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Developmental Motor Training Program for Kindergarten Students to Enhance Reading Readiness Skills

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Abstract

This is a motor training program for kindergarten students, who have both motor difficulties and low readiness scores, which includes gross, fine, and perceptual motor activities. The program includes developmental motor skill activities and a list of equipment used. A hypothetical population consists of four kindergarten classes of which, most are white, middle class, and live in a community of 12,000 in Missouri. The Purdue Perceptual Motor Survey and The Metropolitan Readiness Test will be administered to the students in all four classes. A control group and an experimental group will be selected from all students who score below 65 on the Purdue and 44 or below on the Metropolitan. The low scoring subjects will be placed in either the experimental or control group, random assignment will be used. There will be 15 subjects placed in each group. The control group will receive no treatment. The experimental group will be administered the Psychoeducational Inventory of Basic Learning Abilities for additional diagnosis and then will participate in a seven month, daily motor training program. Three variables will be used for analysis: (a) readiness test scores--both pretest and posttest; (b) motor test scores--both pretest and posttest; and (c) sex differences. Statistical analysis of the data

gathered will be done using a two-tailed T test. The findings expected are: (a) more boys than girls will have lower motor scores; (b) more boys than girls will have lower readiness scores; (c) motor training will enhance reading readiness; and (d) the experimental group will make greater positive gains in both motor and readiness test scores. A significant difference at level .05 is expected.

Developmental Motor Training Program for Kindergarten Students to Enhance Reading Readiness Skills

The idea for the paper stems from research in learning disabilities, observations of children at both the kindergarten age and the primary grades, work with learning disabled children, and personal experience as a parent of a child with motor development problems.

Based on personal primary teaching experience, discussions with other primary teachers, and readings in childhood development and learning disabilities, it is the author's opinion that many young children have motor developmental problems and many of these same children also develop reading problems in school. In the past approximately ten years much research for and against motor training programs and their effectiveness has been conducted. A number of motor training programs for kindergarten and primary grades have been developed which may aid children by improving their motor skills as well as skills in academic areas of reading, math, and spelling. The motor training programs are used in Learning Disabilities (LD) programs for children who have gross, fine, or perceptual motor disabilities.

Among the major contributors in the area of motor development are Kephart, Valett, Frostig, Barsch, Getman, Cruickshank, and Delacato. Each of the above researched

and tested their own theory and found positive results. Cratty (1970, Chapter 10) has a cautious approach toward the endorsement of motor training. Spache (1973, pp. 123-125) accepts it as a partial answer to readiness needs. There are other authorities who strongly oppose the motor development idea as it relates to reading readiness. This group includes such persons as Harris, Ayres, Bloom, La Prau, and Ross. Some major objections are the type of research being conducted, lack of hard data, and the limited amount of research. The research by the non-motor group tends to produce negative results.

In discussions with LD teachers and teachers of the primary grades, it was found that many are using motor developmental training and tend to believe it is beneficial to children with motor disabilities. Intermediate grade LD teachers use a limited amount of gross motor training. Fine motor and/or perceptual motor activities are used, with children that have strong motor deficiencies. Intermediate LD teachers feel other instructional methods produce more positive results. All LD teachers talked with believe the earlier a problem is diagnosed, and treatment started, the easier it is to remediate. Most felt motor training produced positive results for young children and less positive results for the older children.

The author has been influenced by the work of Kephart (1960), Valett (1967), Frostig (1966), Barsch, and Cratty (1970).

Newell C. Kephart is one of the better known authorities in the perceptual-motor field. Kephart believes children must establish a perceptual-motor world in which they can operate. Time and space are the dimensions of the universe, all behavior is basically motor; prerequisites for behavior are muscular and motor responses. Children's learnings are divided into three stages of development: (a) The initial stage is motor pattern learning--this is muscular and motor response. Children learn a motor skill then a motor pattern. (b) Children learn motor generalizations. This is a result of combining and using motor patterns. There are four generalizations essential for academic success: balance and maintenance of posture; contact; locomotion; and receipt and propulsion. (c) The final stage of development is the ability to make a perceptual-motor match. The perceptual information must be matched to motor knowledge. According to Kephart's theory, development always goes forward, it never stays stationary or goes backward. When children are forced into stages they are not developmentally ready for, they will have some degree of learning difficulty. Their existence will become confused. Children who constantly touch things may be doing so because they cannot

make the correct perceptual-motor match to be certain what they are seeing.

The Purdue Perceptual Motor Survey was developed by Kephart and Roach. It will be used as the pretest and post-test instrument for this program.

Kephart considers the visual channel more important than the auditory channel. The author feels both are equally important for reading readiness success.

Robert Valett is a contributor to motor development in LD. His is a developmental task approach with three levels for each task; beginning, middle, and advanced. His book The Remediation of Learning Disabilities, published in 1967, is an excellent tool for LD and classroom teachers who are looking for ideas and specific activities to help students. There are six major areas of developmental tasks given. Tasks from three areas will be considered; gross motor, sensory-motor intergration, and perceptual-motor skills. Valett developed the Psychoeducational Inventory of Basic Learning Abilities as an evaluation tool to be used with his remediation book. The "Inventory" is not a motor test. Its purpose is to help pinpoint specific disabilities.

In discussions with Dr. Boeckland, a former student of Dr. Valett's, it was learned that Valett believes motor training alone will not remediate a learning disability, although there are cases where it has proven useful. If

children with motor difficulties are started on a motor training program young enough, many of them will not have learning problems. Valett recommends using the Frostig program with his developmental task approach.

Raymond H. Barsch is a perceptual-motor theorist. He originated the Movigenic Theory which is a space oriented theory of learning. The purpose of this theory is to develop better capabilities in the total motor movement area of life or movement efficiency. Barsch's precepto-cognitive system is based on six modes: (a) gustatory; (b) olfactory; (c) tactual; (d) kinestheitic; (e) auditory; and (f) visual. These six modes are referred to as "GOTKAV." Barsch's theory and methods are presented in laymen terms in Where's Hannah? A Handbook for Parents and Teachers of Children With Learning Disabilities by Jones and Hart. Gearheart (1977, pp. 52-55) gives description of the Movigenic Theory and Barsch's ten curriculum guidelines for teachers. Barsch evaluates the success of his program by clinical observation and subjectively observed improvement rather than on structual experimental studies.

Bryant J. Cratty approaches motor developmental training with a cautious attitude. He is Director of the Perceptual-Motor Learning Laboratory at the University of California. Cratty has a game theory. He believes movement games may help children with learning disabilities; may aid active,

normal children in learning; and may improve the academic progress of culturally deprived or retarded children. Cratty stresses may, he does not believe motor training is the cure-all some perceptual-motorists feel it can be. Cratty does believe the inability to play motor games well can lead to: (a) low self-esteem; (b) low social acceptance by peers; and (c) reduced academic performance. He feels hand-eye coordination is essential for many learning tasks. Cratty believes there are indications that gross movement activities can provide a sensory experience that enhances general classroom learning. The reader will find Cratty's Perceptual and Motor Development in Infants and Children an informative and useful aid in understanding child motor development. Chapter ten lists the reasons behind his approach to various motor training theories. Cratty has designed a motor program which uses games to facilitate academic learning.

Gerald N. Getman has much in common with Kephart. They worked with Gesell at the Gesell Child Development Clinic at Yale. Both are visually oriented in their perceptual-motor theories.

Getman is considered the most visually oriented of the perceptual-motorists. He believes perception can be developed with training in five developmental stages: (a) general motor patterns; (b) special movement patterns; (c) eye movement patterns; (d) visual language patterns; and (e) visual-

ization patterns. These stages are developed in sequence but may overlap.

Gearheart (1977, pp. 48-52) has a concise, accurate review of Getman's visual motor model representing a pyramid of skills, each dependent on the skill below; and his theory.

Getman is criticized for his strong visual emphasis by some perceptual-motorists who believe he de-emphasizes the auditory channel to extremes.

Marianne Frostig is recognized for her Developmental Test and Program in Visual Perception. The Frostig test measures five areas of visual perception: (a) eye-motor coordination; (b) figure-ground; (c) form constancy; (d) position in space; and (e) spatial relations.

Frostig does not rely on her test for total diagnosis, she uses a variety of testing instruments. However, the Frostig developmental training program is based on her test. The program can be used as either a developmental or remedial program. For this study, sections of Beginning Pictures and Patterns for fine motor training will be used. Frostig is another perceptual-motorist quick to inform educators her program is not a cure-all nor is it meant for all children. It is a program designed to train young children in visual perception skills. Frostig combines physical exercises, work sheet exercises, and suggestions for three-dimensional activities.

Carl Delacato and Glen Doman work at the Institute of the Achievement of Human Potential in Philadelphia. Delacato's patterning theory of neurological organization is one of the most criticized methods in the field of special education. The patterning method is based on the concept that the process a member of the human race goes through in maturing, follows the same developmental stages of the entire species in the process of evolution. The goal is to establish; in brain-injured, retarded, or learning disabled children, the neurological developmental stages found in normal children and to establish hemispheric dominance. Subjects have to re-learn and perform each stage of motor development. Parents play an important role in this program. The program includes such techniques as restriction of the child's diet, restriction of arms or legs so the dominate limb will perform more readily, supervised motor training, and turning the subject during sleep.

Three criticisms of Delacato's method are: (a) The parent must spend an extreme amount of time with one child at the expense of the rest of the family; (b) The brain is treated, not the symptoms; and (c) Delacato has not attempted to establish research validity for his approach.

Because of the above reasons and limb restriction, Delacato's procedure will not be used in this program.

The author believes a well developed perceptual-motor training program for kindergarten can improve skills for five and six year old children who have both motor difficulties and lack reading readiness skills. It will not be a cure-all for all children nor will it insure them success in reading.

