

Visual-Motor Control

VISUAL-MOTOR CONTROL

Definition

Visual-motor control refers to the ability to coordinate visual information with motor output for precise visual guidance of movement. This ability is seen in threading a needle, catching a ball, and using visual guidelines for writing or cutting on lines or for coloring within boundary lines.

Development

Newborns interact mostly visually with their environment. During the first four months of life, they spend a great deal of time watching their own hand movements, assisted by a primitive reflex (asymmetric tonic neck reflex) which places their hands in the ideal position for observation.

During the fourth through twelfth months, they learn to guide hand movement visually to reach for and manipulate objects. Given the opportunity, they may begin to use a crayon to make marks on paper. At this point, scribbling is done primarily for the sensorimotor experience it provides.

Active scribbling continues into the second year of life (12-24 months), and toddlers begin to appreciate the contrast between the line and the background. Random scribbling results in horizontal, vertical, then circular lines, and is usually repetitive and carried out in one direction.

Two-year-olds (24-36 months) differentiate forms from repetitive scribbles and purposefully imitate and then copy vertical, horizontal, and circular lines. They develop the ability to trace vertical and horizontal lines to form crosses and squares.

Three-year-olds (36-48 months) begin to cut with scissors on lines, color within line boundaries, imitate vertical-horizontal crosses, and trace diamonds with rounded curves. At this age, forms are combined to make simple designs; and some children begin to copy large upper-case letters legibly.

Four-year-old children are able to guide their movements visually for successful performance of simple tracing and maze activities. They copy crosses, squares, and diagonal lines; color within lines; and draw recognizable pictures. Cutting skills improve so that the preschooler can cut on straight or simple curved lines and cut out circle and square shapes.

Five-year-old children can copy triangles, diagonal cross shapes, and some words with fair accuracy. Some write letters and their names, although letters are formed idiosyncratically (they look right but are not formed using correct patterns). At this age, attention is devoted to controlling the movements to form the letters, with little awareness of spacing or size of letters.

In the early school years, children practice and perfect the earlier skills and begin to attend to spatial aspects of placing letters on the page, such as spacing between letters and words, size of letters, and writing on the line. In later school years, the visual-motor skills developed earlier are performed easily so that attention is focused on the content of the written material, the design of the art project, or the objective of the game.

Difficulty with Visual-Motor Skills

Children can have difficulty with visual-motor skills for a number of reasons. Some children have difficulty with control of movement or visual processing, or they do not attend visually to the activity. Others may not have had opportunities for or interest in practicing visual-motor activities. Another group of children has difficulty with coordinating visual input with motor output, although visual perception and motor control are adequate.

Children with weak visual-motor skills know what they want to do and how to do it, but they can't guide movement accurately to accomplish a visual-motor task successfully. These children may have difficulty with activities that depend on visual guidance, such as placement of letters on a line, cutting on a line with scissors, or building models and performing other fine mechanical tasks.

Beneficial Activities

Before addressing this skill area, make sure that visual perception and motor control are intact. If not, work on these first (or together with visual-motor skills). For example, is a child who is unable to copy a letter able to tell the difference between correctly and incorrectly formed letters by looking? Can the child control the pencil to make the component strokes of the letter? If not, address these skills before asking the child to practice copying letters.

Any precise movement that requires visual guidance will be helpful for improving visual-motor control. It is important to grade activities so that the child starts with the easiest tasks and experiences success before proceeding to more difficult tasks. The visual-motor skills necessary for writing usually develop in a predictable order and improve with practice. Present activities that help to develop these skills in the order in which they normally develop. Children begin by randomly scribbling while watching their hands. Lines and shapes are first formed randomly, then traced, then imitated (drawn after a demonstration), and finally copied from a model.

Activities that develop fine visual-motor control include imitating and copying lines, shapes, letters, and numbers; and tracing, mazes, coloring within lines, writing on lines, cutting on lines with scissors, Pick-Up Sticks®, jacks, and similar games.

Improvement in specific skills is often seen with repetition of gross visual-motor activity. However, this improvement does not necessarily carry over to other, finer activities. The most practical approach for choosing gross motor activities is to build skills which interest the child or are needed for gym class or playground activity.

