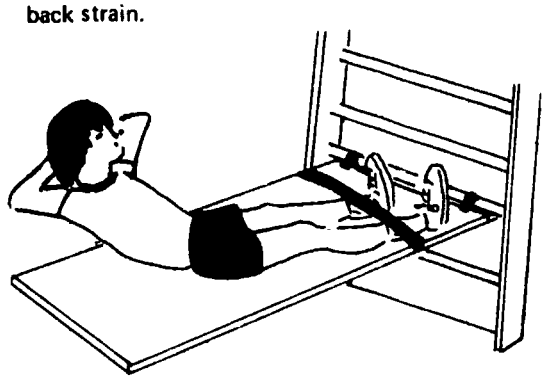


Fig. 12 Inclined Sit-Up

14. Name: Vee Sit-Up
    Equipment: Mats
    Description: Have the student assume a supine position on the mat, with arms and legs extended. On command, have the student:
    - Raise upper torso and straighten legs simultaneously.
    - Balance body weight on buttocks.
    - Touch extended hands to toes, while maintaining balance.
    - Return to supine position.
    - Repeat.

    Teaching Hints:
    - A difficult task which requires considerable abdominal strength, coordination, and balance.
    - Use the part-whole method. Have the students perform the component parts of the task until mastered before attempting the Vee sit-up.

Fig. 13 Vee Sit-Up

15. Name: Gather Sit-ups
    Equipment: Mats
    Description: Supine position on mats, with arms extended overhead. On command, have the students:
    - "Curl" upper torso forward, bringing arms toward toes.
    - Flex knees, with heels touching the buttocks.
    - Wrap arms around knees and squeeze.
    - Return to starting position.
    - Repeat.

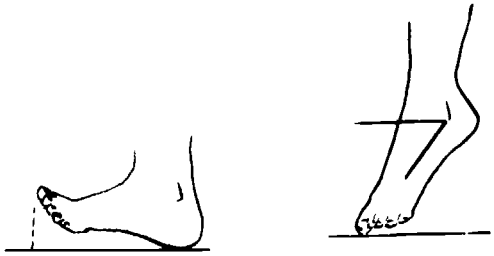
    Teaching Hints:
    - When raising upper torso, have students roll the head, neck, shoulders, upper back, and lower back forward in that order. Reverse the process when returning to the supine position.
    - Encourage diaphragmatic breathing by having students inhale when moving to a sit-up position and exhaling during the "squeezing" phase of the exercise.

Fig. 14 Gather Sit-Ups

EXPLOSIVE LEG POWER

1. Name: Point Toes
   Equipment: Mat
   Description: Have the student assume a supine position on the mat. On command, have the student:
   - Dorsiflex left foot.
   - Plantar flex left foot.
   - Return to starting position.
   - Repeat with right foot.
   - Return to starting position.

   Teaching Hints:
   - When working with a child who does not understand the explanation or does not exhibit muscular control, it will be necessary to assist the individual through the exercise.
   - Have students work in pairs. One student applies pressure on the performer's feet; the performer endeavors to point his toes.
   - Vary the task by having the student flex or extend both feet simultaneously.
   - Have the student note which muscles contract during the flexion and extension phases of the exercise.



Dorsiflexion Plantar Flexion

Fig. 1 Point Toes

2 Name: Bend the Knee
Equipment: Mat
Description: Have students work in pairs. One student lies down on his back. The partner places one hand under his right knee while the other hand grasps his right ankle. On command:

- The performer endeavors to maintain the extension position while the partner strives to flex the knee. The partner shifts his hands to the performer's left leg and the task is repeated.
- Partners exchange positions.

Teaching Hints:

- Variations: Maintaining knees in the flexed position; applying pressure to performer's feet as he endeavors to ride a bicycle in the inverted position (on his back)

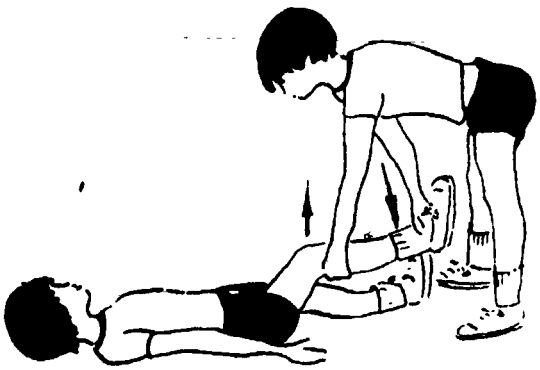


Fig. 2 Bend the Knee

3. Name: Blast Off[1]
Equipment: None
Description: Have the student stand erect with his arms at his side On command, the student

- Lowers his body to a semi-squat position (the teacher counts to ten.)
- On the command of "blast off," the student jumps as high as possible and lands in the starting position
- Repeats the task eight to ten times

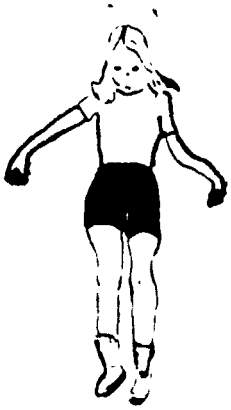


Fig. 3 Blast Off

Teaching Hints:

- Variations: Landing on the same spot each time, covering as much distance as possible on each "blast off."
- Caution the student to avoid flexing the knees beyond a 45 degree angle to avoid a knee injury.

4. Name: Jumping the Square
Equipment: White Shoe Polish
Description: The teacher draws a series of three-foot squares on the floor. Have the student stand on one corner of the square. On command, have the student:

- Jump to each corner sequentially in a counterclockwise direction.
- Jump to each corner sequentially in a clockwise direction.
- Vary directions, for example, "jump left to three corners and right to four corners, etc.".

Teaching Hints:

- Vary the tempo.
- Have student perform the task by hopping on an imaginary square.
- Add creativity by requesting the student act as a jack rabbit, kangaroo, etc.
- Have student move through imaginary obstacle courses. For example, jumping over a log, a stream, or a crack in the earth.

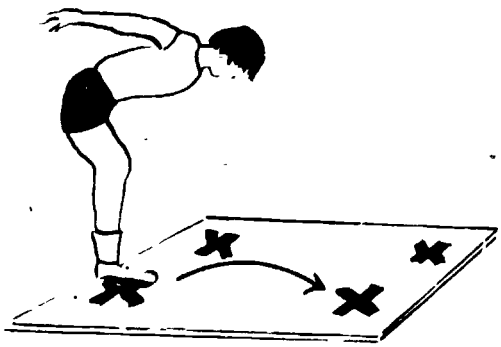


Fig. 4 Jumping the Square

5 Name Leg Straightener[2]
Equipment: None
Description: Have the student sit erect, knees bent, heels on floor, with hands grasping toes On command, have the student

- Straighten legs while maintaining hold on toes
- Return to the starting position
- Repeat the exercise.

Teaching Hints

- Stress "pushing" action of legs and "pulling" action of hands

[1] Educational Research Council of America, *Physical Education Program*

[2] Educational Research Council of America, *Physical Education Program*

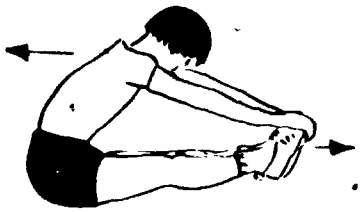


Fig. 5 Leg Straightener

6. Name: Tiptoes
   Equipment: None
   Description: Have the student stand erect. On command, have the student:
   - Rise up on his toes on the count of "1."
   - Return to standing position on the count of "2."
   - Repeat the task.

   Teaching Hints:
   - Have the student perform alternately on right and left foot.
   - Have the student feel the calf muscle and explain what happened.
   - Increase time duration for holding No. 1 position.
   - Place a text under the toes and perform.

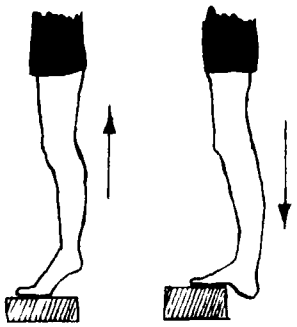


Fig. 6 Tiptoes

7. Name: Jump and Stretch
   Equipment: None
   Description. Have student stand erect with arms at sides. On command, have the student:
   - Swing arms backward while bending knees.
   - Jump for height and distance, stretching arms overhead.
   - Throw body and arms forward as he lands.
   - Repeat.

   Teaching Hints:
   - Have the child jump repeatedly across the gymnasium and keep a record of the total attempts.
   - Vary by excluding the use of the arms. Discuss the difference in distance resulting from the elimination of arm usage.
   - Record each student's best distance in inches.

Fig. 7 Jump and Stretch

8. Name: Jumping for Height
   Equipment: Chalk
   Description: Have students work in pairs. The performer should stand upright, adjacent to a wall, with a piece of chalk in his hand. On command, the performer:
   - Jumps as high as he can and makes a mark on the wall.
   - The partner measures and records the height.
   - Partners reverse positions and repeat.

   Teaching Hints:
   - Mark a grid on the wall, with graduations in inches. Variation: Have each partner jump, repetitively, for one minute and record the number of jumps.

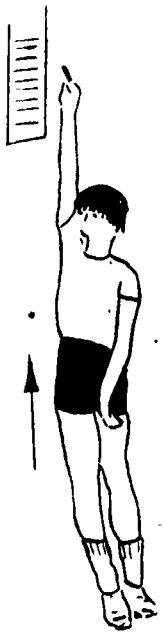


Fig. 8 Jumping for Height

9. Name: Mountain Climbing
   Equipment: None
   Description: Have student assume push-up position, with one leg flexed and the other in the extended position. On command, have the student:
   - Reverse his leg position continuously.

   Teaching Hints:
   - Establish a slow cadence, initially, so that the student can learn the coordinated movement.
   - By having the student transfer all body weight to his arms as he shifts his leg position, the task becomes an arm strengthening exercise.

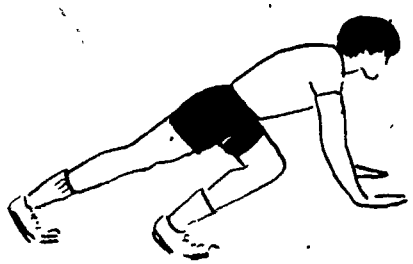


Fig. 9 Mountain Climbing

10. Name: Squats (Knee Bends)
    Equipment: None
    Description: Have the student stand erect, feet shoulder width apart, with hands on hips. On command, have the student:
    - Lower his body so that knees are flexed at a 45 degree angle.
    - Maintain position for five seconds.
    - Return to the starting position.

    Teaching Hints:
    - Increase repetitions at periodic intervals.
    - Caution student regarding the performance of knee bends beyond 45 degrees.

Fig. 10 Squats (Knee Bends)

11. Name: Barbell Squats
    Equipment: Barbell, plus Assorted Weights
    Description: Have the student stand erect, feet shoulder width apart, with barbell on shoulders.
    On command, have the student:
    - Perform the task as cited in No. 10.

    Teaching Hints:
    - Have the student start the program by placing weights on the barbell equal to one-third of his body weight. Increase or decrease the weight level until he performs a range of five to ten repetitions with a specific weight. From that point on, have the student use the same weight load until he can perform ten repetitions, and then increase the weight load.

Fig. 11 Barbell Squats

12. Name: Barbell Heel Raises
    Equipment: Barbell plus Assorted Weights, Plank
    Description: Have the student stand erect, with toes on 2' x 4', feet shoulder width apart, and barbell on shoulders. On command, have the student:
    - Extend body upward until the entire body weight is supported by his toes.
    - Maintain the position for five seconds.
    - Return to the starting position, with his heels on the floor.

    Teaching Hints:
    - Determine appropriate barbell weight and exercising regimen as per instructions in No. 11.
    - Vary the angle of the feet to develop different musculature.
    - Vary the height of the support that is placed under the toes.

Fig. 12 Barbell Heel Raises

13. Name: Wall Tapping
Equipment: Timer
Description: Marks are made on a wall at 3" intervals. The student is to stand adjacent to the wall. On command, the student:
- Jumps as high as he can and touches the wall as high as he can reach.
- Repeats the task for one minute.
- Attempts to continually jump above a predetermined mark, i.e., above 3, 6, 9, or 12 inches.

Teaching Hints:
- Have a partner record his score, that is the number of successful jumps.
- Record his highest "touch point."
- Record a measure of his explosive leg power – jumping touch minus standing touch.

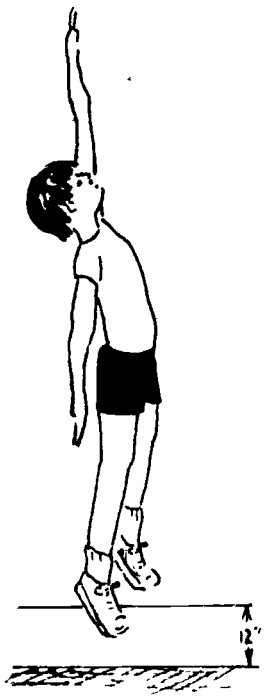


Fig. 13 Wall Tapping

14. Name: Flutter Kick
Equipment: Mats
Description: Prone position on the mat, with hands under thighs and legs extended together. On command, the student:
- Keeps chin and trunk in contact with the floor.
- Alternately raises and lowers legs as in the flutter kick in swimming.

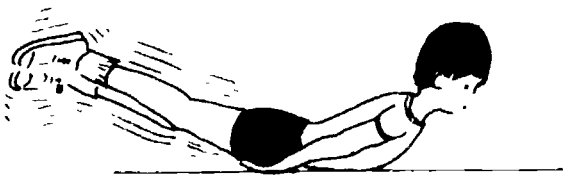


Fig. 14 Flutter Kick

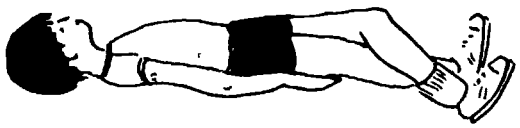


Fig. 15 Crossover

Teaching Hints:
- Start with a slow cadence for a limited period of time.
- Increase cadence and time demand as progress is noted.
- Add verbalization by having students count every time the left foot strides the floor.
- Have the students perform the task while lying in a supine position.
- Vary the task – moving legs apart and together, or crossing one leg over the other.

CARDIORESPIRATORY ENDURANCE

1. Name: Marching-in-Place
Equipment: None
Description: Have the student stand at attention. On command, the student:
- Marches-in-place, starting with the left foot.
- Swings arms naturally.
- Counts each time his left foot strikes the floor.
- Stops when the teacher gives the command.

Teaching Hints:
- Vary the learning experience by: keeping the performance time and repetitions constant; increasing the time while keeping the repetitions constant.
- Have the students march to music.
- Observe performance and note bilaterality and/or gross body coordination problems.

2. Name: Endurance Jumping
Equipment: None
Description: Have the student assume an upright standing position, with his arms at his sides. On command, the student:
- Jumps repeatedly, feet together, until requested to stop.
- Places fingers on carotid artery (under jawbone) and endeavors to locate pulse.

Teaching Hints:
- Explain the effects exercise has on the heart and circulatory system.
- Add music to make the task more enjoyable.
- Vary the repetitions according to individual capacities.
- Vary the task by having the student jump forward, backward, and sideward, with feet together and apart.

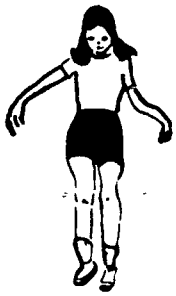


Fig. 1 Endurance Jumping

3. Name Endurance Hopping
   Equipment None
   Description Have the student assume the upright standing position, with his arms at his sides On command, the studeot
   - Hops on his left foot.
   - Hops on his right foot
   - Hops, alternately, on his left and right foot

   Teaching Hints.
   - The same suggestions as for "Endurance Jumping."

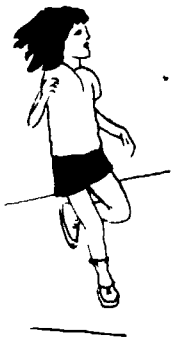


Fig. 2 Endurance Hopping

4 Name Spot Running[1]
   Equipment Stop Watch
   Description Have the student assume the upright standing position, with his arms at his sides in the flexed position. On command, the student
   - Runs in place at varying speeds, for varying lengths of time

   Teaching Hints
   - Have the students change pace by telling them to imagine they are running uphill, downhill, around a turn, or they are a racing car, horse, bus, truck, or a train

5 Name Running A Measured Distance
   Equipment Stop Watch, Measuring Tape
   Description Establish a measured distance On command, the studen
   - Completes the run as rapidly as possible.

   Teaching Hints:
   - Recommended distances: grades K-2 — 200 yards; grades 3-6 — 600 yards; grades 7-9 — one mile; and grades 10-12 — two miles.
   - Add the competitive element by using team races, team relays, shuttle runs, and obstacle runs.

6. Name: Trot, Skip, Run[2]
   Equipment: None
   Description: Sub-divide the class into a series of teams aligned in line formation, facing the same direction. On command:
   - The first student in each line begins trotting.
   - The next student in each line begins trotting, when the first student has moved forward approximately eight feet.
   - Repeat the same procedure until all students in each line have completed the task.
   - When the first student of each line (the leader) has returned to the starting point, he or she begins again by skipping the entire distance.
   - The other students replicate the skipping.
   - The leaders will complete the third lap by running at full speed.

   Teaching Hints:
   - Have students select and include other types of locomotor skills.
   - Identify and assist students who are having difficulty with any of the locomotor skills.

7. Name: Ski Slalom Run
   Equipment: Stop Watches, Boundary Markers
   Description: Arrange markers as per the illustration. Space the markers so that the total distance is 25-60 yards. On command:
   - One student at a time runs the entire distance
   - Repeat until the entire class has a time recorded

   Teaching Hints:
   - The instructor "times" each student.
   - Vary the experience by conducting a continuous slalom (i e , students traversing the course, keeping eight-foot intervals.

Fig. 3 Ski Slalom Run

[1] Thomas M Vodola, *Individualized Physical Education Program for the Handicapped Child* p 161

[2] Ortaie Bryant and Eloise McLean Oliver, *Fun and Activities Through Elementary Physical Education*,

8. Name: Follow the Leader[1]
Equipment: Record Player
Description: Place students in a circle formation (ten to a circle).
- A designated leader performs an exercise such as hopping.
- The other students in the circle replicate.
- When the instructor calls "change" the student to the left of the lead performs a different task.
- The other students replicate.
- Continue until all students have served as leaders.

Teaching Hints:
- Play a record that has a fast tempo to set the rhythm.
- Encourage the inclusion of tasks that involve the different parts of the body.

9. Name: Astronaut[2]
Equipment: None
Description: Have the entire class form one large circle. Select one student to serve as the chief astronaut; have him stand in the center of the circle.
- The chief astronaut calls No. 6 (or any number).
- All astronauts whose numbers are six respond by running counterclockwise around the circle (space), reentering the circle (the earth's atmosphere) at their original positions, and touching the chief astronaut's extended hand.
- The first astronaut to make contact becomes the new chief astronaut and calls a different number.

