

Chapter Seven

Training Activities

Here's how is the main concern of this chapter. I want to share with you the classroom application of the optometric understandings presented in the preceding chapters. Keep in mind that these procedures are a starting point in the training of children. They are expanded through optometric use of lenses, prisms, and specific optometric training devices.

All training activities are designed to help a child develop the myriad of visual, motor, and language skills needed to perform in the classroom. These skills are developed by emphasizing the process (how he does it) as a child is engaged in an activity. This is accomplished by constantly reinforcing the need for the child's awareness of what he is doing with and to himself in the areas of vision, motor, and language as he performs a specific activity. End results are not given the major emphasis.

The goals of the classroom training activities are to have the child develop the following:

- Free and effortless movements of eyes, hands, and body.
- Reciprocal movement.
- Body awareness.
- Consistency in direction.
- Correction of his own errors.
- Comfortable use of receptive, internal, and expressive language.
- Maintenance of his peripheral visual and auditory world while engaged in a task.
- Integration of all sensory-motor systems.

The goal of training is achieved when a child knows what he is doing with and to himself in the areas of vision, motor, and language, is aware of his errors, and can correct his own errors.

Basic to all training procedures are the following considerations pertaining to vision, motor, language and communication:

1. Vision
 - a. Maintaining visual monitoring of body movements—using eyes to direct and alter body movement.
 - b. Maintaining awareness of a total peripheral volume of space while engaged in a visual, motor or language task. Peripheral awareness aids ease of movement, automatic functioning, body balance, and binocular vision.
 - c. Maintaining smooth, effortless, and accurate eye movements.
2. Motor
 - a. Awareness of muscular movement and patterns of movement—proprioception and kinesthesia.
 - b. Awareness of control of movement in desired directions.
 - c. Awareness of unrestricted movement.
 - d. Awareness of reciprocal movement.
3. Language
 - a. Listening to instructions – receptive language.
 - b. Programing, evaluating, and correcting response – inner language.
 - c. Executing into action or producing a product through verbal, visual, and motor systems (talking, writing, body reactions, thought) – expressive language.

4. Communication

The use of language becomes the key in keeping a child emotionally open while engaged in a training activity. All learning takes place from within. A child can be led to a situation and he can be shown how to do it, but the doing is his. Performance can either be a superficial duplication of what a child has been shown, or it can be a meaningful response that comes from within the child. When a child is emotionally open and comfortable with his instructor, he will feel free to make errors and share his inner thinking and reactions. When he is afraid of judgment and criticism, he will turn off and whatever performance comes through will be without insights that can be applied to future situations. Allowing the child freedom of his thoughts by removing judgment from his expressive performance encourages his creativity, responsiveness, and willingness to look at and correct performance.

When a child makes an error, ordering him to correct his error may turn him off to learning and cut off communication. Asking him questions, however, about his performance opens him up to positive achievement by establishing a communication-bond between himself and his instructor. This can be done by keeping the following in mind:

- Encourage the child to correct his own errors.
- Explain to the child that the concern is with how he does an activity and his understanding of his errors, rather than the finished product.
- Question the child about his performance instead of ordering him to correct his error.
- End sentences with a question mark (?) rather than an exclamation mark (!).

This concept can be illustrated by using the following statements when the child does the reciprocal crawling training activity:

- Show me the pattern.
- Are all your body parts in the proper position?
- Show me how you change and make everything the opposite.
- What part moved first? Did they all move at the same time?
- What part did you forget to move?
- Why am I waiting before telling you to change?
- Did you forget to move something?
- Is that the way it's supposed to be?
- At what are you looking?

Improved Performance

Performance efficiency will show improvement when a child has learned to integrate his visual, motor, and language skills to a level where they support each other. The following signs are noticed by the optometrist, parents, and teachers when the child's performance improves:

- Reduction of muscular tension and anxiety.
- Easier and more effective integration of all senses.
- Increased attention span.
- Expression of positive attitudes.
- Increased receptivity and response to instruction.
- Improvement in classroom performance.
- Improvement and increased participation in sports activities.
- Improved learning.
- Improved social relations.

Orientation Understandings

A. *The purpose of the training is discussed with a child at the first training session. He is told that as a result of his optometrically oriented training he will perform more efficiently and with less effort in the following areas:*

1. *School.* His school work will improve. He will be able to learn more and receive better grades with less effort and time than he is presently using. He will be able to spend less time on his school work and get more out of it.
2. *Sports.* His ability to catch and hit a ball will improve.
3. *Socially.* He will be accepted by other children.

B. *General Rules*

1. The child is asked to do the following while he is engaged in all training activities, listening to someone, watching television, or anything else that he does when his eyes are open:
 - a. To be aware of a large volume of visual and auditory space.
 - b. To be aware of his body and the movements he makes to do something.
 - c. To be aware of visual, auditory, and body awareness without forcing it—letting it come through by itself.
 - d. To be aware of what he is thinking and feeling, both physically and emotionally.
 - e. To be aware of visual space, auditory space, and body awareness all at the same time.
 - f. To be aware of what he is doing with himself and to know his reactions.
2. Competition
 - a. There is no competition in the training situation. Each child has his responsibility and one child is not set against another.
 - b. There are no races, time tests, or any other factors to put pressure on him.
 - c. There is a job to do and he is to spend his time developing his skills. (Some socialization is encouraged because many of these children need to talk to other children.)

C. *Children who are advanced in training are asked to teach new children how to do certain training techniques. This is done to help the experienced child with his expressive language. In addition to the value of learning how to express and share, an effective way to learn is to teach. Teaching another child gives the child who is the teacher recognition that he has gained proficiency in the training. Allowing him to assume the responsibility of teaching another child is a boost to his self-esteem.*

Helping Children Discover Themselves

A child must know the names of his body parts and the action of each part. Frequently a child does not know the names or actions of the parts of his own body. Demands for performance are made, with the assumption that a child has full awareness of his body and the use of its parts. Assume nothing and take nothing for granted. Help a child learn about his own body through the following activities:

1. Awareness of Body Parts

- a. Have the child point to and name each of his body's parts. When he does not know the proper name, supply it to him.

Question: "Point to the parts of your body. What is the name for each one?"

- b. Have the child name and move his body parts in all possible directions.

Question: "How many different ways will each body part move?"

(1) Gross Parts

- (a) Head
- (b) Trunk
- (c) Shoulders
- (d) Arms
- (e) Forearm
- (f) Hand from wrist
- (g) Leg
- (h) Foreleg
- (i) Foot from ankle

(2) Finer Parts

- (a) Eyes
- (b) Fingers
- (c) Toes
- (d) Eyebrows
- (e) Facial expressions
- (f) Eyelids (winking either eye)

2. Using Body Parts

a. Jumping, hopping, walking.

- (1) In place – jump, hop, walk in place.
- (2) In directions – jump, hop, walk in the following directions: right, left, forward, backward, forward to right, backward to right, forward to left, backward to right.
- (3) Jump, hop, walk to specific spots in the room.
- (4) Language.
 - (a) With auditory memory and motor output. Give a number of instructions, e.g., "Hop on your right foot three times, walk to the left for two steps, hop on your left foot three times and stop." Start with simple instructions, varying the number of actions given according to the child's ability to remember the following instructions.
 - (b) With visual instructions – repeat 4a by writing directions on a 3 x 5 card. Child is to put what he reads or sees into a motor movement. This may be done with pictures or words.

b. Skipping

- (1) Skipping is a hop and slide action. The child must alternate feet. He hops and slides first on one foot, and then the other is brought forward, and he hops and slides on that one. He repeats this action as he moves across the room.
- (2) Instructions:
 - (a) Skip to specific spots in the room.
 - (b) Language.

- i. Give a number of verbal or written instructions, e.g., "Skip to the door, turn right and skip to the chair, turn left and return to your starting point."
 - ii. Combine skipping with hopping, jumping, and walking.
- c. Heel-toe walk.
- (1) Heel-toe walk is done by walking on a line as follows:
 - (a) The heel of one foot is placed against the toe of the other, both feet on the line.
 - (b) The feet are alternated as the child moves across the floor, using the line as his guide.
 - (c) The heel strikes the floor first, then the ball of the foot.
 - (2) Instructions
 - (a) Heel-toe walk to different spots in the room.
 - (b) Language—repeat as above combining various verbal and written instructions.
- d. Metronome

The metronome may be used when the child is walking, jumping, hopping or skipping. The child is to match his movements to the beat of the metronome. He may be asked to move on each beat, every second beat, every third beat, or any desired combination. The metronome is set at 120 beats per minute.

Reciprocal Movement

Using the muscles of the body in a reciprocal movement helps a child develop the spatial orientation needed for classroom activities. His awareness of the thrust and counter-thrust of his body musculature is the basis for the feeling of movement across a page while he reads and writes. A child's knowledge of direction is not a process of intellect alone—it is the result of a process of the sensing of his muscular movement. Effective and unrestricted reciprocal action of the musculature keeps the body responsive to the nuances in spatial differences caused by light coming into the eyes from different angles. The light entering the eyes triggers a response which affects the muscles of the balancing system of the body, which in turn provides the person with a knowledge of spatial orientation and direction. Too many people close off these muscular sensations and become less responsive to what their body tells them, thereby either losing spatial orientation or restricting the amount of space in which they can effectively function. The trainer, using optometric oriented training, must develop the child's ability to keep himself open and responsive to his body even in tension producing situations.

Properly done, reciprocal movement requires active use of the body in a thrust and counterthrust (counterbalancing) action, plus a vertical torque action. The child is to dynamically relate the right half of his body to the left half of his body in a thrust and counter-thrust action (forward on one side, backward on the other), the top part of his body (head, neck, shoulders, and back) to the lower part of his body (hips, legs, and feet) in a vertical torque action.

While engaged in training for reciprocal movement the child is to be aware of himself and maintain the following:

- His motor movements.
- His peripheral vision.
- His inner awareness of the feel of his muscles.
- His emotional feelings.

When he makes an error, he is asked to express his awareness of having made an error (feedback), and then correct it. The child's expression of having made an error provides the trainer with feedback regarding the child's involvement with the procedure, his sincerity in altering his status, and his trust of the trainer.

I. Reciprocal Crawling

A. Developing the basic reciprocal pattern. Have the child do the following:

1. Lie on his stomach, flat on the floor.
2. Extend his right arm forward, right leg to the rear and straight, with his foot flattened, and toe pointing to the right.
3. Move his left leg up the side of his right leg, with the sole of the left foot touching the right leg at the back of the knee.
4. Touch his left knee with his left arm.
5. Turn his head to the right with his chin resting on his right shoulder.
6. On command, change the position of his arm, legs, and head. His position should now be opposite to what it had been, as follows:
 - a. His left arm extended forward.
 - b. His left leg to the rear and straight, with his toe pointing to left.
 - c. His right leg drawn up to the side, with the sole of the right foot touching his left leg at the back of the knee.
 - d. His right arm touching the right knee.
 - e. His head turned to the left with his chin resting on his left shoulder.

What to look for:

- *Segmented Performance.* Performance is segmented when head, arms, and legs do not move in smooth, synchronized, and simultaneous motion.
- *Peripheral Vision.* Ask the child what he saw in the room as he did the procedure. Did he maintain a broad or open dynamic visual field?
- *Kinesthesia.* Ask the child if he can feel his movements.

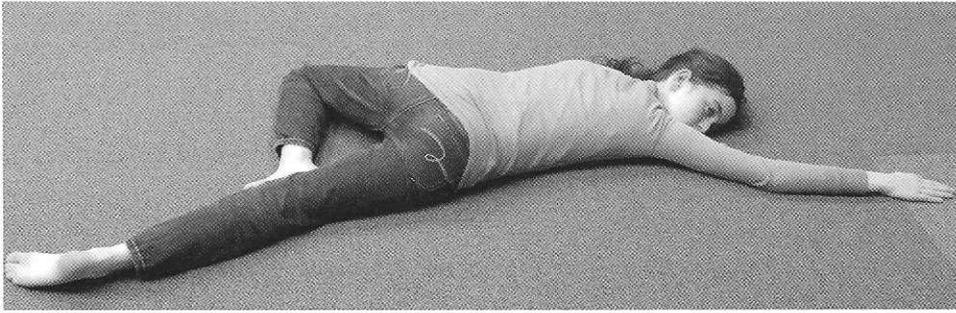
B. Getting the eyes in the act.

1. Basic instructions for movement are the same as in part A.
2. Place an object about 18" to 24" away from the child's right and left shoulders. Pictures, colors, forms, or flashcards with the child's vocabulary words may be used as the fixation object.
3. As the child goes through the procedure, he is to look at the object on the side of the extended arm; i.e., when right arm is extended, child is to rotate his head to the right and look at the object on the right.
4. Reenforce the need to maintain a broad or open peripheral visual field.

C. Crawling with movement. The basic pattern is altered as follows:

1. Have the hand which is placed on the knee, placed flat on the floor.
2. The child is to push with that hand and pull with the other.
3. The legs push and change with the hands.
4. The head turns towards the extended arm as in the basic pattern.

RECIPROCAL CRAWLING PATTERN



Right Hand Forward



Left Hand Forward

D. Combining crawling with other systems. Integration of vision, motor, and language may be attained as follows:

1. Have the child crawl around the room in various directions.
2. Have the child crawl around the room to specific objects in the room.
3. Have the child crawl according to instructions written on cards.
4. Have the child crawl from directions on a simple map.
5. Have the child crawl by responding to prepositions, such as, crawl over, under, around, into, etc.

Always work within the child's ability to perform. Start simply and build up the number of items you wish the child to recall. Wait until the child gains proficiency in following through on simple instructions and then make them more complicated.

II. Reciprocal Creeping

A. Developing the basic reciprocal creeping pattern. Have the child do the following:

1. Kneel on the floor on his hands and knees.
2. Raise his right arm and left leg off the floor. Extend his arm forward and his leg backward, both held straight out.
3. Look at and point to an object straight ahead of him and maintain an open peripheral visual field.
4. Hold the above position for the slow count of five (about five seconds).
5. Resume basic position.
6. Repeat step 2, this time using his left arm and right leg.

B. What to look for:

1. *Body Alignment.* Arms, head, body, and leg are to be in a straight line.

