A program for neurological organization is explained and its purposes are stated. Hints are given for working with both child and parents, and form for evaluating measures of neuromotor fitness is included. Also provided is a checklist for rating motor exploration, including movements performed lying on the back, on the knees, or standing or on mats, as well as balance, trampoline and creative movement, and perception activities (tactile, visual, kinesthetic, eye-hand coordination, and manipulative skills). Special techniques and equipment to be used are listed, a diagram of the gymnasium and a clinician data sheet are supplied. (JD)
A PROGRAM FOR
NEUROLOGICAL ORGANIZATION

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PROJECT ON RECREATION AND FITNESS FOR THE MENTALLY RETARDED
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INTRODUCTION

Children grow and develop neurologically from birth to maturity in a definite recognizable sequential pattern. Each level of development serves as a base for further development in the next stage of neurological maturity. As a result of neurological (neuromotor) experiences at one level, in which the child explores the interrelationship of kinesthetic, tactile, visual, and auditory perception, a coordinated development of the neuromotor system takes place. Information, skills, and awarenesses gained at one level are carried over and utilized in the next.

Four recognized levels of development in which there is progressive movement exploration are: (1) moving arms and legs without forward movement (2) crawling (3) creeping (4) walking. When there is an omission or interruption in any of these developmental stages performance at the next stage will be affected.

An interruption in or the omission of any developmental level could be the result of trauma before or at birth, childhood diseases or accidents which might result in neurological impairment. On the other hand, it may simply be a result of overly protective parents who will not allow the child the opportunity for movement exploration and experiences. Whenever adequate neuromotor experiences are lacking in the developmental sequence there is less than optimum neurological organization.

Neurological disorganization as seen in some children is severe and quite recognizable while in others it may be mild and not be noticeable except in acts requiring fine and highly coordinated neuromotor performance such as reading and writing. It is, therefore, the purpose of this program to measure and evaluate the developmental performance level of each child and to plan a program of activities designed to improve his performance. In some instances it will be necessary to provide the opportunity for the child to experience the neuromotor activities which were common to that level of development which may have been interrupted or omitted.

Since neurological organization is so essential to visual perception, spacial relationships, reading skills and writing, an improvement in the neuromotor area should contribute to increased performance in the academic areas as well.

A child's self image and his social interaction with others depends to a large extent on how he sees himself, his body, and what he can do with it. Through increasing the individual's range of movement, his control over his body in performance, and his confidence and interest in attempting new activities, he will perhaps see himself and others in his environment in a different light.

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The purposes of the program are:

(1) to develop a level of physical fitness in the child which would increase his potential to perform basic movement skills and to teach the child the motor skills so necessary for his social and psychological development.

(2) to provide an experience for physical education majors in teaching exceptional children.

(3) to develop activities and teaching techniques for the mentally retarded child, and

(4) to assist teachers of special classes to initiate physical education programs into their curriculum.
HELPFUL HINTS IN WORKING WITH THE CHILD AND PARENTS

1. Always be dressed in your major's uniform when working with the child as this adds much to the cooperation you will get both from the child and parent.

2. Become a friend of the child as well as his teacher. Teach him your name, (first name is less formal, but use your own judgment) repeat it often, and get to know his parents.

3. In observing and evaluating the child always attempt to look at him from not only the physical performance standpoint, but his social and emotional performance as well: alone and in a group.

4. Make a game of initial measures (see measures of motor fitness sheet). But use no measures which seem inappropriate for your child. Remeasure at end of the program.

5. Capitalize on your child's interests and imagination in suggesting activities, but also guide him toward those activities which he needs most.

6. You can expect progress to be slow and uneven from week to week and yet dramatic at times. When your child has successfully accomplished something let him repeat it and enjoy it rather than rushing on to a new activity.

7. Be generous with encouragement and praise achievement, be it ever so small.

8. Do not be too insistent on quality performance because many of the activities are designed for the child to benefit from the inherent movement experience and a pleasurable attitude toward the experience is very important.