Teaching Hints:
- Vary the number of space revolutions before reentry is permitted.

10. Name: Red and Blue[3]
Equipment: Flat Object, with each Side a Different Color
Description: Divide the class into two lines facing each other. Explain and demonstrate the game. Select a leader to toss the colored object.
- The leader tosses the object in the center area between the two teams.
- If the object lands with the blue side up, all members of the "blue" team turn and run home, pursued by the "red" team.
- If the object lands with the red side up, the procedure is reversed.
- All players tagged before returning home join the opposing team.
- The team having the most players in a predetermined time period wins.

Teaching Hints:
- Stress the importance of being careful to avoid injury.
- Use blue and red pinnies or vests, if available.
- If available, use flag belts to minimize arguments as to whether a player was tagged.

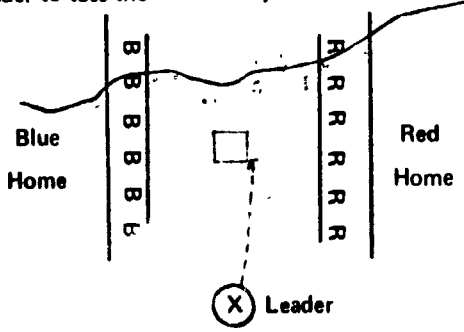


Fig. 4 Red and Blue

11. Name: Grab the Tire
Equipment: Car Tire
Description: Divide the class equally into two teams and assign a number to students on both teams. Place the teams at the opposite ends of the gym and the tire in the center.
- The instructor calls a number.
- The students with that number run to the center and try to drag the tire beyond their line.
- Score one point for each successful attempt.
- Continue until all numbers have been called.

Teaching Hints:
- Vary the game by calling multiple numbers (e.g., 2, 6, 10). In the example cited, six students would run to the center.
- Combine mathematics with the motor task. For example, state, "Those students whose numbers are a total of 3 + 5 run forward."

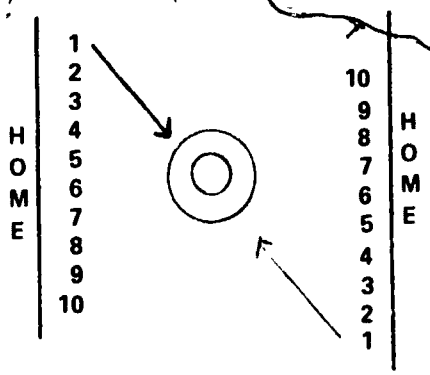


Fig. 5 Grab the Tire

12. Name: Change Places
Equipment: Mats
Description: Divide the class into two teams, placing the teams at opposite ends of the room with each team member assigned a number and requested to lie on a mat. Upon verbal command, the students:

[1] Charles B. Corbin, et al, *Concepts in Physical Education*, p. 61.

[2] Orfalie Bryant and Eloise McLean Oliver, *Fun and Activities Through Elementary Physical Education*, p. 51

[3] *Ibid*, pp. 77-78.

- Obey commands, e.g., "Turn on your stomach, back, etc."
- Exchange mat positions with their partners.

Teaching Hints:

- Award team points on the basis of proper task execution and reaching designated mat first.
- To minimize accidents, have students run to new mat positions around the outer perimeter of the mats in a clockwise direction.
- Vary tasks to include diving, etc.
- Assign students to give verbal commands.

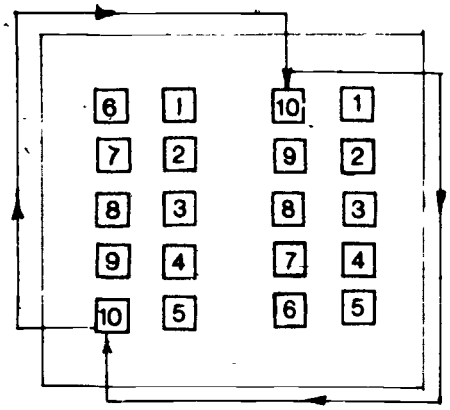


Fig. 6 Change Places

13. Name: Windmill and Jog
Equipment: None
Description: Have the student assume a standing position, feet apart, with arms extended sideward at shoulder level. On command, the student:
    - Bends and twists his trunk, touching his left hand to his right toe.
    - Returns to the starting position.
    - Jogs around the gym and returns to the original floor position.
    - Repeats the task.

    Teaching Hints:
    - Vary the task according to the endurance capacity of each student.
    - Identify and correct bilaterality and/or flexibility problems.

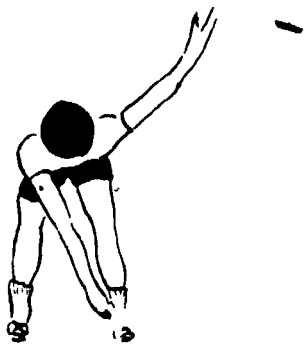


Fig. 7 Windmill and Jog

14. Name: Cycling and Jogging
Equipment: None
Description: Have student assume the inverted cycling position on the floor. On command, the student:
    - Completes twenty-five leg cycles (a cycle is the rotation of both legs).
    - Runs five laps around the gym.
    - Returns to the original cycling position.
    - Repeats the task.

    Teaching Hints:
    - Vary the leg cycles and distance to be run.
    - Keep the time constant and record the number of "circuits" completed by each student.
    - Stress the safety factor – avoiding contact with running classmates.

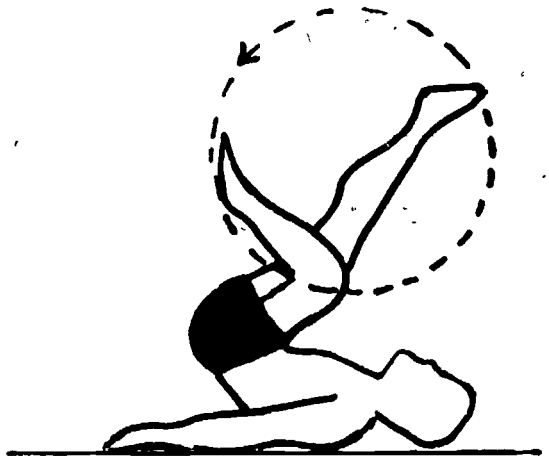


Fig. 8 Cycling and Jogging

15. Name: Mountain Climbing and Jogging
Equipment: None
Description: Have the student assume the starting position as in the illustration. On command, the student:
    - Reverses his foot position for thirty cycles.
    - Runs five laps around the gym.
    - Returns to the original starting position.
    - Repeats the task.

    Teaching Hints:
    - The same "hints" as cited in No. 14.

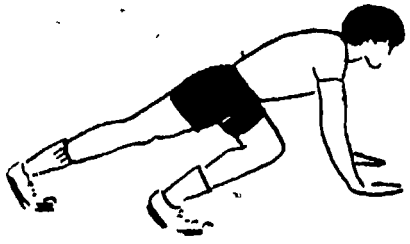


Fig. 9 Mountain Climbing and Jogging

16. Name: Jumping Jacks
Equipment: None
Description: Have the student stand with feet together and hands at sides. On command, the student:
- Jumps and lands with feet apart.
- Simultaneously, moves arms sideward and upward, touching hands overhead.
- Returns to the starting position.
- Repeats the exercise.

Teaching Hints:
- Vary the number of repetitions and cadence.
- Increase the difficulty level by alternately having the student shift the feet sideward — together and staggered — together.
- If a student cannot perform the task have him perform the discrete parts by the numbers.

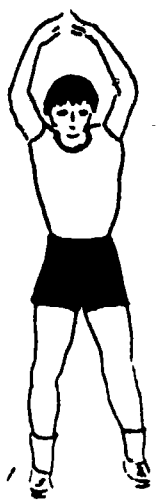


Fig. 10 Jumping Jack

17. Name: Rope Skipping
Equipment: Stop Watch, Jump Rope
Description: Explain and demonstrate the proper rope skipping technique. On command, the student:

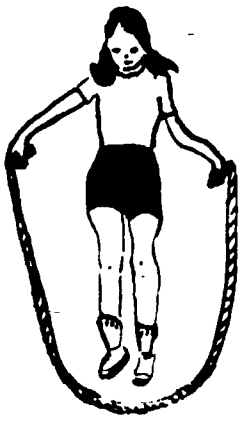


Fig. 11 Rope Skipping

- Skips rope for thirty seconds.
- Rests for thirty seconds.
- Repeats the exercise until he has skipped for 2:30 seconds and rested for 2:30 seconds.

Teaching Hints:
- Work up to a cadence of 120 jumps per minute.
- Increase the skipping time and decrease the resting time.
- Vary the task by having the student skip in reverse (i.e., bringing the rope over the head and behind the body).

18. Name: Bench Stepping
Equipment: Bench, Stairs, or Gymnasium Bleachers, Stop Watch.
Description: Have the student stand upright facing the bench. On command, the student:
- Places his right foot on the bench.
- Brings up his left foot and stands erect.
- Lowers his right foot to the floor.
- Lowers his left to the floor.

(one cycle)
- Continues until he has completed sixty cycles in a two-minute period (thirty cycles per minute).

Teaching Hints:
- Keep the cadence constant by: clapping hands; counting 1, 2, 3, 4; or using music.
- Increase the time, at periodic intervals, by thirty seconds until the students can perform the task for five minutes.

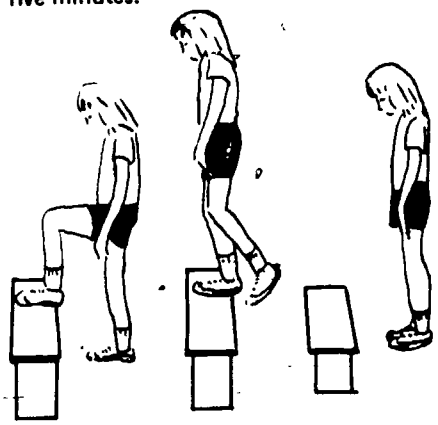


Fig. 12 Bench Stepping

19. Name: Circuit Training
Equipment: Timer
Description: Have the student assume an upright position. On command, the student:
- Hops on his left foot for 100 counts.
- Hops on his right foot for 100 counts.
- Jumps on both feet for 100 counts.
- Performs 100 jumping jacks.
- Runs in place for 100 counts.

(one circuit)
- Repeats the circuit.
- Completes as many circuits as possible in ten minutes.

Teaching Hints:

- Have the student keep a daily record of his performance; two circuits, plus three exercises would be recorded as 2.6.
- Encourage the student to better his score each day.

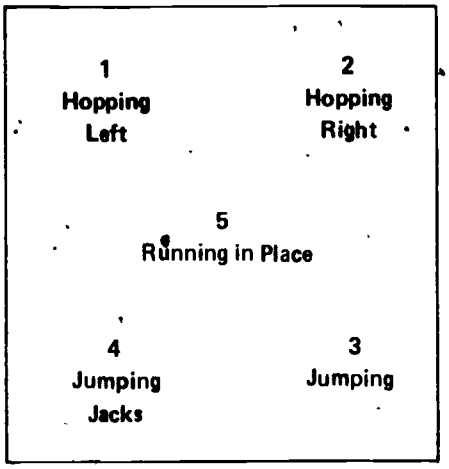


Fig. 13 Circuit Training

20. Name: Interval Running
Equipment: Tape for Measuring Distance, Stop Watch
Description: Interval running is a type of conditioning that uses the "overload concept." The student is overtaxed physiologically by being required to perform a series of running events which include a relaxation phase and a stress phase for a certain distance or a certain period of time. For example, the student might be requested to perform the following running events in a ten-minute period:

- Walk rapidly for two minutes.
- Jog for one minute.
- Run at one-half speed for one minute.
- Sprint for one minute.

(one circuit)

- Repeat the circuit.

Teaching Hints:

- The "overload concept" can be applied to any activity. Devise a circuit that applies interval stress to a series of exercises, the game of soccer, or swimming.
- Increase the "overload" gradually by decreasing the "relaxation" phases of the circuit and increasing the "stress" phases.

21. Name: Road Runner
Equipment: Timer, Track or Large Area
Description: Students form one or more lines. On command, the students:

- Jog slowly.
- The last student sprints to the front of his line and begins to jog.
- The process is repeated until all students have sprinted one time.

Teaching Hints:

- Vary the task according to the ability level of the students. For example, students with extremely poor endurance could walk in line, with the last person jogging to the front position.
- Increase the jogging and sprinting distances as the students improve.
- Decrease the time permitted to cover a given distance.

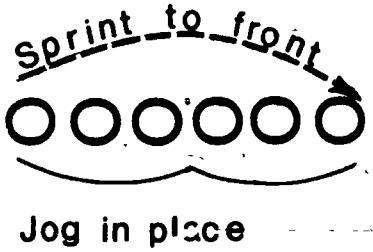


Fig. 14 Road Runner

22. Name: Suicide
Equipment: Timer, Basketball Court
Description: The student stands behind the baseline. On command, he:

- Sprints to the near foul line, touches the line with his hand and sprints back to the baseline.
- Touches the baseline and sprints to the half-court line and back.
- Repeats to the far foul line and back and far baseline and back.

Teaching Hints:

- Keep a record of all times and encourage students to "beat" their own time.
- Have several students perform the activity at the same time; stress staying in their lane.
- Use markers so the activity can be used in an all-purpose room, or out-of-doors.

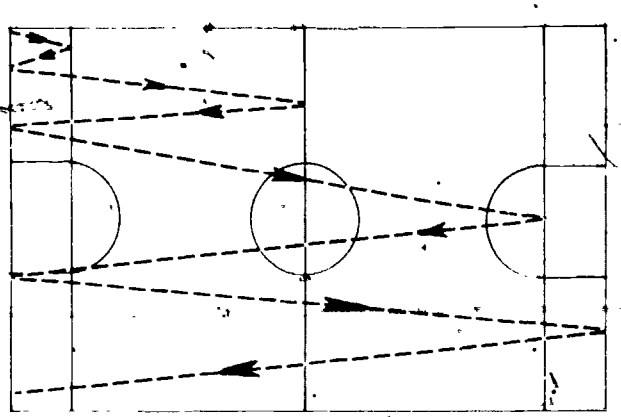


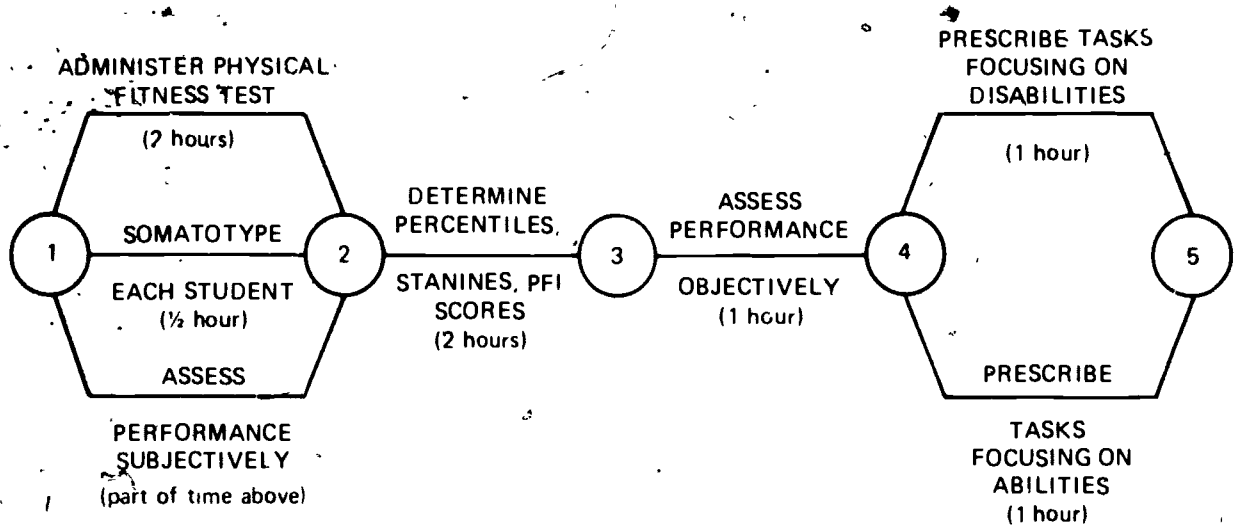
Fig. 15 Suicide

APPENDICES

APPENDIX A

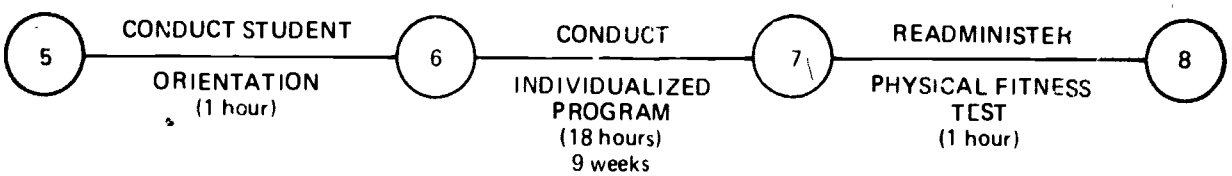
LOW PHYSICAL VITALITY FLOWCHART AND ACTIVITY CHECKLIST

NETWORK 1
LOW PHYSICAL VITALITY [1]

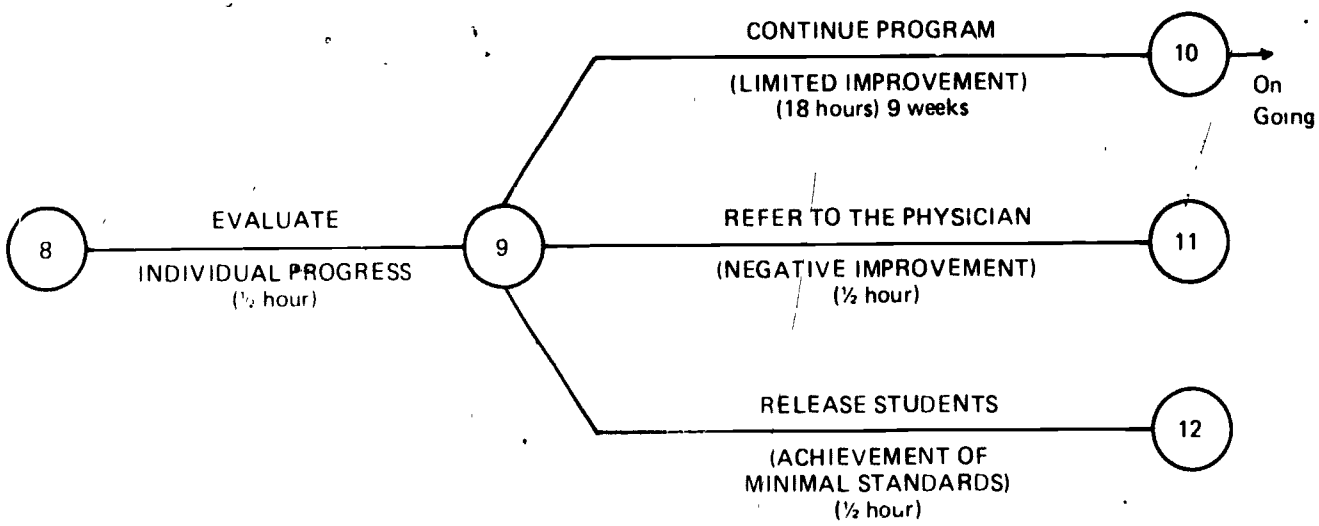


[1]Note: The time lines established for Low Physical Vitality and subsequent categories are based on a teacher-pupil ratio of 1-10