2. *Balance.* Ease with which child maintains his balance.
3. *Peripheral Vision.* Ask the child about his dynamic visual field (peripheral vision reinforces body balance).
4. *Kinesthesia.* Ask the child if he feels his body parts in action.
5. *Sidedness.* Balance may be better on one side than the other. Difficulty in balance on one side indicates restriction of movement on that side and asymmetry.

RECIPROCAL CREEPING PATTERN



Right Hand Leading



Left Hand Leading



Right Hand Leading (Side View)



Left Hand Leading (Side View)



Right Hand Leading (Front View)



Left Hand Leading (Front View)

C. Getting the eyes in the act.

1. Have the child point to an object placed about five to ten feet in front of him as he performs the basic pattern described above.
2. As a specific fixation object use the child's vocabulary or arithmetic flash cards, colors, or geometric forms.

D. Creeping with movement. Have the child do the following:

1. Creep across the floor in the reciprocal pattern. The thrust to move forward is to come from his back and hips.
2. Move his arms and legs in a synchronous movement in response to gravitational pulls.
3. Stop and hold after each movement forward; then start again.
4. In the stop position, the extended knee is to touch the wrist of the arm that had been extended.

E. Creeping with movement and inner language (timing).

1. "Lift" – "Step." Have the child do the following:
 - a. Say "lift" when he lifts his arm and leg off the floor.

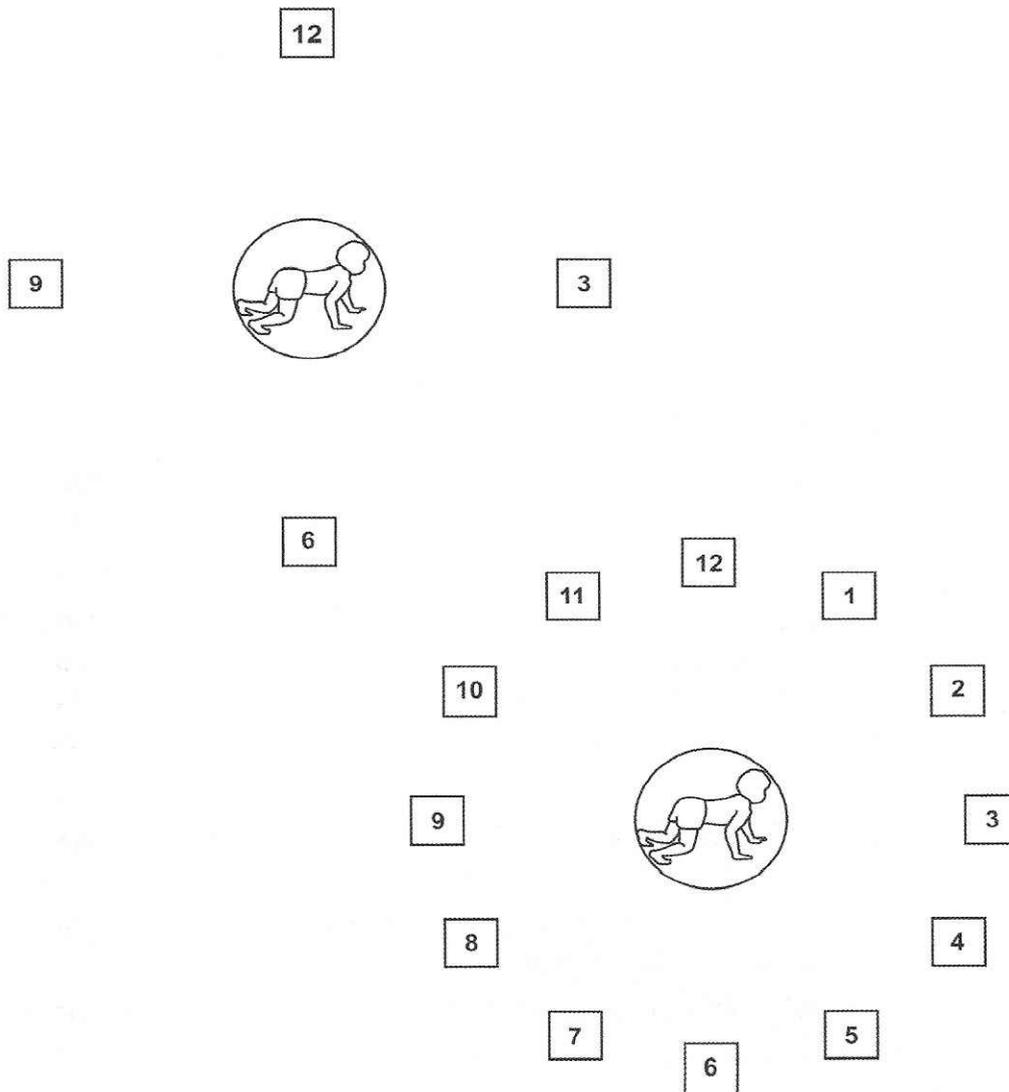
- b. Thrust forward and change his position saying "step" when his hand and knee touch the floor.
 - c. Match his movement and words in time to a metronome as he says: "Lift" and "Step."
2. "Lift 1, 2" – "Step 1, 2." Have the child do the following:
 - a. Say "Lift 1, 2" when he lifts his arm and leg off the floor.
 - b. Thrust forward and change his position to say "Step 1, 2" when his hand and knee touch the floor.
 - c. Match his movement and words in time to a metronome as he says: "Lift 1, 2" and "Step 1,2."
3. Integration with eye movements. Have the child do the following:
 - a. Raise his right arm and left leg.
 - b. Track a slowly moving Marsden Ball, hanging at eye level, with his extended arm and eyes.
 - c. As someone slowly moves a flashcard, track it with his extended hand and eyes. Move the card in horizontal, vertical, circular and diagonal directions.
 - d. Return to the basic position after five to eight seconds.
 - e. Repeat raising left arm and right leg.
 - f. Maintain balance throughout the procedure.
4. Creeping with eyes leading body.
 - a. Using chalk, string or colored tape, make a single line maze on the floor. Turn the line about every five feet to have the child change direction as he creeps.
 - b. Have the child follow the maze using the reciprocal creeping pattern described above.
5. Creeping with specific direction.
 - a. Materials and setup:
 - (1) Represent the numerals of a clock face on either 4 x 6 or 3 x 5 file cards.
 - (2) Select the cards with numbers 12, 3, 6 and 9, representing the four primary positions of a clock face. Place them on the floor in their proper positions about 6' apart.
 - (3) Place a different object on each card, such as a toy soldier on #12, a toy car on #3, a pencil on #6, and a ball on #9.
 - (4) When the child masters the four primary positions of a clock face, add the other cards to make up a complete clock face. Place an object on each of the cards.
 - b. Procedure:
 - (1) Place the child in the center of the cards (corresponding to the center of a clock face).
 - (2) Call off the name of an object, have the child creep in pattern to the object, and then creep back to the center.
 - (3) Repeat, using the clock number in place of the object.
 - (4) When you observe that the child has mastered the clock numbers and their positions, use the numerical value of the time position; such as, ten after, twenty after, five of, etc.
 - (5) Receptive language and auditory memory can be incorporated by having the child go first to one number, then to two numbers, then to three numbers, and so on, depending on how many numbers you wish the child to handle at one time.
 - (6) When he can creep to the object or number you have called off without any hesitation, have him do the following:

- (a) Creep to the right of an object or number.
 - (b) Creep to the object or number to the left of the first one.
 - (c) Continue this with other objects or numbers by creeping to the right and left of them. (This is to incorporate direction to what is being done. The child receives the verbal instruction of right and left and then puts it out in a motor act. He also makes observations of direction in relationship to himself.)
 - (d) An example of pre-planning is as follows: "Creep to the number to the right of #12, then to the number to the left of #9. Where will you be when you finish?"
- (7) Visual memory and response to written symbols may be incorporated as follows:
- (a) Write the instructions on 3 x 5 cards.
 - (b) Have the child respond motorically to the information on the cards.

III. Body Roll (Log Roll)

This activity helps a child develop the following:

- Interaction between the upper and lower half of his body.
- Feeling for countermovement-reciprocal movement.



- Head to toe direction.
- Control of body movement.

How to do it:

A. The Reciprocal Pattern. Have the child do the following:

1. Lie down on the floor.
2. Stretch his arms out above his head (on the floor) with his hands clasped.
(Refer to illustration below)
3. Roll over by first turning his head in the direction he wishes to turn, then follow with his shoulders and trunk, and the rest of his body will respond to the torque (hold his ankles to prevent him from leading with his feet or pelvis).
4. Turn from his stomach onto his back and stop; then turn from his back onto his stomach and stop. Repeat in each direction.
5. Continue without anyone holding his ankles when he can control his body.
6. Maintain a broad and open dynamic visual field because peripheral awareness will improve the performance.

B. With Direction.

1. When the child has demonstrated that he can use the torque from the upper half of his body to propel the lower half, specific direction may be added.
2. Have the child roll to specific places or objects in the room.
3. Use directions of right and left.
4. Make directions more complicated, e.g., three rolls to the right, one to the left.

BODY ROLL



Starting Position



Turning from Back to Stomach

IV. Angels-in-the-Snow

This activity helps the child in the following ways:

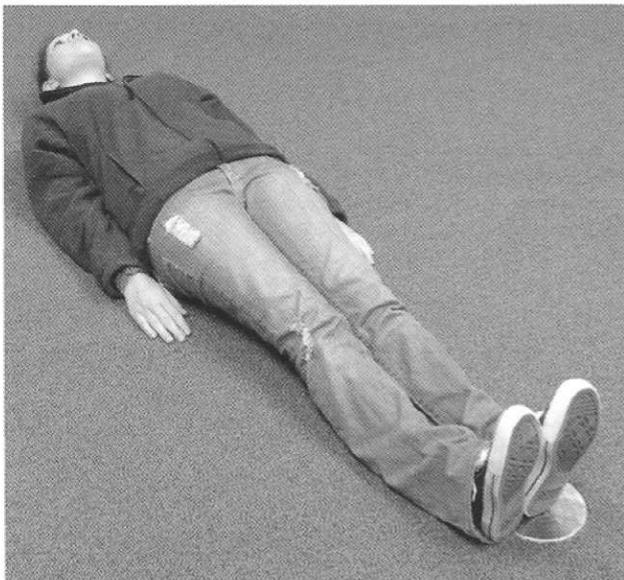
- Develops awareness of body parts.
- Stimulates language functions.
Receptive-he must learn to move on command.
Inner-he has to evaluate his action and think before he moves.
Expressive-he must vocally relate his error.

How to do it:

Have the child do the following:

- A. Lie on the floor, on his back.
- B. Hold his arms at his sides; his feet outstretched and together.
- C. Respond on command to open and close. Open when the command open is given; close when the command close is given; i.e., "Both arms and both legs." Pause for two or three seconds—open. Watch the child's performance and if satisfactory, say close.
- D. When the child makes an error and corrects it himself, let him know that you are pleased; i.e., Teacher: "Who corrected you?" Child: "I did myself." Teacher: "That's the best kind of correction; I am pleased that you know the difference."
- E. When the child moves before command to open: Teacher: "What happened?" Child: "I don't know." Teacher: "What didn't you wait for?" Child: "You didn't tell me to open." Teacher: "Try again." Make a game of how well the child listens. Act as if you are trying to trick him, but he is really too smart for you.
- F. The instruction commands are given to the child (one at a time) as follows:
 1. Both arms and both legs.
 2. Right arm and right leg.
 3. Left arm and left leg.

ANGELS IN THE SNOW



Starting Position



Basic Open Position

4. Right arm and left leg.
5. Left arm and right leg.
6. Restate “b” through “e” giving leg first and then arm.

V. Jumping Jacks

Jumping Jacks are Angels-in-the-Snow done standing up. Body awareness is a necessity for proper performance. Have the child do the following:

- A. Stand with feet together; hands at his sides.
- B. Jump on the command, Open. As he jumps, he is to spread his feet apart sideways; raise both arms over his head in a sideways movement, holding them palm to palm against each other; and hold the position.
- C. Jump on the command, Close. As he jumps, he is to bring his arms down to his sides; bring his feet together, resume his starting position.
- D. Vary the procedure by having the child open the same and opposite sides, as follows:
 1. His right arm and right leg.
 2. His left arm and left leg.
 3. His right arm and left leg.
 4. His left arm and right leg.
- E. Integrating Eyes. As the child jumps, have him move his eyes to a pre-selected spot as follows:
 1. Both arms and both legs – on *open*, look up center, on *close*, look down center.
 2. Right arm and right leg or right arm and left leg – on *open* look up to the right; on *close*, look down center.
 3. Left arm and left leg or left arm and right leg – on *open* look up to the left; on *close*, look down center.
- F. Be aware of the following:
 1. Move only on command. This is to reenforce the development of receptive, inner, and expressive language.
 2. Maintain an open peripheral visual field.

VI. Reciprocal Jump

Reciprocal jump is Body Roll standing up. It is a more complicated integration of body parts.

- A. How to do it. Have the child do the following:
 1. Stand on the floor with his feet apart.
 - a. His right foot extended forward and his left arm also extended forward.
 - b. His body is to lean forward and to the right with his trunk and his eyes at the spot to which he is pointing.
 - c. His fingers (of left hand) are to reach and point to the outside edge of the heel of his right foot. (Fixation targets may be used in place of his heel by placing an object on his right and left side, in line with each heel.)
 - d. His right arm is to be extended up and behind him in a counter-poised position.
 2. Jump on command and change position.
 - a. The movement is to be a rotational motion around the vertical axis of the body.

RECIPROCAL JUMP



Right Hand Leading



Left Hand Leading

- b. The swinging motion of the head, arms, and trunk should cause the legs to move as a product of the torque generated.
 - c. The action is from bent over to up straight; head, arms, and trunk rotating; arms and legs changing position; and trunk and arms down again.
3. Repeat back to original position.
- B. What to look for.
1. Segmented performance.
 2. Legs changing before trunk rotates.
 3. Arms changing, legs remaining the same.
 4. Trunk not moving up and down.
 5. Arms moving without trunk and shoulder movement.
 6. Awareness of an open peripheral visual field.