A good kindergarten program will include motor training, language development, math readiness, reading readiness, science, social adjustment, writing skills, music, and art in the curriculum. To provide adequate opportunities for motor development, this author believes, a minimum of one third of the curriculum in a three hour day should be composed of gross, fine, and perceptual-motor activities.

The purpose of this study is to provide a motor training program for kindergarten teachers to use as an aid in identifying and remediating motor disabilities and reading readiness deficiencies caused by poor gross, fine and/or perceptual-motor development. Because of time factors and course expectations, the necessary research to confirm or reject the hypotheses will not be carried out. Plans are to conduct an experimental program at a later date.

Hypotheses

When kindergarten students with motor development disabilities and low readiness test scores are given a systematic training program in gross, fine, and perceptual-motor

skills; there will be no significant difference in the pretest and posttest reading readiness scores of the experimental and control groups.

When given the Purdue Perceptual-Motor Survey, there will be no significant difference between the motor scores of the boys and the girls.

The author intends this program for children, who because of their motor problems and lack of motor development; have not acquired the gross and fine motor abilities, the body awareness, the body image, and perceptual awareness necessary for learning how to read.

Pre-Assessment Instruments

The Purdue Perceptual-Motor Survey--developed by Kephart and Roach--will be used to identify children that need motor therapy. A score of 65 or below indicates a need for perceptual motor training. This is a survey, not a test, therefore validity is not stressed. The normative and validation data information is given in the Survey Manual on pages 17 to 27. From examination of this data, it is felt this test has significant value for kindergarten students. Three major areas are covered in the Survey: (a) laterality; (b) directionality; and (c) perceptual-motor match skills. This survey can be used by the classroom teacher and the cost is minimal. It is an individualized instrument.

The Metropolitan Readiness Test--developed by Hildreth, Griffiths, and McGauvran--will be used to identify children

with reading readiness difficulties. Harris (1975, pp. 33-35) recommends it as a valuable tool for predicting success in reading. Children who score 44 or below will be considered likely to have difficulty in first grade reading activities.

The Psychoeducational Inventory of Basic Learning Abilities--developed by Valett--will be used in further evaluation of the major educational and perceptual motor tasks. The Inventory measures specific tasks in six major areas of development: (a) gross-motor; (b) sensory-motor intergration; (c) perceptual-motor skills; (d) language development; (e) conceptual skills; and (f) social skills. Areas a, b, and c, will be used for further evaluation of the experimental group.

Children in all four kindergarten rooms will receive the Purdue and the Metropolitan. Children who score 65 or lower on the Purdue and 44 or lower on the Metropolitan will be randomly assigned in either the control or the experimental group. The pretests will be administered during the first week of October. The same evaluation tools will be used as posttests the first week of May.

Population Information

To test the hypotheses and training program, sixty kindergarten students--ages five or six--will be selected from similar socioeconomic backgrounds: Caucasion; middle-

income bracket; the majority of parents both work at skilled or non-professional occupations; basic needs are met for food, shelter, and clothing; play objects are plentiful in the home; and parents are concerned with their children's progress in both the physical and academic areas. The total population will come from the same school in a town of 12,000 in Missouri. Both sexes are to be included in the research study. The results should show lower scores for the boys and higher scores for the girls in both motor and readiness scores.

After determining how many children have both motor and reading readiness deficiencies, the subjects with significantly low scores in both areas will be placed in the control group or the experimental group. Placement into the groups will be by random assignment. It is expected there will be at least 15 subjects in each group.

Procedures for Treatment

The control group will receive no further treatment. The experimental group will receive Valett's Psycho-educational Inventory and be analyzed into subgrouping by sex as boys tend to have more motor developmental problems than girls.

The training program will include portions of: Valett's learning tasks; Kephart's perceptual-motor matching skill activities; body image and differential skills; Frostig's

Beginning Pictures and patterns; Cratty's game activities, Methods used by Cruickshank; Movigenic activities; and activities the author has used or observed other educators using. The minimum treatment time will be one half hour daily. Some activities will be presented to the group as a unit. Individual attention will be given to each member of the experimental group as needs are indicated. An Individualized Educational Program will be written for each subject to remediate specific individual weaknesses.

Treatment will begin the third week of October and continue through the last week of April at which time post-testing will begin for both the control group and the experimental group.

Remediation Program For Kindergarten

There are various activities a teacher can employ to improve motor skills and increase motor efficiency in gross, fine, and perceptual-motor areas for kindergarten students. This program is to be used as a guide. The teacher can begin with this program and then add ideas of her own to adapt the program for further implementation of remedial work with her individual students.

Gross motor skills and activities are listed first. Children must develop their gross motor skills and patterns before they can establish fine motor control and coordination.

Fine motor activities are second in the program. Body awareness activities will be included in both gross and fine motor training. Body awareness is often referred to as sensory-motor intergration. It is the psychophysical intergration of gross and fine motor skills.

The last section of the training program consists of perceptual-motor activities.

Each section will list activities, equipment needed, and specific instructions where required. Attention was given to the cost factor of a motor program. The author has, whenever possible, tried to center activities around inexpensive equipment. An appendix is included at the end of this paper with diagrams, visual activity examples, and directions for constructing equipment needed. Teachers using this program should stress individual activities and achievement, not team competition. Activities are not in sequential order.

Gross Motor Skills and Activities

Gross motor refers to the development, awareness, and control of the large muscles. It includes activities that involve the entire body, such as: walking, sitting, rolling, jumping, running, throwing, awareness of body parts, and knowledge of general health rules for taking care of the body.

Walking. According to Godfrey and Kephart (1969 pp. 60-61) "Walking is probably the most common, most essential,

and most accepted movement performed by man . . . The elements of the walking pattern and the mechanics of the normal gait are integral parts of all man's normal locomotor movements . . . the walking pattern or its elements is in some way part of practically all his movements."

Because walking is basic, a teacher should have a good knowledge of the walking process and use it as a first step in remediation of motor development. There are three basic stages to walking (see Appendix B for diagram of walking stages).

Equipment for walking activities is simple and can be obtained or constructed at low cost (see Appendix B for directions on construction). It includes: walking board; inclined boards; bamboo pole or broom handle; objects to place on head for posture, such as books or beanbags; blindfold; small drum; rhythm sticks; record player and records; mat; air mattress; cardboard boxes; and objects for obstacle course.

Activities for walking are to be conducted both indoors and outdoors.

1. Have the children take off their shoes and socks. Walk on as many surfaces as possible. Indoors: the floor, mats, carpet, and an air mattress. Outdoors: grass, rocks, sand, mud, dirt, blacktop, and concrete. Have the children describe the feeling of each surface.

2. Have the children walk in different directions: forward, backward, and sideways. Record time required to cover a preset distance.

3. Have the children walk up and down steps; the length of inclined boards and back; and then go outside and walk up and down a hill or embankment.

4. Set up an obstacle course using chairs, boxes, etc. Have the children walk the course forward, backward, and sideways--left then right side--record time.

5. Have the children walk keeping time to music.

6. Have the children walk, first on tiptoe then on their heels.

7. Have the children walk heel to toe.

8. Have the children walk like animals such as a duck, elephant, bear, penquin, etc.

9. Have the children experiment on the walking board using the four inch (10 centimeters) wide surface. At first, do not give specific directions. If a group is working together play "Follow the Leader" making sure each child has the opportunity to be "leader."

Next give specific directions but do not demonstrate or manipulate the children's bodies unless it is evident they do not know how to perform the required activity. Say: "Walk the length of the board forward, then walk back." "Walk the length of the board sideways. Walk back on the

opposite side." "Walk to the middle of the board, turn around and return." "Walk to the middle of the board, turn around the opposite way and return." "Walk the length of the board forward with a beanbag on your head." "Walk the length of the board backward, then return." "Walk to the middle of the board, squat, stand, and continue to the end of the board." "Walk heel to toe down the length of the board. Tiptoe back." "Walk with balance pole." "Walk the length of the board with weight in one hand. Walk back with the weight in the other hand." "Walk the length and back with weight in both hands." /Weight can be heavy beanbags so the children can grasp and hold them firmly./ "Catch and throw the ball to me /the teacher/ while walking on the board." When the above activities are mastered on the four inch side of the board, turn the board over on the two inch side and repeat walking activities. It will take several sessions for the children to perform the walking board activities successfully.

10. Have the children take turns performing as many of the walking board activities given in number 9 while blindfolded as possible. Walk beside the children in case they lose their balance.

11. Place the inclined boards at one end of the walking board and a ladder at the opposite end (see Appendix B for diagram). Have the children climb the ladder, cross the

walking board, descend on the inclined board, then return.

12. Have the children play walking games such as "Mother, May I," or "Red Light, Green Light."

Sitting. Kephart describes sitting as "a partially erect position in which the upper body is maintained erect upon the sitting bones of the pelvis as a base with the legs bent so that either the legs and/or the feet may also form part of the base." Sitting is considered as "movement on a stationary base." Godfrey & Kephart (1969, p. 106). The posture should be reasonably erect and relaxed, with a minimum of movement. If the legs are crossed it should be a top and bottom position that changes from left to right and back during long periods of sitting. A child should sit erect in a normal position and be able to relax while doing seat work (see Appendix B for diagram of proper sitting position).

Visual cues a teacher should watch for in a child's sitting habits are: (a) body slumped; (b) the head not balanced or centered, inclined to the front, bent to one side, or turned; (c) all the weight is on one side or on the tailbone; (d) shoulders hunched; (e) a stiff general body position; (f) the body cannot stay still for a reasonable length of time without bouncing, twisting, or extreme movement. Godfrey & Kephart (1969 p. 170).