NETWORK 2
LOW PHYSICAL VITALITY



NETWORK 3
LOW PHYSICAL VITALITY



ACTIVITY CHECKLIST

EVENT NUMBERS		ACTIVITY TIME	ACTIVITY DESCRIPTION	NETWORK NUMBERS	EXPLANATION
BEGINNING	ENDING				
1	12		**IMPLEMENT PROGRAM FOR STUDENTS WITH LOW PHYSICAL VITALITY**	1-3	Test, assess, prescribe, implement, evaluate student progress at nine-week intervals and represcribe accordingly
1	2	2 hours	Administer Physical Fitness Test · Explain and demonstrate test items · Distribute scoring sheets and pencils · Pair students · Post test directions	1	Township of Ocean Physical Fitness Test will be administered to all students, 1-12
1	2	part of time above	Assess Performance Subjectively · Identify areas of deficiency · Record anecdotal remarks as to "how" the students perform	1	Teacher will observe student performance in grades 1-12, student will observe partner's performance in grades 9-12
1	2	½ hour	Somatotype Each Student · Explain and demonstrate somatotyping procedure · Post somatotyping directions · Record the two basic somatotyping characteristics of each student	1	Teacher to somatotype each student, grades 1-8, students to somatotype partners, grades 9-12
2	3	2 hours	Determine Percentiles, Stanines, PFI Scores · Explain and demonstrate compu-	1	Teacher will determine scores in grades 1-8; each student will determine his own scores in grades 9-12

APPENDIX A (Continued)

ACTIVITY CHECKLIST

EVENT NUMBERS		ACTIVITY TIME	ACTIVITY DESCRIPTION	NETWORK NUMBERS	EXPLANATION
BEGINNING	ENDING				
			tation procedures ·Record percentile, stanine and PFI scores ·Post percentile and stanine norms		
3	4	1 hour	Assess Performance Objectively ·Identify students with PFI Scores of 35 and below, or a Recovery Index of 40 or above ·Prepare a list of students with deviant scores for D&A referral	1	Teacher will assess performance in grades 1-8; student will assess personal performance in grades 9-12
4	5	1 hour	Prescribe Tasks Focusing on Disabilities ·Develop a series of exercises to strengthen the *specific* deficiencies i.e., arm, leg, abdominal strength, and/or cardiorespiratory endurance ·Structure exercises so that tasks are achievable by *all* students ·Design program so that it incorporates the overload concept (half of the period)	1	Teacher will prescribe tasks, grades 1-8, students will prescribe tasks, grades 9-12
4	5	1 hour	Prescribe Tasks Focusing on Abilities	1	Teacher will prescribe tasks based on pupil interest, grades 1-8; students will

ACTIVITY CHECKLIST

EVENT NUMBERS		ACTIVITY TIME	ACTIVITY DESCRIPTION	NETWORK NUMBERS	EXPLANATION
BEGINNING	ENDING				
			•Discuss activity interests with students •Explain, demonstrate and post motivating activities •Prescribe activities which can be conducted within the existing facilities (half of the period)		prescribe tasks based on their interest, grades 9-12
5	6	1 hour	Conduct Student Orientation •Explain the values derived from an individualized physical conditioning program •Explain the daily class and release procedures •Discuss the physiological values of utilizing the "overload" principle •Prepare student folders and forms	2	Program values, daily class and release procedures will be discussed; all necessary student forms will be prepared
6	7	18 hours (9 weeks)	Conduct Individualized Program •Record weight weekly •Record muscle girth measurements periodically •Establish definite stations, recording procedures and procedures for filing folders, storing supplies and equipment	2	Individualized program focusing on specific disabilities and abilities will be conducted two or three times each week (in addition to the regular program)

APPENDIX A (Continued)

ACTIVITY CHECKLIST

EVENT NUMBERS		ACTIVITY TIME	ACTIVITY DESCRIPTION	NETWORK NUMBERS	EXPLANATION
BEGINNING	ENDING				
			•Record dates and accomplishments on Individual Prescription Cards		
7	8	1 hour	Readminister Physical Fitness Test •Recompute percentiles, stanine and PFI scores •Readminister muscle girth measurements	2	Students will be retested to determine progress
8	9	½ hour	Evaluate Individual Progress •Determine student progress on each test item on the test battery (in terms of improvement as well as achievement)	3	Post-test results will be analyzed
9	10	18 hours (9 weeks)	Continue Program, Limited Improvement •Modify prescriptions to stimulate motivation	3	Students indicating limited progress will be scheduled for another nine-week period
9	11	½ hour	Refer to Physician, Negative Improvement •Administer health-habit questionnaire	3	Referral to ascertain whether a medical problem exists (if indicated)

ACTIVITY CHECKLIST

EVENT NUMBERS		ACTIVITY TIME	ACTIVITY DESCRIPTION	NETWORK NUMBERS	EXPLANATION
BEGINNING	ENDING				
			-Schedule medical examination to ascertain possible cause(s)		
9	12	½ hour	Release Students, Achievement of Minimal Standards -Release students who attain a PFI score of 50 -Release students who made improvement consistent with their somatotype	3	Self-explanatory

Township of Ocean School District

PHYSICAL FITNESS INDEX CONVERSION CHART

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AGE 6

RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested – 143									
M	F	M	F	M	F	M	F		
68	31	60	72	60	54	38	40	99	9
39	22	36	40	54	49	39	41	[illegible]	8
27	16	30	31	50	47	40	43	90	8
21	13	28	25	48	45	42	45	80	7
20	12	26	23	46	44	43	46	75	6
17	11	24	23	44	43	44	47	70	6
15	10	21	22	42	41	44	48	65	6
15	10	20	20	42	40	45	48	60	5
13	9	15	17	40	39	47	49	50	5
11	6	13	13	38	38	49	50	40	5
10	6	12	13	37	37	50	51	35	5
8	6	10	12	36	37	51	53	30	4
7	5	9	11	34	36	52	54	25	4
6	5	8	10	32	35	53	55	20	4
4	3	3	6	24	31	58	59	10	3
2	1	2	3	9	27	65	66	4	2
0	0	0	0	0	0	66	67	1	1

AGE 7

60	58	100	100	59	57	35	36	99	9
42	32	50	40	55	51	37	38	96	8
31	25	40	33	51	48	39	40	90	8
24	15	30	25	48	46	40	43	80	7
21	14	26	23	48	45	41	44	75	6
19	13	24	21	48	44	42	44	70	6
17	11	21	20	47	43	43	44	65	6
15	10	20	20	46	42	43	45	60	5
13	8	18	17	44	41	44	46	50	5
11	7	15	15	42	40	45	47	40	5
11	6	14	14	42	39	46	48	35	5
10	5	13	13	40	38	47	49	30	4
9	5	12	12	40	38	47	50	25	4
8	5	10	11	39	37	48	51	20	4
6	4	8	7	36	35	52	53	10	3
5	2	5	4	34	33	55	56	4	2
0	0	0	0	0	0	56	57	1	1

COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI
4	10	12	30	20	50	28	70
5	13	13	33	21	53	29	73
6	15	14	35	22	55	30	75
7	18	15	38	23	58	31	78
8	20	16	40	24	60	32	80
9	23	17	43	25	63	33	83
10	25	18	45	26	65	34	85
11	28	19	48	27	68	35	88
						36	90

Township of Ocean School District

PHYSICAL FITNESS INDEX CONVERSION CHART

AGE 8

RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested – 143									
M	F	M	F	M	F	M	F		
53	50	100	120	68	60	33	35	99	9
45	31	92	100	63	57	35	37	96	8
35	23	50	71	59	53	36	38	90	8
28	17	38	52	56	50	37	40	80	7
24	17	32	49	55	49	38	40	75	6
23	15	30	40	53	48	38	41	70	6
20	14	28	35	53	47	39	41	65	6
19	13	26	30	51	47	39	42	60	5
16	11	24	25	49	44	40	43	50	5
14	9	21	21	47	43	42	45	40	5
12	8	20	20	46	42	43	45	35	5
11	7	20	20	46	41	43	46	30	4
9	6	17	19	44	39	44	47	25	4
7	5	16	17	43	38	45	48	20	4
5	4	12	11	40	36	47	51	10	3
1	2	9	6	35	34	49	55	4	2
0	0	0	0	0	0	50	56	1	1

AGE 9

75	70	121	100	71	66	31	32	99	9
65	43	100	100	69	63	32	33	96	8
52	33	70	62	64	58	34	35	90	8
37	24	55	50	59	54	35	38	80	7
32	21	50	50	57	53	36	38	75	6
30	18	50	43	55	51	36	39	70	6
27	17	42	40	54	50	37	39	65	6
24	15	41	38	54	49	38	40	60	5
19	12	35	32	52	47	40	41	50	5
15	10	30	29	49	45	40	42	40	5
13	9	26	25	48	44	41	43	35	5
11	8	24	24	48	44	42	43	30	4
10	6	22	23	47	43	43	44	25	4
8	5	21	22	45	41	44	45	20	4
5	4	16	18	43	38	46	47	10	3
2	2	10	7	37	35	50	49	4	2
0	0	0	0	0	0	51	50	1	1

COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI
4	10	12	30	20	50	28	70
5	13	13	33	21	53	29	73
6	15	14	35	22	55	30	75
7	18	15	38	23	58	31	78
8	20	16	40	24	60	32	80
9	23	17	43	25	63	33	83
10	25	18	45	26	65	34	85
11	28	19	48	27	68	35	88
						36	90

APPENDIX B (Continued)

Township of Ocean School District

PHYSICAL FITNESS INDEX CONVERSION CHART

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AGE 10

RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PERCENTILE	STANINE
Number of Pupils Tested – 143									
M	F	M	F	M	F	M	F		
80	63	125	121	70	67	30	30	99	9
69	50	100	100	65	64	32	32	96	8
57	40	90	85	63	61	33	33	90	8
41	25	55	63	60	56	34	35	80	7
37	23	52	57	59	56	35	36	75	6
32	20	50	50	58	55	35	36	70	6
29	17	50	45	57	54	36	37	65	6
25	15	45	42	55	53	36	37	60	5
20	12	38	40	53	51	37	38	50	5
16	10	32	32	51	49	38	39	40	5
14	10	30	30	50	49	38	39	35	5
13	9	28	27	49	48	39	40	30	4
10	7	24	25	48	47	40	41	25	4
8	6	21	23	48	44	41	42	20	4
5	4	18	20	44	41	44	44	10	3
1	2	13	15	41	37	47	50	4	2
0	0	0	0	0	0	49	51	1	1

AGE 11

90	83	125	125	76	74	30	30	99	9
83	58	125	125	74	72	31	33	96	8
64	38	90	100	70	70	32	34	90	8
45	31	70	63	67	67	33	36	80	7
42	26	68	68	65	64	34	36	75	6
39	24	64	60	64	63	34	37	70	6
35	21	60	58	64	62	35	37	65	6
33	1	54	51	63	61	35	38	60	5
27	15	50	50	62	60	36	39	50	5
22	13	47	40	60	58	37	39	40	5
20	12	43	36	58	57	38	40	35	5
18	10	37	35	58	55	38	41	30	4
14	8	32	30	55	54	39	42	25	4
12	7	30	30	52	52	40	43	20	4
8	4	25	22	50	48	41	45	10	3
2	2	21	17	42	46	44	49	4	2
0	0	0	0	0	0	47	51	1	1

COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI
4	10	12	30	20	50	28	70
5	13	13	33	21	53	29	73
6	15	14	35	22	55	30	75
7	18	15	38	23	58	31	78
8	20	16	40	24	60	32	80
9	23	17	43	25	63	33	83
10	25	18	45	26	65	34	85
11	28	19	48	27	68	35	88
						36	90

PHYSICAL FITNESS INDEX CONVERSION CHART

AGE 12

RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 8-MINUTE RUN[1]		PERCENTILE	STANINE
Number of Pupils Tested – 143									
M	F	M	F	M	F	M	F		
86	65	125	117	80	82	5 0	4 1	99	9
74	60	125	100	76	75	4.7	4.0	90	8
62	45	122	80	73	72	4.4	3.6	90	8
45	34	101	69	72	69	4.3	3.4	80	7
42	31	90	64	70	68	4.2	3.3	75	6
39	31	75	60	69	67	4.1	3.3	70	6
35	25	68	55	67	67	4 0	3.2	65	6
32	23	65	52	66	66	4.0	3.2	60	5
28	18	60	50	64	63	3.7	3.1	50	5
23	14	55	45	62	62	3.5	3.0	40	5
20	13	51	43	61	60	3.4	3.0	35	5
19	12	43	40	60	59	3.4	2.6	30	4
17	10	40	40	60	58	3.2	2.6	25	4
16	9	35	35	58	56	3.1	2.4	20	4
8	5	27	28	52	51	3 0	2.3	10	3
5	4	20	22	48	47	2.7	2.2	4	2
0	0	0	0	0	0	2.4	2.1	1	1

AGE 13

94	65	125	105	89	78	5.6	4.1	99	9
79	60	125	100	83	77	5.0	3.6	96	8
64	40	125	80	78	73	4.7	3.5	90	8
51	33	100	60	73	71	4.4	3.4	80	7
45	29	100	59	72	70	4.4	3 3	75	6
43	28	87	52	72	69	4.3	3.2	70	6
39	26	77	50	72	68	4.2	3.1	65	6
37	23	72	50	71	68	4.2	3.1	60	5
30	20	50	45	69	65	4.1	3.0	50	5
24	15	50	40	65	62	4.0	2.7	40	5
21	13	49	37	65	61	3.7	2.7	35	5
20	12	45	35	63	60	3.6	2.6	30	4
17	10	40	32	62	60	3.5	2.5	25	4
13	10	38	30	60	58	3.4	2.4	20	4
9	5	31	25	58	56	3.3	2 4	10	3
6	4	25	20	51	51	3.0	2.1	4	2
0	0	0	0	0	0	2.4	1.7	1	1

COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI
4	10	12	30	20	50	28	70
5	13	13	33	21	53	29	73
6	15	14	35	22	55	30	75
7	18	15	38	23	58	31	78
8	20	16	40	24	60	32	80
9	23	17	43	25	63	33	83
10	25	18	45	26	65	34	85
11	28	19	48	27	68	35	88
						36	90

[1]NOTE: Measured in laps (440 yards) and 1/8's of a lap (Thus, 4 0 reflects four complete laps, 3 7 reflects three complete laps, plus 7/8's of a lap.)

Township of Ocean School District

PHYSICAL FITNESS INDEX CONVERSION CHART

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AGE 14

RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 12-MINUTE RUN[1]		PERCENTILE	STANINE
Numbers of Pupils Tested — 163									
M	F	M	F	M	F	M	F		
103	75	125	100	96	84	8.1	6.3	99	9
82	57	120	70	94	80	7.5	5 6	96	8
75	45	101	55	84	75	7.3	5.3	90	8
65	34	100	49	81	72	6.7	4.7	80	7
62	32	100	45	80	71	6.6	4.6	75	6
55	29	86	42	78	70	6.4	4.6	70	6
49	24	85	40	76	68	6.4	4.3	65	6
48	22	79	35	75	67	6.3	4.2	60	5
44	19	66	31	73	66	6.0	4.0	50	5
38	15	60	26	72	64	5.7	3.7	40	5
36	15	60	25	71	63	5.5	3.7	35	5
34	13	55	23	69	62	5.4	3.5	30	4
27	11	50	21	67	60	5.3	3.3	25	4
24	8	50	20	65	59	5.2	3.0	20	4
15	5	35	15	61	55	4.6	2.7	10	3
8	1	26	12	58	51	3.7	2.0	4	2
0	0	0	0	0	0	3.4	1 9	1	1

AGE 15

Number of Pupils Tested — 209									
126	70	125	90	100	89	8.5	8.1	99	9
105	58	121	71	96	80	7.4	6.0	96	8
86	37	110	57	91	77	6.7	5.6	90	8
73	30	101	50	87	72	6.4	5.1	80	7
68	28	100	45	86	71	6.3	5.0	75	6
65	25	100	42	84	70	6.2	4.7	70	6
61	24	100	40	84	69	6.0	4.7	65	6
60	22	100	40	83	68	5.7	4.7	60	5
54	18	80	35	80	66	5.7	4.5	50	5
48	15	70	30	78	64	5.4	4.3	40	5
46	13	65	30	77	63	5.3	4.2	35	5
43	12	60	30	76	62	5.2	4.1	30	4
38	10	55	28	75	60	5.1	4.1	25	4
34	8	54	26	73	59	4.9	4.0	20	4
22	5	45	20	70	54	4.3	3.6	10	3
15	4	32	12	66	52	3.6	3.1	4	2
0	0	0	0	0	0	3.1	2.1	1	1

COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI
4	10	12	30	20	50	28	70
5	13	13	33	21	53	29	73
6	15	14	35	22	55	30	75
7	18	15	38	23	58	31	78
8	20	16	40	24	60	32	80
9	23	17	43	25	63	33	83
10	25	18	45	26	65	34	85
11	28	19	48	27	68	35	88
						36	90

[1]NOTE Measured in laps (440 yards) and 1/8's of a lap. (Thus, 4 0 reflects four complete laps, 3.7 reflects three complete laps, plus 7/8's of a lap)

AGE 16

RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 12-MINUTE RUN[1]		PERCENTILE	STANINE
Number of Pupils Tested – 163									
M	F	M	F	M	F	M	F		
121	75	120	81	105	84	8 0	6 4	99	9
109	51	115	70	99	77	7 3	5.5	96	8
85	37	101	51	94	74	7 0	5.3	90	8
78	30	100	50	90	70	6.6	5.0	80	7
74	26	95	45	88	69	6 4	4.7	75	6
70	22	80	40	86	67	6.2	4.7	70	6
68	20	75	40	86	66	6.1	4.5	65	6
65	19	75	40	84	65	6.0	4 4	60	5
58	16	60	36	83	63	5.7	4 3	50	5
50	12	55	33	80	61	4 6	4 2	40	5
48	11	50	30	80	60	5.5	4 1	35	5
42	10	50	30	77	59	5 3	4.0	30	4
40	9	45	29	75	57	5.2	4.0	25	4
38	8	40	25	74	57	4.6	3.7	20	4
28	5	33	23	71	52	4 2	3.5	10	3
19	1	25	20	65	48	3.6	2.5	4	2
0	0	0	0	0	0	3.0	1.3	1	1