VII. Reciprocal Walk

Walking is a reciprocal movement of body segments around a vertical axis. The child having difficulty with left to right organization frequently walks in a segmented manner.

A. How to do it. Have the child do the following:

1. Stand on the floor with his feet apart.
 - a. His right foot forward and his left foot to the rear.
 - b. His left arm is to be extended forward with his fingers reaching and pointing to the outside of his right knee.
 - c. His right arm is to be extended up and behind him in a counter-poised position.
 - d. His trunk leans forward.
2. Walk across the room alternately changing position.
 - a. The movement is to be a rotational motion around the vertical axis of the body.
 - b. The movement is to be generated from the head, neck, shoulders, back, and legs.
3. Walk on the balance beam using this reciprocal pattern.

B. What to look for.

1. Segmented performance.
2. Legs changing before trunk rotates.
3. Same side, rather than opposite side pattern.
4. Arms moving without trunk and shoulder movement.
5. Walking must be a total reciprocal action of the body and not only a movement from the hips down.
6. Awareness of an open peripheral visual field.

Activities that Require Balance

Balance requires the use of the entire body and peripheral vision. The following activities help develop balance and integrate body to vision. Lateral movement is enhanced as a result of these activities.

I. Balance Board

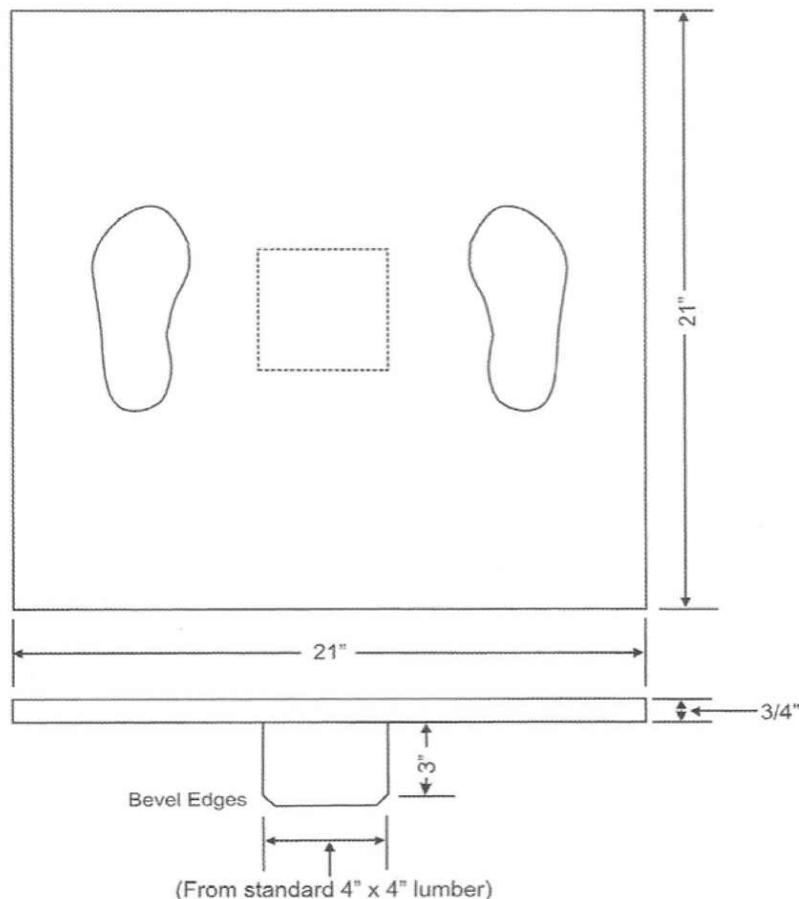
A. Setup.

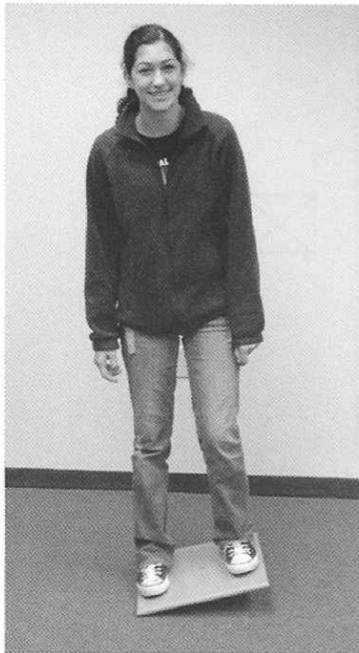
1. The balance board is made with a piece of plywood, 21" x 21". Attached to the bottom center is a 3" piece of 4" x 4" lumber.
2. Pieces of rough sandpaper or rubber matting are to be glued onto the top surface of the balance board for foot grips and as a guide for foot placement.

B. How to do it. Have the children do the following:

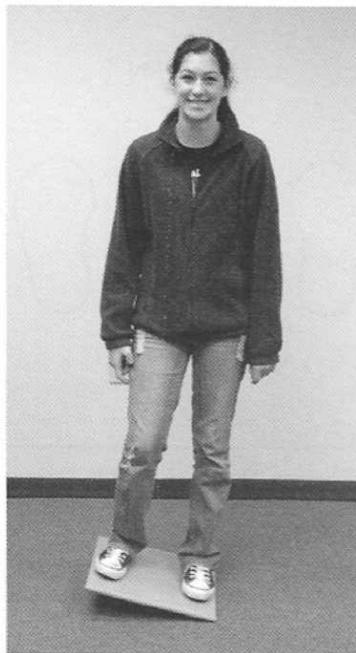
1. Stand on the balance board with his feet on the foot marks.

BALANCE BOARD

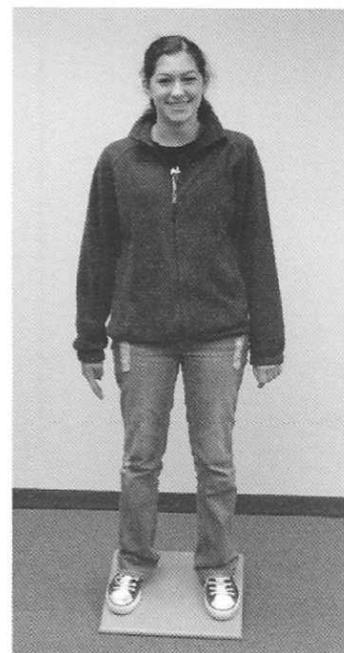




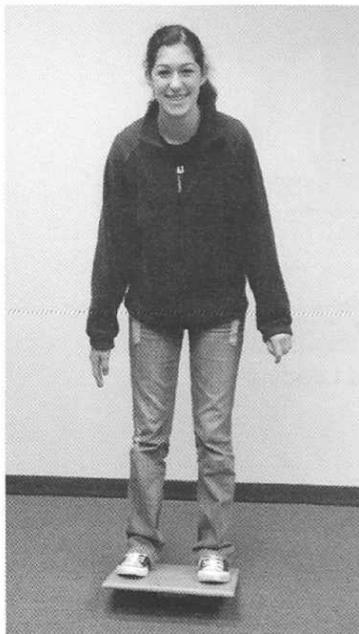
Down on Right



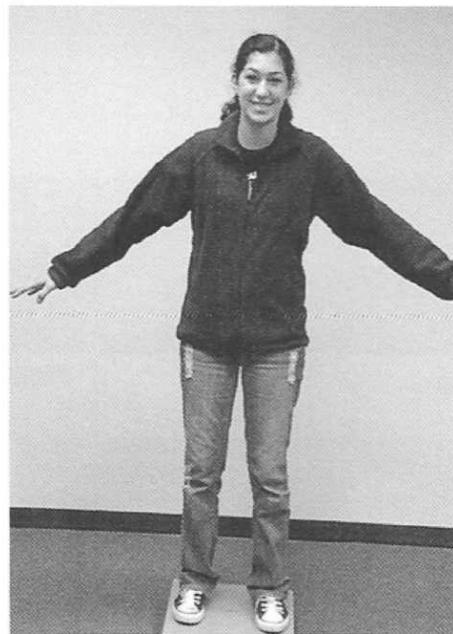
Down on Left



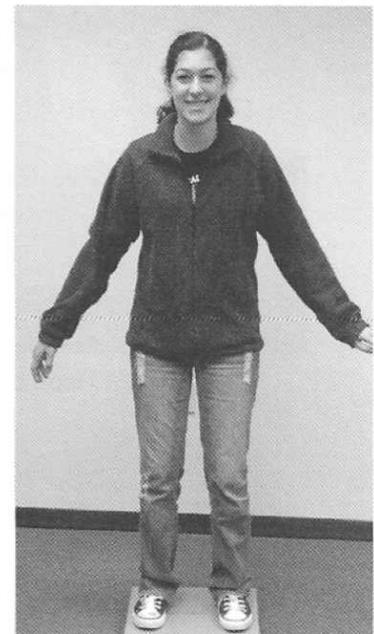
Down in Front



Down in Back

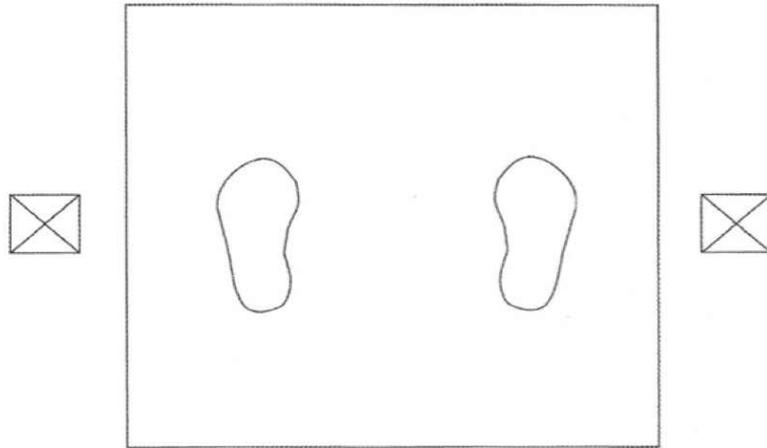


Moving into Balance

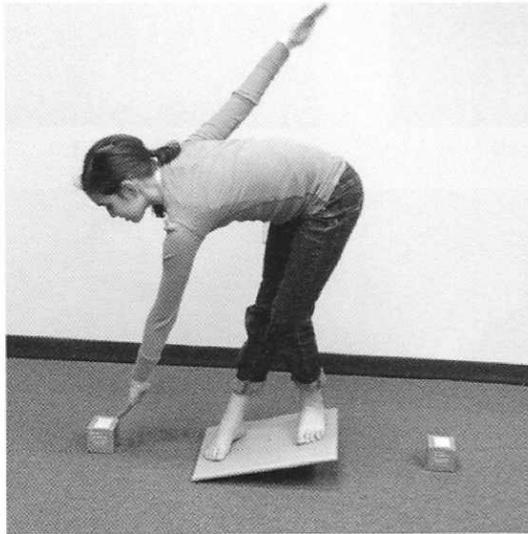


In Balance

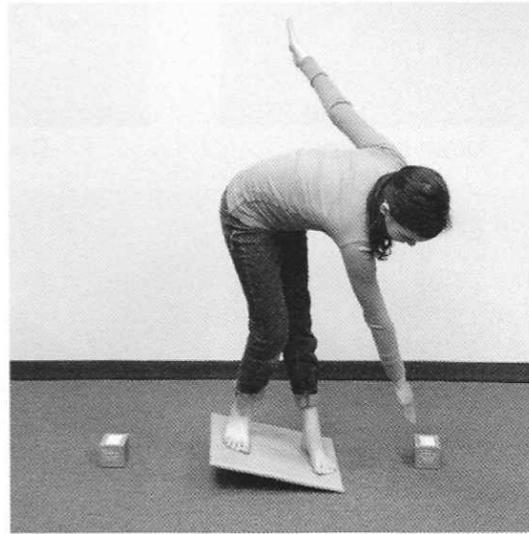
2. Manipulate the board as follows:
 - a. Side to side: right down; then left down.
 - b. Front to back: front down; then back down.
3. Learn to balance himself on the board by looking at an object straight ahead at about knee level and maintain visual awareness of the room.
4. Work with the balance board until he has gained proficiency in the manipulation described above.
5. Use balance board with reciprocal movement, as follows:
 - a. Place a brightly colored object on the right and left side of the balance board in line with and about a foot from the foot marks. (Flash cards or geometric forms may be used as objects.)



Balance Board with Targets



Left Hand Leading



Right Hand Leading



Changing from Left Hand Leading to Right Hand Leading

b. Have the child do the following:

- (1) Stand on the balance board with his feet on the foot marks, the left foot side down.
- (2) Look at the left target with his head turned to the left and his right arm pointing to the target. His left arm is held back and up in a counterpoised position.
- (3) Stand up straight with his hands over his head, keeping the left side of the board down.
- (4) Swing his eyes, head, and trunk toward the target on the right following with his trunk and left arm extended, pointing at the target. As he does this, his right arm is held up and back in a counterpoised position.
- (5) Stretch and point more and more to the target on the right until his right foot goes down and his left foot comes up. (He will be in a counterbalanced position opposite to his starting position.)
- (6) Repeat, reversing direction.

C. What to look for.

1. Segmented performance. Smooth and simultaneous motion of the head, eyes, arms and legs is desired.
2. Maintenance of an open peripheral visual field.