Children should have a desk or worktable and chair appropriate for their size.

Equipment for sitting activities consists of what is usually standard for a kindergarten classroom with a few exceptions. It includes: desks, chairs, worktables, record player, records of quiet listening music, books, paper, crayons, a skateboard, a balance board (see Appendix B for construction directions), a rocking chair, large blocks, and various objects to sit on.

Activities suggested are brief, they will provide a "take-off point" for the teacher to extend and vary.

1. Use relaxation and control exercises with the group. Say, "Sit up! Place your head in your arms on your desk." "Listen to this quiet music." "Feel how good it is to relax." "Let your arms relax." "Let your back and shoulders relax." "Relax your legs." "Close your eyes and let your whole body relax." Continue with relaxation suggestions for three to five minutes. Later, discuss with the children how it feels to relax.

2. This activity is for good posture in reading, writing, or art tasks. Say, "Sit in your chair with your back against the chair, hold your head up, place both arms on your desk and look at the picturebook you like the best." "Sit at your desk and balance a book on your head."

3. Demonstrate correct angle and sitting position for both right and left handed students for art or writing work. Have the students copy simple geometric shapes from the board, draw a picture, or write the alphabet and numbers.

4. Have the children sit on the floor Indian-style. Listen to Indian music. Relax.

5. Have the children practice sitting correctly on various objects, i.e.: boxes, rocking chair, skateboard, balance board, etc. Count to ten while the children hold good sitting balance and posture.

6. Have the children play "Hot Potatoe." Use a bean-bag for the potatoe.

7. Have one child lie on his/her back with both feet in the air. Have a second child sit on the first child's feet with good balance. Count to see how long the children can balance in the air.

Rolling. Rolling is the ability to roll the body or a part of the body in a controlled pattern according to specific directions. It aids in neurophysical development and control.

Equipment requirements are mats, carpet strips five feet wide and six feet long, objects to make an obstacle course, balls of various sizes, a towel, and a quilt.

Activities are those in which the body, or parts of the body, are turned over from side to side or end to end to develop rolling skills or patterns.

1. Say, "Lie down on the mat--or carpet--with your feet together and your hands at your side." "Relax and imagine you see a butterfly flying in a circle over your head." "Keep your head and body still." "Follow the butterfly with your eyes, going in a circle, first to the left, then to the right."

2. Say, "Put your arms out straight from your sides, with the palms down. Roll your hands over on their back." "Now, turn them palms down." Repeat five times.

3. Say, "Lie on your back with your hands over your head, your legs straight, and your feet together." "Roll slowly to the right." "Roll back over to your left side." (You may have to show the children their left and right directions.) "Roll back and forth from the right to the left five times without stopping."

4. Say, "Roll sideways down the length of the mat." "Roll back to the starting point."

5. "Roll sideways down the mat in a straight line."

6. Say, "Roll all the way down the mat with your legs straight, your arms and hands by your side." "Roll back."

7. Say, "Lie on your back with your arms and hands straight over your head." "Hold a ball in your hands and roll down the mat in a straight path." "Roll back."

8. Say, "Lie on your back with your arms and hands over your head. Grasp a towel between your feet and roll to the

end of the mat."

9. Have the children play a rolling version of "Follow the Leader" on the mats and carpet strips.

10. Have the children do forward rolls--somersaults--down the mat and back.

11. Have the children do backward rolls down the mat.

12. Have the children double up their body into a ball and roll sideways down the mat--left then right.

13. Set up a simple obstacle course and use various combinations of numbers 10-11-12 as directions on rolling the course.

14. Take the children outside and let them roll in the grass. Roll up and down hills if they are available. If some children are allergic to grass, use a quilt on the ground.

Jumping. Jumping is a locomotor pattern in which the ankles, knees, and hips are bent and then forced to extend to move the body. A child needs the ability to jump over or around objects without falling. Unlike walking and running, each jump has an observable starting point, action point, and finishing point. Leaping, hopping, and skipping are forms of the jumping pattern. Jumping can be directed upward, downward, forward, backward, or sideways.

For more complete information about the jumping pattern, the author recommends the work by Godfrey and Kephart (1969,

pp. 66-75).

Equipment for jumping activities include jump ropes, tires, air mattress, chair, various sized boxes, bamboo poles, a measuring tape, and a trampoline (if possible).

Activities for basic jumping skills can be adapted for hopping and skipping.

1. Have the children show all the different ways they can jump. The game "Follow the Leader" with each child having a turn as leader can be used.

Activities number 2 through number 7 may have to be individually taught with one child at a time. The teacher may have to hold the child's hand. More skilled children may pair up for these activities.

2. Hold the child's hand and jump together. Count each jump.

3. Hold the child's hand; jump first on the right foot then on the left.

4. Hold the child's hand; jump once on the right foot and twice on the left. Reverse and repeat.

5. Have the child jump forward along a line. Jump backwards to return.

6. Have the child do a one foot jump back and forth across a line. Make five jumps on the right foot, then five jumps on the left foot.

7. Have the child jump, from a standing position, as

far forward as possible. Next have the child do the same with a backward jump and a sideways jump. Measure the distance of each jump and record it.

8. After the children have mastered number 2 through number 7 with a partner, repeat each activity alone.

9. Have the children play "Hopscotch."

10. Have the children do animal jumps. Frog jumps, Rabbit jumps, and Kangaroo jumps are good starters. The children can think of others.

11. Have the children jump on an air mattress forward and backward as rapidly as possible without losing their balance or falling.

12. Have the children jump down from different heights. Begin with low heights and gradually increase the distance as their skill increases.

13. Have the children jump rope lifting both feet up at the same time.

14. Have the children jump rope, alternating feet.

15. Have two children turn a long rope. The other children are to run in, jump once and run out. Repeat and increase the number of jumps as skill increases.

16. Have the children jump on tires. They can jump in and out of tires in an obstacle course.

17. Have the children do "Jumping Jacks."

18. Have the children jump from different heights and

describe how it feels.

19. Teach the children to judge distance and try to jump on targets.

20. Set bamboo poles on tincans to make low hurdles (see Appendix B). When this skill is established, put the poles on boxes.

21. Measure jumping activities and record information on a chart so the children can see their progress.

22. Set up obstacle courses made of boxes, tires, air mattress, jump rope activities, Hopscotch, hurdles, heights from chairs, etc. Have the children set up their own courses.

23. There will be some kindergarten children who cannot skip. Begin their instruction by having the child stand erect and jump forward on the right foot then bring the left foot up to the right. Alternate from right to left. Gradually increase speed. Hold the child's hand and do this activity together until the pattern is established.

24. To teach the alternate skip, hold the child's hand and skip around the room alternating the right and left foot. After the pattern is established, let the child skip alone.

25. Have the child skip to designated point such as the window or the door.

26. Have the child skip on a line.

27. Have the children skip to music. Use games such as "Ring Around the Rosy" and "Skip to My Lou."

28. Have the children skip while jumping rope.

29. Have the child skip backward.

Running. The running pattern is similar to the walking pattern with a few exceptions. In running the body is completely off the ground for short periods of time. "The ball of the new forward foot makes ground contact first; . . . . the body is inclined forward from the ankles with the inclination becoming greater as speed increases; . . . . the arms are held high with the elbows bent, the hands stay in front of the body, the elbows behind the midline of the body; . . . the knees are higher from the ground and bent more, the difference between the length of stride is not much greater in the run as compared to the walk, and the body's center of gravity is moved further up the body . . . . A child's individual running style follows the basic movement patterns and the speed should remain consistant. Changes in speed without reason is considered a development deficiency in the running movement." Godfrey & Kephart (1969 pp. 61-65).

Equipment for running consists of balls, a stop watch, boxes, a large area for running activities, relay flags or other objects to be used in relay races.

Activities for running are varied. They can be taught during formal instruction or through informal situations at recess. Many games lend themselves to running opportunities.

1. Have the children run in place. Begin with a slow pace, increase speed gradually then decrease back to slow speed. Encourage the child to bring his knees up high.

2. Use a stop watch and time running in place. Have the children count to 100 while running in place.

3. Have the children run in place to music.

4. Have the children run up and down the rows in the classroom without falling or hitting the desks.

5. Make a maze out of the desks and boxes. Have the children run the maze while being timed.

6. Let the children run on the playground. If the playground is free of glass and trash have them take off their shoes and socks and run barefoot. Run races against time, not each other.

7. Have the children run laps in the gym.

8. Have the children do animal runs, i.e.: bird, bee, horse, dog, etc.

9. Have relay races. Give the children objects to pick up, run with, lay down, and return to starting point.

10. Use any game or play activity that requires running.

11. Give the children opportunities to make up their

own running games.

12. Have the children play "Cowboys and Indians." Let the horses be stick horses. Run races with stick horses.

Throwing. Throwing is a propulsive pattern. It is one of the first propulsive actions a child learns. One basic instinct is to fend off objects coming toward the body.

In observing the throwing pattern, the teacher must know some basic techniques of throwing. The opposite leg to the throwing arm should come forward slightly before the release of the object. There are four basic throwing patterns: (a) The underhand throw where the arm action is a back, then forward swing from the shoulder with the arm straight and close to the body. (b) The overarm throw where the arm action is more a push of the upper arm with rotation of the upper arm and a swing followed by a whip of the lower arm and extension of the arm at the release point. The elbow is bent throughout the action. (c) The sidearm throw where the arm action is back and forth, almost parallel to the ground with a swing forward followed by a whip action at the release point. (d) The two-handed throw which is made with the whole body in a bending movement backwards, then a swing and a forward bend.

A child's throwing pattern should not be judged on the skill and accuracy, but whether or not the pattern is correct. Propulsion patterns are essential and both the

teacher and the parent should provide opportunities for the child to practice and develop these patterns.