AGE 17

Number of Pupils Tested – 181									
120	61	125	80	106	88	8.2	6.4	99	9
112	42	115	60	101	78	7 7	5.4	96	8
87	27	102	50	96	75	7.3	5.2	90	8
79	22	100	50	93	75	6 7	4.6	80	7
75	19	95	47	92	72	6.7	4.6	75	6
71	18	90	45	90	71	6.5	4.3	70	6
68	16	81	41	90	70	6.3	4.3	65	6
64	15	76	40	89	69	6.3	4.3	60	5
60	14	70	35	87	67	6 0	4 1	50	5
54	12	65	30	84	66	5.7	4.0	40	5
48	11	60	30	84	65	5.6	4.0	35	5
45	10	52	30	82	62	5.4	3.7	30	4
41	10	51	30	81	63	5.1	3.7	25	4
40	8	50	25	79	60	4 7	3.7	20	4
31	5	40	20	75	55	4 6	3.4	10	3
25	3	25	12	70	48	3.5	3 2	4	2
0	0	0	0	0	0	3.0	2.4	1	1

COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI
4	10	12	30	20	50	28	70
5	13	13	33	21	53	29	73
6	15	14	35	22	55	30	75
7	18	15	38	23	58	31	73
8	20	16	40	24	60	32	80
9	23	17	43	25	63	33	83
10	25	18	45	26	65	34	85
11	28	19	48	27	68	35	88
						36	90

[1]NOTE Measured in laps (440 yards) and 1/8 s of a lap (Thus, 4 0 reflects four complete laps, 3 7 reflects three complete laps, plus 7/8's of a lap)

APPENDIX C

STATE OF NEW JERSEY: PHYSICAL FITNESS INDEX CONVERSION CHART

AGE 6

9/75

RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PFI		%	STANINE
n=75	60	81	62	82		85	80	80	80		
M	F	M	F	M	F	M	F	M	F		
20	21	99	60	55	54	38	40	82	80	99	9
18	16	97	60	54	49	39	41	75	75	96	8
7	15	75	55	53	47	40	43	70	68	90	8
6	14	52	30	52	45	42	45	65	63	80	7
6	10	52	29	48	44	43	46	63	60	75	6
5	9	38	25	44	43	44	47	60	58	70	6
5	8	35	20	43	41	44	48	58	57	65	6
4	7	30	18	41	40	45	48	58	55	60	5
3	5	20	11	38	39	47	49	55	50	50	5
2	4	19	8	35	38	49	50	50	45	40	5
2	3	12	6	35	37	50	51	50	43	35	5
2	2	10	5	34	37	51	53	48	40	30	4
2	2	9	5	32	36	52	54	45	38	25	4
1	1	8	3	30	35	53	55	42	35	20	4
1	1	4	0	20	31	58	59	35	28	10	3
1	0	2	0	6	27	65	66	30	20	4	2
0	0	0	0	4	0	66	67	20	15	1	1

AGE 7

n=65	56	64	53	65	62	60	60	60	61		
M	F	M	F	M	F	M	F	M	F		
95	90	99	90	76	57	35	36	80	82	99	9
90	90	90	90	74	51	37	38	75	78	96	8
31	70	80	89	70	48	39	40	70	73	90	8
34	60	53	60	49	46	40	43	65	70	80	7
30	36	37	50	47	45	41	44	63	67	75	6
22	35	32	36	45	44	42	44	60	65	70	6
18	19	26	35	45	43	43	44	60	63	65	6
15	16	22	30	44	42	43	45	58	62	60	5
9	9	17	26	41	41	44	46	55	57	50	5
7	7	10	20	39	40	45	47	50	53	40	5
6	7	10	20	37	39	46	48	48	52	35	5
6	6	8	20	37	38	47	49	45	50	30	4
4	5	8	17	36	38	47	50	45	47	25	4
3	5	6	15	35	37	48	51	40	42	20	4
2	2	4	7	34	35	52	53	33	35	10	3
1	1	0	0	28	33	55	56	27	23	4	2
1	0	0	0	28	0	56	57	18	20	1	1

COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI
4	10	12	30	20	50	28	70
5	13	13	33	21	53	29	73
6	15	14	35	22	55	30	75
7	18	15	38	23	58	31	78
8	20	16	40	24	60	32	80
9	23	17	43	25	63	33	83
10	25	18	45	26	65	34	85
11	28	19	48	27	68	35	88
						36	90

STATE OF NEW JERSEY: PHYSICAL FITNESS INDEX CONVERSION CHART

AGE 8

9/75

RAW SCORES ARM HANG		SIT-UPS		RAW SCORES BROAD JUMP		200 YD. DASH		PFI		%	STANINE
n=65	64	60		62	60	59	60	62	61		
M	F	M	F	M	F	M	F	M	F		
95	90	100	120	68	60	33	35	83	80	99	9
90	90	92	100	63	57	35	37	77	77	96	8
51	80	50	71	59	53	36	38	70	73	90	8
39	53	38	52	56	50	37	40	65	67	80	7
30	37	32	49	55	49	38	40	63	65	75	6
22	32	30	40	53	48	38	41	60	65	70	6
18	26	28	35	53	47	39	41	60	63	65	6
15	22	26	30	51	47	39	42	58	60	60	5
9	17	24	25	49	44	40	43	55	55	50	5
7	10	21	21	47	43	42	45	53	50	40	5
6	10	20	20	46	42	43	45	50	50	35	5
6	8	20	20	46	41	43	46	50	45	30	4
4	8	17	19	44	39	44	47	47	43	25	4
3	6	16	17	43	38	45	48	43	42	20	4
2	4	12	11	40	36	47	51	37	35	10	3
1	0	9	6	35	34	49	55	32	25	4	2
1	0	0	0	0	0	50	56	17	15	1	1

AGE 9

n=58	78	59	76	70	77	70	75	73	73		
M	F	M	F	M	F	M	F	M	F		
93	80	99	98	71	99	31	32	78	75	99	9
93	75	99	90	69	96	32	33	70	75	96	8
68	61	81	65	64	80	34	35	65	70	90	8
60	40	70	50	59	60	35	38	62	63	80	7
53	36	60	46	57	60	36	38	60	60	75	6
41	30	50	41	55	58	36	39	60	57	70	6
41	25	37	36	54	52	37	39	58	55	65	6
33	22	35	35	54	50	38	40	57	55	60	5
15	14	34	27	52	49	40	41	53	50	50	5
10	10	19	20	49	46	40	42	48	47	40	5
6	7	18	18	48	45	41	43	47	45	35	5
5	6	13	14	48	42	42	43	45	45	30	4
4	5	10	10	47	40	43	44	43	43	25	4
4	4	6	10	45	38	44	45	40	40	20	4
3	3	2	5	43	5	46	47	35	33	10	3
0	1	2	3	37	4	50	49	27	35	4	2
0	1	2	2	0	2	51	50	18	17	1	1

COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI
4	10	12	30	20	50	28	70
5	13	13	33	21	53	29	73
6	15	14	35	22	55	30	75
7	18	15	38	23	58	31	78
8	20	16	40	24	60	32	80
9	23	17	43	25	63	33	83
10	25	18	45	26	65	34	85
11	28	19	48	27	68	35	88
						36	90

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AGE 10

9/75

RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 200 YD. DASH		PFI		%	STANINE
n=55	57	53	68	54	54	50	50	50	50		
M	F	M	F	M	F	M	F	M	F		
133	75	104	100	90	96	30	30	80	80	99	9
102	71	100	93	69	90	32	32	75	75	96	8
56	50	99	80	56	65	33	33	68	70	90	8
32	41	99	75	52	53	34	35	63	63	80	7
29	39	99	75	52	50	35	36	62	60	75	6
22	30	75	65	50	48	35	36	58	58	70	6
19	21	50	50	48	48	36	37	57	57	65	6
13	18	46	45	48	47	36	37	55	55	60	5
9	11	38	33	47	45	37	38	52	52	50	5
6	7	24	20	45	41	38	39	50	48	40	5
5	5	18	20	40	39	38	39	48	45	45	5
4	5	10	14	39	30	39	40	45	43	30	4
3	4	6	9	25	25	40	41	45	40	25	4
3	4	4	5	4	20	41	42	42	38	20	4
3	3	4	4	2	6	44	44	35	30	10	3
1	1	2	3	1	4	47	50	30	22	4	2
1	1	1	0	1	3	48	51	20	15	1	1

AGE 11

n=73	88	75	81	70	82	78	80	73	75		
M	F	M	F	M	F	M	F	M	F		
73	55	100	101	71	67	30	30	80	70	99	9
50	49	95	73	71	64	31	33	75	67	96	8
44	29	95	55	67	62	32	34	72	63	90	8
33	20	70	45	64	58	33	36	65	57	80	7
23	19	56	40	63	57	34	36	63	57	75	6
19	13	56	36	59	56	34	37	60	55	70	6
17	10	51	35	57	55	35	37	58	52	65	6
13	10	46	32	57	54	35	38	53	50	60	5
10	8	38	30	54	51	36	39	50	48	50	5
9	6	35	25	52	48	37	39	47	45	40	5
8	6	28	23	52	47	38	40	45	43	35	5
6	5	28	20	48	46	38	41	42	42	30	4
5	5	25	20	47	44	39	42	40	40	25	4
4	4	20	16	44	42	40	43	40	38	20	4
2	2	10	5	34	5	41	45	33	30	10	3
1	1	4	5	3	4	44	49	25	25	4	2
1	0	0	0	3	0	47	51	18	10	1	1

COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI
4	10	12	30	20	50	28	70
5	13	13	33	21	53	29	73
6	15	14	35	22	55	30	75
7	18	15	38	23	58	31	78
8	20	16	40	24	60	32	80
9	23	17	43	25	63	33	83
10	25	18	45	26	65	34	85
11	28	19	48	27	68	35	88
						36	90

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AGE 12

9/75

RAW SCORES ARM HANG		SIT-UPS		RAW SCORES BROAD JUMP		8-MIN. RUN		PFI		%	STANINE
n=140	93	125	103	136	120	175	163	90	92		
M	F	M	F	M	F	M	F	M	F		
86	70	125	79	80	82	39	41	80	80	99	9
74	60	125	76	76	75	38	40	80	70	96	8
62	41	122	71	73	72	35	36	78	63	90	8
45	32	101	65	72	69	34	34	68	58	80	7
42	29	90	64	70	68	33	33	65	55	75	6
39	25	75	63	69	67	32	33	63	53	70	6
35	20	68	60	67	67	31	32	63	53	65	6
32	16	65	59	66	66	31	32	62	50	60	5
28	14	60	58	64	63	30	31	62	45	50	5
23	10	55	57	62	62	29	30	53	43	40	5
20	9	51	56	61	60	28	30	50	40	35	5
19	7	43	54	60	59	27	26	50	40	30	4
17	6	40	53	60	58	26	26	48	38	25	4
16	5	35	51	58	56	24	24	44	33	20	4
8	3	27	44	52	51	23	23	33	28	10	3
5	2	20	10	48	47	23	22	23	23	4	2
0	1	0	3	0	0	19	21	15	10	1	1

AGE 13

n=90	70	80	120	94	128	98	100	69	68		
M	F	M	F	M	F	M	F	M	F		
94	81	125	120	89	81	46	41	85	85	99	9
79	75	125	116	83	78	39	38	80	83	96	8
64	66	125	110	78	75	38	35	73	75	90	8
51	50	100	100	73	72	35	34	68	68	80	7
45	47	100	100	72	71	35	33	68	68	75	6
43	45	87	90	72	71	34	32	65	63	70	6
39	38	77	85	72	69	33	31	63	60	65	6
37	35	72	80	71	68	33	31	60	60	60	5
30	24	50	74	69	65	82	30	60	55	50	5
24	20	50	69	65	63	31	27	55	55	40	5
21	15	49	60	65	62	30	27	5	50	35	5
20	15	45	54	63	60	29	26	52	48	30	4
17	13	40	50	62	58	28	25	50	45	25	4
13	11	38	45	60	55	27	24	50	43	20	4
9	4	31	15	58	30	25	24	43	34	10	3
6	4	25	4	51	10	20	21	28	28	4	2
0	2	0	4	0	4	16	17	15	18	1	1

COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI
4	10	12	30	20	50	28	70
5	13	13	33	21	53	29	73
6	15	14	35	22	55	30	75
7	18	15	38	23	58	31	78
8	20	16	40	24	60	32	80
9	23	17	43	25	63	33	83
10	25	18	45	26	65	34	85
11	28	19	48	27	68	35	88
						36	90

STATE OF NEW JERSEY: PHYSICAL FITNESS INDEX CONVERSION CHART

AGE 14

9/75

RAW SCORES ARM HANG		RAW SCORES SIT-UPS		RAW SCORES BROAD JUMP		RAW SCORES 12-MIN. RUN		PFI		%	STANINE
n=298	449	236	315	282	300	225	215	201	202		
M	F	M	F	M	F	M	F	M	F		
103	70	120	120	97	87	56	41	83	84	99	9
87	61	111	101	91	82	50	36	78	80	96	8
71	50	103	96	85	79	47	35	70	73	90	8
62	44	96	80	81	75	44	34	65	68	80	7
59	40	89	80	79	74	44	33	63	65	75	6
56	37	80	75	77	74	43	32	60	63	70	6
49	34	74	65	75	72	42	31	59	60	65	6
48	30	65	61	74	72	42	31	58	60	60	5
40	24	58	55	72	69	41	30	53	55	50	5
35	20	50	48	69	67	40	27	48	50	40	5
32	18	48	46	68	65	37	27	48	50	35	5
28	16	42	41	67	64	36	26	45	45	30	4
25	15	40	39	65	62	35	25	43	45	25	4
20	13	32	33	62	61	34	24	40	40	20	4
10	9	25	26	55	57	33	24	33	32	10	3
4	4	16	20	25	52	30	21	25	22	4	2
1	2	1	13	3	25	24	17	18	4	1	1

AGE 15

n=313	309	304	293	307	308	290	270	288	288		
M	F	M	F	M	F	M	F	M	F		
110	69	150	110	100	85	85	41	83	82	99	9
86	58	130	85	94	81	74	36	78	77	96	8
78	40	130	73	90	77	67	35	74	70	90	8
71	30	125	60	87	73	64	34	70	65	90	7
69	27	117	55	86	72	63	33	68	62	75	6
66	24	108	53	84	71	62	32	65	60	70	6
61	21	100	50	84	70	60	31	63	60	65	6
59	20	99	50	82	69	57	31	63	58	60	5
54	16	85	48	80	67	57	30	60	55	50	5
48	13	75	40	78	65	54	27	54	50	40	5
44	12	74	39	76	64	53	27	53	50	35	5
41	10	69	35	74	63	52	26	50	48	30	4
37	9	65	33	72	62	51	25	48	45	25	4
33	8	59	30	69	60	47	24	45	43	20	4
17	4	46	24	65	58	43	24	38	35	10	3
10	1	31	20	60	51	36	21	33	28	4	2
4	0	5	10	50	45	31	17	28	20	1	1

COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI
4	10	12	30	20	50	28	70
5	13	13	33	21	53	29	73
6	15	14	35	22	55	30	75
7	18	15	38	23	58	31	78
8	20	16	40	24	60	32	80
9	23	17	43	25	63	33	83
10	25	18	45	26	65	34	85
11	28	19	48	27	68	35	88
						36	90

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AGE 16

9/75

RAW SCORES				RAW SCORES							
ARM HANG		SIT-UPS		BROAD JUMP		12-MIN. RUN[1]		PFI		%	STANINE
n=259	292	277	281	275	295	265	270	250	252		
M	F	M	F	M	F	M	F	M	F		
119	66	189	100	102	82	80	64	85	82	99	9
98	51	146	84	99	80	73	55	78	78	96	8
89	38	128	70	94	76	70	53	75	72	90	8
79	29	105	52	90	72	66	50	68	66	80	7
74	26	100	50	88	71	64	47	63	65	75	6
72	23	98	50	87	69	62	47	63	63	70	6
68	20	93	50	86	68	61	45	60	60	65	6
63	17	86	50	84	68	60	44	60	60	60	5
58	14	75	48	83	66	57	43	58	55	50	5
50	11	64	40	80	63	46	42	53	52	40	5
48	10	60	40	79	63	55	41	53	50	35	5
46	10	58	37	78	61	53	40	50	50	30	4
42	9	53	35	75	61	52	40	45	48	25	4
39	7	49	32	74	59	46	37	45	46	20	4
28	4	41	30	70	57	42	35	40	40	10	3
17	1	30	21	65	49	36	25	32	32	4	2
5	0	5	16	6	30	30	13	20	27	1	1

AGE 17

n=198	194	184	225	197	211	181	181	175	177		
M	F	M	F	M	F	M	F	M	F		
105	64	198	100	99	83	82	64	83	85	99	9
94	46	145	75	98	79	77	54	78	78	96	8
89	36	126	65	96	76	73	52	73	70	90	8
78	30	123	53	94	72	67	46	63	67	80	7
74	28	120	50	93	72	67	46	60	65	75	6
71	24	113	50	90	70	65	43	58	63	70	6
67	21	98	50	89	69	63	43	58	60	65	6
64	19	98	49	87	69	63	43	55	60	60	5
59	16	85	42	85	67	60	41	53	56	50	5
54	13	70	40	83	64	57	40	50	52	40	5
51	10	64	35	83	63	56	40	48	50	35	5
48	9	57	31	81	62	54	37	45	50	30	4
45	8	54	30	79	61	51	37	43	47	25	4
45	7	49	30	78	60	47	37	43	45	20	4
30	4	35	20	70	56	46	34	35	38	10	3
20	3	21	15	66	50	35	32	27	27	4	2
3	2	5	4	48	30	30	24	13	17	1	1

COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI	COMPOSITE STANINES	PFI
4	10	12	30	20	50	28	70
5	13	13	33	21	53	29	73
6	15	14	35	22	55	30	75
7	18	15	38	23	58	31	78
8	20	16	40	24	60	32	80
9	23	17	43	25	63	33	83
10	25	18	45	26	65	34	85
11	28	19	48	27	68	35	88
						36	90

[1]Note: Measured in laps (440 yards) and 1/8's of a lap. (Thus, 4.0 reflects four complete laps; 3.7 reflects three complete laps, plus 7/8's of a lap.)