II. Walking Rail

A. Setup. A walking rail is made as follows:

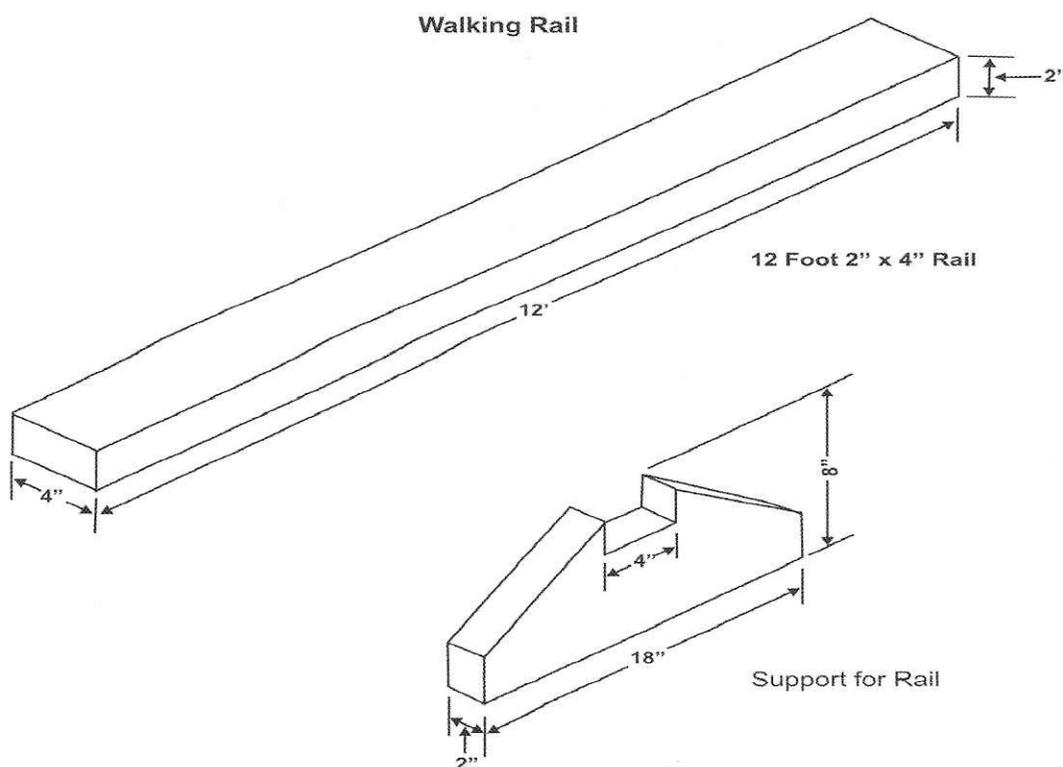
1. Materials

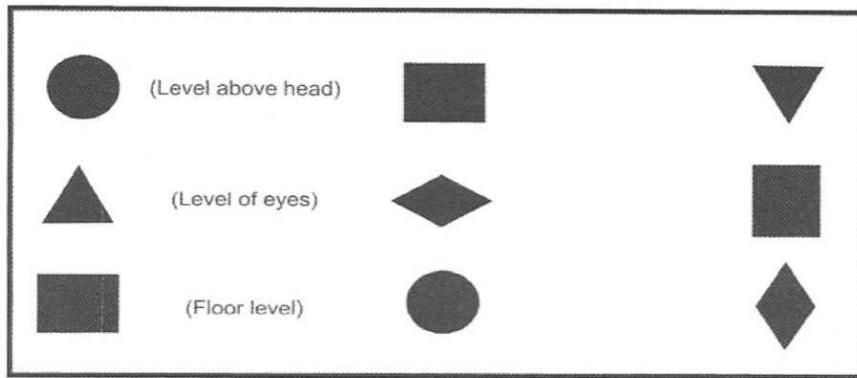
- a. A 12-foot length of 2" x 4" lumber.
- b. Three pieces of 2 x 8 x 18-inch lumber for supports.

2. Place and fasten the 12-foot length of 2" x 4" on the three pieces of 2 x 8-inch supports.

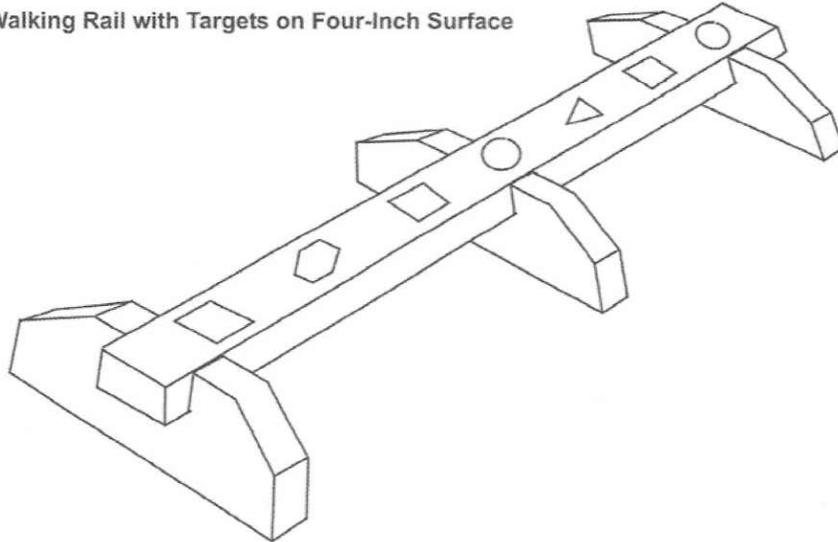
Place a support at each end of the 2" x 4" and one in the center.

B. How to do it.

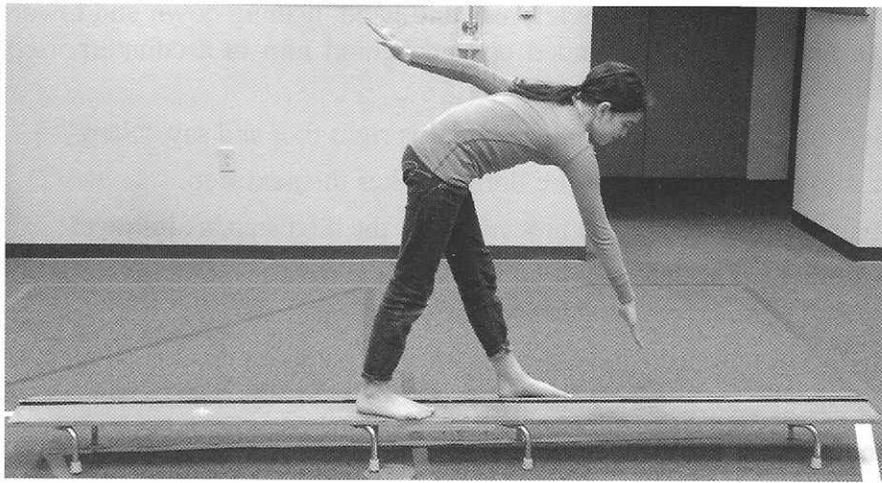




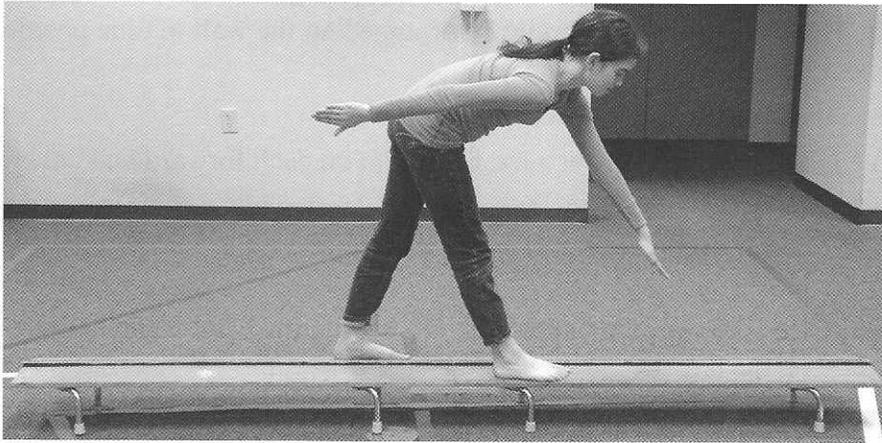
Walking Rail with Targets on Four-Inch Surface



1. Without pattern, have the child do the following:
 - a. Walk on the 4-inch surface of the rail forward and backward.
 - (1) He is to walk with a natural movement, arms swinging freely, and body relaxed.
 - (2) He is to report to you the degree of awareness of his peripheral visual field.
 - b. Walk on the rail sideways (right to left and left to right) when he shows proficiency in step a.
 - (1) He is to walk with a natural and relaxed movement.
 - (2) He is to maintain peripheral visual awareness.
2. With geometric forms:
 - a. When the child is able to walk on the rail with ease and does not lose his peripheral visual field, have him walk on fixation targets painted on the rail.
 - b. Paint simple geometric forms (circle, cross, square, rectangle, triangle and diamond) every 12 to 15 inches on the 4" surface of the rail.
 - c. Have the child step on the geometric forms as he walks the rail forward, backward, and sideward.
 - (1) He is to walk with a natural and relaxed movement.
 - (2) He is to maintain peripheral visual awareness.
3. With reciprocal pattern:
 - a. Look, point, and step.
 - b. Starting at the first form, the child is to walk across the rail as follows:

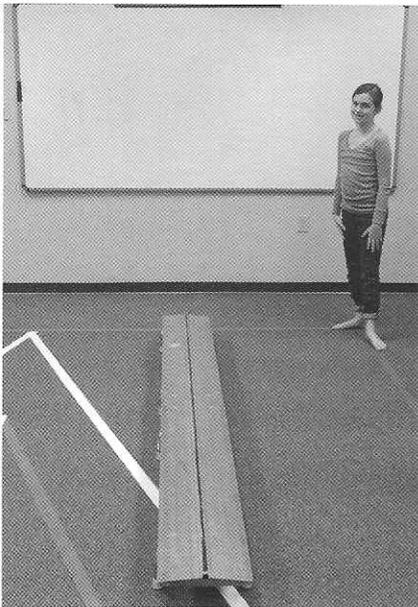


Right Hand Leading

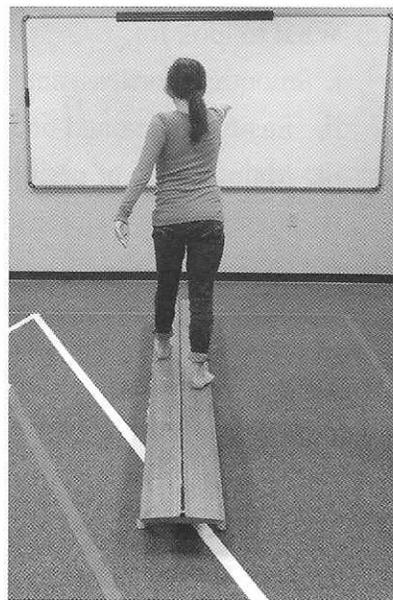


Left Hand Leading

SLOPED WALKING RAIL



Sloped Walking Rail With Fixation Targets



Walking on the Sloped Walking Rail With Fixation Targets

- (1) Look at the form with his right eye (head turned to the left) and say, "Look."
 - (2) Point to the form with his left arm and hand, leaning down and toward the form with his right arm and hand extended up and behind him in a counterpoised position, and say, "Point."
 - (3) Have the child step on the form with his right foot and say, "Step."
 - (4) He is to maintain that posture until he takes the next step.
 - (5) Have the child reverse the procedure for the next step, as follows:
 - (a) Look with his left eye (head turned to the right), point to the form with his right arm and hand leaning down and toward the form.
 - (b) His left arm and hand extended up and behind him in a counterpoised position, and then step with his left foot. The words, *Look*, *Point*, *Step*, are to coincide with his movements.
- c. With spatial targets:
- (1) When the child has mastered the reciprocal movement procedure described above, he is to walk on the rail looking at objects directly in front of him, rather than objects on the rail. The fixation objects should be arranged on the wall in nine positions as illustrated on opposite page.
 - (2) Have the child do the following:
 - (a) Walk the rail looking at a fixation point on each forward and backward trip.
 - i. He is to look at the targets in the following order: center down, center middle, center up, lower right, lower left, middle right, middle left, upper right, and upper left.
 - ii. He is to move his eyes without moving his head while maintaining ocular fixation on the target.
 - (b) Walk forward and backward on the rail in the following posture:
 - i. *Naturally* – walking with a natural movement, arms swinging freely, and relaxed.
 - ii. *Reciprocal pattern* – same as the look, point, and step using the spatial targets for his fixation point.
 - (c) What to look for:
 - i. Smooth, effortless, and relaxed movements.
 - ii. Easily maintained body balance.
 - iii. Maintenance of peripheral visual awareness.
 - iv. Spontaneous reciprocal movement.

III. Stepping Stones

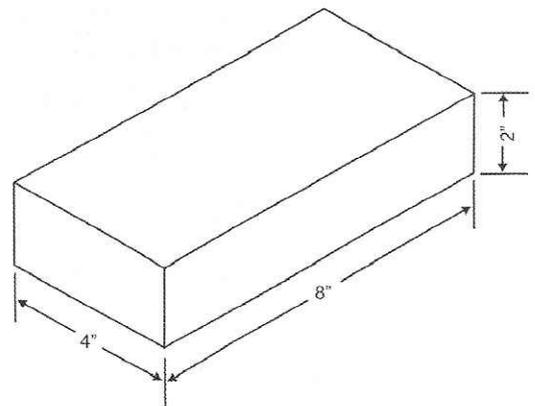
This is a unique procedure where the eyes direct placement of the feet.

A. Materials: Fifteen 8" pieces of 2" x 4" are made by cutting up a 10-foot length of 2" x 4".

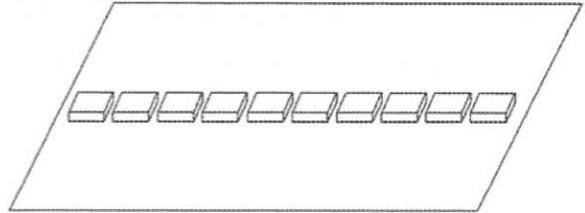
B. How to do it.

1. Placement

- a. The 8" blocks of 2" x 4" may be arranged on the floor in straight, curved, or diagonal lines; in geometric forms; or in letter formations.



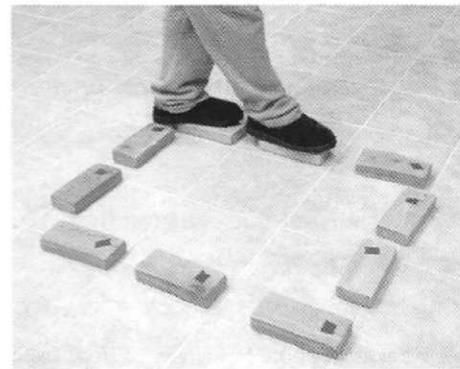
- b. The blocks are placed 8" apart (a block can be used to aid the spacing).
- c. After the child has mastered the straight line, give him the freedom of arranging the blocks in simple patterns.