Equipment is any object the children can hold in their hand and throw (objects that could cause harm are not to be used). Balls of many sizes and textures, beanbags, targets, paperbags, milk cartons, buckets, sponges, Nerf balls, rubber horseshoes, Quoits, sticks, a goal, Frizbees or a round disk are examples of equipment to be used in throwing activities.

Activities should be practiced either in a gym, outside, or any large space where the children will have room to throw and not have to worry about breaking things.

1. Have the children play pitch and catch with a Nerf ball. As skill and accuracy improve, extend the distance.

2. Let the children play "Ring Toss" or rubber Horseshoes.

3. Make a clown target. Cut holes with the larger holes worth one point, the smaller holes worth five points. Have the children toss beanbags or tennis balls at the target. Record scores.

4. Extend target games to seasonal targets, i.e.: Jack O'Lantern, Christmas Tree, Valentine, or Rabbit.

5. Take the children outside and have them practice all four types of throwing. Alternate arms for each type of throw. Use both large and small balls. Demonstrate how to

make each throw if necessary.

6. Set up targets, i.e.; bucket, basket, paper bag, old tires, etc. and have the children throw tennis balls, beanbags, crumpled paper or small stones into the targets.

7. Use "Pitchback"--available at department stores--for practice in throwing and catching.

8. Have the children use blunt sticks and throw them at old tires.

9. Have the children throw Frizbees or round disks at hanging targets.

10. Practice long distance throws, alternate arms, and measure the distance.

11. Stuff a pillowcase or gunnysack, draw a face on it, and suspend it from the ceiling to use as a target.

12. Set up a goal and use Nerf balls or sponges to play basketball. A goal can be made from a hatbox by cutting out the bottom of the box and taping it to the wall or tacking in on the door.

13. Have the children play "Dodge ball" or "Ball Tag."

14. Throw an object such as a sponge or beanbag at the child. See how fast he/she can catch or retrieve it and throw it back.

Awareness of body and self. "Primary to all conceptual learning is the awareness of self as a separate identity." Valett (1967, Program 10). Children must be aware of their

physical body; its size, parts, the amount of space it occupies, and the concept of their body in relationship to the environment. They must be able to conceptualize and identify their own body from everything else in the environment. Problems related to body awareness and identity "come about when a child cannot take into account his size, the placement and biomechanical arrangement of the body and body parts, his strength or his similarity or difference from others." Godfrey & Kephart (1969, p. 145).

Equipment consists of full length mirrors, large hand mirror, camera, magazine pictures of people of all ages and sizes, body puzzles, opaque projector, scrapbook, paste, scissors, early photographs of the child at various developmental stages, and a taperecorder.

Activities can be any that will aid children in association of self and body with their individual name and surroundings. Do most of the following activities individually with each child.

1. Stand the child in front of a full length mirror. Say, "This is name." Have the child feel his/her body while repeating "name." Turn the child so several angles of the body show. Say, "That is name." The child responds, "I am name."

2. Take a photograph of the child. Have the child identify the picture, "This is name."

3. Give simple commands using the child's name each time: "Name, raise your hand." "Name, walk to the door," etc.

4. Teach children to respond with their own name when shown a photograph of themself or their image in the mirror.

5. Mix up photographs of the child with pictures of children. Have the child find own picture.

6. Mix up photographs of all the children in the group. Each child must find their own photograph.

7. Have a photograph of the child's family. The child must identify each family member by name and position.

8. Have a group of pictures taken of the child at different ages. The child is to arrange them in correct age sequence. Snapshots of the child with a birthday cake and the correct number of candles for each year are excellent for this activity if they are available. So are action snapshots of crawling, first steps, riding toys, etc.

9. Make silhouettes of the children with an opague projector. Have the children identify, color, and cut out their own silhouette.

10. Use a taperecorder and give all of the children an opportunity to talk on it. The child responds by identifying self when the tape is played back; "That is name talking."

11. Start a scrapbook for each child in the experimental group. Include developmental photographs, silhouettes, self-portraits, charts of improvement, and add to the book as other body identity and awareness activities are presented. Review it frequently with the children.

12. Cut up a photograph of each child. The children must be able to identify self from one piece of the photograph. Let the children put their own photograph together as they would a puzzle.

13. Using a hand mirror, let the child identify self although only a portion of the body is shown. "This is name."

14. Teach the children to write their name correctly and to identify it when they see their name written.

15. Give the children paper and crayons. Have them draw a self-portrait and verbally describe it.

16. Use a full length mirror and a hand mirror to help each child identify his/her body from a back view.

17. Have the child locate basic body parts using a full length mirror. Say, "Point to your head, eyes, nose, etc." Child must point to body part and respond verbally, "This is my head, etc." All parts missed should be taught and reinforced with practice.

18. Locate all basic body parts and the correct name for each.

19. Have each child lie down on a large sheet of paper. Trace around the child's body. The children can color, draw in the features and cut out their own "body." The teacher then labels the body part on each "body."

20. Let the children work human body puzzles.

21. Play "Simon Says" using body parts in action.

22. Play pretend body action games. Say, "Stretch your neck like a turtle." "Kick your feet like a donkey." "Be as large as you can." "Be as small as you can." "Shake your eyebrows," etc.

23. Make "Angels In the Snow" (see Kephart Purdue Motor Survey for directions).

24. Have children listen to their own breathing and feel their heart beat.

25. Have the children write a book about "Me."

26. Try to transfer body awareness and self-concepts to an awareness and conceptualization of "Others Besides Me."

Good general health knowledge. All children should know and practice good health and hygiene habits. Children's general well-being can affect their ability to learn. The suggestions are to teach units on personal cleanliness, proper eating habits, exercise, safety rules, proper rest, and good use of leisure time to teach the child to relax and enjoy life. Specific activities will not be given as

the author thinks teachers are aware of the need for these units to be taught in the curriculum and are well equipped to teach them effectively. Children with learning disabilities or those with underdeveloped self-awareness will need good health habits stressed and reinforced throughout the year.

Fine Motor Skills and Activities

Fine motor skills are those that require the use of the small muscles of the body in fine, skilled, or coordinated movement. Writing, reading, art, eye-hand tasks, and judgment of fine physical responses with ease and without gross errors will be included in this description. Common activities for young children include cutting, placing, pasting, tracing, drawing, coloring, bead stringing, and building with blocks. Children need good body awareness and gross motor developmental skills to do well at fine motor tasks. After these two areas have been developed, the child is ready for fine visual-motor coordination tasks.

Body-awareness for fine motor. The equipment is similar to that used to develop gross-motor body awareness: full length mirror; bell; jungle gym; slide; teeter-totter; crawling tunnel; paints; large pictures; flannel board; supplies to play store, act out plays, or different ways to travel.

Activities are varied.

1. Have the children stand in front of a full length mirror to see how they look. They should learn to recognize themselves and to have good feelings about how they look.

2. Play "Freezing" to teach body control and transfer of body awareness to others. Select a leader. The teacher tells the class to run, jump, or do some form of physical activity. When the teacher rings a bell, the "leader" freezes into a position and the group imitates the leader. A new leader is selected and the game continues.

3. Encourage children with motor problems to use and experiment with various types of playground equipment. By changing their position in space and gravity, they increase body awareness.

4. Have the children draw lines at the chalkboard or at an easel. Draw lines: up, down, away from his body (out); from the side to his body in (in); circles going in opposite directions; and circles going in the same directions.

5. When children have mastered number 4, have them perform the same activities with a pencil and paper at their desks. If any of the children have trouble with this activity, hold their hand, guide the drawing and say the direction the hand is moving in.

6. Use large pictures to have the children make up simple verbal stories.

7. Cut the main characters of nursery rhymes or favorite fairy tales out of flannel. Have the child tell the story or rhyme using the flannel board.

8. Provide simple props so the children can dramatize their feelings.

9. Provide supplies and props so the children can play "store" or "gas station."

10. Take a wooden television set, strip out the inside works, paint it, add curtains and it makes an excellent puppet stage. The children can make simple puppets or puppets can be purchased in most department stores. Puppetry helps children organize so their thoughts, language, and hand coordination all work together (see Appendix B).

Fine Motor. Equipment includes, but is not limited to: clothespins; shoeboxes; scissors; paper; paste; scraps of material; beads; buttons; shoestrings; blocks of all shapes and sizes; small objects like nuts, bolts, plastic animals, etc.; small manipulative toys such as those made by Creative Playthings, Fisher Price, or PlaySkool, and D.L.M. Company; basic tools including hammers, saw, screwdriver, nails, soft lumber scraps; containers of various shapes and sizes; zippers; snaps; shoe to tie; crayons; paints; easel; playdough; clay; and any objects the teacher finds to encourage fine muscle activity.

Activities are limited only by the teacher's creative

abilities and imagination.

1. Kindergarten children may have underdeveloped finger muscles. One activity the author has used with success is to give children clamp clothespins and have them clamp the clothespins around the edge of a shoebox to make a "zoo cage." Small plastic animals can be placed in the cage. This will strengthen the finger muscles so the children can do other fine finger tasks like cutting with scissors.

2. Have the children cut out random shapes from construction paper. Show the children how to make fringe or "grass" by cutting parallel slits in paper. The random shapes and fringe can be placed in the shoebox zoo for food and grass.

Whenever children do an activity, make it a meaningful or useful task. Don't make children do something and then throw it away. This helps children understand the idea that there is a purpose or reason for learning tasks.

3. Before children begin to paste, they should have experiences with placing objects on a background. Any activity consisting of placing three-dimensional objects on an outline and then doing the same with paper cutouts is good. Make playdough cookies by cutting playdough with simple-shaped cookie cutters: use jar-lids, small box lids, and a star, a heart, or a diamond cutter. The "cookies" are then placed on a cardboard cookie sheet on which the

same shapes have been drawn. The conclusion of this activity is for the children to trace around, cut out, and paste matching construction paper cookies on the cookie sheet.