Compensatory Strategies

Without good visual-motor control, a child will have difficulty achieving accuracy when performing motor tasks that depend on visual guidance. Make classroom activities less stressful by these strategies:

- Modify visual-motor activities so that they require less accurate movement.
- Give the child more time for completing visual-motor activities.
- Provide sensory cues (tactile, auditory, or visual) to help with guidance of movement.
- Minimize visual-motor aspects of activities whenever possible.

Examples of these types of adaptations include:

- Increasing the size of the space to be colored in or the lines to be cut on.
- Using a wide-tip red marker to outline lines for the child to color within.
- Giving verbal feedback when the child goes out of the lines.
- Using shoes with Velcro® fasteners rather than laces.
- Instructing child to focus on the content of the writing assignment and not to be concerned about placement of the letters on the lines.

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Velcro® is a registered trademark of Velcro U.S.A., Inc.

Child's Name _____

Date _____

VISUAL-MOTOR CONTROL
Classroom and Individual Practice
TRACING ACTIVITIES

Purpose

To improve ability to direct movement of writing implement along a line

Materials

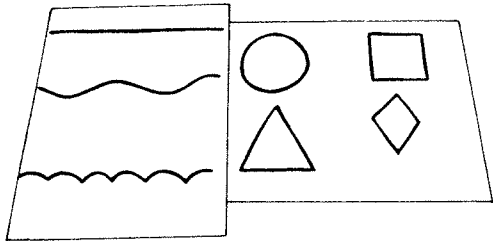
Writing implements (markers, crayons, pencils) in a variety of colors; paper

Preparation

Draw a variety of lines and shapes on paper. Include straight, wavy, and curved lines in a variety of lengths and line widths (from short and wide to long and thin); simple shapes (circle, square, triangle, diamond) in a variety of line widths and sizes; and complex shapes (combinations of shapes that make designs or pictures) of varying degrees of difficulty.

Position

Child is seated at desk of proper height, with arms supported on desk surface and feet flat on the floor.



Procedure

1. Child traces over shortest straight line with finger, repeating until the finger does not stray from the line.
2. Child picks up pencil, crayon, or marker and traces over line, repeating until the line is traced accurately. Different colors are used for each attempt, so child can see progress ("The red went off three times, blue went off one time, and the yellow was 100% accurate").
3. Child repeats steps 1 and 2 with longer straight lines, shorter and longer wavy lines, curved lines, circles, squares, triangles, then complex shapes.
4. When child traces the shapes accurately, introduce a tracing activity.
 - Use tracing paper to trace over pictures in a coloring book or picture book. Then color them and cut them out with scissors.
 - Fold paper, then open it and trace over fold lines to create a design.
 - Cover the back of a picture with pencil lead; then place it lead-side down over a sheet of paper and trace over the outline on

the front of the picture to reproduce it onto the lower sheet of paper. The outline that results will be dim, and child will need to trace over it with a marker or pencil to get a clear picture. Color it in and cut it out.

- Trace letters and numbers in a variety of colors.

Desired Response

Child visually guides movement so that the finger and marker stay on the lines, regardless of line direction or shape.

Undesired Response

Child turns paper to trace only in one direction.

Variations and Adaptations

If child is visually confused by the different color lines from repeated tracing attempts, place a clear sheet of acetate over paper with lines drawn on it; or insert paper between vinyl photo cover pages. Have child use a grease pencil to trace. Marks can be erased with paper towel after each attempt.

Start with short, wide, straight lines. As skill improves, progress to thinner, longer, and more complex lines. Begin with a level at which child can achieve success; progress slowly; and stop when child has been challenged, has shown improvement, and is still successful.

If upper arm control is good, have child practice tracing on the chalkboard, which places the lines and hand directly at eye level.

Pens are commercially available that make a sound or flash a light when the pen point strays from a line. These pens provide immediate feedback and can improve tracing skill.