2. The child is instructed to walk from one block to another, looking where he is stepping, and maintaining awareness of his surroundings.
3. He is to walk forward, backward, and sideward.
4. Integrating auditory, visual, and motor performance is done as follows:
 - a. As the child walks on the blocks, he is to do and say the following:
 - (1) When his leg is lifted, he is to say, "Lift."
 - (2) When his leg is lowered and he steps on the next block, he is to say, "Step."
 - b. Using a metronome for external beat, thereby matching auditory, motor, and vision.
 - (1) Set metronome to 120 beats per second.
 - (2) As the child walks on the blocks, he is to do and say the following:
 - (a) When his leg is lifted, he is to say, "Lift, one, two," keeping in time with the metronome.
 - (b) When his leg is lowered and he steps on the next block, he is to say, "Step, one, two," keeping in time with the beat of the metronome.
 - (3) Have the child step at every third, fourth, or fifth beat.
 - (4) Peripheral visual awareness is to be maintained at all times.



Triangle



Square



Straight Line

Integrating Vision, Motor, and Language

The following activities are designed to integrate vision, motor and language. This is accomplished by having the child respond with his hands to what his eyes tell him in terms of spatial location. He is also to respond to what is taking place visually and motorically. Following are the activities used :

I. Beanbag

A. Beanbag activities are used to develop the following skills:

1. Catching, throwing, and batting.
2. An open dynamic peripheral visual field.
3. Eyes leading hands.
4. Self-awareness.
5. Receptive, inner, and expressive language.

B. Understandings:

1. Vision is an automatic process which has the survival of the body as one of its primary functions.
2. Peripheral vision, when stimulated by an object moving in a person's surroundings, triggers the body's survival systems in order to appropriately protect itself.
3. Catching or batting is the appropriate survival act to protect the body from being hurt when something is thrown at a person.
4. Hands and arms work in conjunction with the peripheral visual mechanism. When allowed to function freely, peripheral vision leads the hands and the hands automatically catch what is thrown at a person.
5. The same reasoning applies to batting a ball because a bat can be thought of as an extension of the arms.

C. How to catch. Give the child the following instructions while catching and throwing the beanbag:

1. Look directly at the other person, not at the beanbag.
2. Keep your peripheral visual field open to be aware of as much as possible in your surroundings.
3. Let your hands react to what your eyes see; do not force the catching, hitting, or throwing—let it happen!
4. Feel your arms and body responding. You will be amazed at how automatic it feels. You catch without trying—it just happens.
5. Toss the beanbag in an underhand throw.
6. As your catching becomes more proficient, look away from your partner by looking at each of the nine primary positions as you did with the walking rail, each time you throw or catch the beanbag.
 - a. Straight ahead and down.
 - b. Straight ahead and middle.
 - c. Straight ahead and up.
 - d. Right down.
 - e. Right center.
 - f. Right up.
 - g. Left down.
 - h. Left center.
 - i. Left up.

7. As proficiency is gained in throwing and catching, throw in a reciprocal throwing pattern.
The reciprocal throwing pattern for the right-handed child is as follows:
 - a. Beanbag held in right hand.
 - b. Right foot forward, left foot back.
 - c. Right arm back, left hand forward with fingers pointing to the other person.
 - d. As the child throws, he is to step forward with his left foot, his right arm swings forward releasing the beanbag, and his left arm swings back and up—all is to happen at the same time.
8. When catching a hard ball, look at the ball and maintain awareness of your peripheral visual field.

D. How to bat. Give the child the following instructions for batting:

1. Look at the pitcher and keep an open peripheral visual field.
2. Hit the beanbag or the ball without looking directly at it when it is pitched to you.
3. Let your hands go to the ball—do not force it.
4. Sequence:
 - a. Using his hands and a beanbag.
 - b. Using a paddle and a wiffle ball.
 - c. Using a bat and a wiffle ball.
 - d. Using a bat and an outdoor softball.
 - e. Using a bat and a baseball.
5. When doing steps *c*, *d*, and *e* above, track the ball (look at the ball) as it comes toward you and maintain an open peripheral visual field at the same time.
6. Remember, you are learning a new process and errors will be made. You may miss the ball at first until you gain proficiency. Work on the process and do not worry about the balls missed.

E. Visually Directed

1. Make up beanbags in three different colors; i.e., red, green, and white.
2. The red represents the right hand, the green represents the left hand, and the white represents both hands.
3. The procedure is as follows:
 - a. The red beanbag is thrown to the child and he is to catch it with his right hand.
 - b. The green beanbag is thrown to the child and he is to catch it with his left hand.
 - c. The white beanbag is thrown to the child and he is to catch it with both hands.
 - d. When the child shows proficiency and no hesitation in responding to the color of the beanbag, do the following:
 - (1) Hold the beanbags behind your back.
 - (2) Throw one beanbag to the child.
 - (3) He is to respond by catching the beanbag with the appropriate hand, directed by the color of the beanbag.
 - (4) Repeat the procedure until the child can quickly and accurately respond to the visual stimulus of the colored beanbag.

II. Ball Activities

The purpose of ball activities is to develop performance in the following areas:

- Integration of eyes with hands, shoulders, legs, and feet.
- Flexibility, freedom, and control of the movement of body parts.
- Awareness of a broad peripheral visual field.
- Eye movements
- Spatial judgment.

A. The hanging ball (Marsden Ball).

1. Materials: a hanging ball is made as follows:

- a. A 6-foot length of Venetian blind cord.
- b. A sponge rubber ball about 3" in diameter.
- c. A 1" screw eye screwed into the ceiling.

2. Put the Venetian blind cord through the ball and hang it from the ceiling.

B. How to do it.

1. General: have the child do the following:

- a. Hit the ball with his right, left, or both hands.
- b. Maintain an open peripheral visual field.
- c. Add language by vocalizing the side of body he uses to hit the ball: "Right," "Left," "Both." The direction of the ball can also be vocalized; e.g., "Away from me," "Towards me."

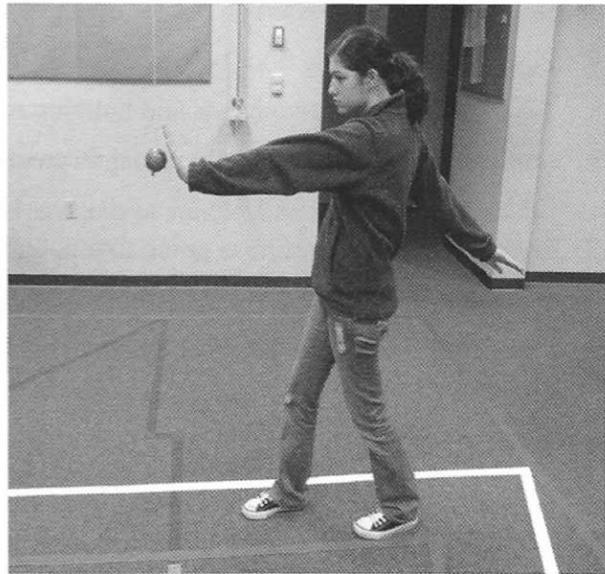
2. With eyes and hands:

- a. Suspend the ball at the level of the child's chin.
- b. Instruct the child as follows:
 - (1) Watch the ball with your eyes and be aware of your surroundings.
 - (2) Hit the ball with alternate hands.
 - (3) The movement of your arms should be from the shoulder: the whole arm and shoulder are to move forward, and your trunk is to rotate around a vertical axis.
- c. With language:
 - (1) Hold the ball in your hand in line with the child's midline.
 - (2) Let go of the ball. Just before it reaches the child call out which hand, or hands, he is to use to hit the ball; e.g., "Right," "Left," "Both," or say nothing. (When you say nothing, he is not to hit the ball.) Vary the pattern to keep the child alert.
- d. With reciprocal body movement: the child is to hit the ball using the reciprocal jump as follows:
 - (1) With his left foot forward, his left arm back, his right foot back, he is to hit the ball with his right hand.
 - (2) As the ball moves away, the child is to jump, reverse his pattern, and strike the ball with his left hand as it comes toward him.
 - (3) The change of reciprocal movement is timed by the speed of the ball.
- e. With peripheral vision as a guide for movement:

Hitting a Ball



With Reciprocal Movement Right Hand Leading



With Reciprocal Movement Left Hand Leading

- (1) The child is to look at an object across the room and be aware of the entire room.
- (2) He is to hit the ball without looking directly at it.
- f. Variations: The child may hit the ball with his hands, shoulders, hips, knees, or with his feet while standing or lying on his back.
 - (1) Shoulders:
 - (a) Position the ball at shoulder level.
 - (b) The child is to hit the ball using his shoulders alternately
 - (c) Language may be added by having the child name the shoulder that hits the ball, e.g., "Right," "Left."
 - (2) Knees
 - (a) Lower the ball to the level of the child's knees.
 - (b) The child is to kick the ball with alternate knees.
 - (c) Language may be added as before.
 - (3) Feet
 - (a) Lower the ball to about 6" from the floor.
 - (b) Standing: the child is to kick the ball with alternate feet.
 - (c) Lying down:
 - i. The child is to lie on his back.
 - ii. He is to kick the ball with his right foot, his left foot, and both feet.
 - (d) Language may be added as before.

III. Hitting A Coin

A. Materials :

1. A large ball about the size of a basketball.
2. A twenty-five cent piece or equivalent.

B. Procedure: Have the children do the following:

1. Place the coin on the floor between two children standing ten feet from each other.
2. Take the ball in his two hands and hold it over his head.
3. Look at the coin and maintain visual awareness of the whole room.
4. Let his eyes tell his hands where to reach as he throws the ball towards the coin. He is to feel his hands go through an arc as if he is going to touch the coin with his finger tips.
His hands become finger-eyes and his eyes become eye-fingers.
5. Place emphasis on the process. Be concerned with how they do the procedure, not with keeping score for competition.

Eye Movements

Eye movements—ocular pursuits and fixations—are fundamental to smooth and effortless performance as a child engages in any of the myriad of classroom activities requiring use of the eyes. The use of the eyes and hands are so intertwined that the development of eye movement skills must include the use of the child's hands. It is necessary for the child to derive the feeling that his eyes and hands work simultaneously.

“Hands confirm where eyes look, and eyes confirm what hands do,” is a helpful thought when doing the procedures described below. When we work with our hands, we usually look at what we are doing, thereby using vision to monitor hand actions. When we look at something, touching it will confirm where it is and confirm texture, form, and the material of which it is made.

I. Basic Considerations

The child is to do the following:

- A. Use one eye at a time and then both together.
- B. Move his eyes without moving his head.
- C. Keep his peripheral field of vision open at all times.
- D. Move his eyes in the following primary directions:
 1. Horizontal—right and left.
 2. Vertical—up and down.
 3. Diagonal—up to the right and down to the left; up to the left and down to the right.
- E. Vocalize the direction of his eye movement, thereby adding the modality of speech to the activity.
- F. Use his dominant hand first, the other hand, and then both hands in those procedures where hands are used.
- G. Use targets, in place of his thumbs, such as words, pictures, numbers, toys, or other objects of interest to him.

II. Ocular Pursuits or Tracking

- A. Using his thumb. The child, relating eye movements to his own hand (self), is to hold the thumb of his dominant hand up and about 10 to 14 inches in front of his eyes. His eyes are to follow his thumb and arm movement as follows:
 1. Move his arm in all of the primary directions, starting with horizontal movement.
 2. Make geometric or other designs in the air, such as, circle, square, triangle, rectangle, oval, diamond, figure eight, etc.
 3. Make letters and words in the air.
- B. Relating eye movements to external objects.

1. Have the children do the following:
 - a. Pair off by selecting a partner.
 - b. Follow an object being held in the hand of the partner.
 - c. Hold the object at about 12" from the child viewing it.
 - d. Move the object slowly as follows:
 - (1) In the primary directions.
 - (2) In making the geometric designs.
 - e. Change positions, thereby allowing the partner to follow the object.

2. Hanging Ball (Marsden Ball)

Have the child do the following:

- a. Lie on his back and with his nose in line with the hanging ball.
- b. Lower the ball to about 12" or fingertip reach above the child's nose.
- c. Swing the ball in the primary directions.
- d. Follow the ball using his eyes and pointing with his hands, and then with his eyes alone.

III. Ocular Fixations

A. Relating fixations to self. Have the child do the following:

1. Hold his thumbs 12 to 14" from his eyes and about 12 to 15" apart.
2. Look from one thumb to another in a rhythmic movement. The cadence may be counted or clapped out by the teacher or from a metronome.
3. Make ocular fixations in the primary directions—horizontal, vertical, and diagonal.
4. Add speech by vocalizing the direction of his movements.

B. Relating fixations to external objects. Repeat the preceding activity, having the child's partner hold the fixation objects.

IV. Integrating eye movements with receptive language, auditory memory, form, visual memory, and hands—programed letters.

A. Draw simple line drawings on the chalkboard representing figures of interest to the child.

They may be ships, faces, or animals.

B. In each drawing, mark a center point with an "X." This is to be used as a fixation point.

C. Arrange the figures to represent the comers of whatever form is desired; such as a square, a triangle, a diamond, etc.

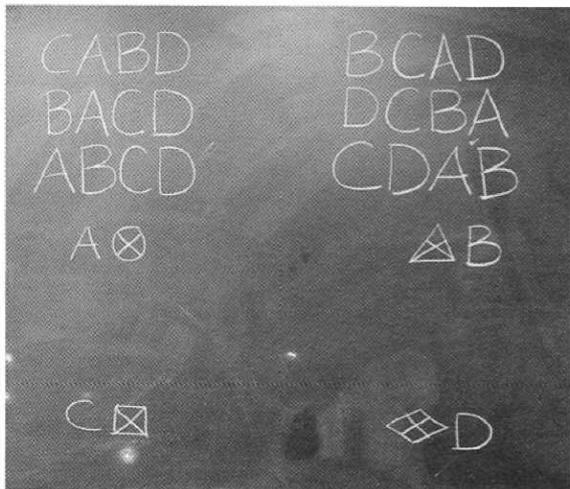
D. Place a letter or number above each figure. (Should the child not be able to respond to numbers or letters, then use a different picture at each point of the form.)

E. On command, have the child draw a line connecting one picture to another. The line should be drawn from the center of one "X" to the center of another. (The resulting form will be a square, triangle, rectangle, circle, diamond, etc.)