4. Another placing activity children enjoy is placing animals in their homes. Draw animal homes on a large piece of paper--a tree with a hole for the squirrel, a dog house with an empty doorway, an empty nest, etc. Have the children place plastic animals in the correct home. Last, construction paper animals can be pasted in the right home.

5. There are many opportunities for pasting activities. Each holiday provides ideas: paper chains, three dimensional trees for Christmas; Halloween shapes on a spooky background; cotton "wool" on lambs whiskers and tails on rabbits for Easter; and feathers on turkeys for Thanksgiving is just the beginning.

6. Collect yarn, ribbon, seeds, and other scraps. Have the children paste them on cardboard in geometric shapes or animal outlines. The children should experience working with as many textures as possible.

7. Tracing is good for tactual visual-motor development, and fine-motor development. Begin by using the fingers to trace shapes, templates, and other forms. Trace along lines, plastic letters and numbers. This will help children later in writing tasks. Second, trace the same objects as before only use crayons. Outline simple pictures like blocks, balls,

tree, car, etc. Trace around the inside of plastic containers, paper cups, cans, etc.

8. Make use of finger play games to provide fine muscle coordination.

9. Have the children string beads on a shoestring to make a necklace.

10. Make use of educational toys available: stacking cups and saucers; plastic nuts and bolts; dishes; blocks; wooden puzzles; Lego; Lincoln Logs; Tinkertoys; dolls to dress and undress; a dollhouse; snap-together toys; and American Bricks are just a few you can purchase in department stores or dime stores.

11. Provide small push and/or pull toys with wheels: cars; animals; interlocking trains; or any sturdy toy with moving parts.

12. Provide a kitchen area where the children can measure, sift, pour, mix and bake. Toy dishes, appliances, etc. are good.

13. Provide an area so the children can pour water into different size containers.

14. Provide a sandbox with containers of different shapes and sizes.

15. A workbench with simple tools and carpenter supplies should be provided. Supervision is necessary for

safety reasons.

16. Have boxes with buttons, beads, marbles, spools, etc. for sorting tasks. Sorting can be by size, shape, color, or object.

17. Put several easily recognized objects in a bag. Have the children identify them by touch.

18. Provide an area and plenty of opportunities for children to play with clay, mud, fingerpaints, and different textured objects.

Perceptual-Motor Skills and Activities

Perceptual-motor refers to the process of organizing data obtained through the senses and the interaction of this perceptual data with motor activities. The two sensory channels this study is most concerned with are the visual and the auditory.

Visual learning is important to success in reading. There are sub-areas of visual skills. Children must be able to: (a) discriminate one object from another. In reading, one letter or word from another letter or word; (b) distinguish an object from its surrounding, figure ground; (c) visual closure, the ability to identify the whole from an incomplete stimulus. In reading, completing a word or sentence when part of it is missing; (d) to recognize and remember shapes and objects, visual memory. In reading this is a necessary skill. It is used to build sight

vocabulary. (e) Visual coordination and pursuit, tracking left to right; (f) visual-motor spatial form is the ability to move the body and other forms in space.

Auditory perception skills are also necessary for success in reading. The phonics methods depend upon the auditory channel for success. There has not been as much research devoted to the auditory perception skills as have been in the visual perception area. Oakland and Williams (1971) have written an excellent book on auditory perception. It is used in LD classrooms as an important resource aid.

The main areas of remediation and instruction in auditory perception are: (a) discrimination of sounds; (b) blending; (c) decoding; (d) memory; (e) sequencing; (f) comprehension.

Visual perceptual-motor. Children may have normal vision or acuity and have visual-perceptual disabilities. Screening for nearpoint vision is often overlooked in school visual examination although it is important to reading success. Children must be able to see and interpret correctly what they see. They must be able to fixate on an object, pursue a moving target, and rotate the eyes in any direction at will. "What an individual sees is the result of a psychoeducational process which intergrates gravitational forces, conceptual ideation, spatial-perceptual orientation, and language function." Valett (1967, #7).

Children should be given the opportunity for as many

different visual experiences as possible. They should also have opportunities to practice the skills necessary for good visual perceptual-motor intergration.

McCarthy and McCarthy (1969, p. 31) describe Strauss' idea of perception as "a process midway between sensation and thought. . . . A visual field exists in which events follow certain rules under normal circumstances. In LD children who have a visual-motor perceptual handicap, these rules are not followed." Kephart believes our modern environment makes visual-motor intergration skills in the LD child worse, perceptual disabilities have a physical basis.

Frostig (1978) has identified five functions of visual perception: (a) visual-motor coordination; (b) figure-ground; (c) perceptual constancy; (d) position in space; (e) spatial relationship. Visual perception takes place in the brain. As a result of extensive reading about visual perception, the author believes many of the theories and activities used to be similar, but the theories are arrived at by different methods, and the same activities are used for different reasons.

Activities for visual discrimination:

1. Food: Place a cookie 10 to 20 feet away. If the child can identify it, give the cookie to the child as a reward. Use various types of food.

2. Toys: Place a small toy 10 to 20 feet away. The

child that identifies it, may play with the toy.

3. Using a hand lens, let the children examine their hands, nails, skin, clothes, print, elements such as sugar, salt, and objects with different textures.

4. Give the children opportunities to experiment with color. Begin with the primary colors--red, yellow, blue--then the secondary colors--orange, green, purple. Mix paints, water with food color, or easter dye. Make cookies and color the dough. Have the children use crayons to make seasonal color wheels.

5. Take the children outside, point out objects in the distance and let them describe the object. If possible show the children how to use binoculars to focus on an object.

6. Place five or six objects on a tray. Allow the children to look at the tray for 15 seconds. Cover the tray and have the children describe the objects on the tray.

7. Set up the taperecorder. Have the children take turns looking out of the window and describe what they see. Play the tape back.

8. Have children point out objects in a large picture.

9. Play animal or action "charades." Have the children act out dog, monkey, eating, and jumping rope.

10. Mount simple objects on cardboard and have the children describe each object.

11. Mount simple pictures on construction paper. Have the children describe the picture.

Visual coordination and pursuit. All of these activities involve tracking skill development.

1. Place the child at one end of the room. Instructions given are to hold the head steady and, using only your eyes, follow the teacher around the room.

2. Place the child in the same position as number 1, visually follow another student skip, crawl, and run around the room.

3. To develop object focus, place the student in front of you. Say, "Look at me while I count to five." "Look at my desk while I count to six." "Look at the flower," etc.

4. Have the children track a ball as it rolls away from their body. Track it as it rolls toward their body.

5. Have the children visually follow wind-up toys until they stop moving.

6. For horizontal-lateral tracking, sit in front of the child. Hold a pencil with a thumbtack stuck in the eraser about 18 inches from the midline of the child's nose. Move the pencil slowly to the left while counting to ten. The child visually tracks the thumbtack. Move it slowly back to the right past the midline while counting.

7. Have the child track basic form patterns, free movements, and changing depth perceptions. Use a small

penlight for this pursuit activity.

8. Ping Pong is an excellent activity for visual pursuit. A small low table can be used by young children ages five and six.

9. An inexpensive car racing set is good for visual pursuit. It also provides practice in eye-hand coordination.

10. Have the children visually track as the teacher draws line patterns on the board.

11. Have the children trace line patterns with fingers, then chalk. Use directional arrows if needed.

Figure ground activities. To begin figure ground training, present tasks and material with reduced stimuli. Present one activity at a time and break it into small sections if necessary.

1. Provide a doll house with furniture and dolls for free play.

2. Provide a toy farm with plastic equipment, animals, crops, and people for placement and free play.

3. Provide "Weebles"--available at department stores--and their different play sets for placement and free play.

4. Give placement directions. Say, "Put the Mother doll in front of the house." "Place the boy Weeble in the swing." "Stand the cow in the barn," etc.

5. For form discrimination, have the children point to all the square things in the room; all the round objects

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on the shelf; and all the triangle shapes in the hall.

6. Have the children trace two and three dimensional forms with their fingers. Use templates and crayons to trace a design on a plain background.

7. Have the children work puzzles. Begin with puzzles that show good figure-ground contrast. Advance to puzzles with more figure-ground confusion as the children become more skillful.

8. Use worksheet material from Continential Press to teach visual organization and intergration of separated pieces of pictures and designs.

9. Have the children cut pictures of people and objects from magazines, place and paste on a plain background.

10. Have the children cut out a large circle, then draw a small square on the circle. Point out to the children that the square is figure and the circle is ground. Extend this activity to the outline of a boy in front of a tree; a car in front of a house, etc. Discuss and have the children finger trace the figure.

11. "Highlights" a magazine for children has a feature each issue on hidden figure outlines. Have the children locate and outline each hidden figure.

12. Use overlapping mixed figures and designs for visual discrimination (see Appendix B for sample).

13. Use Frostig's figure-ground workbook activities in

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Beginning Pictures and Patterns, pages 15, 16, 26, 27, 37, 38, 39, and 51.

Visual memory activities. Visual memory or recall is necessary for success in reading tasks.

1. Place five objects (a comb, pencil, paper clip, button, and a penny are examples) on the table. Count to ten with the children watching. Have the children close their eyes, remove one object, have the children look and identify the missing object.

2. Have the children close their eyes and tell what color clothes they are wearing. Have them describe a hall bulletin board. Have them describe their room at home.