Have children trace each other's drawings with tracing paper.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

VISUAL-MOTOR CONTROL
Classroom and Individual Practice
MAZE ACTIVITIES

Purpose

To improve ability to control movement so pencil line is maintained within lines of a maze

Materials

Baking tray (or cardboard box with low sides) and salt or sand; or finger-paint paper and finger paint; or shaving cream on desk top; paper; markers

Preparation

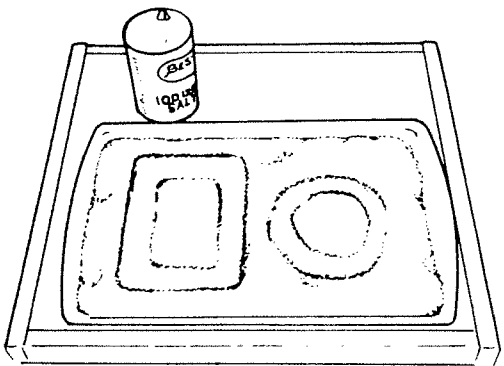
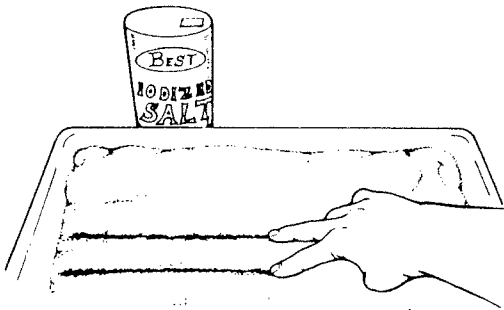
Place shallow layer of salt or sand in tray or box (paint bottom of box with black poster paint for added contrast, if desired); or cover a large sheet of finger-paint paper with paint; or cover the desk top with shaving cream.

Position

Child is seated at desk or table of proper height, with arms supported on desk surface and feet flat on the floor.

Procedure

1. Adult pulls index and middle fingertips through salt, sand, paint, or shaving cream to create a wide, straight line maze.
2. Child traces through maze using index finger, and repeats until maze is completed without having finger go out of the lines.
3. Steps 1 and 2 are repeated with longer straight lines; short, then longer, wavy line mazes; curved line mazes; and circular, square, triangular, then complex-shape mazes.
 - Draw roads; have child drive a small toy car through without touching sides, then do the same with a marker.
 - Draw progressively smaller (lines closer together) and more wavy mazes with car (horse, person) drawn at one end and garage (stable, house) at the other. Create mazes that encourage left-to-right movement.
 - Have children try to stump one another by creating mazes with numerous paths, only one of which leads to the goal.
 - Have children write letters and numbers within outlined forms without going out of the lines.



Desired Response

Child visually guides movement so the finger and marker stay within the lines, regardless of line direction or shape.

Undesired Response

Child turns paper to move finger or marker in only one direction.

Variations and Adaptations

If child has difficulty staying within lines, increase line contrast by using bright markers on paper.

Encourage child to move with increased speed as skill improves. A stopwatch can be fun for monitoring progress.

Have child drive a small toy car through mazes made in salt, damp sand, or paint.

Place a clear sheet of acetate over paper with a maze drawn on it; or insert paper between vinyl photo cover pages. Have child use a grease pencil, which can be erased with paper towel after each attempt.

Add tactile (touch) cues to mazes to provide additional feedback about staying within the lines. Pour white glue on top of lines to form a ridge when dry; place tape along outer sides of the lines; or make templates by cutting the maze outline from cardboard or thin plywood.

Start with short, straight line mazes with lines far apart. As skill improves, progress to thinner, longer, and more complex mazes. Begin with a level at which child can achieve success; progress slowly; stop when child has been challenged but is still successful.

If upper arm control is good, have child practice maze activities on the chalkboard or on mazes drawn on large paper and taped to the wall. This places the lines and hand directly at eye level.

Books of mazes are commercially available.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

VISUAL-MOTOR CONTROL
Classroom and Individual Practice

COLORING WITHIN LINE BOUNDARIES

Purpose

To improve ability to color within boundary lines

Materials

Coloring implements (crayons, colored pencils) in a variety of colors; several colored wide-line markers; white glue; paper

Preparation

Draw a 6" simple shape (circle, square, or rectangle) on paper, and outline it with a thick line of red. Draw around the outside edge of the marker line with white glue and allow to dry.

Draw a 5" to 8" picture with three or four details. Outline the picture with red marker and the detailed areas with blue, green, and purple markers. Cover all marker lines with glue and allow to harden.