APPENDIX D

TABLE OF NUMBERS[1]

DIRECTIONS FOR USE OF THE CONVERSION TABLES

Directions for use of the Conversion Tables

1. Record all raw data on the "tally sheet."
2. Accumulate frequency scores (check to ensure the "N" is correct).
3. Locate the Table of Numbers for the "N" of your population.
4. Place the tally sheet adjacent to the correct "N" table and proceed as indicated in the following example. (Seeking the raw score for the percentile; N = 78:
   a. Locate P_4 for "N" of 78, the number indicated is "3." Thus, 4 percent of 78 subjects is "3."
   b. Locate the "cf" column on your tally sheet and identify the "cf" of "3"; the "typed" raw score number to the left of "3" is the raw score the subject must attain to achieve the 4th percentile.
   Note: Assuming the "cf" column only has numbers "2" and "4," you select the raw score adjacent to the "cf" score of "4." Rule to remember: when the percentage of cases you are seeking falls between two "cf" scores, you *always* select the higher raw score as being representative of the percentile in question.
   c. Record the raw score identified in the left hand column on the tally sheet adjacent to 4.
   d. Proceed in the similar manner to determine all percentile scores on your tally sheet.
5. The Tables of Numbers have been established for sample sizes ranging from 30 to 199. However, you can use the tables to identify the percentage of "N" you are seeking regardless of size via the following procedure:
   a. Data: N of 279; seeking 70 percent of 279.
   b. Locate the "N" Table for 79.
   c. Identify the number that is representative of P_{70} (i.e., 55).
   d. Locate the "N" Table for 100. (Actually, in most instances, steps "d" though "h" can be computed mentally.)
   e. Identify the number that is representative of P_{70} (i.e., 70).
   f. Multiply 2 x 70 (i.e., 140).
   g. Add 55 and 140 (i.e., 195).
   h. Therefore, 70 percent of 279 is *195*.

[1]Source: Thomas M Vodola, *Descriptive Statistics Made Easy for the Classroom Teacher*, © 1974, pp. 23-32, 36. Reprinted by permission of the author, P O Box 93, Neptune City, New Jersey

APPENDIX D (Continued)

TABLES OF NUMBERS

DETERMINING THE PERCENTAGE OF CASES SOUGHT

TABLES 30 to 39

N=	30	31	32	33	34	35	36	37	38	39	=N
P99	30	31	32	33	34	35	36	37	38	39	P99
96	29	30	31	32	33	34	35	36	36	37	96
90	27	28	29	30	31	32	32	33	34	35	90
80	24	25	26	26	27	28	29	30	30	31	80
75	23	23	24	25	26	26	27	28	29	29	75
70	21	22	22	23	24	25	25	26	27	27	70
65	20	20	21	21	22	23	23	24	25	25	65
60	18	19	19	20	20	21	22	22	23	23	60
50	15	16	16	17	17	18	18	19	19	20	50
40	12	12	13	13	14	14	14	15	15	16	40
35	11	11	11	12	12	12	13	13	13	14	35
30	9	9	10	10	10	11	11	11	11	12	30
25	8	8	8	8	9	9	9	9	10	10	25
20	6	6	6	7	7	7	7	7	8	8	20
10	3	3	3	3	3	3	4	4	4	4	10
P1	.3	.3	.3	.3	.3	.4	.4	.4	.4	.4	P1

TABLES 40 to 49

N=	40	41	42	43	44	45	46	47	48	49	=N
P99	40	41	42	43	44	45	46	47	48	49	P99
96	38	39	40	41	42	43	44	45	46	47	96
90	36	37	38	39	40	41	41	42	43	44	90
80	32	33	34	34	35	36	37	38	38	39	80
75	30	31	32	32	33	34	35	35	36	37	75
70	28	29	29	30	31	32	32	33	34	34	70
65	26	27	27	28	29	29	30	31	31	32	65
60	24	25	25	26	26	27	28	28	29	29	60
50	20	21	21	22	22	23	23	24	24	25	50
40	16	16	17	17	18	18	18	19	19	20	40
35	14	14	15	15	15	16	16	16	17	17	35
30	12	12	13	13	13	14	14	14	14	15	30
25	10	10	11	11	11	11	12	12	12	12	25
20	8	8	8	9	9	9	9	9	10	10	20
10	4	4	4	4	4	5	5	5	5	5	10
4	2	2	2	2	2	2	2	2	2	2	4
P 1	.4	.4	.4	.4	.4	.5	.5	.5	.5	.5	P 1

DETERMINING THE PERCENTAGE OF CASES SOUGHT

TABLES 50 to 59

N=	50	51	52	53	54	55	56	57	58	59	=N
P99	50	50	51	52	53	54	55	56	57	58	P99
96	48	49	50	51	52	53	54	55	56	57	96
90	45	46	47	48	49	50	50	51	52	53	90
80	40	41	42	42	43	44	45	46	46	47	80
75	38	38	39	40	41	41	42	43	44	44	75
70	35	36	36	37	38	39	39	40	41	41	70
65	33	33	34	34	35	36	36	37	38	38	65
60	30	31	31	32	32	33	34	34	35	35	60
50	25	26	26	27	27	28	28	29	29	30	50
40	20	20	21	2	22	22	22	23	23	24	40
35	18	18	18	19	19	19	20	20	20	21	35
30	15	15	16	16	16	17	17	17	17	18	30
25	13	13	13	13	14	14	14	14	15	15	25
20	10	10	10	11	11	11	11	11	12	12	20
10	5	5	5	5	5	6	6	6	6	6	10
4	2	2	2	2	2	2	2	2	2	2	4
P 1	5	5	.5	5	.5	.6	6	.6	.6	.6	P 1

TABLES 60 to 69

N=	60	61	62	63	64	65	66	67	68	69	=N
P99	59	60	61	62	63	64	65	66	67	68	P99
96	58	59	60	61	61	62	63	64	65	66	96
90	54	55	56	57	58	59	59	60	61	62	90
80	48	49	50	51	51	52	53	54	54	55	80
75	45	46	47	47	48	49	50	50	51	52	75
70	42	43	43	44	45	46	46	47	48	48	70
65	39	40	40	41	42	42	43	44	44	45	65
60	36	37	37	38	38	39	40	40	41	41	60
50	30	31	31	32	32	33	33	34	34	35	50
40	24	24	25	25	26	26	26	27	27	28	40
35	21	21	22	22	22	23	23	23	24	24	35
30	18	18	19	19	19	20	20	20	20	21	30
25	15	15	16	16	16	16	17	17	17	17	25
20	12	12	12	13	13	13	13	13	14	14	20
10	6	6	6	6	6	7	7	7	7	7	10
4	2	2	2	3	3	3	3	3	3	3	4
P 1	6	6	6	6	6	7	7	7	7	7	P 1

APPENDIX D (Continued)

DETERMINING THE PERCENTAGE OF CASES SOUGHT

TABLES 70 to 79

N=	70	71	72	73	74	75	76	77	78	79	=N
P99	69	70	71	72	73	74	75	76	77	78	P99
96	67	68	69	70	71	72	73	74	75	76	96
90	63	64	65	66	67	68	68	69	70	71	90
80	56	57	58	58	59	60	61	62	62	63	80
75	53	53	54	55	56	56	57	58	59	59	75
70	49	50	50	51	52	53	53	54	55	55	70
65	46	46	47	47	48	49	49	50	51	51	65
60	42	43	43	44	44	45	46	46	47	47	60
50	35	36	36	37	37	38	38	39	39	40	50
40	28	28	29	29	30	30	30	31	31	32	40
35	25	25	25	26	26	26	27	27	27	28	35
30	21	21	22	22	22	23	23	23	23	24	30
25	18	18	18	18	19	19	19	19	20	20	25
20	14	14	14	15	15	15	15	15	16	16	20
10	7	7	7	7	7	8	8	8	8	8	10
4	3	3	3	3	3	3	3	3	3	3	4
P 1	.7	.7	.7	.7	.7	8	.8	.8	.8	.8	1

TABLES 80 to 89

N=	80	81	82	83	84	85	86	87	88	89	=N
P99	79	80	81	82	83	84	85	86	87	88	P99
96	77	78	79	80	81	82	83	84	85	86	96
90	72	73	74	75	76	77	77	78	79	80	90
80	64	65	66	66	67	68	69	70	70	71	80
75	60	61	62	62	63	64	65	65	66	67	75
70	56	57	57	58	59	60	60	61	62	62	70
65	52	53	53	54	55	55	56	57	57	58	65
60	48	49	49	50	50	51	52	52	53	53	60
50	40	41	41	42	42	43	43	44	44	45	50
40	32	32	33	33	34	34	34	35	35	36	40
35	28	28	29	29	29	30	30	30	31	31	35
30	24	24	25	25	25	26	26	26	26	27	30
25	20	20	21	21	21	21	22	22	22	22	25
20	16	16	16	17	17	17	17	17	18	18	20
10	8	8	8	8	8	9	9	9	9	9	10
4	3	3	3	3	3	3	3	3	4	4	4
P 1	8	8	.8	8	8	9	9	.9	9	.9	P 1

APPENDIX D (Continued)

DETERMINING THE PERCENTAGE OF CASES SOUGHT

TABLES 90 to 99

N=	90	91	92	93	94	95	96	97	98	99	=N
P99	89	90	91	92	93	94	95	96	97	98	P99
96	86	87	88	89	90	91	92	93	94	95	96
90	81	82	83	84	85	86	86	87	88	89	90
80	72	73	74	74	75	76	77	78	78	79	80
75	68	68	69	70	71	71	72	73	74	74	75
70	63	64	64	65	66	67	67	68	69	69	70
65	59	59	60	60	61	62	62	63	64	64	65
60	54	55	55	56	56	57	58	58	59	59	60
50	45	46	46	47	47	48	48	49	49	50	50
40	36	36	37	37	38	38	38	39	39	40	40
35	32	32	32	33	33	33	34	34	34	35	35
30	27	27	28	28	28	29	29	29	29	30	30
25	23	23	23	23	24	24	24	24	25	25	25
20	18	18	18	19	19	19	19	19	20	20	20
10	9	9	9	9	9	10	10	10	10	10	10
4	4	4	4	4	4	4	4	4	4	4	4
P 1	9	9	9	9	9	1.0	1.0	1.0	1.0	1.0	P 1

TABLES 100 to 109

N=	100	101	102	103	104	105	106	107	108	109	=N
P99	99	100	101	102	103	104	105	106	107	108	P99
96	96	97	98	99	100	101	102	103	104	105	96
90	90	91	92	93	94	95	95	96	97	98	90
80	80	81	82	82	83	84	85	86	86	87	80
75	75	76	77	78	78	79	80	80	81	82	75
70	70	71	71	72	73	74	74	75	76	76	70
65	65	66	66	67	68	68	69	70	70	71	65
60	60	61	61	62	62	63	64	64	65	65	60
50	50	51	51	52	52	53	53	54	54	55	50
40	40	40	41	41	42	42	42	43	43	44	40
35	35	35	36	36	36	37	37	37	38	38	35
30	30	30	31	31	31	32	32	32	32	33	30
25	25	25	26	26	26	26	27	27	27	27	25
20	20	20	20	21	21	21	21	21	22	22	20
10	10	10	10	10	10	11	11	11	11	11	10
4	4	4	4	4	4	4	4	4	4	4	4
P 1	1 0	1.0	1 0	1 0	1 0	1 1	1 1	1 1	1.1	1 1	P 1

APPENDIX D (Continued)

DETERMINING THE PERCENTAGE OF CASES SOUGHT

TABLES 110 to 119

N=	110	111	112	113	114	115	116	117	118	119	=N
P99	109	110	111	112	113	114	115	116	117	118	P99
96	106	107	108	108	109	110	111	112	113	114	96
90	99	100	101	102	103	104	104	105	106	107	90
80	88	89	90	90	91	92	93	94	94	95	80
75	83	83	84	85	86	86	87	88	89	89	75
70	77	78	78	79	80	81	81	82	83	83	70
65	72	72	73	73	74	75	75	76	77	78	65
60	66	67	67	68	68	69	70	70	71	71	60
50	55	56	56	57	57	58	58	59	59	60	50
40	44	44	45	45	46	46	46	47	47	48	40
35	39	39	39	40	40	40	41	41	41	42	35
30	33	33	34	34	34	35	35	35	35	36	30
25	28	28	28	28	29	29	29	29	30	30	25
20	22	22	22	23	23	23	23	23	24	24	20
10	11	11	11	11	11	12	12	12	12	12	10
4	4	4	4	5	5	5	5	5	5	5	4
P 1	1 1	1 1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	P 1

TABLES 120 to 129

N=	120	121	122	123	124	125	126	227	128	129	=N
P99	119	120	121	122	123	124	125	126	127	128	P99
96	115	116	117	118	119	120	121	122	123	124	96
90	108	109	110	111	112	113	113	114	115	116	90
80	96	97	98	98	99	100	101	102	102	103	80
75	90	91	92	92	93	94	95	95	96	97	75
70	84	85	85	86	87	88	88	89	90	90	70
65	78	79	79	80	81	81	82	83	83	84	65
60	72	73	73	74	74	75	76	77	77	77	60
50	60	61	61	62	62	63	63	64	64	65	50
40	48	49	49	49	50	50	50	51	51	52	40
35	42	42	43	43	43	44	44	44	45	45	35
30	36	36	37	37	37	38	38	38	38	39	30
25	30	30	31	31	31	31	32	32	32	32	25
20	24	24	24	25	25	25	25	25	26	26	20
10	12	12	12	12	12	13	13	13	13	13	10
4	5	5	5	5	5	5	5	5	5	5	4
P 1	1.2	1 2	1 2	1 2	1 2	1.3	1 3	1 3	1 3	1 3	P 1

APPENDIX D (Continued)

DETERMINING THE PERCENTAGE OF CASES SOUGHT

TABLES 130 to 139

N=	130	131	132	133	134	135	136	137	138	139	=N
P99	129	130	131	132	133	134	135	136	137	137	P99
96	125	126	127	128	129	130	131	132	132	133	96
90	117	118	119	120	121	122	122	123	124	125	90
80	104	105	106	106	107	108	109	110	110	111	80
75	98	98	99	100	101	101	102	103	104	104	75
70	91	92	92	93	94	95	95	96	97	97	70
65	85	85	86	86	87	88	88	89	90	90	65
60	78	79	79	80	80	81	82	82	83	83	60
50	65	66	66	67	67	68	68	69	69	70	50
40	52	52	53	53	54	54	54	55	55	56	40
35	46	46	46	47	47	47	48	48	48	49	35
30	39	39	40	40	40	41	41	41	41	42	30
25	33	33	33	33	34	34	34	34	35	35	25
20	26	26	26	27	27	27	27	27	28	29	20
10	13	13	13	13	13	14	14	14	14	14	10
4	5	5	5	5	5	5	5	5	6	6	4
P 1	1 3	1 3	1.3	1.3	1 3	1.4	1 4	1.4	1.4	1.4	P 1

TABLES 140 to 149

N=	140	141	142	143	144	145	146	147	148	149	=N
P99	139	140	141	142	143	144	145	146	147	148	P99
96	134	135	136	137	138	139	140	141	142	143	96
90	126	127	128	129	130	131	131	132	133	134	90
80	112	113	114	114	115	116	117	118	118	119	80
75	105	106	107	107	108	109	110	110	111	112	75
70	98	99	99	100	101	102	102	103	104	104	70
65	91	92	92	93	94	94	95	96	96	97	65
60	84	85	85	86	86	87	88	88	89	89	60
50	70	71	71	72	72	73	73	74	74	75	50
40	56	56	57	57	58	58	58	59	59	60	40
35	48	49	50	50	50	51	51	51	52	52	35
30	42	42	43	43	43	44	44	44	44	45	30
25	35	35	36	36	36	36	37	37	37	37	25
20	28	28	28	29	29	29	29	29	30	30	20
10	14	14	14	14	14	15	15	15	15	15	10
4	6	6	6	6	6	6	6	6	6	6	4
P 1	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1 5	P 1

APPENDIX D (Continued)

DETERMINING THE PERCENTAGE OF CASES SOUGHT

TABLES 150 to 159

N=	150	151	152	153	154	155	156	157	158	159	=N
P99	149	149	150	151	152	153	154	155	156	157	P99
96	144	145	146	147	148	149	150	151	152	153	96
90	135	136	137	138	139	140	140	141	142	143	90
80	120	121	122	122	123	124	125	126	126	127	80
75	113	113	114	115	116	116	117	118	119	119	75
70	105	105	106	107	108	109	109	110	111	111	70
65	98	98	99	99	00	101	101	102	103	103	65
60	90	91	91	92	92	93	94	94	95	95	60
50	75	76	76	77	77	78	78	79	79	80	50
40	60	60	61	61	62	62	62	63	63	64	40
35	53	53	53	54	54	55	55	55	55	56	35
30	45	45	46	46	46	47	47	47	47	48	30
25	38	38	38	38	39	39	39	39	40	40	25
20	30	30	30	31	31	31	31	31	32	32	20
10	15	15	15	15	15	16	16	16	16	16	10
4	6	,6	6	,6	6	6	,6	6	6	6	4
P 1	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	P 1

TABLES 160 to 169

N=	160	161	162	163	164	165	166	167	168	169	=N
P99	158	159	160	161	162	163	164	165	166	167	P99
96	154	155	156	156	157	158	159	160	161	162	96
90	144	145	146	147	148	149	149	150	151	152	90
80	128	128	130	130	131	132	133	134	134	135	80
75	120	121	122	122	123	124	125	125	126	127	75
70	112	113	113	114	115	116	116	117	118	118	70
65	104	105	105	106	107	107	108	109	109	110	65
60	96	97	97	98	98	99	100	100	101	101	60
50	80	81	81	82	82	83	83	84	84	85	50
40	64	64	65	65	66	66	66	67	67	68	40
35	56	56	57	57	57	58	58	58	59	59	35
30	48	48	49	49	49	50	50	50	50	51	30
25	40	40	41	41	41	41	42	42	42	42	25
20	32	32	33	33	33	33	33	33	34	34	20
10	16	16	16	16	16	17	17	17	17	17	10
4	6	6	6	7	7	7	7	7	7	7	4
P 1	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	P 1

APPENDIX D (Continued)

DETERMINING THE PERCENTAGE OF CASES SOUGHT

TABLES 170 to 179

N=	170	171	172	173	174	175	176	177	178	179	=N
P99	168	169	170	171	172	173	174	175	176	177	P99
96	163	164	165	166	167	168	169	170	171	172	96
90	153	154	155	156	157	158	158	159	160	161	90
80	136	137	138	138	139	140	141	142	142	143	80
75	128	128	129	130	131	131	132	133	134	134	75
70	119	120	120	121	122	123	123	124	125	125	70
65	111	111	112	112	113	114	114	115	116	116	65
60	102	103	103	104	104	105	106	106	107	107	60
50	85	86	86	87	87	88	88	89	89	90	50
40	68	68	69	69	70	70	70	71	71	72	40
35	60	60	60	61	61	61	62	62	62	63	35
30	51	51	52	52	52	53	53	53	53	54	30
25	43	43	43	43	44	44	44	44	45	45	25
20	34	34	34	35	35	35	35	35	36	36	20
10	17	17	17	17	17	17	18	18	18	18	10
4	7	7	7	7	7	7	7	7	7	7	4
P 1	1.7	1.7	1 7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	P 1