3. Let the children tell what they had for breakfast.

4. Have the children recall and describe a favorite television show.

5. Have the children match toys, objects, and shapes with the picture duplicate.

6. Play "Old Maid" cards for matching and recall.

7. Play "Dominoes."

8. Give each child six number cards. Briefly show a duplicate card. Points are given for matching by recall.

9. Teach alphabet recall with cards, link letters, plastic letters, etc.

10. Arrange numbers in a series. Allow the child to look at the series for ten seconds, cover and have the child

recall the series. Begin with two digit series and work up to as many as the child can successfully handle. This is an individual task.

11. Arrange number or letter cards, let the child see the cards, shuffle and have the child place the cards in the original order.

Visual-motor memory. Not only must children be able to recall visually, they must be able to act on past experiences for further sequential tasks.

1. Present children with a series of simple designs, expose for 15 seconds, cover and have the children reproduce the designs with crayon on paper. Suggestions for designs are vertical line, circle, square, triangle, star, and half moon. In the beginning use only three or four designs. Extend this activity to include more complex designs, i.e.: a circle in a square, a half circle hanging on a vertical line, a square with a vertical line running through the middle, etc. Use tracing techniques and longer exposure to the design if necessary.

2. Arrange a set of simple objects on a table. Have a set of several different objects in a box nearby. Allow the children to observe the objects on the table, then close their eyes. Remove one object from the table and place it in the box. The task is for the children to discover what is missing from the table and then find it in the box.

3. Arrange assorted beads on a shoestring, expose to the children for 15 seconds, remove and have the children string beads in the same order or pattern on their shoestring.

4. Use different colored and sized blocks, and arrange in a pattern, expose for ten seconds, remove and have the children rebuild the pattern.

5. Build patterns with plastic numbers or letters, expose, remove and have the children reproduce the pattern.

6. Any activity where the children observe and then reproduce a pattern is good training for visual-motor skill. Always begin with a simple pattern and increase difficulty as the children are able.

Visual-motor fine muscle coordination.

1. Have the children reproduce simple forms. Draw a vertical line, circle, square, and a triangle on the board. Let the children finger trace the shapes, then draw the forms on the chalkboard.

2. Have the children draw the forms in number 1 on paper with crayon, color in the design and cut out. Place the designs on another sheet of paper and trace around the cut out forms.

3. Have the children use open stencils for tracing, coloring, and cutting.

4. Make a gadget board with locks, latches, plug-ins

and plugs, etc. Any object a child can manipulate can be attached.

5. Have the children thread needles and string beads, buttons, shells, etc. to make necklaces.

6. Provide a small sandbox--the top of a snack tray will work--and let the children draw shapes, print their name, or make mazes in the sand.

7. Fingerpaint is a favorite of children. On a wet sheet of fingerpainting paper or construction paper, squirt some liquid soap and powdered tempra paint. Let the children experiment with mixing the soap and paint together and making shapes in the paint.

8. Using disposable pie pans, have the children make clay tablets. While the clay is moist, they can trace forms, print name, or write letters or the alphabet in it.

9. Make worksheets with simple mazes. Let the children crayon to find their way out.

10. "Tickle Bee," a game available at most department stores is a maze activity that uses a magnet and a "bee." This game is an individual activity. It attracts and holds the attention of five and six year olds.

Visual-motor spatial form. The ability to move in space and make judgements about space is "basic to the solutions of non-verbal performance problems encountered in everyday life." Valett (1967, #34).

1. Give the children wooden or plastic geometric shapes to touch and experiment with.

2. Give large building blocks to the children to experiment with. Provide examples of various building shapes and have the children imitate them, i.e.: a fort, house, tower, train, etc.

3. Have different sized objects of the basic shapes and encourage children to compare them by touch, vision, and verbalization. Round objects can be blocks, marbles, balls, and beads. Triangles can be blocks, ice cream cones, and toy tents. Square objects can be blocks, boxes, and sponges.

4. Provide clay and have the children make the basic forms.

5. Show pictures of the basic forms and have the children find a three dimensional one to match.

6. Cut letters and numbers out of cardboard. Include both upper and lower case letters. Let the children experiment with these in free play.

7. Use the spatial relationship section of the Frostig program.

8. Have the children match parquetry blocks with printed patterns.

9. Let the children experiment with interlocking cubes--available from Tupperware dealers.

Visual-motor intergration.

1. Have the children draw: (a) self-portrait; (b) another child; (c) the teacher; (d) their family members.

2. Have the children paint a self-portrait on a large sheet of paper (butcher paper is good for this activity).

3. Have the children cut up pictures of people and reassemble.

4. Make puzzles by gluing pictures of people on cardboard and cutting in jigsaw fashion. They can assemble the puzzles.

5. Have the children assemble commercial puzzles of the human figure. There are several available from the DLM catalog.

6. Let the children use "Etch-A-Sketch" to create designs, draw a house, print their name, etc.

7. Have the children plan and make murals.

8. Make picture, symbols, letters, shapes, or number bingo cards. Play a modified version of Bingo.

Auditory Perceptual-Motor Skills

Auditory perception skills are as necessary for reading as visual perception skills. According to Oakland and Williams (1971, p. 8) there are six goals in teaching auditory perception. The child must learn: (a) "objects make sounds"; (b) "objects which make sounds have labels";

(c) "unseen objects make sound"; (d) "familiar sounds sound different"; (e) "sounds can be associated with pictures of objects and persons"; (f) "sounds can differ in intensity, frequency, duration, or pattern."

Auditory discrimination. Auditory discrimination is necessary for reading. It includes gross and fine discrimination of words, discrimination of accented words in a sentence, discrimination of words in a sentence, discrimination of the order of sounds within words, and of the syllables within words. Harris (1975, p. 24) states "inability to distinguish between words that sound alike may prove a severe handicap in learning to read." Harris believes auditory discrimination activities should involve words and phonemes rather than non-verbal sounds or nonsense words. Before children can be taught phonics, they must have adequate auditory discrimination skills. Activities for auditory discrimination must include those activities to develop a recognition of similarities and differences in all parts of a word and compare it to other words.

1. Make a tape recording of the children making various sounds; clapping, shaking a rattle, dropping marbles in a jar, running water into a jar, crushing paper, breathing hard, using a stethoscope to hear heart beating, coughing, etc. Play these sounds back and have the children identify them.

2. Teach children to relax and listen. Have the children place their heads on the desk, shut their eyes, relax and listen to quiet sounds. Later, have the children describe what they heard and how they felt.

3. Use talking books or record stories on tape and have the children follow along in the book as the tape is played back.

4. Let the children find objects in the room that can make sounds and have them demonstrate how the object can make sounds. Some examples are books dropping, the pencil sharpener, and moving a chair.

5. Put blindfolds on all the children. Make a sound with an object and see if they can identify it. Some sounds could be clock alarm ringing, ring a bell, shut the door, or tap on the desk with a pencil.

6. Teach the children poems and songs by rote.

7. Pronounce two words that are alike in some way and have the children tell how they are alike. Pairs that could be used are: mat--map, sat--cat, train--chain, or chair--stair.

8. Play listening games. "Simon Says" is a favorite for many young people.

9. Have the children name objects in categories that begin with the same sound, i.e.: animals, foods, toys, etc.

10. Make up incomplete rhymes and have the children

complete them.

11. As you use a sound in games, show the children the symbol for it by either writing it on the board or holding up a model of it.

Auditory decoding. Children should understand what they hear and respond to oral directions. Kindergarten students should use answers of yes and no rather than long verbal answers.

1. Match pictures with their sounds, i.e.: dog-barking; cow-mooing; train-whistle, etc.

2. Have the children turn their backs while the teacher makes various sounds. The children are to identify and imitate the sounds. Some sounds to use are hand clapping, clucking tongue, and tapping the desk with a pencil.

3. Play "Follow the Leader" with the children. Use contrasting sounds, i.e.: walking on tiptoe, stamping feet; talk in a loud voice, whisper; and sing in a high voice, a low voice.

4. Ask questions so the children can give yes or no answers. Use questions about nouns, verbs, sex, purpose, i.e.: "Does a bird fly?"; "Is Sue a boy?"; "Is a kite something to eat?"

5. Play "Alike or Different." Say two words such as "cat--cat" or "boy--toy," and ask if they are alike or different. Let the children make up sets of words.

6. Give simple directions and have the children carry them out in the order given. Increase complexity of directions as the students increase their ability to respond correctly to oral directions.

7. Prepare worksheets (see Appendix B) for following oral directions.

8. Arrange letters in the chalktray. Have the children select the symbol to match the sound given by the teacher.

Auditory memory. Children need to recall specific sounds to match the correct symbol if they are going to be successful readers. This skill is necessary for both sight word vocabulary and for phonic analysis of words.

1. Have the children explain rules for simple games.

2. Discuss daily activities with the children.

3. Name objects in different categories such as: foods, animals, candy bars, etc. Vary the categories to suit the environment.

4. Teach the children songs or poems that repeat sections over and over. "Old MacDonald," "I Know An Old Lady," and "The House that Jack Built" are excellent ones to begin with.

5. Have the children listen to a series of four words. When they hear one of the four that is different they are to raise their hand. Say each group of words twice, the

children respond on the second round. An example is: "dog, dog, cat, dog."

6. Play "Telephone."

7. Play records or tapes of stories. After the story is finished, have one child retell it to the class.

Auditory closure. Any activity to improve the ability to anticipate from context the word or words in spoken sentences, or to recognize a spoken word when a letter or letters have been omitted should be used.

1. Say all but one sound of a word and have the children complete the word. Examples are: ice (cr)eam; wat(er)melon; tea(ch)er; butter(f)ly; bir(d)house; and mail-(m)an.

2. Say a sentence and omit one word. Have the children complete the sentence. Examples are: The dog _____ loudly at the cat. He kicked me, so I _____ him. Who's knocking at the _____. And _____ and Jill went up the hill.