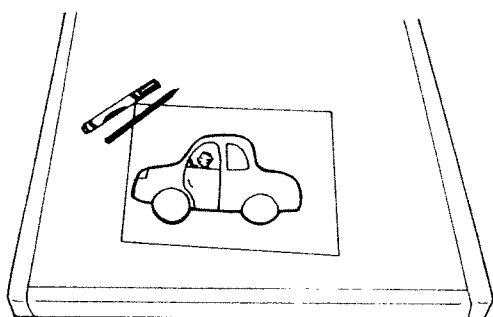
Draw another 5" to 8" picture, and outline it with red marker.

Position

Child sits at desk of proper height, with arms supported on desk surface and feet flat on the floor. Paper with shape and glue is placed on desk in front of child.

Procedure

1. Child traces the outline of the large shape with index finger, feeling the glue.
2. Child uses index finger to make motions as if coloring the shape, and tries to "color in" the space without feeling the glue line. This is repeated until child can do it without touching the glue very often.
3. Child uses crayon and colors in the shape. Adult records the number of times crayon touches the glue.
4. Child repeats, using different colors, and attempts to "beat the record" by coloring without touching the glue.
5. When large shapes are colored within lines, child colors the detailed picture using different colors for each section, trying not to cross the glue lines.
6. Child colors in the picture without glue outline.



Desired Response

Child works carefully and controls movement so finger and crayon stay within the lines.

Undesired Response

Child works quickly and impulsively.

Variations and Adaptations

Place a clear sheet of acetate over paper with shape outlines drawn on it; or insert paper between vinyl photo cover pages. Have child use a grease pencil for coloring. Marks can be erased with paper towel after each attempt.

Start with large shapes and wide marker outlines. As skill improves, decrease size and outline width.

Let child work propped on elbows, lying on the floor, to encourage smaller finger movements for coloring in small spaces.

Encourage child to work slowly and accurately at first; then increase speed as skill improves.

Use bright markers to outline pictures to be colored or to outline pictures in coloring books.

Have child practice tracing by outlining pictures before coloring.

Use cardboard templates in a variety of shapes to provide tactile (touch) feedback when child colors outside of the outline. Cut out the shape, place template over paper, and trace the outline of the shape onto two sheets of paper. Have child color within the shape with the template around it, then without the template.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

VISUAL-MOTOR CONTROL
Classroom and Individual Practice

PRE-WRITING ACTIVITIES—LINE COPYING

Purpose

To improve copying of vertical, horizontal, and diagonal pre-writing lines

Materials

Desk-top easel, desk-top chalkboard, or other vertical surface

Two 1" x 8" strips of stiff plastic, cardboard, construction paper, or wood (rulers can be visually distracting)

Prerequisite Skills

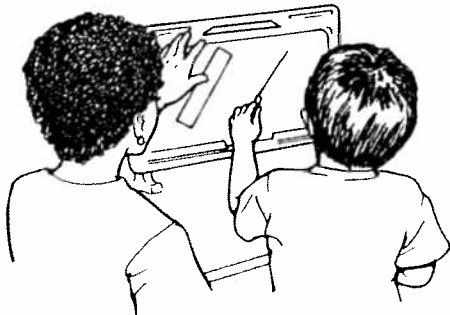
Before beginning this activity, make sure child understands the concepts and language for *same* and *different* and can visually discriminate lines of different angles (that is, can tell whether lines look the same or different).

Position

Child is seated at desk or on floor; adult is next to child. Upright surface is located directly in front of child at face level.

Procedure

1. Place one strip vertically on the upright surface and hold it there with your thumb. Instruct child to "make one that looks like mine, right next to the strip."
2. Child uses writing implement to copy the line on the upright surface, immediately next to the strip.
3. Child identifies whether copy looks the same as the strip. If the line is not copied correctly (length and angle), child uses the strip as a template and draws the line several times using the strip as a guideline, then repeats the copying attempt next to the strip.
4. When child's line is formed accurately, child erases the first line and attempts to copy the line farther away from the strip.
5. When child can copy the vertical line accurately several inches from the strip, repeat for horizontal line and angled (slanted) lines.



Desired Response

Child accurately copies lines of vertical, horizontal, and various angles.

Variations and Adaptations

Upright surfaces are usually easier for children to begin with, but child may need practice transferring these skills to a horizontal surface. When child is accurate on a vertical surface, repeat activity with strips on top of desk. If child has difficulty with this, encourage child to position the head so the face is parallel to desk surface (same position relative to the lines as during use of the upright surface). As child progresses, encourage child to raise head gradually until normal posture is assumed.