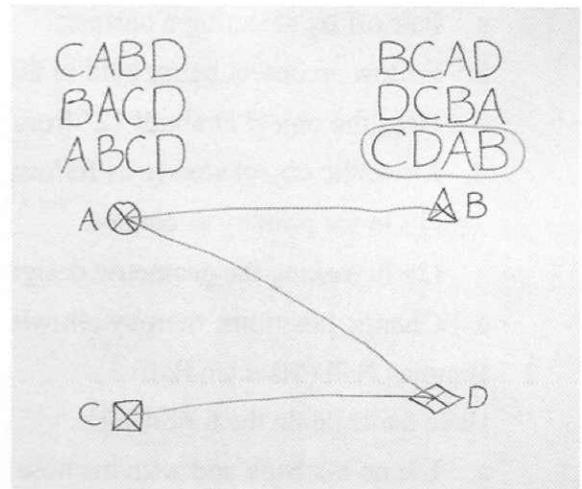
F. Enhancing auditory memory. Auditory memory is added to the training by verbally instructing the child to make a sequence of movements. This is accomplished by having the child do the following:

1. "Draw a line in the following sequence: A, B."

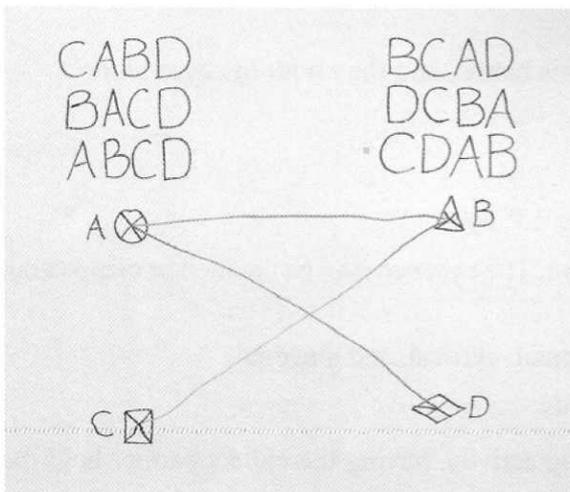
PROGRAMED LETTERS



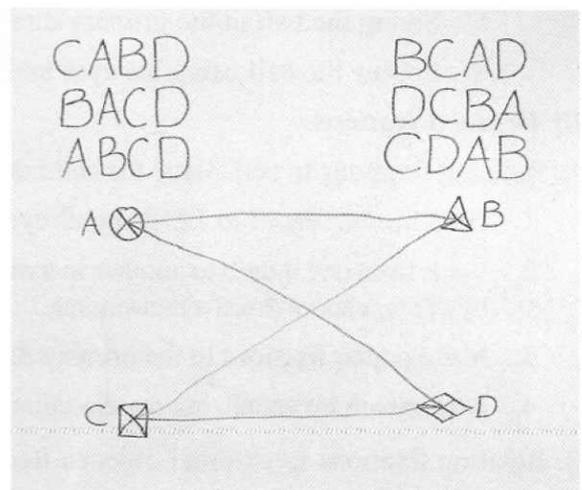
Starting



CDAB



CBAD



CDABC

2. Follow through by drawing lines according to your verbal command and look to see what form has been made.
3. Start off by remembering two letters, then three, and so on.
4. "Draw a line in the following sequence: B, C, D, B."
5. "Draw a line in the following sequence: A, B, C, D, A."

G. Enhancing visual memory. Visual memory can be developed by writing the instructions on 3 x 5 cards and having the child carry out the movements, as he did with the auditory instructions.

H. When the procedures have been mastered at the chalkboard, they are to be repeated with pencil and paper at the child's desk.

V. Eye Fixations-Near to Far and Far to Near

To help the child use his eyes to guide hand movements, the following procedure requires that he watch the chalkboard and transfer to paper at his desk in a manner similar to what he will do when he copies written material from the chalkboard.

A. Using a game. To help the child develop the skill needed when copying from the chalkboard, do the following:

1. Draw a road on the chalkboard, marking off various positions along the roadway with simple line drawings of a house, school, gas station, etc.
2. Reproduce the roadway on other sheets.
3. Have one child lead the class by giving him a toy car. He is to have his car ride along the roadway on the chalkboard and make stops at the various stations.
4. As the child at the chalkboard moves his car, the children at their seats are to follow, marking the route with red pencil and making a circle around the places where the car stops. They are to keep pace on their road map with the car on the chalkboard.

B. Copying from the chalkboard and visual memory.

1. Have a child draw basic geometric forms (use circle, square, cross, triangle, oval, rectangle, and diamond) on the chalkboard.
2. The other children are to copy the forms at their seats, making as few fixations as possible.
3. Start with only one form. Increase to two, then three, etc. Make combinations of forms.
4. Visualization and Visual Memory.

The children are to do the following:

- a. Look at the form(s) on the chalkboard.
- b. Close their eyes and picture the form(s) in their “mind’s eye.”
- c. Draw the form(s) in the air with their dominant hand, eyes remaining closed.
- d. Draw the form(s) on paper as if copying from a mental picture.
- e. Check their product against the form on the chalkboard and correct their product if it is in error.

C. When doing the procedures described above, emphasize the following to the child:

1. When you look at the chalkboard, see the form, the chalkboard, and the room all at one time.
2. When you close your eyes try to visualize all that you saw.
3. When you make what you have seen on paper, be visually aware of all around you.

The Chalkboard

The chalkboard is a helpful device to help a child develop the eye-hand-body skills he needs for classroom performance.

Chalkboard activities are designed to help a child to develop the following:

I. Spatial Orientation—awareness of direction, position, and movement of arms.

- A. Proprioception—an individual’s awareness of the position and movement of his muscles.
- B. Kinesthesia—an individual’s awareness of the position and movement of his muscles used to perform a specific muscle movement pattern, such as writing, typing, eye movements.

(Organizational pattern of muscles for specific movements.)

C. Orientation to space consistent with body position.

1. Up is up towards the head.
2. Down is down towards the feet.
3. Right is towards the right side of the body—to the right of the body’s vertical midline.
4. Left is towards the left side of the body—to the left of the body’s vertical midline.

II. Movement—freedom and control of direction of arm movement.

When efficient kinesthesia for form and word formation is developed, less visual monitoring is required, thereby freeing vision and the brain to gather and integrate information.

- A. Form concept—ability to recognize and reproduce letters, words, and shapes, or:
 - 1. Discrimination between the elements of form.
 - 2. Recognition and reproduction of form.
- B. Handwriting—Handwriting requires a child to translate a visual impression into a motor movement pattern with his product monitored by vision.
 - 1. Manuscript writing.
 - 2. Cursive writing.

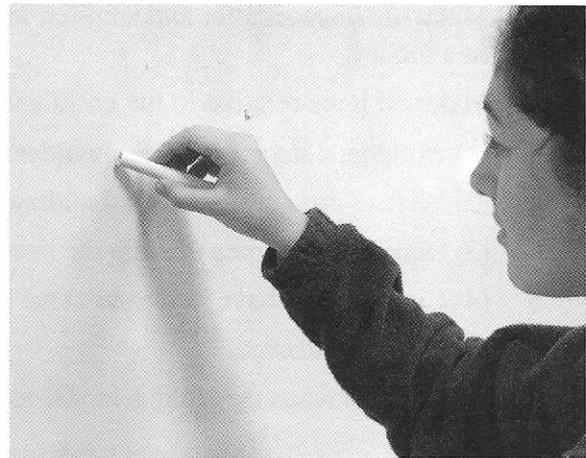
Chalkboard Activities

I. Arm Movement Activities

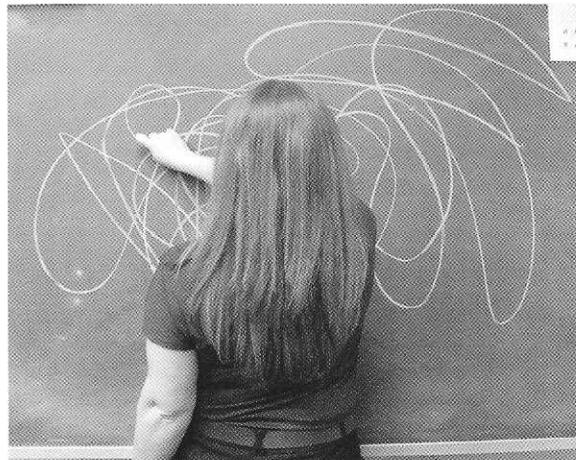
- A. General considerations:
 - 1. All movements are to be made using the full arm from the shoulder.
 - 2. The child is to stand at the chalkboard as follows:
 - a. Both feet equally apart – about 9 to 12”.
 - b. Balanced on both feet.
 - 3. The chalk is to be held as follows:
 - a. Sideways with thumb on the bottom and the tips of the other fingers on top.
 - b. The point of the chalk is at the thumb end.
 - 4. What to emphasize in all chalkboard activities:
 - a. Feeling tone.
 - (1) All movements are to be done slowly. Say, “I want you to move slowly and feel the muscles of your arms, shoulders and back working.”
 - (2) “We are in no hurry. Can you feel the movements in your muscles?”
 - (3) “Do your muscles feel different from one position to another?”
 - (4) “Tell me how they feel different.”
 - b. Maintenance of a wide peripheral visual field.
 - c. Freedom of movement.
 - 5. Levels of performance.
 - a. Scribbling – random movements to free the arm.
 - b. Movements with direction – to develop freedom of movement and feeling for different directions.
 - c. Movements within boundaries – freedom of movement monitored by the eyes.
 - d. Specific monitoring of hands by eyes – eyes leading and guiding hands in specific activities.
 - e. Integrating eyes, hands and speech by repeating steps b and d as follows:
 - With eyes, hand and speech have the child do the following for all movements:
 - (1) Vocally describe his movements.



Proper Way of Holding Chalk for a Right-Handed Person



Chalk on Chalkboard



Scribbling on Chalkboard

(2) Say, “Up,” when his arm moves up; “Down,” when his arm moves down, etc.

B. Scribbling. Instruct the child to do the following:

1. Scribble on the chalkboard using his whole arm.
2. Make his scribbles in all directions and patterns using a continuous motion.
3. He does not have to make a drawing or anything recognizable. Anything he makes is satisfactory.
4. Make all horizontal lines from one side of his body to the other, passing through his vertical midline.
5. Make his movements from waist level to a few inches above his head.

C. Movements with Direction.

1. Movements with direction:
 - a. Circular – clockwise and counterclockwise.
 - b. Horizontal – left to right; right to left.
 - c. Vertical – up and down.
 - d. Diagonals – up to right and down to left; up to left and down to right.

2. General:

Have the child do the following:

- a. Start by making large free movements (15 to 18”) in the directions indicated.

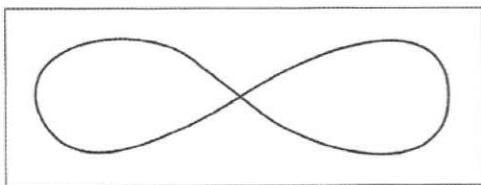
- b. Make the lines smaller and smaller, in stages, until he can control his movements within about two inches.
- c. Make all lines relative to the child's vertical and horizontal midline, as follows:
 - (1) Horizontal lines from one shoulder to the other, passing through the vertical midline.
 - (2) Vertical lines on the vertical midline.
 - (3) Diagonal lines pass through the intersection of the horizontal and vertical midline at nose level.
 - (4) Circular lines have the center at the intersection of vertical and horizontal midlines – nose level.

D. Movements with Boundaries.

1. Add boundaries when the child demonstrates easy and free control of whole arm movements under all conditions.
 - a. Use a circle or square to provide boundaries.
 - b. Start with a figure 18" high and wide; reduce in stages to 2".
2. Eyes monitor hand movements when boundaries are used. If the child goes beyond the boundary ask him to observe what he has done and what he has to do to correct it.

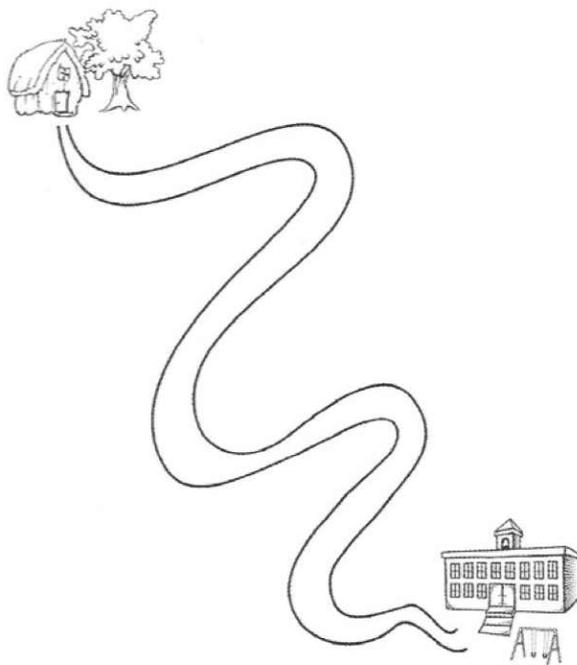
E. Specific Monitoring of Hands by Eyes.

1. Lazy Eight:



- a. Draw an eight on its side with the intersection at the level of the child's nose. The loops should extend a minimum of eight inches to either side of center.

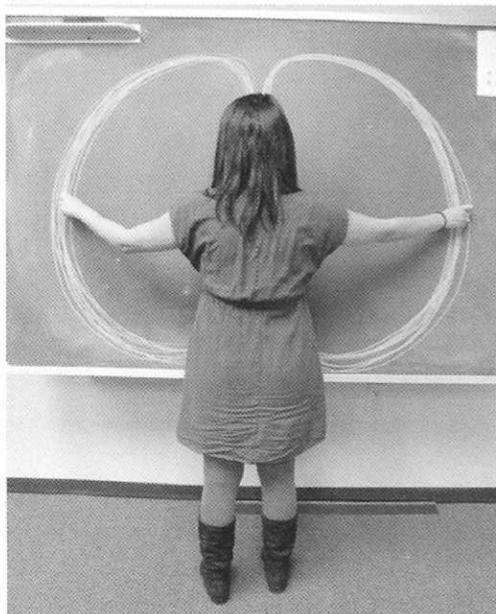
- b. Have the child stand about one foot from the chalkboard with his nose in line with the center of the eight.
 - c. Have the child trace the lazy eight, freely and easily.
 - d. Have him reverse his direction after every 10 circuits.
- ##### 2. Following the road.
- a. Draw a circuitous roadway on the chalkboard. At one end draw a simple picture of a school; at the other end draw a picture of a simple house.
 - b. Have the child follow the road to school and home again without going off the road.
 - c. Have the child make up his own roadways.