9. Avoid activity which might be too strenuous at first since most of the children tire easily. In some cases it would possibly be wise to return the child to the parent before the hour is up.

10. Always start the evening workout on time and don't run overtime. It is better to have the child looking forward to a planned future activity.

11. In recommending exercises to the parents for home performance it will be necessary to demonstrate and write down what you expect them to do. The parents are interested and willing but are not physical education majors; therefore, they are most anxious to follow your advice.

12. If there is a question in your mind concerning the safety of a given activity, don't use it with the child. At the end of each session we want to return the children to their parents improved and uninjured.

13. The parents and, from time to time, guest observers will be seated in the gymnasium bleachers. Ignore their presence and your child will probably do the same.

14. All the instruments for measuring will be kept in a box in the testing area. (See map) Return each instrument to box after using it.
MEASURES OF NEUROMOTOR FITNESS

NAME ___________________________ AGE _______ WEIGHT _______ DATE ____________

Preferred:
Hand R____ L____ Eye R____ L____ Foot R____ L____ Ear R____ L____
Eye-Hand Reaction time ____ ____ ____ ____ ____ Average _________
Eye-Foot Reaction time ____ ____ ____ ____ ____ Average _________
Grip Strength ____________________________ Vital Air Capacity ________ cc.

Balance-Modified Bass Stick Test - 5 trials
____ ____ ____ ____ TOTAL ______

Agility - Three Block Test - Three Feet Apart
Time ______

Power - Standing Broad Jump - ____ ____ Average ______

Speed - Ten Yard Dash - Time ______

Visual Perceptual and Hand Coordination Test

Two circle, square, triangle and diamond shaped blocks must be placed in appropriate shaped hold. Time ______

- 4 -
Legend - Symbols for weekly observation of performance.

P = Performed         PP = Performed Poorly          CnP = Could Not Perform *

Subscript number indicates the week in which the activity was attempted or performed. Example P₂ - Performed during second meeting.

MOVEMENT EXPLORATION

Level I - Performed Lying on Back

Moving both arms in jumping jack fashion
Moving both legs in jumping jack fashion
Moving both arms and legs in jumping jack fashion
Head facing left, left arm and left leg flexed, right arm and leg extended
Head facing right, right arm and right leg flexed, left arm and leg extended
Head facing left, left arm extended and left leg flexed, right arm flexed and right leg extended
Head facing right, right arm extended and right leg flexed, left arm flexed and left leg extended
Suppination and pronation of hands with elbows bent
Oppose thumb and forefinger
Hand to side - roll right - roll left
Tuck - roll right - roll left
Roll right from back to hands and knees
Roll left from back to hands and knees
Roll left from hands and knees to back
Roll right from back to all fours
Roll left from back to all fours

* Alternative Legend (Suggested by Project on Recreation and Fitness for Mentally Retarded)

0 = Would Not Try
T = Tried, Failed, Quit
TT = Tried Several Times, Failed on Each, Then Quit
TTT = Tried Continuously, Failed Continuously, Had To Be Stopped
PP = Performed Poorly
P = Performed Satisfactorily
PS = Performed Smoothly, Gracefully, and Efficiently
Level II - Performed on Knees

Crawl through tunnel
Crawl background through tunnel
Crawling looking at forward hand
Cross pattern creeping - left hand and right leg forward
Crawling forward on all fours
Crawling backward on all fours

Level III - Performed Standing or on Mat

Make yourself as tall as you can
Make yourself as short as you can
Make yourself flat as you can
Make yourself as stiff as you can
Make yourself as relaxed as you can
Make yourself as round as you can
Make yourself as heavy as you can
Move as slow as you can
Walking using foot patterns
Walk with hand following lead foot
Walk with opposite hand following lead foot
Walk with cross over pattern
Walk cross over pattern with hand following lead foot
Marching in place - right hand touches right knee
Marching in place - right hand touches left knee
Hopping on right foot
Hopping on left foot
Take off on one foot and land on two
Take off on two feet and land on two
Two footed hop across rope
Take off on two feet and land on one side slide pattern
Galloping
Lift both arms in jumping jack fashion
Lift both legs in jumping jack fashion
Perform jumping jack
Jump-bringing knees up and touching simultaneously with both hands
Running
Skipping