Follow this activity with one that incorporates the use of vertical, horizontal, or diagonal lines, such as copying shapes or letters on chalkboard or paper.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

VISUAL-MOTOR CONTROL
Classroom and Individual Practice

LETTER COPYING—CAGE THE MONSTER

Purpose

To improve ability to copy letters

Materials

Chalkboard; two colors of chalk

Preparation

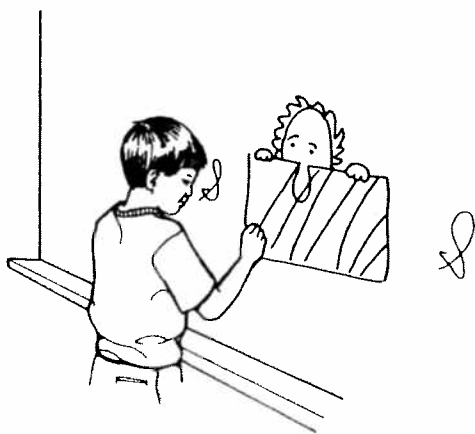
Draw a large rectangle (the "cage") on the board, with top side at child's shoulder height.

Position

Child stands facing chalkboard; adult stands next to child, opposite child's preferred side.

Procedure

1. Write the letter A on the board, next to the rectangle on your side of the chalkboard.
2. Child uses the other color of chalk to copy the letter on the other side of the rectangle.
3. Child identifies whether copy looks the same as your model letter. If the letter is formed accurately, the child may draw a "bar" on the cage. Bars are diagonal lines which are formed at the same angle.
4. If the letter is formed inaccurately or the diagonal bar is not at the correct angle, child erases them and you draw one body part of the "monster." The monster can be any creature that looks over the top of the cage. ("Kilroy" works well for those who don't wish to make up their own figures.)
5. Repeat for all letters as child tries to "cage the monster" with diagonal bars before the complete monster is drawn. After bars are completed in one direction, the cage can be secured further with diagonals in the other direction. If the monster is completed before the cage is securely barred, it escapes.



Desired Response

Child accurately copies letters and diagonal lines.

Undesired Response

Child forms letters or lines in incorrect direction or sequence.

Variations and Adaptations

Progress to copying without demonstration, then finally requiring the child to make the letter from memory. (You say the letter name, child draws it.)

Use this activity for practicing letter formation; then add spatial orientation by requiring child to write the letter in correct upright positioning on a line.

Use this activity to practice numbers, shapes, lines, spelling words, or whatever you want child to practice.

Ensure that child wins (or at least has an exciting game) by adding as many details as necessary to the monster. Add one tooth at a time, if necessary.

Upright surfaces usually are easier for children to begin with. When child is accurate on a vertical surface, this activity can be repeated with paper and pencil on desk top.

Keep track of difficult letters by recording them on a sheet of paper and presenting them again when the alphabet has been completed.

Follow this activity with use of the letters, numbers, and shapes in a drawing or writing activity.

Use of these activities should be directed by a qualified therapist.

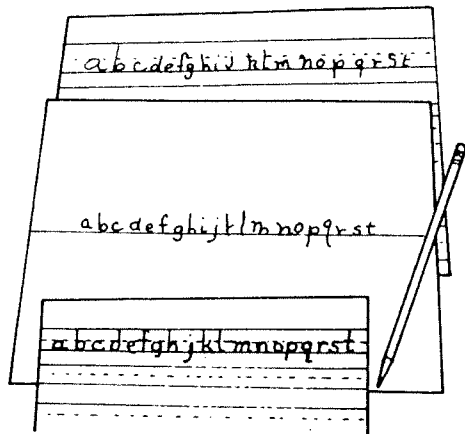
Child's Name _____

Date _____

VISUAL-MOTOR CONTROL
Classroom and Individual Practice
PLACEMENT OF LETTERS WITHIN LINES

Purpose

To improve ability to write letters within line boundaries



Prerequisite Skills

Before practicing placement of letters within lines, child should be able to write the letters and visually tell the difference between letters which are correctly or incorrectly arranged within the lines. Be sure child's difficulty with line use is not due to inappropriate spacing of lines. Does the child consistently write letters that extend beyond or are too small for the lines on the paper? If so, have child write the letters of the alphabet (words or a sentence) in "best writing" on a sheet of paper with one line. The height of these letters usually will be the size that allows child the most control of pencil movement. Choose paper for use in the classroom based on the size of these letters.