TABLES 180 to 189

N=	180	181	182	183	184	185	186	187	188	189	=N
P99	178	179	180	181	182	183	184	185	186	187	P99
96	173	174	175	176	177	178	179	180	180	181	96
90	162	163	164	165	166	167	167	168	169	170	90
80	144	145	146	146	147	148	149	150	150	151	80
75	135	136	137	137	138	139	140	140	141	142	75
70	126	127	127	128	129	130	130	131	132	132	70
65	117	118	118	119	120	121	121	122	122	123	65
60	108	109	109	110	110	111	112	112	113	113	60
50	90	91	91	92	92	93	93	94	94	95	50
40	72	72	73	73	74	74	74	75	75	76	40
35	63	63	64	64	64	65	65	65	66	66	35
30	54	54	55	55	55	56	56	56	56	57	30
25	45	45	46	46	46	46	47	47	47	47	25
20	36	36	36	37	37	37	37	37	38	38	20
10	18	18	18	18	18	19	19	19	19	19	10
4	7	7	7	7	7	7	7	7	8	8	4
P 1	1 8	1.8	1.8	1.8	1 8	1.9	1 9	1 9	1.9	1 9	P 1

APPENDIX D (Continued)

DETERMINING THE PERCENTAGE OF CASES SOUGHT

TABLES 190 to 199

N=	190	191	192	193	194	195	196	197	198	199	=N
P99	188	189	190	191	192	193	194	195	196	197	P99
96	182	183	184	185	186	187	188	189	190	191	96
90	171	172	173	174	175	176	176	177	178	179	90
80	152	153	154	154	155	156	157	158	158	159	80
75	143	143	144	145	146	146	147	148	149	149	75
70	133	134	134	135	136	137	137	138	139	139	70
65	124	124	125	125	126	127	127	128	129	129	65
60	114	115	115	116	116	117	118	118	119	119	60
50	95	96	96	97	97	98	98	99	99	100	50
40	76	76	77	77	78	78	78	79	79	80	40
35	67	67	67	68	68	68	69	69	69	70	35
30	57	57	58	58	58	59	59	59	59	60	30
25	48	48	48	48	49	49	49	49	50	50	25
20	38	38	38	39	39	39	39	39	40	40	20
10	19	19	19	19	19	20	20	20	20	20	10
4	8	8	8	8	8	8	8	8	8	8	4
P 1	1.9	1.9	1.9	1 9	1.9	2.0	2.0	2.0	2.0	2.0	P 1

RAW SCORE TALLY SHEET

N=_____

EVENT _____ SEASON _____ AGE ____ SEX ___ SCHOOL _____

Directions Tally all raw scores as follows–

Percentiles		100-	75-	50-	25-
99 ___		99-	74-	49-	24-
96 ___	125	98-	73-	48-	23-
90 ___	124	97-	72-	47-	22-
80 ___	123	96-	71-	46-	21-
75 ___	122	95-	70-	45-	20-
70 ___	121	94-	69-	44-	19-
65 ___	120	93-	68-	43-	18-
60 ___	119	92	67-	42-	17
50 ___	118	91	66-	41-	16-
40 ___	117	90-	65-	40-	15-
35 ___	116	89-	64-	39-	14-
30 ___	115	88	63-	38-	13
25 ___	114	87-	62-	37-	12-
20 ___	113	86-	61	36	11-
10 ___	112	85-	60-	35-	10-
4 ___	111	84	59	34-	9
1 ___	110	83	58-	33-	8-
	109	82	57	32	7
	108	81	56	31	6
	107	80	55-	30-	5
	106	79	54	29-	4
	105	78	53	28	3
	104	77	52	27-	2
	103	76	51	26	1
	102				0
	101				

APPENDIX E

TIME PRESCRIPTION DIRECTIONS AND FORM

Directions For PREPARING TIME PRESCRIPTION FORM

1. Type, or print legibly.
2. List complete mailing address (including zip code).
3. Program Time (In Minutes): Insert the time for that portion of the period that you desire to individualize instruction. (Note: It is suggested you devote a portion of each period to group/social activities.)
4. Raw scores/stanines: Record the raw score/stanine score for each factor, stanine scores should range from 1 to 9.
5. Time: *To be filled in by the Project ACTIVE staff.*
6. Age, Sex, I.Q., M.A.: Information desired by the Project Director so that state-wide norms can be established. Note: Implementing districts/agencies will receive a copy of the norms by June/July, 1976 Also include the name of the test used to determine mental age.
7. Handicapping Condition: List classified students as EMR, TMR, NI, PI, ED, etc. List non-classified students as LMA (low Motor Ability), LPV (Low Physical Vitality), or Normal.
8. Subject #: Spaces have been provided for the submission of raw scores/stanine scores for 12 subjects. If you have data for more than 12 subjects, reproduce the original sheet and *change the subject #'s accordingly*
9. Mail form(s) to: Dr. Thomas M. Vodola, Township of Ocean School District, Dow Avenue, Oakhurst, N.J. 07755 (Phone No.: 201-229-4100 Ext. 260)

RETURN PROCEDURE

1. The Project ACTIVE staff will feed the data into the mini-computer, record the time prescriptions for each subject; include a packet of resource and tasks activities; and return to the instructor making the request.

PROCEDURE FOR USING RESOURCE TASKS AND ACTIVITIES MATERIALS

1. Review packet: You will note activities are grouped according to the four physical fitness factors.
2. Prescribe tasks and activities: Identify a child's time prescription for one factor and select tasks from the appropriate section of the manual. For example, if subject 1 received a time prescription of 3:20 (three minutes and twenty seconds) for arm hang, refer to the section that lists arm and shoulder strength tasks and activities and select items for that time duration. (Note: It is suggested that one minute per task be used as a guideline. However, it is only a guideline as the more complex tasks may require more time.)

PROJECT TITLE III ESEA ACTIVE

Township of Ocean School District Title III, ESEA, Project No. 72-341

PHYSICAL FITNESS TIME PRESCRIPTION FORM*

Instructor: _____ School: _____ Phone: _____

Address: _____ Zip Code: _____

Program Time: (In minutes) _____ M.A. Test _____

Subject #	Arm Hang		Sit-ups		Standing Br Jump		Endurance		Age	Sex	I.Q.	M.A.	Handicapping Condition
	Stanine	Time	Stanine	Time	Stanine	Time	Stanine	Time					
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													

*Please record data as per the illustration

Raw Score → [/] ← Stanine Score

APPENDIX F

ANSWERS FOR PROBLEMS CITED IN TEACHER LEARNING EXPERIENCES

Problem #1: Determining Percentile and Stanine Scores

Test Factors	Raw Score	Percentile	Stanine
Arm/Shoulder Strength	1	4	2
Abdominal Strength	30	70	6
Explosive Leg Power	35	4	2
Cardiorespiratory Endurance	34	96	8
		Composite stanine =>	18

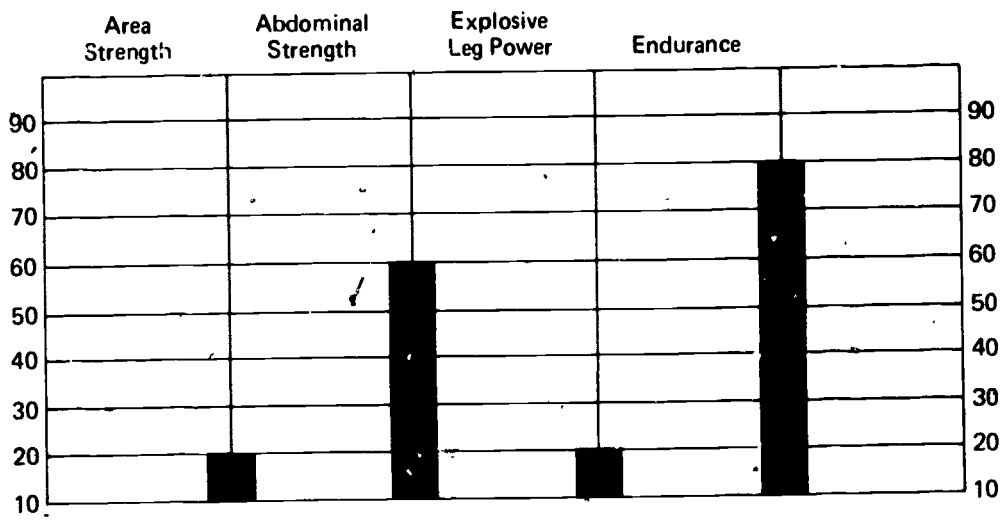
Problem #2: Determining the Physical Fitness Index (PFI)

$$PFI = \frac{\text{(Composite stanine) x 10}}{\text{Number of Test Factors}}$$

$$PFI = \frac{(18) \times 10}{4} = \frac{180}{4} = 45$$

Problem #3: Construct an Individual Profile Chart

Physical Fitness Profile Chart



Problem # 4: Convert Stanine Scores to Time Prescription

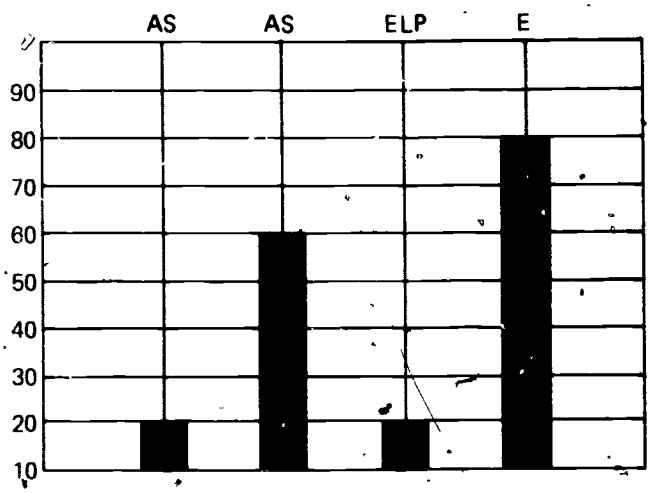
PHYSICAL FITNESS TIME PRESCRIPTION CHART

Deviation Points Below 90: 180

Exercising Time: 900

Prescription Time Multiplier: 180 | 900 = 5

Adjustment Time: 0



Stanine Scores

					Total
Deviation Points Below 90	70	30	70	10	180
Prescription Time Multiplier	5	5	5	5	
Sub-total	350	150	350	50	900
Adjustment Time	0	0	0	0	0
Prescription Time, Seconds	350	150	350	50	900
Prescription Time, Minutes/Seconds	5:50	2:30	5:50	:50	15:00

Problem # 5: Select Tasks and Activities[1]

Factor	Tasks and Activities	Time
Arm/Shoulder Strength	Crab Walk	1:00
	Inch Worm	1:00
	Wall Push-up (left arm only)	1.00*

[1]The use of an asterisk is indicative of a task prescribed on the basis of the teacher's subjective evaluation

APPENDIX F (Continued)

Factor	Tasks and Activities	Time
Arm/Shoulder Strength	Modified Push-up (left arm only)	1:00*
	Overhead Ladder	1:00*
	Parallel Bar Travelling	:50*
Abdominal Strength	Knee Circles	1:30*
	Belly Dance	1:00
Explosive Leg Power	Point Toes	1:00
	Blast Off	1:00
	Jumping the Square	1:00
	Leg Straightener	1:00
	Tiptoes	1:00
	Jump and Stretch	:50
Cardiorespiratory Endurance	Rope Skipping	:50

APPENDIX G

ACTIVITIES RECOMMENDED FOR BASIC BODY TYPES

Mesomorphic endomorphs (S-Types: 631, 532, 541, 542, 543)	Endomorphic mesomorphs (S-Types: 452, 361, 462, 451, 453)	Extreme mesomorphs (S-Types: 171, 162, 262, 172, 252)	Ectomorphic mesomorphs (S- Types: 253, 254, 163, 164, 265)	Mesomorphic ectomorphs (S-Types: 235, 126, 136, 145, 146)
Table Tennis	Baseball	Sprints	Lightweight Wrestling	Bicycling
Floating (swimming)	Football (lineman)	Basketball	Long-Distance Running	Cross Country
Croquet	Heavyweight Wrestling	Middleweight Boxing	Tennis	Basketball Center (short periods)
Fly and Bait Casting	Swimming	Middleweight Wrestling	Gymnastics	Archery
Bowling	Soccer (backs)	Quarterbacks	Weight Lifting	Also many athletic games, except those requiring weight and sheer strength
	Ice Hockey (backs)	Football (backs)	Javelin	
	Weight Tossing	Divers	Pole Vault	
		Tumbling	High Jump	
		Lacrosse	Fencing	
		Soccer (forwards)	Badminton	
		Ice Hockey (forwards)	Skiing	
		Handball	Jockey	

(Source Carl E Willgoose, "Body Type and Physical Fitness," *Journal of Health, Physical Education and Recreation* 27 26-28, September 1956) Permission to publish granted

APPENDIX H

PROJECT ACTIVE
SUPPLY AND EQUIPMENT NEEDS FOR PROGRAM IMPLEMENTATION

To: Adopting School Districts/Agencies

From: Dr. Thomas M. Vodola, Director, Project ACTIVE

Re: Supply/Equipment Needs for Program Implementation

The appended tables provide specific information relative to supply and equipment needs for program installation. The format has been designed to facilitate the identification of items for those who are adopting or adapting one phase of the program, or the total program. The information supplied includes:

- The specific item
- Essential items needed (coded with an "N")
- The number of items needed
- Items recommended (coded with an "R")
- The unit price of each item
- The source of the item

The tables reflect the basic needs for implementing the program in one school. It is recommended that one set be purchased for each additional school involved. (If a district has some of the items on hand, it obviates the need for that expenditure.)

Project Director
Thomas M. Vodola, Ed.D.
Township of Ocean School District
Ocean Township Elementary School
Dow Avenue
Oakhurst, N.J. 07755
201–229-4100 Ext. 260

APPENDIX H (Continued)

PROJECT ACTIVE SUPPLY/EQUIPMENT NEEDS[1]

COMPONENT ADOPTED ITEMS	TOTAL PROGRAM				Items Needed	LOW MOTOR ABILITY		LOW PHYSICAL VITALITY		NUTRITIONAL DEFICIENCIES		BREATHING PROBLEMS		POSTURAL ABNORMALITY		MOTOR DISABILITIES		COMMUNICATION DISORDERS	
	N	R	Cost	Source		N	R	N	R	N	R	N	R	N	R	N	R	N	R
PC5026 Shoulder Breadth, Length Caliper	X		74.90	J A Preston Corp 71 Fifth Avenue N.Y., N Y 10003	1					X									
PC5028 Large Skinfold (Fat Caliper)	X		142 45	J A Preston	1					X									
PC5155 Dry Spirometer	X		176 85	J A Preston	1														
PC5156 Disposable Paper Mouthpieces	X		31.60	J A. Preston	500							X							
PC5059 Flexometer		X	246 65	J A Preston	1							X							
or PC5054 Plastic Goniometer (Transparent)	X		20 20	J A. Preston	1											X			
PC5022A Symmetrigraf (Posture Grid)	X		80 50	J A Preston	1									X					
No. 305 Stall Bars, Starter Unit (optional)		X		Nissen Corp 930 27th Ave Cedar Rapids, Iowa	1										X				
No. 39 Wall Mounted Horizontal Ladder (optional)		X		Nissen Corp	1										X				
or Construct Horizontal Ladder (optional)		X		Maintenance Dept	1										X				X
No. 92602 Utility Playground Ball, PG8½	X		3 00	J L. Hammett Co 2393 Vaux Hall Rd Union, N J 07083	12	X										X			
No 92655 Fun Balls (Plastic) S-650	X		55	J L Hammett Co.	12	X										X			

[1] Contact source for unlisted prices

APPENDIX H (Continued)

PROJECT ACTIVE SUPPLY/EQUIPMENT NEEDS

COMPONENT ADOPTED ITEMS	TOTAL PROGRAM				Items Needed	LOW MOTOR ABILITY		LOW PHYSICAL VITALITY		NUTRITIONAL DEFICIENCIES		BREATHING PROBLEMS		POSTURAL ABNORMALITY		MOTOR DISABILITIES		COMMUNICATION DISORDERS	
	N	R	Cost	Source		N	R	N	R	N	R	N	R	N	R	N	R	N	R
No 92670 Saf T Bat (Plastic) No. 705	X		2 25	J L. Hammett Co	3	X										X			
Plastic Measuring Tape 36"	X			Local Fabric Shop				X		X				X					
White Shoe Polish, Bottle	X		55	Local Supermarket	3	X		X						X		X		1	
No 39170 Water Color Marking Pen, Black	X		.40	J L Hammett	1									X					
No. 61145 Pegboard and Pegs, No 7615 (optional)		X	3 45	J L Hammett	6 sets												X		
PEC1064 Walk On Letters	X		29.85	J A Preston	1 set	X												X	
No 9201 Audible Ball Electronic	X			Royal Nat'l Inst for the Blind, 224-6-8 Great Portland St London, W-1 England	1														
No 92663 Audi-Ball, No. AB-30 (optional)		X		J.L. Hammett														X	
No. 1-0357 Staley Sports Field Kit (optional)				American Printing House for the Blind 1839 Frankfort Ave P O. Box 6085 Louisville, Kentucky 40206	1														
No. 1-0304 Portable Audible Goal Locator		X		American Printing House for the Blind	1													X	
Barbells		X		J L. Hammett	1				X		X				X				

APPENDIX H (Continued)

PROJECT ACTIVE SUPPLY/EQUIPMENT NEEDS

COMPONENT ADOPTED ITEMS	TOTAL PROGRAM				Items Needed	LOW MOTOR ABILITY		LOW PHYSICAL VITALITY		NUTRITIONAL DEFICIENCIES		BREATHING PROBLEMS		POSTURAL ABNORMALITY		MOTOR DISABILITIES		COMMUNICATION DISORDERS	
	N	R	Cost	Source		N	R	N	R	N	R	N	R	N	R	N	R	N	R
Stopwatch	X			J L Hammett	1	X		X		X		X							
PEC2747A Beanbag Game		X	50 45	J A Preston	2												X		
PEC2747B Beanbag Set		X	32 40	J A Preston	1												X		
Chinning Bar	X			Nissen Corp	2			X							X		X		X
Mats, 5' x 10'	X			Nissen Corp	3	X		X				X		X		X		X	
No 92882 Number 3 Fleece Balls	X		1 50	J L Hammett	3	X										X		X	
No 92645 Number CT850 Endure Tetherball	X		10 90	J L Hammett	1	X										X			
PEC4806 Walk On Number Kit	X		17 85	J A Preston	1 set	X													
No 92656 Number S 630 Fun Balls	X		40	J L Hammett	12	X										X			
No 84252 Rubber Quoit Set	X		5 65	J L Han mett	1 set	X													
No 60676 Footsteps to Numbers, 6076	X		8 00	J L Hammett	1 set	X													
No 92730 Jump Roe (7')	X		1 30	J L Hammett	6			X		X		X							
Shape O Ball		X		Tupperware Products	1	X													X
PEC2600 Doorway Chinning Bar		X	14 95	J A Preston	1				X									X	
PEC2766A Deluxe Safe-T-Play Batting Set		X	56 90	J A. Preston	1		X											X	
PEC2771B Pitch Back		X		J A Preston	1		X												
Masking Tape		X		Local Store	6 roll		X											X	