Auditory sequencing. Begin auditory sequencing training with very specific directions. Gradually increase difficulty of commands as skill develops.

1. Say, "Listen carefully, I want you to go to the table, bring me the red book and then sit down." Give the children practice in following directions until they can follow directions in the order given.

2. Ask each child to sing a song he knows to you.

3. Make simple rhythmic patterns either vocally or with rhythm instruments and have the children duplicate the pattern.

4. Ask the children time, week, month, and seasonal sequence questions.

5. Teach the children the correct order of the seasons, months, and days.

6. Provide practice in repeating series of digits, i.e.: "1-3-6"; "4-1-0-2," etc. Say the series forwards and backwards. Begin with two digits and do not use more than four digits in a series.

7. Say letters in series and have the child repeat as in number 6.

8. Make up sequence stories with the children. One child starts the story with one sentence. Each child that follows must repeat all the sentences said before and then add their own sentence.

Posttest, Expected Results, and Conclusions

The experimental and the control group will receive both the Purdue Perceptual-Motor Survey, and the Metropolitan Readiness Test the last week of April or the first week of May.

The findings expected are: (a) a significant difference at the level .05 in favor of the experimental group over the control group in both motor scores and readiness scores; (b) girls will make higher scores in both motor and readiness

tasks than boys; (c) the experimental group will have acquired a higher score on the readiness test than the control group.

This experiment would need to be conducted three or four years to validate the above conclusions. The author recommends testing both the experimental group and the control group at the end of their first grade work to further substantiate the findings of this experiment.

Given the opportunity, the author will test this program at a later date.

It is the belief of the author that there is no one best method of preparing a child to read. The best approach is to provide a combination of proven instructional methods, adjusted to each individual child's needs, plus a teacher who cares, and parents who take an interest in their children and work with the school.

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D.L.M.--Developmental Learning Materials Company, 7440 Natchez Avenue, Niles, Illinois 60648.

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Appendix A

Definition of Terms

Angels-in-the-snow: An exercise used by Kephart to detect problems in neuromuscular differentiation and specific problems with right--or left--sidedness.

Auditory perception: The ability to interpret the sensory data received by the ears.

Bilateral: This involves both sides of the body.

Body image: The awareness of one's body, and how it relates to space. A self-picture of one's body.

Body movement patterns: The way one handles the body in locomotion. It includes posture, balance, and applying performance to natural laws such as gravity.

Brain-injury: An injury or damage inflected on the brain before, during, or after birth that prevent or interfer with the normal functioning of the brain.

Cerebral dominance: The control of the brain by on hemisphere sometimes called the dominant hemisphere. This idea is an important one to many perceptual-motorists.

Cognition: Analytical or logical thinking.

Closure: The ability to recognize a whole when one or more of the parts are missing.

Contralateral: On the opposite side.

Cross pattern: A movement in which the arms and legs move in an alternating fashion as in walking.

Discrimination: The ability to detect differences and likenesses between stimuli.

Dominace: The preferred side of the body.

Directionality: Awareness of the up and down axis and of the relative position of the left and right side of the body (vertical and lateral).

Figure ground: Refers to the ability to see one part of a visual field while relating it to the rest of the field.

GOTKAV: Refers to Barsch's theory. The letters stand for gustatory, olfactory, tactual, Kinesthetic, auditory, and vision; the six senses.

Homolateral: Pertaining to one side.

Hyperactive: Disorganized, disruptive, and unpredictable patterns often seen in exceptional children.

Hypoactive: Lethargy, the opposite of hyperactive.

Imagery: Visual representation of images.

Laterality: An internal awareness of the two sides of the body.

Locomotion: Movement from one place to another.

Mid-line: The vertical center of the body.

Motor: Refers to the muscular activity of the body. Gross refers to large muscle activities. Fine refers to small muscle activities. Perceptual-motor refers to the interaction of the various channels of sensory perception with motor activity.

Movigenics: A motor-based curriculum for LD developed by Barsch.

Ocular pursuit: The following of a moving target with one or both eyes.

Perception: The process of recognizing sensory input and the ability to differentiate from various similar but different stimuli.

Phoneme: A group of closely related speech sounds such as Tin Top and Stop is one phoneme.

Phonics: The process of relating sounds to specific letters.

Psychomotor: Refers to the motor effects of psychological processes.

Readiness: The willingness and ability to engage in an activity, prepareness for learning. In reading it refers to a state of general maturity that allows the child to learn to read.

Spatial orientation: An awareness of the space around the body in terms of distance, form, direction, and position.

Splinter skill: Skills developed out of context from the total movement pattern. It is unrelated to a total pattern.

Unilaterial: On one side of the body.

Visual perception: The ability to interpret the sensory data received through the eyes.

Appendix B

Figure Captions

Figure 1. Walking Stages.

Figure 2. Walking Board.

Figure 3. Inclined Board.

Figure 4. Diagram Ladder, Walking Board, Inclined Board.

Figure 5. Sitting Position.

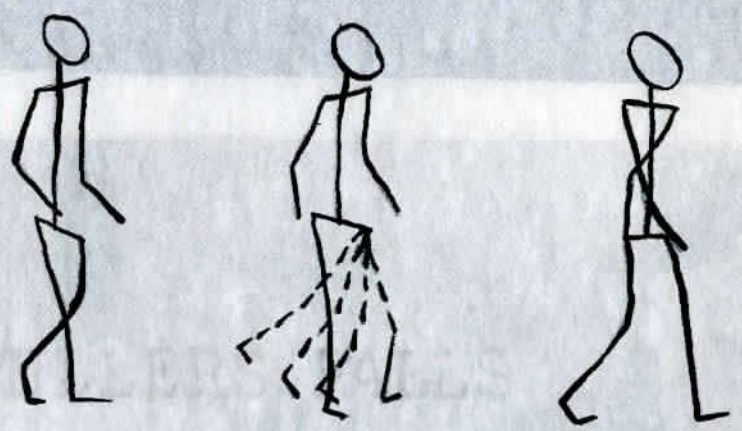
Figure 6. Pole and Can Hurdles.

Figure 7. Puppet Stage.

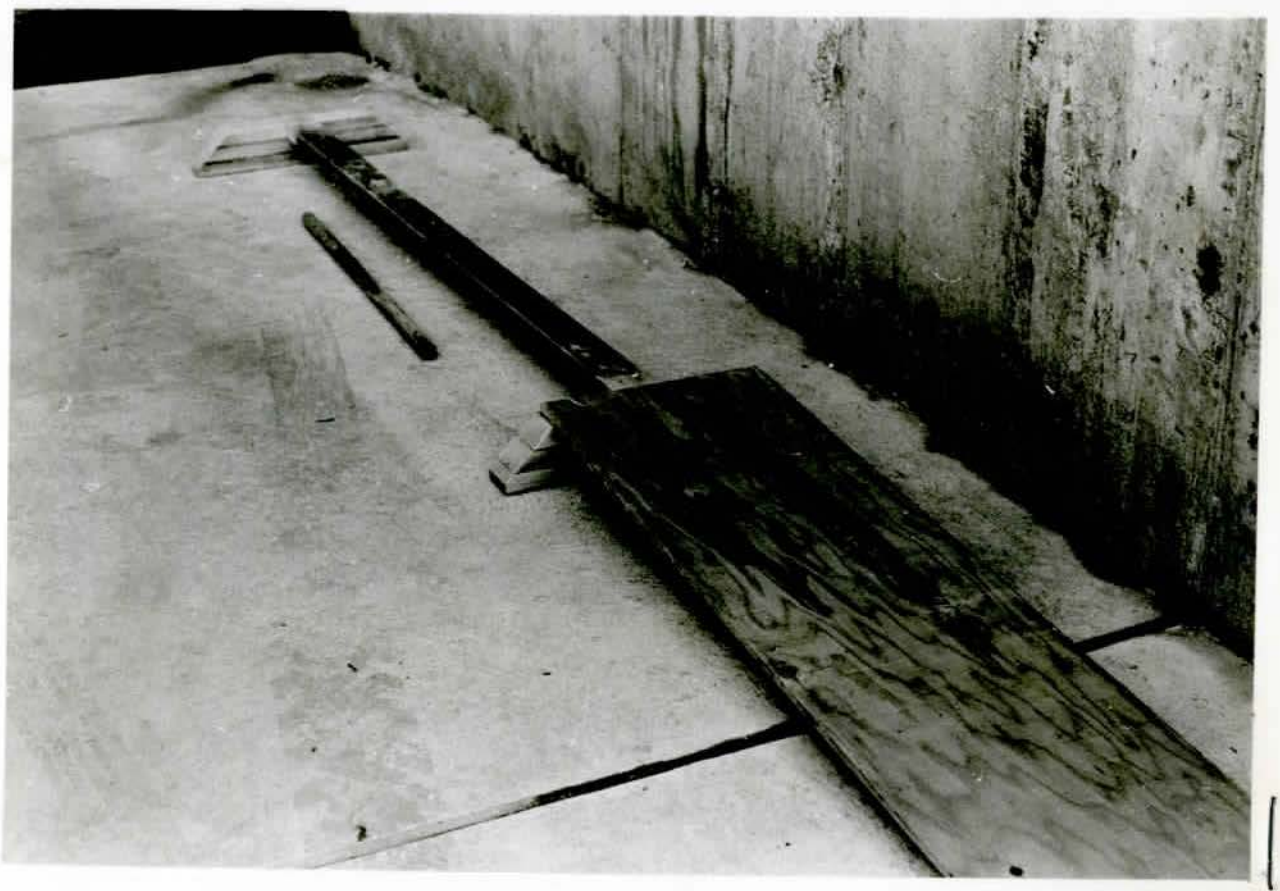
Figure 8. Overlapping Shapes.