Materials

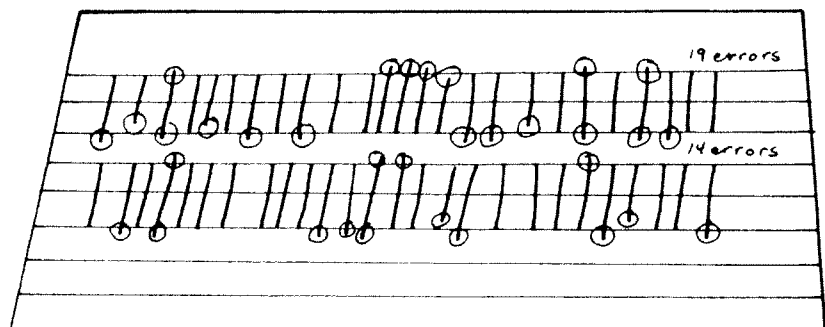
Fine-tip marker or pencil with sharp point; lined paper which is used for writing in the classroom

Position

Child is seated at desk of proper height, with arms supported on desk surface and feet flat on the floor.

Procedure

1. Child draws vertical lines, pulling stroke down from top to bottom between lines on paper, from left to right across the page.
2. Child uses red marker to circle places where the vertical lines extend beyond or don't reach the lines.
3. Child or adult counts circles and records number of errors.



4. Child repeats steps 1-3, attempting to beat previous record by having fewer errors.
5. Follow this activity with practice writing capital letters within lines of paper.

Desired Response

Child visually guides movement so that vertical lines reach top and bottom writing lines.

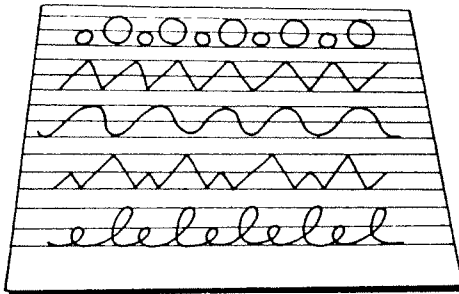
Undesired Response

Vertical lines do not reach, or extend beyond, writing lines of the paper.

Variations and Adaptations

Child circles letters which are not placed correctly within lines and attempts to stay within lines while writing the next word, sentence, or line.

If child is unable to stay within lines, begin this activity using paper with raised lines; or use wide markers to make boundary lines wider and more visible.



Have child increase speed as accuracy improves.

Have children do this activity in pairs, with each circling the other's errors.

If this activity is easy, have child make circles, wavy lines, or angular lines within lines.

Repeat this activity using the middle and bottom boundary lines (on three-lined paper). Have child practice lower-case letters in the same way.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

VISUAL-MOTOR CONTROL
Classroom and Individual Practice

SPACING BETWEEN LETTERS AND WORDS — PLASTIC LETTERS ACTIVITY

Purpose

To improve ability to space evenly between letters and words

Prerequisite Skills

Before working on writing with correct spacing, child should be able to visually discriminate (tell the difference) between correctly and incorrectly spaced letters and words, and copy all letters and numbers. If child is weak in these areas, work on letter copying and visual-perceptual activities for discriminating correct spacing before beginning this activity.

Materials

Small plastic or felt letters; chalkboard; chalk; large sheets of unlined paper; ruler; black marker; pencil; eraser

Preparation

Use ruler and marker to draw two horizontal lines across each sheet of paper. Draw a horizontal line on the chalkboard.

Position

Child is seated at desk or table of proper height, with arms supported on desk surface and feet flat on the floor, facing chalkboard.

Procedure

1. On the chalkboard, write a word or sentence on the line with accurate spacing.
2. Child places felt or plastic letters on the top line of the paper to copy the writing on the board.
3. Child identifies and corrects any spacing errors.
4. Child copies the word or sentence on the second line with pencil.
5. Child identifies any spacing errors on the copied line of letters, and records the number of correctly spaced letters. Child corrects spacing errors by erasing and rewriting them.
6. Repeat for a variety of words and sentences. Child tries to achieve a higher percentage of correctly spaced letters and words.