APPENDIX H (Continued)

PROJECT ACTIVE SUPPLY/EQUIPMENT NEEDS

COMPONENT ADOPTED ITEMS	TOTAL PROGRAM				Items Needed	LOW MOTOR ABILITY		LOW PHYSICAL VITALITY		NUTRITIONAL DEFICIENCIES		BREATHING PROBLEMS		POSTURAL ABNORMALITY		MOTOR DISABILITIES		COMMUNICATION DISORDERS	
	N	R	Cost	Source		N	R	N	R	N	R	N	R	N	R	N	R	N	R
LP6050 Coordination Skills		X	12 95	Kimbo Educational P O Box 246 Deal, N J 07723	1	X													
EA606 7 Developing Perceptual Motor Needs		X	12 95	Kimbo Educational	1	X													
EA605 Developing Body Awareness		X	6 50	Kimbo Educational	1	X											X		X
EA655 Relaxation		X	6 50	Kimbo Educational	1	X							X		X		X		X
EA657 Dynamic Balance		X	12 95	Kimbo Educational	1	X													X
EA658 Balance Beam Activity		X	12.95	Kimbo Educational	1	X													
EA656 Pre Tumbling Skills		X	12 95	Kimbo Educational	1	X													X
LP5000 Developing Body Space Perception Motor Skills CM1056, 1058, 1079		X	15 75	Kimbo Educational	1	X											X		X
LP5000 Teaching Children Mathematics through Games		X	12 95	Kimbo Educational	1	X													
LP8060 To Move Is To Be		X	12 95	Kimbo Educational	1	X													
LP4000 Rhythmic Rope Jumping		X	10 95	Kimbo Educational	1	X		X			X		X						X
4032 34 Developing Exercises		X		Dance Records, Inc Waldwick, N J. 07463	1			X					X						
4008 Elementary School Exercises to Music		X		Dance Records, Inc.	1	X		X					X						X
Foot Disinfectant	X			Local Drug Store	1 Gal									X				X	

Department of Education

AND

PROJECT ACTIVE

ALL CHILDREN TOTALLY INVOLVED EXERCISING
Project No. 72-301, Title VI, ESEA, P.L. 89-10

Hereby Acknowledge With Sincere Appreciation The Completion Of The Mini-Intensive Training Course For Physical Education, Special Education, And Recreation Teachers Working With Handicapped Children.

By

_____

This course consisted of ten fourhour lectures, lecture-demonstrations on individualizing instruction and practicum work experiences with handicapped children; and developing specific competencies.

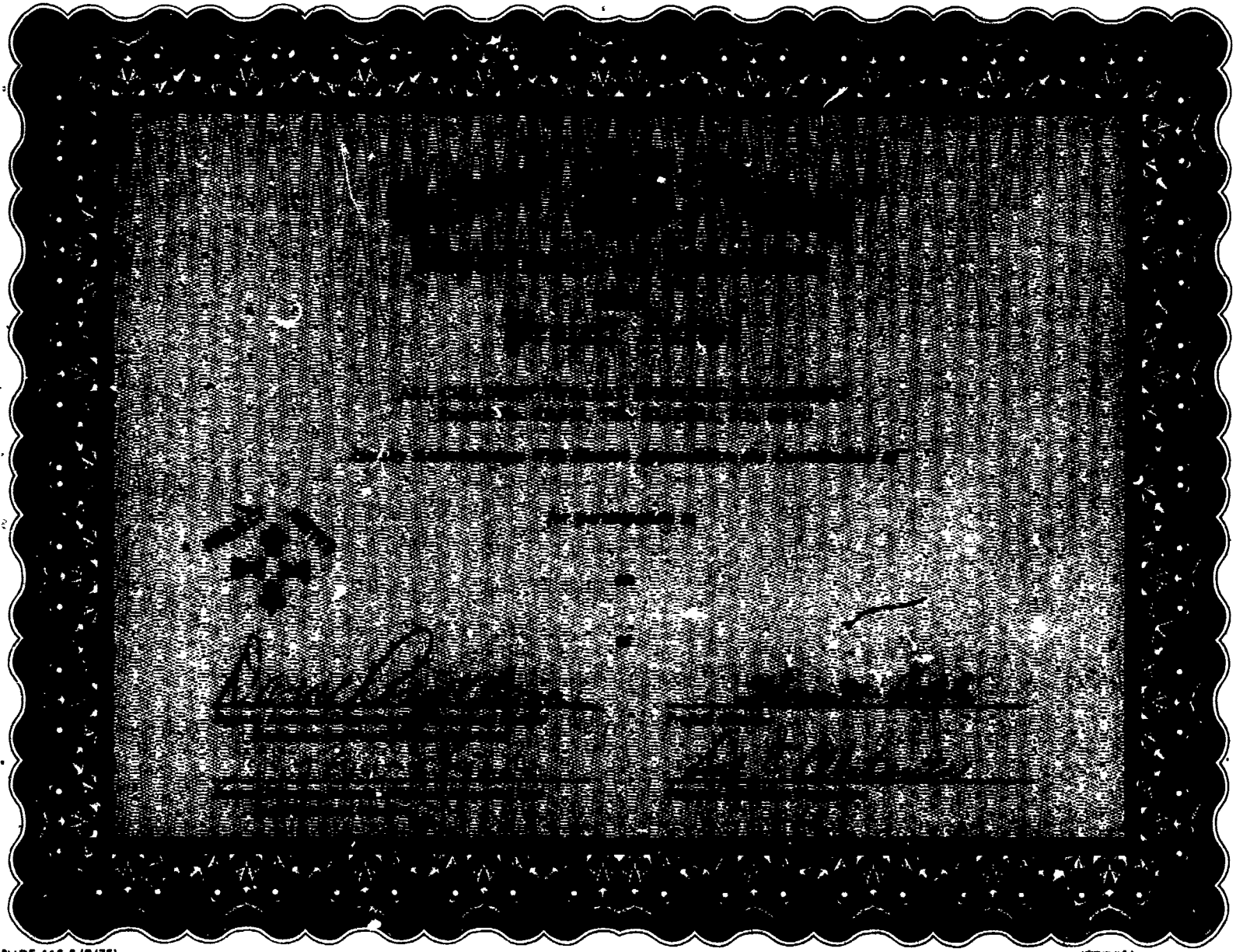
_____ _____
Project Director *Branch of Physical Education & Pupil Personnel Services*

_____ _____
Date *Physical Education Consultant*

GOES 480

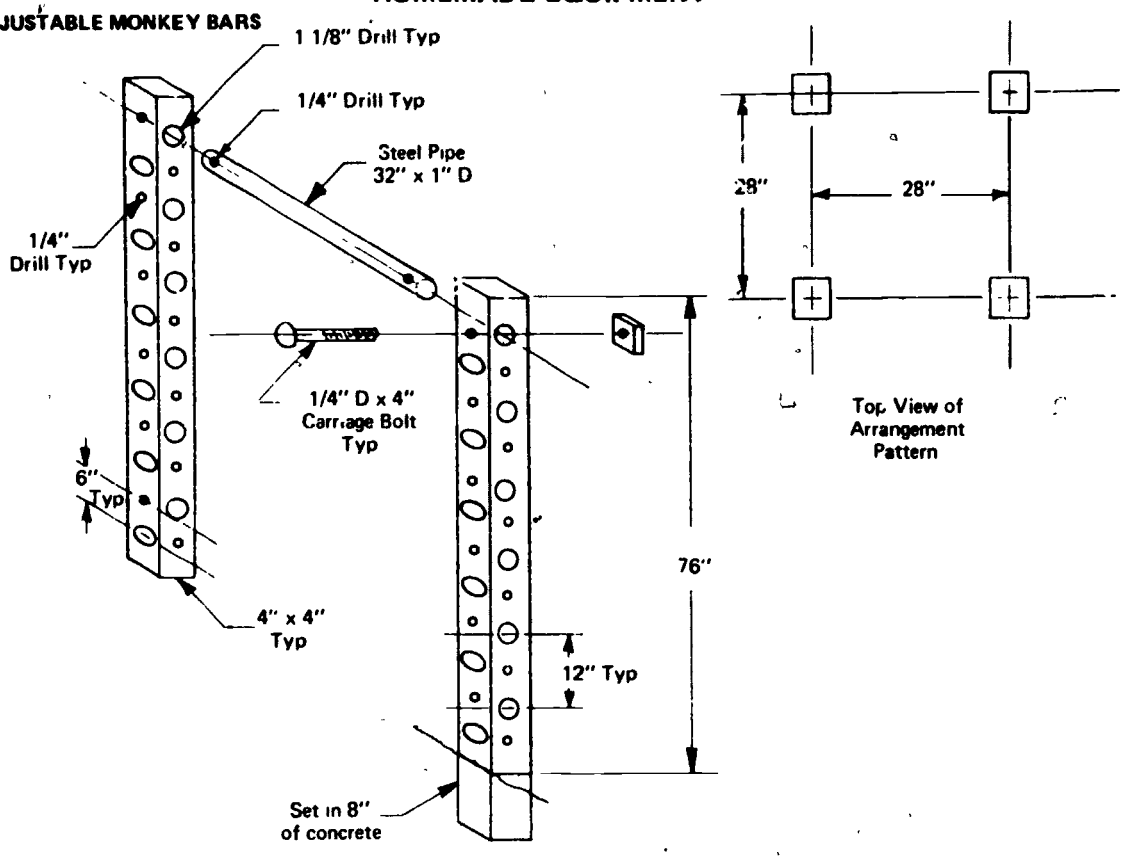
LITHO IN U.S.A.

NJDE 401-16 (12/74)



APPENDIX K
HOMEMADE EQUIPMENT[1]

ADJUSTABLE MONKEY BARS



Purpose:

Develop and improve muscular strength and endurance, general coordination, and agility.

Possible Activities:

- Use as an adjustable isometric station.
- Climb up (down, over, under, through).
- Use as horizontal bar for pull-ups (straight arm hang, flexed arm hand, gymnastic activities).
- Include as part of confidence (obstacle) course.
- Devise own activities, combinations, and routines.

Helpful Hints:

- Use any number of crossbars to devise different arrangements (top bar only for pull-ups, bottom bar only for crawling under, all bars for climbing).
- Have bars of different heights for participants of varying abilities.

Safety Considerations:

- Make certain all crossbars are secure before allowing use.
- Inset nuts into uprights.
- Provide spotting as necessary.

Materials:

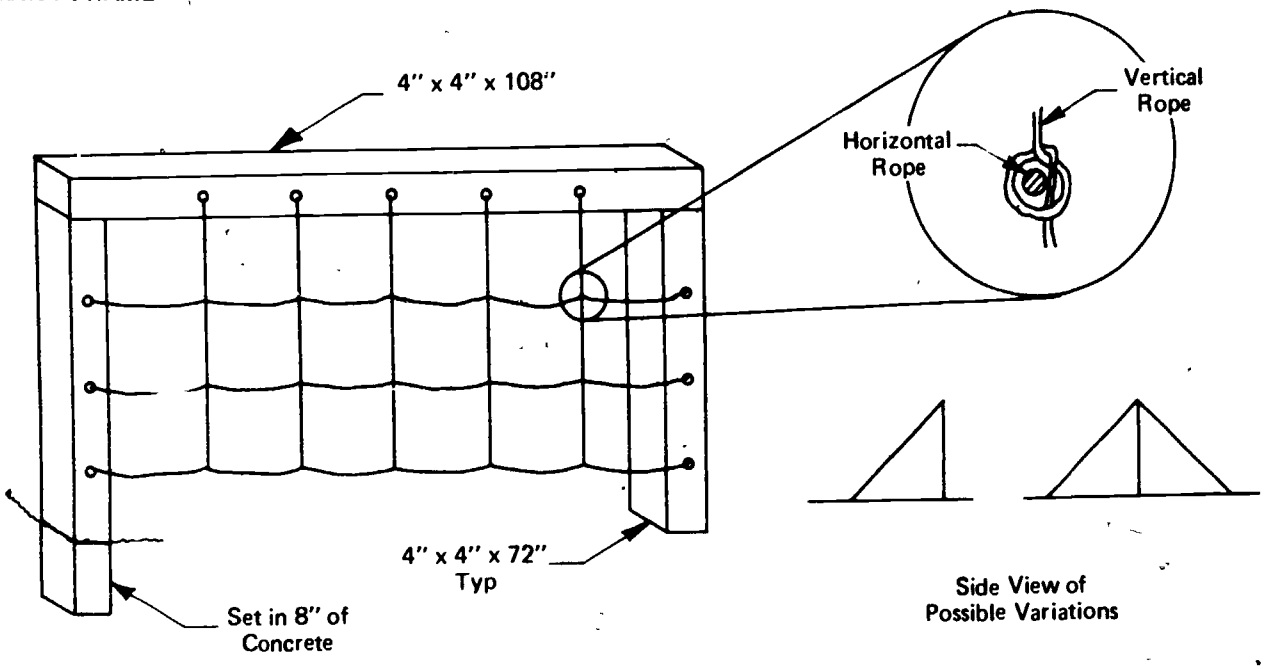
Steel pipe, beams, bolts and nuts, concrete, drill.

Approximate Cost:

$25.00 and up (depends on number of uprights).

[1]Courtesy of AAHPER and USDHEW (BEH).

CLIMBING FRAME



Purpose:

Develop and improve muscular strength and endurance, general coordination, and agility.

Possible Activities:

- Climb up (over, down, across, under, through).
- Use for relays, self-testing activities, and low organized games.
- Use as a goal for ball games and activities.
- Include as part of confidence (obstacle) course.
- Devise own activities, combinations, and routines.

Helpful Hints:

- Encourage participant to go one step higher until straddling top when it is just as easy to continue over as to come back down side climbed.

Safety Considerations:

- Place on sawdust, grass, or on other soft surface.
- Provide spotting as necessary.

Materials:

Wood, saw, nails, hammer, drill, rope or chain, concrete.

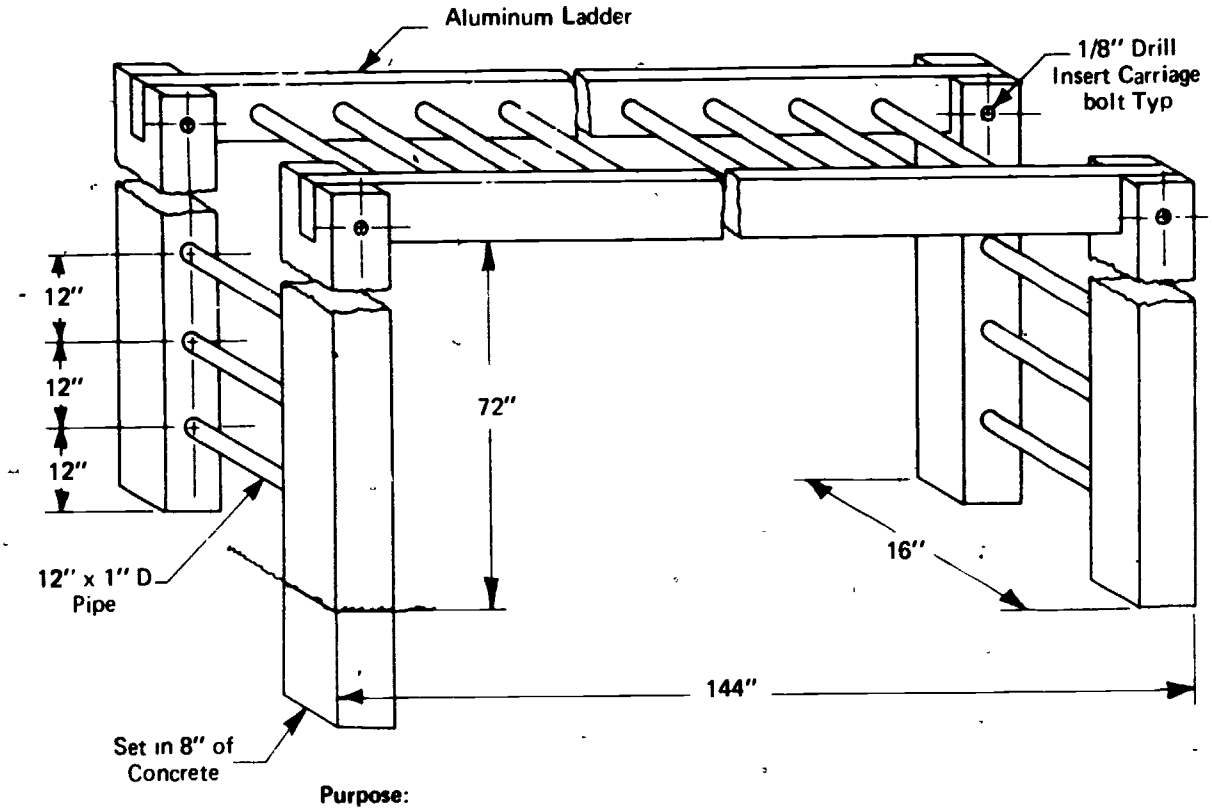
Approximate Cost:

$25.00

Construction Hints:

- Attach horizontal ropes first.
- Thread rope through holes and knot on both sides.
- Use chain (rope, cargo net, automobile tires).
- Construct different heights for participants of varying abilities

OVERHEAD LADDER



Purpose:

Develop and improve upper body muscular strength and endurance, and eye-hand coordination.

Possible Activities:

- Hand-walk across (forward, backward, sideward) on middle rungs (side supports) in various combinations.
- Hang by arms and/or legs (determine who can hang longest time).
- Use for pull-ups (flexed arm hang, self-testing activities, stunts).
- Crawl (creep, walk) across top.
- Include as part of confidence (obstacle) course
- Devise own activities, combinations, and routines.

Safety Considerations:

- Place over sawdust, grass, or other soft surface.
- Inset nuts into uprights.
- Provide spotting as necessary.

Materials:

4" x 4", aluminum ladder, drill, carriage bolts, steel pipe, concrete.