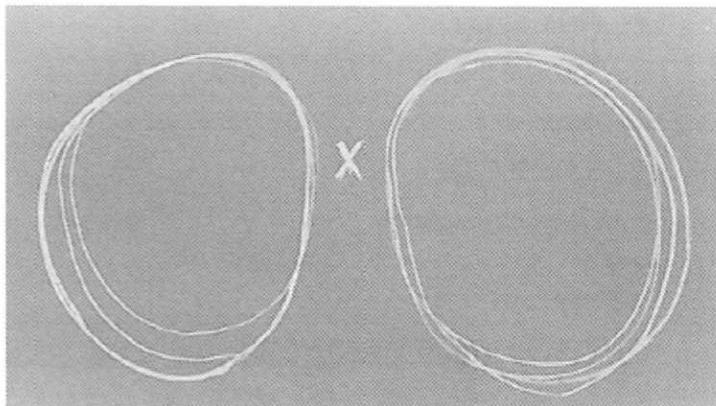
F. Bi-Manual Circles

Bi-Manual circles are to develop a feeling for reciprocal body movement and an integration of body sides. This is in addition to the general development activities for movement and its control as previously stated. Have the child do the following:

1. Make a mark on the chalkboard at the level of his nose. This mark will serve as a point of fixation.



Large Bi-Manual Circles

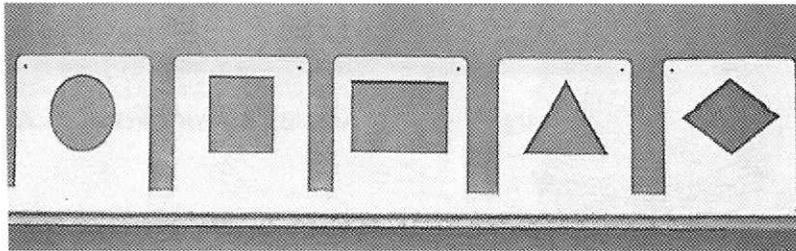


Large Bi-Manual Circles Showing Fixation X

2. Stand 12 to 14" from the chalkboard with a piece of chalk in each hand.
3. Look at the point of fixation and be aware of his surroundings.
4. Make circles on the chalkboard using both hands in the following sequence:
 - a. Basic: Make circles moving hands in the opposite directions (20 times each way).
 - b. Bicycle Wheels: To be done when proficiency is shown in step above. Make circles moving hands in the same direction, similar to the movement of the wheels of a bicycle (20 times each way).
 - c. Dropouts: To be done when proficiency is shown in steps above. Make circles moving hands in opposite directions and do the following:
 - (1) Slowly remove one hand from the chalkboard continuing the circular movement parallel to the chalkboard.
 - (2) Move the removed hand in a circular movement corresponding to the original movement on the chalk board.
 - (3) Gradually work the dropped out hand from parallel to the chalkboard to a position parallel to the floor.
 - (4) Gradually work the hand back to the chalkboard.
 - (5) Repeat with the other hand.
 - (6) Look for the following:
 - (a) The circle being made on the chalkboard is not to be affected when the opposite hand is removed and worked.
 - (b) No loss of rhythm.
 - (c) This indicates that one side of the body is reciprocating with the other.
 - (7) Repeat above doing Bicycle Wheels (same direction).
5. Evaluate the performance for opposite directions, same directions, and removing one hand (dropouts) as follows:

- a. Field awareness
- b. Full and free movement of arms
- c. Equal size
- d. Equal height
- e. Concentric circles.

II. Templates



A. Description of templates.

Templates are cutouts of basic geometric forms made from heavy cardboard (8" x 12") or plastic.

1. Templates made for chalkboard use consist of the following forms and dimensions:

- a. Circle – 6" in diameter.
- b. Square – 6" on each side.
- c. Rectangle – 4 by 8".
- d. Triangle – base of 8" with 7" sides.
- e. Diamond – 4 1/2" on each side.

2. Templates made for desk use have smaller dimensions, as follows:

- a. Circle – 2 1/2" in diameter.
- b. Square – 2 1/2" on each side.
- c. Rectangle – 2 1/2" by 4".
- d. Triangle – 3" on each side.
- e. Diamond – 2 1/2" on each side.

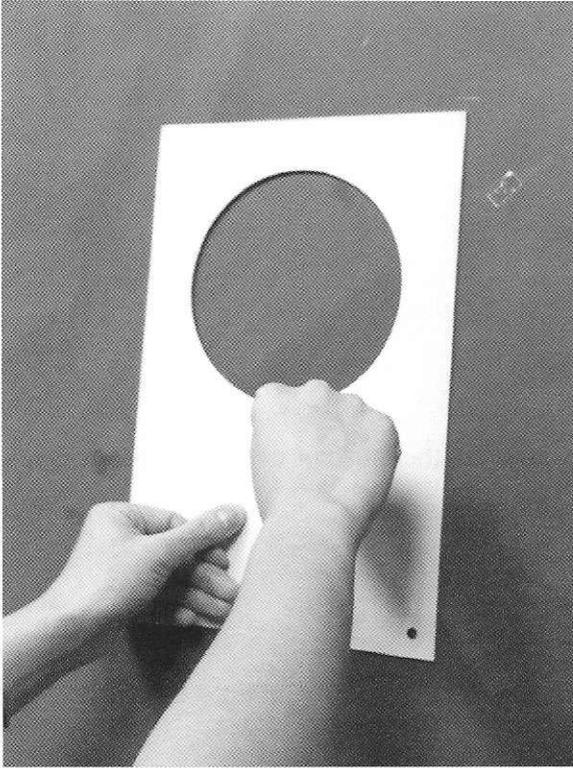
B. Templates are available from most children's school suppliers.

C. Purpose of Template Activities. Templates help the child develop the following:

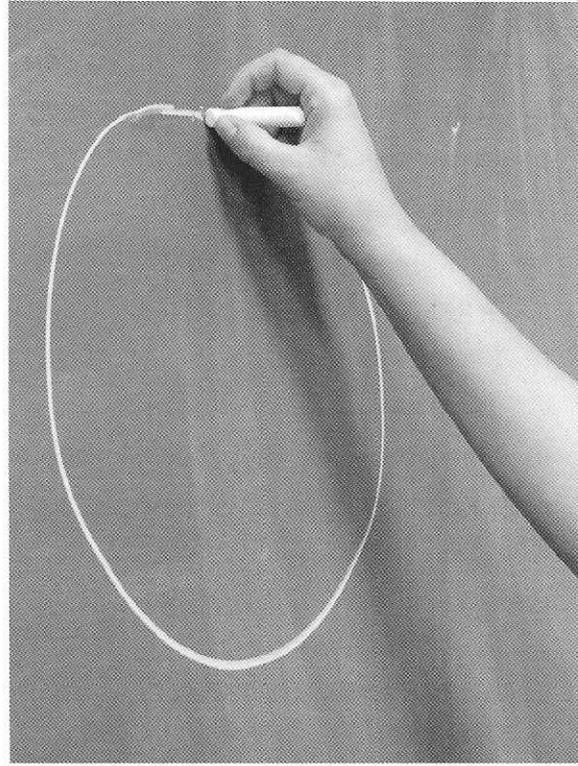
1. Integration of vision, language, and muscle sense.
2. Kinesthesia (the feeling for muscle movement patterns) which can be triggered by vision or thought (inner language).
 - a. The child will be able to look at a form and know what it feels like to reproduce it.
 - b. The child can think of the name of a form and trigger feeling of the movement to make the form and simultaneously visualize the form.
3. Spelling, reading, writing, and arithmetic depend on the abilities described above.

D. How to use the templates:

1. General



Using Circle Template



Tracing a Circle

a. Posture

Have the child do the following:

- (1) Stand at the chalkboard with feet apart.
- (2) Hold the template against the chalkboard with his nondominant hand; the center of the form is to be even with the bottom of his nose.

b. Muscle sense—as the child moves his hand and arm around the edges of the forms he is to:

- (1) Feel the edges with his fingers.
- (2) Feel his arm as it moves.
- (3) Feel the change of direction and stop at the corners (in forms other than the circle).

c. Dynamic Visual Field – he is to be visually aware of as much as possible.

d. Language – he is to describe his arm movements vocally after his first week of training.

This is done as follows: as he traces a square, he is to say “right” as he goes across the top, “down” as he goes down on right, “left” as he goes across bottom, “up” as he goes up the left side.

e. The sequence from steps 2 to 4 is done daily. At the end of the first week, step 5 is added.

2. Tactual Triggering Visual.

Have the child do the following:

- a. With eyes closed, run his index and middle fingers around the edges of the form.
- b. Feel the edges and try to picture (visualize) the form.
- c. Repeat this 20 times each way.

3. Tactual Monitored by Vision.

Have the child do the following:

- a. With eyes open, trace around the edges of the form with a piece of chalk.
 - b. Watch the chalk and feel the edges of the form.
 - c. Repeat this 20 times each way.
4. Vision Monitoring Hands.

Have the child do the following:

- a. With eyes open, trace around the edges of the form with a piece of chalk.
 - b. Remove the template.
 - c. Trace around the chalk form.
 - d. Watch the chalk, keep it on the outline of the form, and feel the muscles of the arm as it moves.
 - e. Repeat this 20 times each way.
5. Kinesthesia Monitored by Vision.

Have the child do the following:

- a. Erase the chalkboard.
- b. Reproduce the form exactly as he had made it previously. Try to regenerate the feeling his muscles had as he traced the form.
- c. Place the template of the form against the form he regenerated to check for accuracy.

III. Vision and Our Other Senses

Taste, touch, hearing, smell, and sight have been classically considered as our primary senses.

In the formative stages of a child's life he will look at an object, touch it, mouth it, bang it, and do any other manipulative action possible. He does all of this to learn as much about the object as possible. As the child becomes more sophisticated with age, he ceases to explore the world with his hands, mouth, nose, and ears—using his eyes instead. When he uses his eyes, the child can determine texture, taste, smell, and the sound of an object by comparing present observation to previous manipulation of the object or objects similar to it.

The ability to reconstitute previous sensory experiences from light energy implies that the child has had previous sensory experiences. As the child grows older he does not need to explore new situations with his hands, and he can interrelate his senses. None of these factors can be taken for granted in working with children. Activities are necessary to help a child explore his external world with an awareness from all of his senses. Not only will this increased awareness make the child more alert, but it will assist him in becoming more receptive and responsive to the educational process because *he* will be personally involved. Words will not be black scratches on paper, but will come alive with sensory and experiential meaning.

A. Tactual Skills.

“Eyes confirm what hands do; hands confirm what eyes see,” is the basic thought in activities to develop tactual (touch) skills.

What to do.

1. The child is encouraged to explore with his hands.

Have the child do the following:

- a. Touch as many things as he can in the room, hallway, or anyplace he goes. He is to explore the feeling of the walls, floor, ceiling, closets, etc.
- b. Describe in words the feel of what he has touched and his reaction to it; i.e., smooth, rough, cold, warm, icky, etc.

- c. Describe, using words and his hands, how different surfaces look to him; i.e., when you look at something rough it has little bumps (hands go up and down from left to right, indicating bumps). Something that's smooth has no bumps (hands go straight across from left to right, indicating smoothness).
2. The child is to look for and feel objects in the room which are round and rounded, square, triangular, rough, smooth, hard, soft, and so on.
3. The child is to take newsprint quality paper and crayon to make rubbings of the texture and patterns of different objects in the room that have texture or relief, such as gratings, brickwork, and tile formations. Have the child do the following:
 - a. Place the newsprint paper over the object to be rubbed.
 - b. Rub a crayon in quick gentle strokes allowing the patterns to emerge on the paper
 - c. Make a composite design on his paper using his rubbings.
4. The child is to identify textures, shapes, objects, letters, and other items using only his hands. This is done as follows:
 - a. Blindfold the child
 - b. Place objects in his hands, such as forms, letters, numbers, textured material, sandpaper, letters and forms, etc.
 - c. Have the child feel the object and verbally identify it.
 - d. Take the child to different places in the room and have him describe the object he is identifying with his hands in relationship to its position or location in the room.
 - e. Remove the blindfold and have the child confirm with his eyes what he has touched with his hands.

B. Auditory Skills.

1. Identification of objects.

The child is given experiences in identifying objects through the use of his hearing, as follows:

- a. Stand behind the child.
- b. Tap, rub, or initiate a sound from an object. Recordings can be used for sounds that are not in the immediate surroundings, such as sounds of animals, sirens, guns, automobiles, etc.
- c. The child is to identify the object by the sound it makes.
- d. After the child has made his verbal identification:
 - (1) Allow him to confirm what he has heard by touching and looking at the object if it is in the room. If the object is not in the room, have the child match the sound to a picture.
 - (2) Have the child attempt to imitate what he heard either vocally or by initiating the sound from an object matching the one he heard.
2. Auditory-spatial relationships are developed by having the child tell you the location of the sound.
3. Temporal Sequencing.
 - a. Tap out patterns and have the child reproduce them on paper; i.e.: tap, tap, tap—becomes . . . tap, tap, pause, tap—becomes . . .
 - b. Contrast loudness and softness; i.e., soft tap, soft tap, loud tap—becomes . . .
 - c. The combination and variations are innumerable. Have the children devise their own patterns. Morse code (meaningful patterns) can be used when the child shows proficiency in recognizing meaningless patterns.

4. Auditory—visual matching.
 - a. Place the patterns described above on cards.
 - b. Tap out the pattern and have the child select the card which matches the auditory pattern, thereby visually identifying the pattern.

C. Action Triggered by Visual or Auditory Stimuli.

Any activity programmed for the child to follow auditory or visual instructions will be to his benefit.