Desired Response

Child consistently spaces plastic and written letters accurately.

Variations and Adaptations

Start with short words and sentences. As skill improves, progress to longer words and sentences. Encourage child to check classroom written work and correct spacing errors after assignments are completed.

After classroom penmanship activities, have child count and record letters spaced accurately and try to increase that number on later activities.

Cut small letters from cardboard for this activity.

Have child practice spacing with felt letters on a felt board.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

VISUAL-MOTOR CONTROL
Classroom and Individual Practice
**SPACING BETWEEN LETTERS AND WORDS—
GRAPH PAPER ACTIVITY**

Purpose

To improve ability to space evenly between letters and words

Prerequisite Skills

Before working on writing with correct spacing, child should be able to visually discriminate (tell the difference) between correctly and incorrectly spaced letters and words, and copy all letters and numbers. If child is weak in these areas, work on letter copying and visual-perceptual activities for discriminating correct spacing before beginning this activity.

Materials

Pencil and eraser; black and red markers; one sheet each of graph, tracing, and regular lined paper; ruler

Preparation

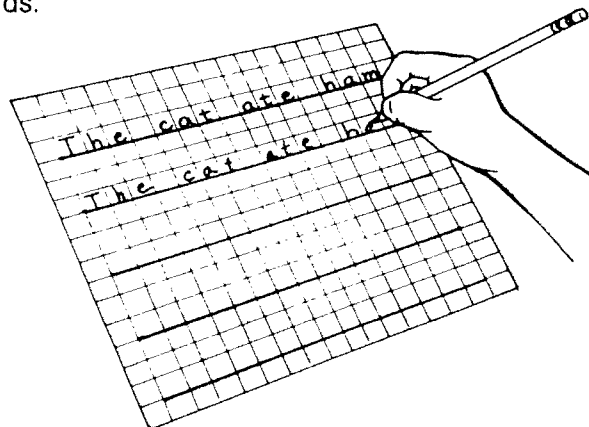
Outline horizontal lines of graph paper at regular intervals with red marker for top line and black marker for lower lines. Write a word or sentence, one letter per square, along the top red line. Skip one square for spacing between words. Place tracing paper over the graph paper, and use a ruler to trace the horizontal lines.

Position

Child is seated at desk of proper height, with arms supported on desk surface and feet flat on the floor.

Procedure

1. Child copies the word or sentence on the second outlined line, with one letter in each square and one square skipped between words.



2. Child places tracing paper over the graph paper so horizontal lines match up. Child traces over the word or sentence.
3. Child copies the word or sentence on the tracing paper on the next line down. Child uses the traced sentence for comparison.
4. Child identifies any spacing errors on the copied line of letters and corrects by erasing and rewriting them; then puts that sheet of paper out of sight.
5. Adult says the word or sentence; child writes it from dictation on a blank sheet of lined paper. Child identifies and analyzes spacing errors, records the number of correctly spaced letters, and corrects the errors.
6. Repeat with several words or sentences. Child attempts to increase the number of letters that are spaced accurately.

Desired Response

Child traces, copies, and writes words and sentences from dictation with consistent spacing between letters and words.

Variations and Adaptations

Start with short words and sentences. As skill improves, progress to longer words and sentences. Encourage child to check classroom written work and correct spacing errors after assignments are completed.

After classroom penmanship activities, have child mark, count, and record spacing errors and try to decrease that number on later activities.

Have two or more children try to produce writing samples with no spacing errors, identify each other's errors, and try to correct their own work until no more errors can be identified by the other child.