Balance
Walks line on gymnasium floor
Walks four inch balance beam
Walks tilted balance team-cross over step
Holds balance on balance tilt
Walks on two-inch wood blocks
Walks two-inch low balance beam
Walks two-inch high balance beam
Walks two-inch low balance beam while shifting weight from hand to hand
Walks two-inch high balance beam while shifting weight from hand to hand
Walks two-inch low balance beam - steps over one foot bar
Walks two-inch low balance beam and walks under three foot bar
Catches bean bag while balancing on two-inch low balance beam
Throws bean bag while balancing on two-inch low balance beam
Can follow teacher across two-inch low balance beam
Trampoline - Creative Movement

Jumps on bounce board with two feet
Jumps on bounce board with foot
Jumps on bounce board with one foot and changes feet
Jumps on bounce board and off
Bounces seated on trampoline bed
Control bounce on trampoline
Bounce - bring knees up
Bounce - perform jumping jack
Bounce - perform one-half turn
Bounce on right foot
Bounce on left foot
Bounce on alternate feet

Perception Activities

Tactile
Can distinguish between hot and cold towel
Can distinguish between smooth and rough surface with the eyes closed
Can distinguish between wood, metal, rock surfaces with the eyes closed
Can distinguish shape of object with eyes closed - round, square, triangle, diamond
Can distinguish numbers by shape and/or size
Can place circle, square, triangle, and diamond in appropriate slot

Visual Perception
Pursues moving target with eyes while lying down
Pursues moving target with eyes while standing
Can pursue moving target with eyes and stop it with the hand on command
Catches balloon using both hands simultaneously
Kinesthetic Perception

Can duplicate position of the arms with eyes closed - within three inches

Can duplicate position of the legs with eyes closed - within three inches

Can duplicate force on scale push within 10 pounds with eyes closed

Can duplicate force on scale push within 5 pounds with eyes closed

Can distinguish between weights of varying amounts with eyes closed

Eye Hand Coordination

Catches large playground ball on bounce

Passes large playground ball to receiver

Catches large playground ball in air

Can kick ball not moving - soccer style

Can kick ball moving - soccer style

Can trap moving ball with feet - soccer style

Hits box target with bean bag at ten feet

Catches bean bag in the air

Catches ball in cup

Manipulative Skills

Bi-manual circles - clockwise

Bi-manual circles - counterclockwise

Bi-manual circles - left hand, clockwise; right hand, counterclockwise

Bi-manual straight lines - lines drawn to center simultaneously with both hands
Special Techniques and Equipment to be used:

1. Use tunnel to promote crawling

2. Perform floor exercises on new Resilite mat or use knee pads on children

3. Use foot patterns for hopping, jumping, galloping, skipping, etc.

4. Practice cross pattern crawling and walking on an incline board with mat

5. Utilize boxes of different sizes, colors, designs, and numbers for bean bag targets

6. In exploring movement have the children form some of the following letters with their bodies while looking in the non-reversible mirror:

   Y I F E L C X H V O T

7. Use non-reversible mirror or shadow image to teach new movements

8. Explore not only right and left lateral balance on balance tilt, but forward-backward tilt as well. (Perform with weight in hands)

9. Use balance pole to lower the center of gravity of the child in walking the two-inch balance beam.

10. Use peg board for hand eye coordination. Have form circle, square, triangle, etc.

11. Use deep breathing exercises in children whose vital air capacity is lacking.

12. Use gym scooters to teach basic swimming strokes and for developing arm strength.
CLINICIAN DATA SHEET

Clinician's Name

Major

Semester - Year

Date to be graduated

Mailing Address

Campus Phone No.

Attendance Record

1  2  3  4  5  6  7  8  9  10

Name of Child