1. Verbally – tell the child what to do.
2. Visually – write, diagram, or pictorially represent what he is to do. The instructions may be placed on index cards.

There are innumerable activities which can be presented sequentially. Any activity may be used where the child takes in visual or auditory instructions, processes it, and puts it into action. The following activities are an example of those which may be used:

1. All of the training activities.
2. Putting a puzzle together.
3. Playing games having to do with movement.
 - a. Giant steps
 - b. Simon says
 - c. Putting oneself through the movement or placing objects according to prepositions.
4. Building a model.

D. Vision Triggering Speech.

1. Have a child cut pictures out of magazines and mount them on heavy paper. The picture may represent the following:
 - a. Fruits, houses, bicycles, etc.
 - b. Scenes
 - c. Colors
 - d. Concepts
 - e. Emotions
 - f. Any other category.
2. Have a child look at a picture and describe what he sees. Try to elicit the following:
 - a. Identification of the picture – what it is.
 - b. Colors
 - c. Relationships
 - d. Understandings
 - e. As much about the picture as possible; i.e., shown a picture of a television set.
 - (1) Identification – TV set.
 - (2) Color – black and white.
 - (3) Parts – screen, cabinet, knobs, etc.
 - (4) Relationships – cabinet made of wood, screen made of glass.

- (5) Understandings – description of how TV pictures are made and broadcast and how received, names of TV channels.
 - 6) Favorite TV programs, and so on.
3. Have the child write or dictate a story about the picture.

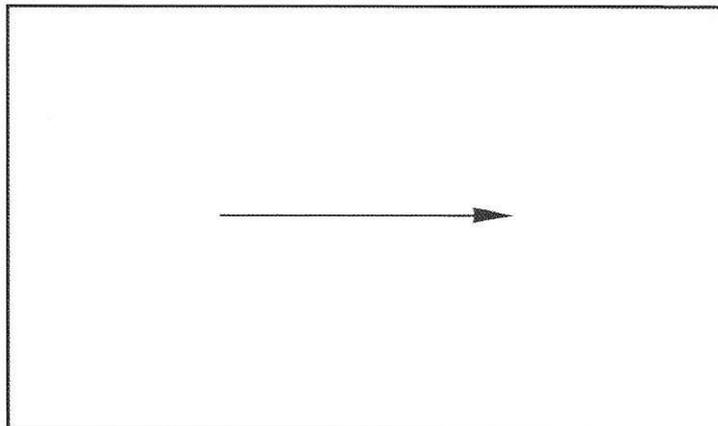
IV. Action Triggered by Auditory Stimuli

A. Following directions.

1. Pair the children to work on this procedure.
2. Have one child (A) give the instructions and the other child (B) carry them out exactly as he is told.
 - a. Child A describes what to do.
 - b. Child B works only on the basis of the information given him. He is not to anticipate or correct A's instructions.

Example #1- Using arrows.

1. Child A sees configuration which is on a 3 x 5 card.



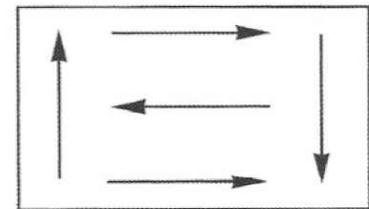
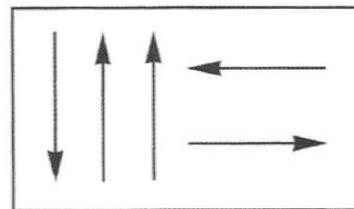
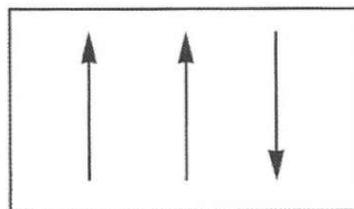
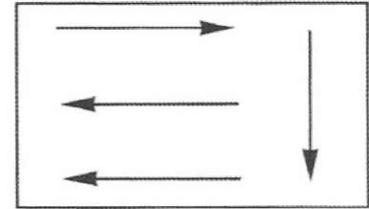
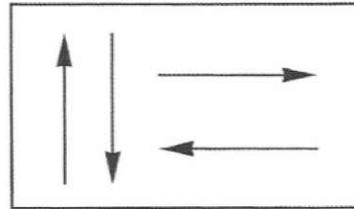
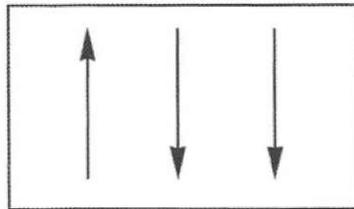
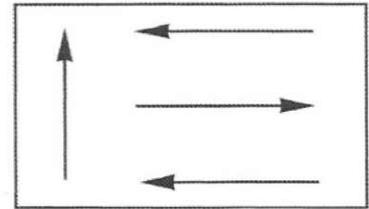
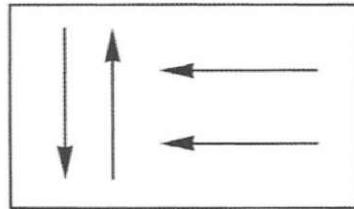
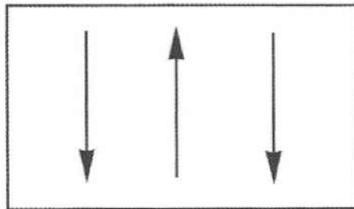
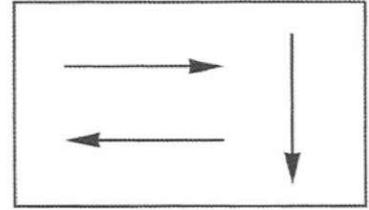
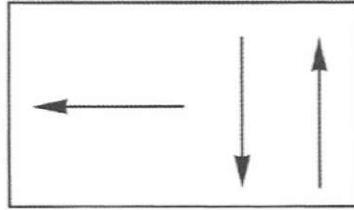
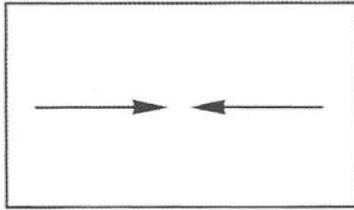
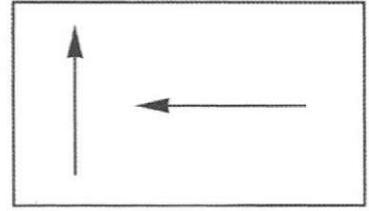
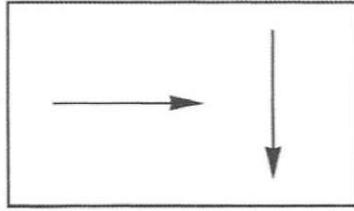
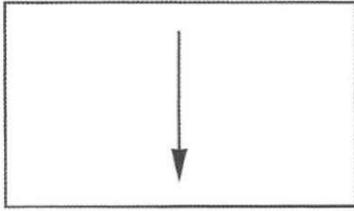
2. Child B is at the chalkboard or at his desk with paper and pencil.



3. Child A says, "Draw an arrow."
4. Child B says, "I need more information."
5. Child A says, "Draw an arrow pointing to the right."
6. Child B says, "I need more information." Child B may draw an arrow pointing to the right, but he is not to draw it in the center of the box.
7. Child A must say, "Draw an arrow in the center of the box, pointing to the right."

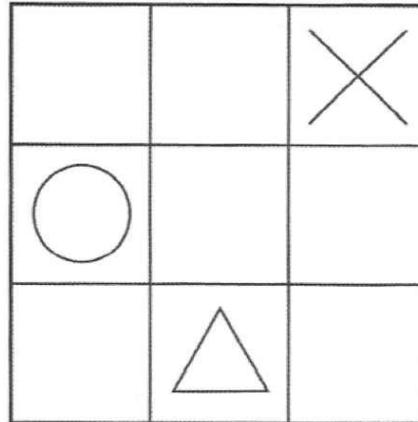
Do not initially tell the children how to do it as in step 7. Let them work it out between them. This will help both children use receptive, inner, and expressive language.

Configurations for additional arrow exercises

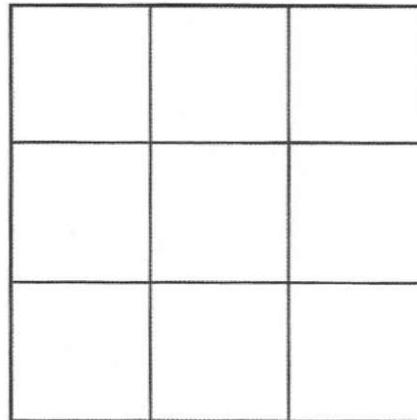


Example #2- Tic-tac-toe.

1. Start with a tic-tac-toe box.
2. Child A has the following design on a card:



3. Child B has the following design on the chalkboard or paper:



4. Child A is to say, "Place a circle in the left middle box, a triangle in the lower middle box, and an X in the upper right-hand box."
5. Should Child A not give the information as described in Step 4, Child B must ask for more information.

B. The Metronome.

Auditory triggering motor action using the metronome.

The metronome may be used with any training activity which requires movement. The child is required to move in relationship to the timing of the beat of the metronome, which may be set at 60 or 120 beats per minute.

What to do.

1. Matching
 - a. Have the child do the following: Tap with his foot or fingers in time to the beat of the metronome.
 - b. Have the child move his eyes from one object to another in time to the beat of the metronome.
 - c. Pause and tap.

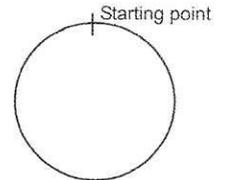
- (1) Have the child do the following: Tap on every other beat.
 - (2) Have the child tap to a variation of every third, fourth, etc. beat.
 - d. When integrated with the motor activities, such as walking rail, creeping, etc., the same procedure is followed. First the child moves on each beat of the metronome, then on the second, third, etc.
2. At the chalkboard.

Have the child do the following:

- a. Draw lines to the beat of the metronome.
 - (1) The faster the rate of the beat, the shorter the line.
 - (2) The child is to notice that in order to make a larger line, when the rate of the beat is fast, he has to move faster.
- b. Making geometric forms to the beat.

Have the child do the following:

- (1) Make a square, rectangle, diamond, triangle, or any other sharp cornered figure to the beat of the metronome. The chalk is to reach the corner of the figure on the tick of the metronome.
- (2) Move his hand fast enough to reach his starting point at the tick of the metronome when making a circular figure.



- c. In relationship to a clock.

Have the child do the following:

- (1) Make a large clock face on the chalkboard. Start with the primary numbers: 12, 3, 6, and 9.
- (2) Place his chalk on 12. Move the chalk to 3, 6, and 9 to the beat of the metronome.
- (3) Add the other numbers and play a game.

Instructions to the child may be given either verbally or written on 3 x 5 cards.

- (a) On each tick, the child is to go from number to number in sequence.
- (b) On each tick, the child goes to every second number.
- (c) On each tick, the child is to move across the clock, such as : 1 to 8, 8 to 3, 3 to 9, etc.
- (d) On each second tick, the child can move to a number.
- (e) On each tick, the minute rather than the hour designations may be used, such as: 15 after, in place of 3 o'clock; 25 of, in place of 7 o'clock; a quarter of, in place of 9 o'clock, etc.

V. Tachistoscope

The tachistoscope is a device used to rapidly flash forms, words, numbers, sentences, pictures, and other material on a screen. This instrument is customarily used to increase the "span of perception," in that a child is told to look at a point on a screen and try to see what is flashed during a short time exposure. He has to then reproduce what he has seen.

Optometric concern is to develop a meaningful process for gaining information from a minimal visual stimulus. In this procedure, the child is to focus his attention and gain meaning by allowing his visual process to function spontaneously. The attempt in training is to develop within the child an ability to "see and know," without tension.

A. How to do it.

1. Seat the child about three to eight feet from a screen or chalkboard (a chalkboard is preferred).
2. Outline the area on the chalkboard where the material will be flashed.
3. Give the child the following three verbal commands:
 - a. Ready – point your eyes at the center of the outline on the chalkboard and become aware of the room.
 - b. Now – open your eyes very wide; be peripherally aware of the room and get ready to reach out with your eyes as if you were going to catch with your hands what is flashed.
Do not lose visual awareness of your surroundings.
 - c. Flash – after a one-second pause, actually flash the material on the chalkboard.
4. After the flash, the child is to close his eyes and mentally picture what has been flashed.
5. Have the child, keeping his eyes closed, describe verbally and with his hands what he has seen.
6. Have the child open his eyes and make on paper what he has seen on the chalkboard.
7. Supply immediate feedback by showing the child what was flashed.

B. How to help the child.

1. Emphasize that you are more concerned with how he does the procedure, rather than his results.
2. Question him about his maintenance of his awareness of the room.
3. Tell him to trust his vision – let it happen, don't force it.
4. Give reassurance – we want the child to learn that vision is automatic and spontaneous.

If he misses something as he is learning to develop the process, he is not to worry because with practice his performance will improve. We are not judging him, and we do not want him to judge, fight, or get angry at himself.

VI. *Effective Breathing for Better Learning*

A. Effective breathing will help a child in the following areas:

1. Speech
2. Oral reading
3. Sports
4. Body awareness and kinesthesia
5. General health

B. How to breathe.

Effective breathing requires use of the diaphragm which is located under the rib cage, separating the chest from the abdomen. Shallow breathing usually results when the diaphragm is not used as the prime mover of the chest. For effective breathing have the child do the following:

1. Primary Position
 - a. Lie on his back.
 - b. Place his hands on his abdomen.
 - c. Tighten his abdomen and press down on it as he slowly expels air through his mouth.
 - d. Expand his abdomen and release his hands as he slowly sucks air in through his nose.

- e. Repeat for only two minutes because initially it may cause the child to feel dizzy.
2. Standing—Have the child stand on the floor, feet apart and repeat the breathing as described above.
3. As the child goes through the breathing procedures, he is to do the following:
 - a. Become aware of and feel his body and the body parts. Body parts involved are: chest, back, abdomen, mouth, and nose.
 - b. Feel the air moving into each part.
 - c. Keep his shoulders relaxed and still.
 - d. Visualize what is happening as his muscles expand and contract.
 - e. Maintain his peripheral visual awareness.