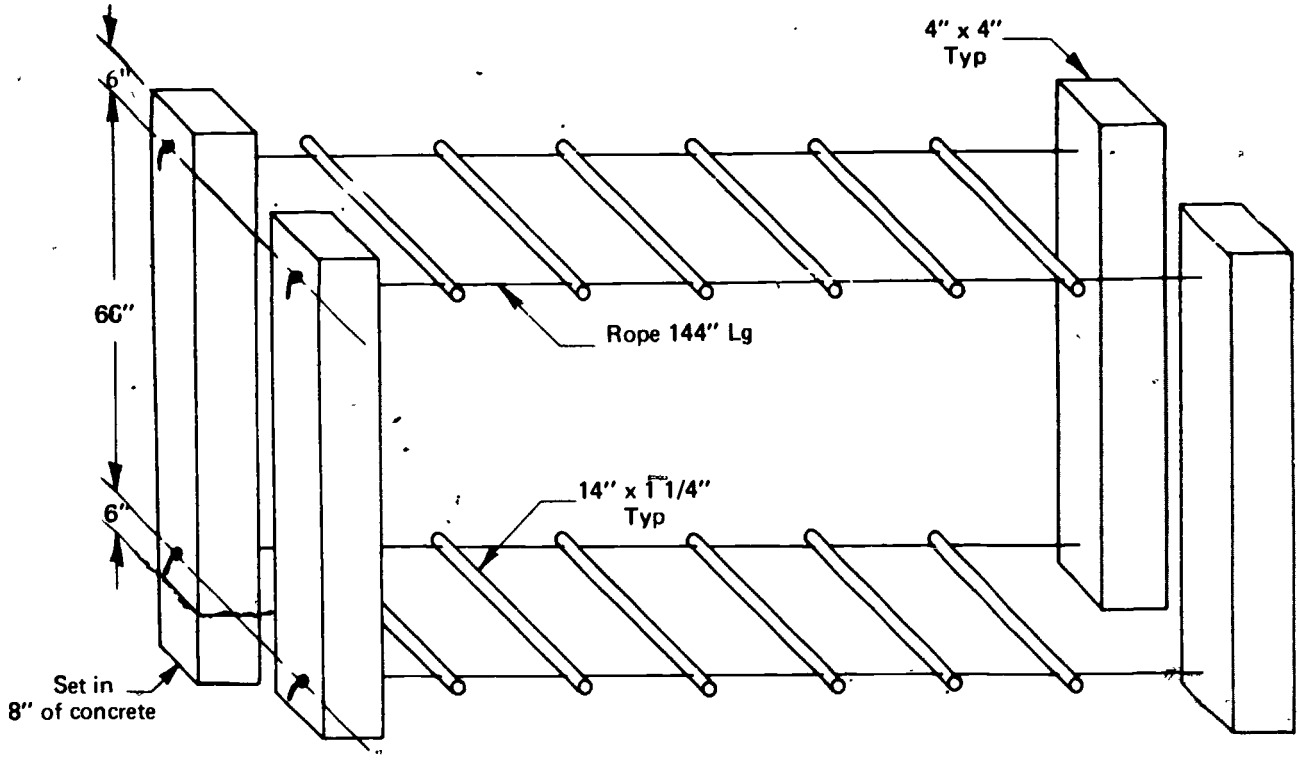
Approximate Cost:

$35.00

Construction Hints

- Drill 1" diameter holes 2" deep and insert pipe for steps
- Install upright steps before inserting supports into concrete.
- Attach ladder to supports with ropes for additional variations.

SWINGING OVERHEAD LADDER



Purpose:

Develop and improve upper body muscular strength and endurance, general, eye-foot, and eye hand coordination, and dynamic balance.

Possible Activities:

- Hand walk (crawl, creep, walk) across (forward, backward, sideward) in various combinations.
- Use for pull-ups (straight arm hang, flexed arm hand, self-testing activities stunts).
- Hang by arms and/or legs (determine who can hang longest time).
- Use as a goal for ball games and activities.
- Include as p. of confidence (obstacle) course.
- Devise own activities, combinations, and routines.

Helpful Hints:

- Attach (remove) top or bottom to meet participants needs.
- Attach one end through top holes and other end through bottom holes.

Safety Considerations:

- Place over sawdust, grass or other soft surface.
- Provide spotting as necessary.

Materials:

Wood beams, drill, concrete, rope ladder(s).

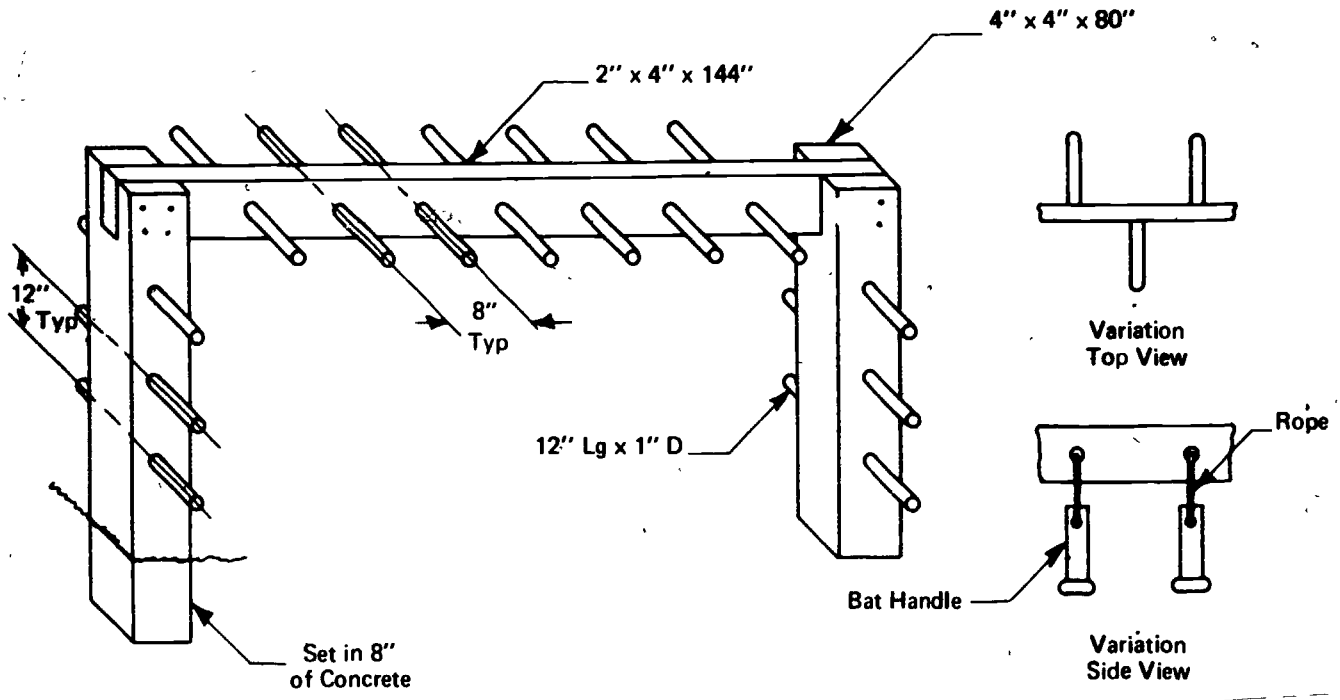
Approximate Cost:

$25.00

Construction Hints:

- Drill, supports thread rope through, and know on both sides.

PEG OVERHEAD LADDER



Purpose:

Develop and improve upper body muscular strength and endurance, general, and eye-hand coordination.

Possible Activities:

- Hand-walk (crawl, creep, walk) across (forward, backward, sideward) in various combinations.
- Use for pull-ups (straight arm hang, flexed arm hang, self-testing activities, stunts).
- Include as part of confidence (obstacle) course.
- Devise own activities, combinations, and routines.

Helpful Hints:

- Stagger dowels in crossbar to encourage appropriate hand-walk pattern and movements (see top view above).

Safety Considerations:

- Place over sawdust, grass, or other soft surface.
- Provide spotting as necessary.
- Shellac dowels to reduce possibilities of splintering.

Materials:

Wood, drill, saw, nails, hammer, concrete, wood dowels (broomstick).

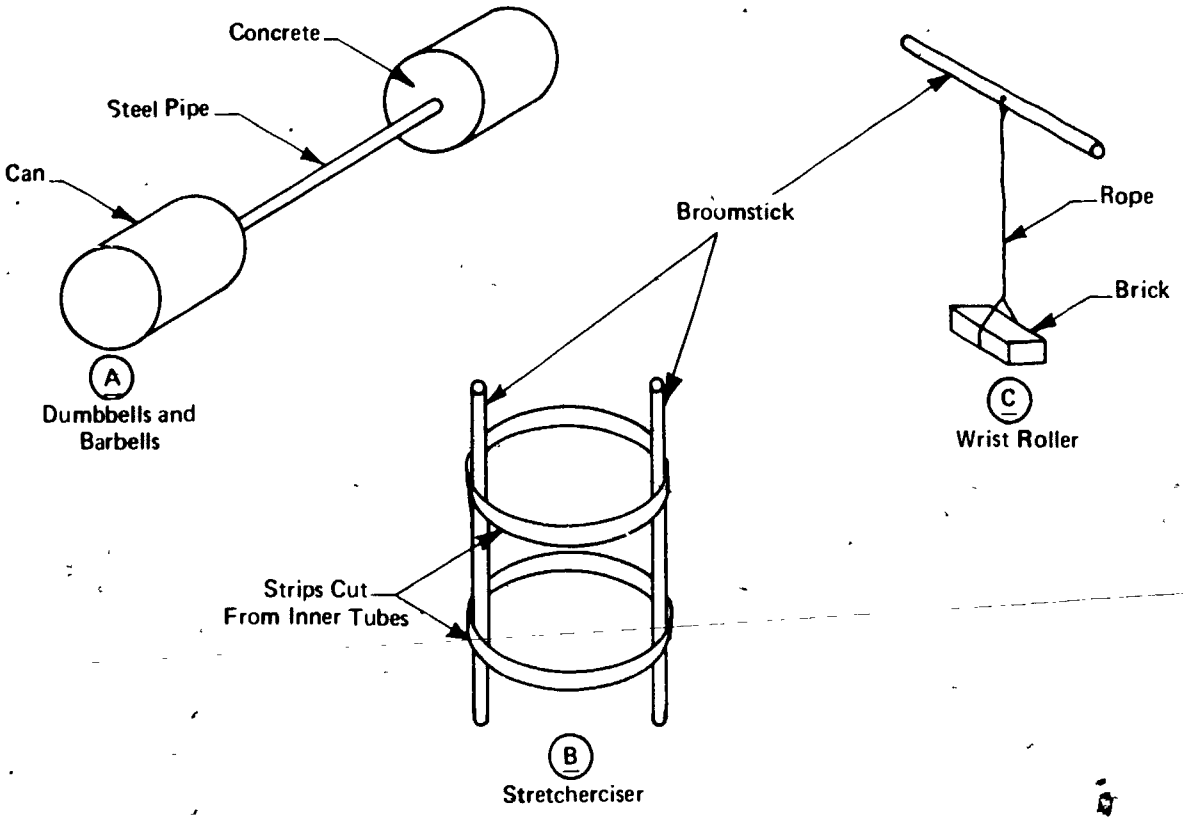
Approximate Cost:

$15.00

Construction Hints:

- Cut 2" x 4" notch in top of upright and set bottom of upright in concrete.
- Drill crossbar and insert dowels.
- Drive nails from top and through dowels to secure.
- Install crossbar and nail or bolt securely.
- Drill and install dowels in uprights if desired.

EXERCISE EQUIPMENT



Purpose:

Develop and improve flexibility and muscular strength and endurance in specific muscle groups.

Possible Activities:

- Use for weight or Resistance Training Activities (p. 12).
- Develop isometric and/or isotonic patterns.
- Devise own activities, combinations, and routines.

Helpful Hints:

- Vary size of cans for different weights (orange juice, soup, coffee, oil) (A).
- Tape broomstick to provide hand grips (B and C).
- Add more or wider inner tube strips for greater resistance (B).
- Drill hole through broomstick to attach rope for wrist roller, rotate handle to wrap rope and raise weight.
- Use inner tube strips (whole bicycle tubes) for stretcherciser

Safety Considerations:

- Prevent injury to back, legs, toes, fingers, and damage of floor by handling weights carefully
- Tack inner tube strips to broomstick to prevent slippage (B).
- Provide spotting as necessary.

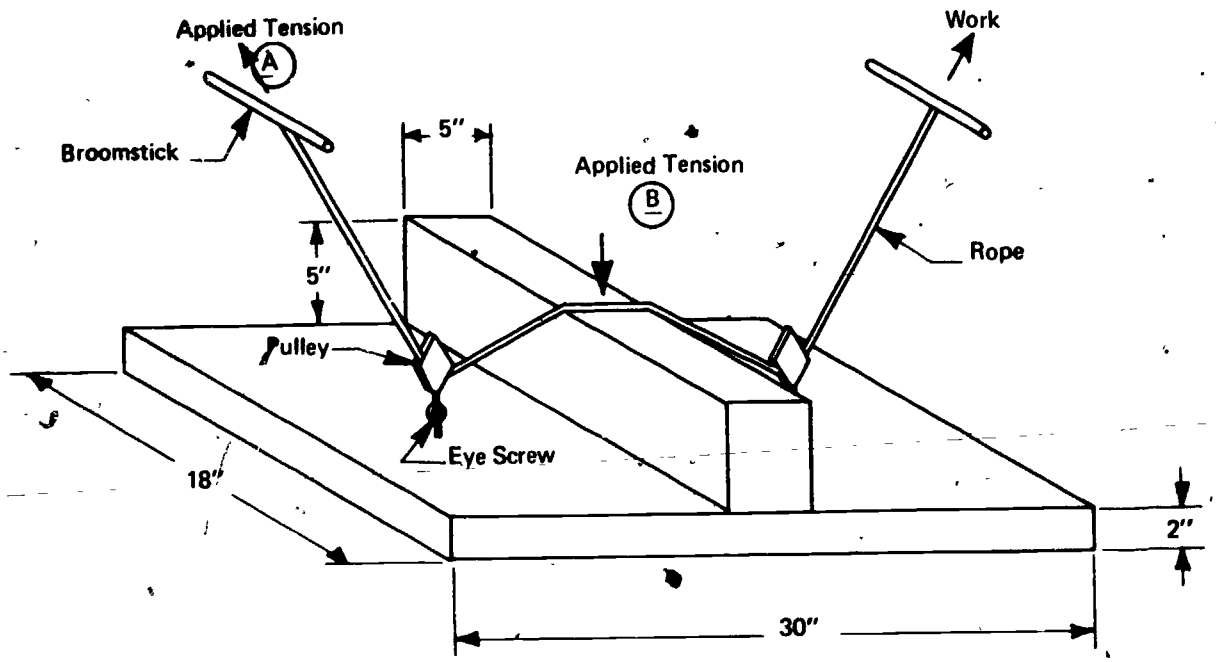
Materials:

Steel pipe, empty cans, concrete, broomsticks, rope, old inner tube, brick, drill

Approximate Cost:

Varies from $0.00 to . ?

TEAM EXERCISER



Purpose:

Develop and improve flexibility and muscular strength and endurance in specific muscle groups.

Possible Activities:

- Use for weight or Resistance Training Types of Activities (p. 12).
- Develop isometric and/or isotonic patterns.
- Devise own activities, combinations, and routines.

Helpful Hints:

- Have one teammate apply tension at points shown in diagram by pulling on handle (A) and standing on rope at point (B); second teammate performs exercise by pulling or lifting at handle indicated *work*; apply enough tension during first 5-10 seconds to prevent any movement (isometric), and then release tension slowly to allow full range of movement (isotonic) for another 8-15 seconds.

Safety Considerations:

- Keep fingers clear of pulleys to avoid injury.
- Have one participant position himself so pulley is directly between his feet.
- Draw (paint, use contact paper) footprints on board to aid beginners.

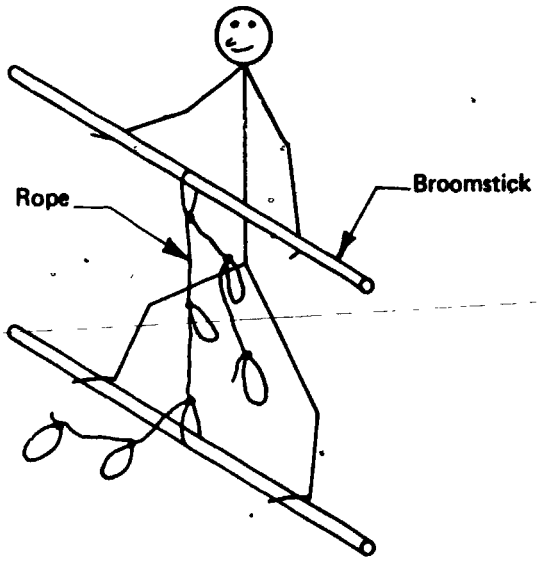
Materials:

Eye screws (2), simple pulleys (2), wood, nails, broomstick, rope, saw, hammer.

Approximate Cost:

$5.00

ISOMETRIC EXERCISER



Purpose:

Develop and improve muscular strength and endurance.

Possible Activities:

- Use for isometric exercises and for weight or Resistance Training Types of Activities (p. 12).
- Tug of war, combatives, and other competitive activities.
- Devise own activities, combinations, and routines.

Helpful Hints:

- Tape broomstick to provide hand grips.

Safety Considerations:

- Prevent slippage during performance of activities by securing knots firmly.

Materials:

Broomsticks (2), rope (10'-15').

Approximate Cost:

None

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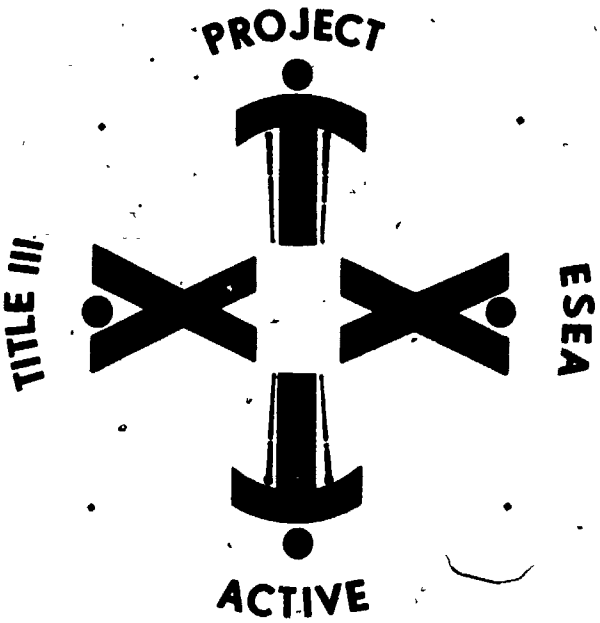
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