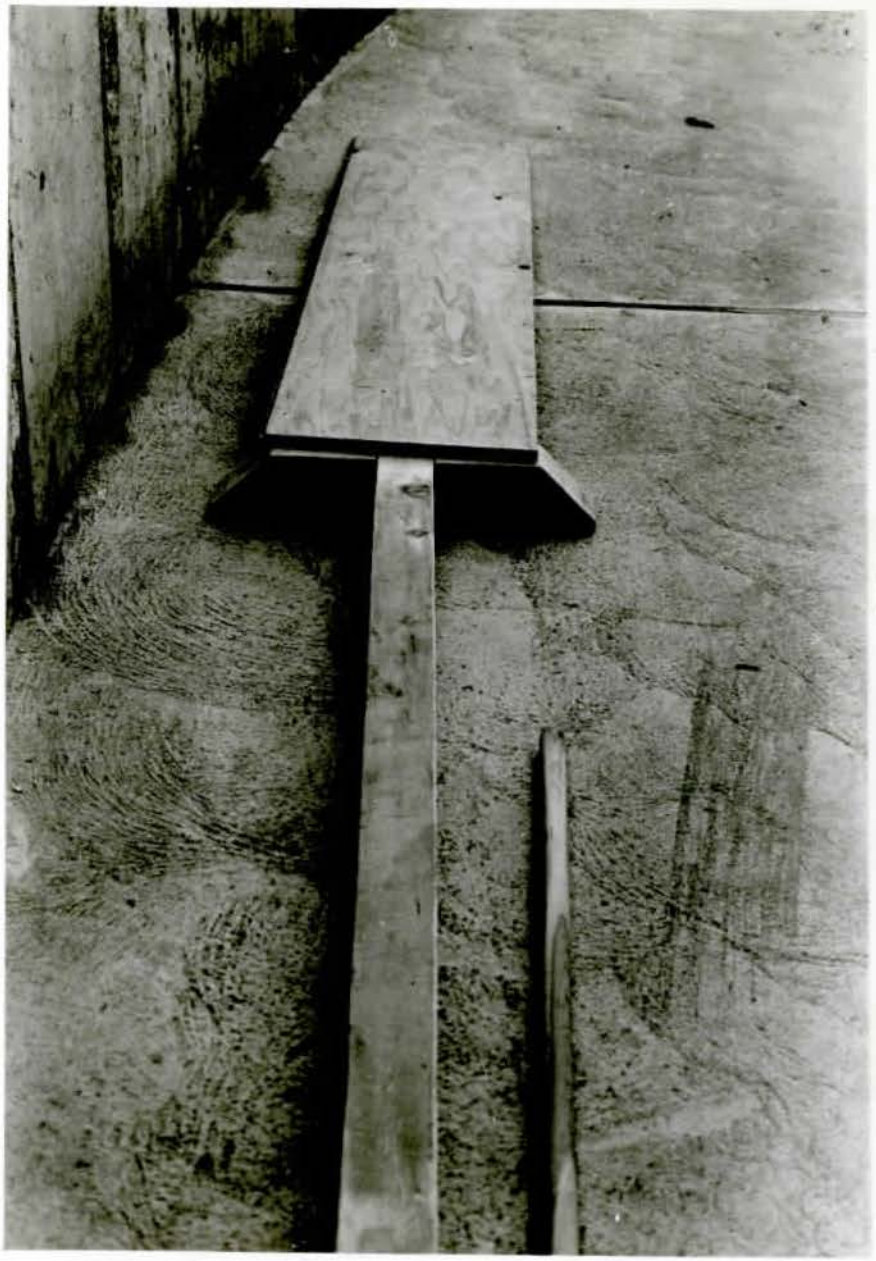
Figure 9. Oral Directions.

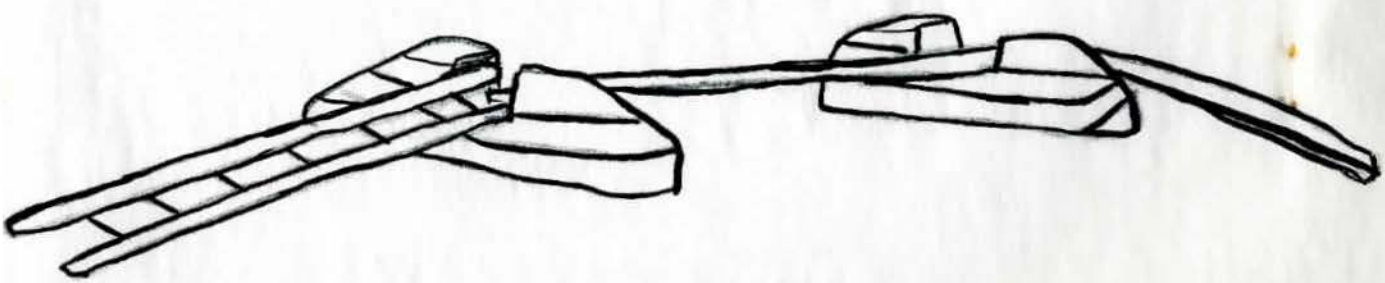
Figure 10. Balance Boards

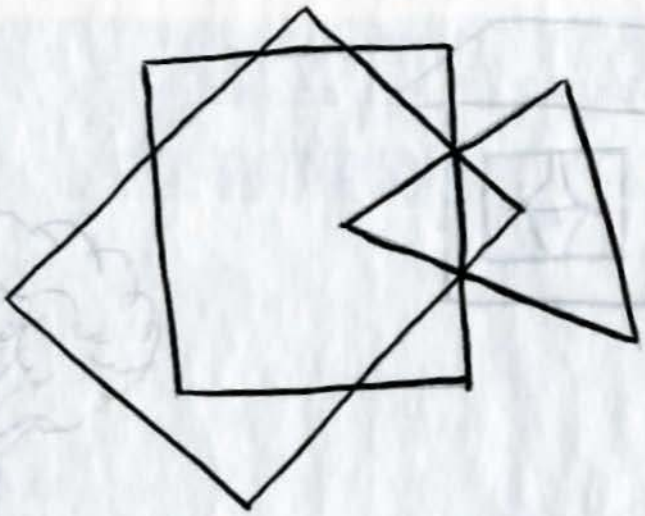


Supportive Swinging Catch





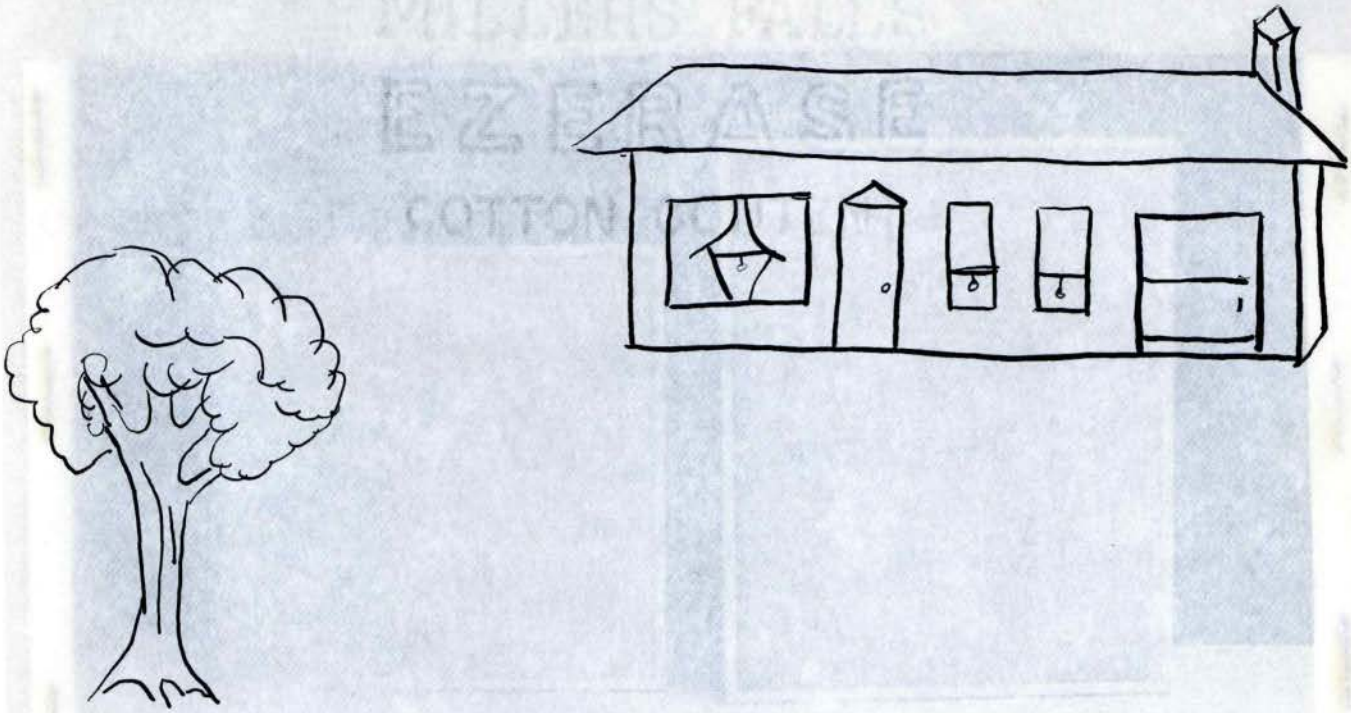




Geometric

Letters

Numbers



Worksheet

Directions to be given the children orally.

1. Color the tree green and brown.
2. Draw a line from the tree to the house.
3. Draw a boy standing under the tree.
4. Put the sun in the sky.
5. Color the house red.
6. Put some flowers in front of the house.