Have child write classroom assignments on graph paper if this helps with spacing and doesn't visually confuse the child.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

VISUAL-MOTOR CONTROL
Classroom and Individual Practice

**ACTIVITIES TO INTEGRATE "FEEL" AND
"LOOK" OF MOVEMENT**

Purpose

To improve ability to associate how lines look (visually) with how they feel (kinesthetically)

Materials

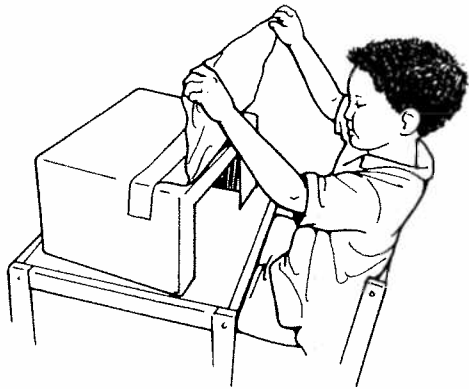
Cardboard box at least 1' x 2' x 15"; fabric or other material to cover one side of box; paper; grease pencil; chalkboard; chalk

Preparation

Cut off box top. Cut a large opening in one side. Place box bottom-side up on a table. Attach material so it hangs down to cover the opening on the side of the box. Place paper on desk or table under the box.

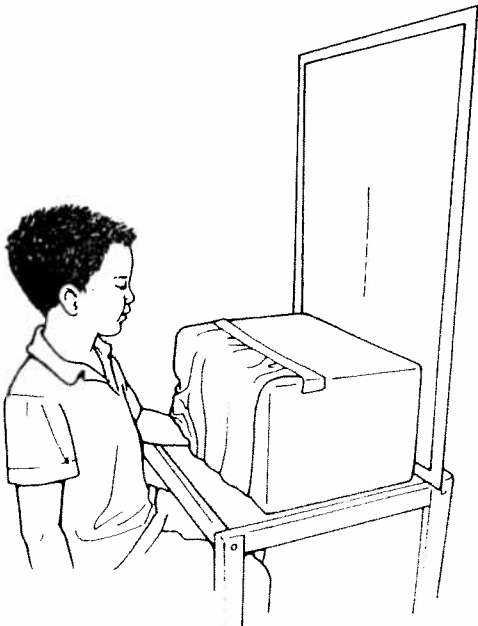
Position

Child sits at desk or table. Child grips grease pencil in preferred hand and places writing hand under the box so it can't be seen.



Procedure

1. Draw a vertical line on the chalkboard.
2. Child watches you draw and imitates the line on paper under the box.
3. Lift box to show child the resulting line. Encourage child to compare it with the line on the chalkboard. If it is an inaccurate imitation, child imitates the line with eyes open until it is accurate, then repeats attempt under the box. Encourage child to "imagine how it feels to make a line that looks like that."
4. Child imitates horizontal and diagonal lines and simple shapes; and finally imitates designs and pictures, first under the box, then checking visually and repeating until an accurate imitation is achieved. For complex designs and pictures, perfect accuracy of spatial details cannot be expected, but the overall design should be recognizable.
5. Follow this kind of activity with practice of letter formation or writing, using the procedure described above; then with regular handwriting practice without the box.



Desired Response

Child looks at lines, shapes, designs, and letters; and guides movement of the grease pencil kinesthetically (by feel) to produce accurate copies.

Undesired Response

Child watches hand movement under the box.

Variations and Adaptations

If child has difficulty making the transition from the upright orientation of the chalkboard to the horizontal desk, draw lines and shapes on index cards and place them in front of the box on the desk.

Make this activity more difficult by requiring copying of lines, shapes, and pictures instead of imitation. Show the model to be copied without demonstrating how it is drawn.

If child has difficulty feeling movements of the grease pencil, try placing sandpaper or another textured surface under the paper to increase sensory input to joints and hands.

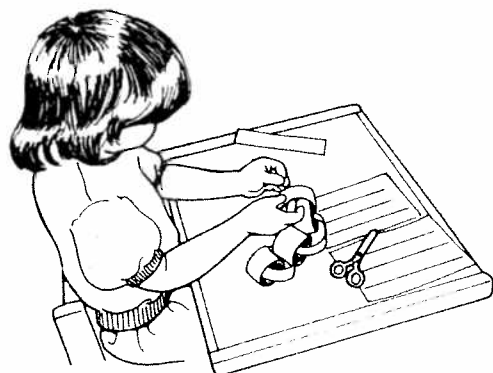
Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

VISUAL-MOTOR CONTROL
Classroom and Individual Practice

SCISSOR ACTIVITIES—CUTTING ON STRAIGHT LINES



Practice Activity 3

Purpose

To improve ability to use visual guidance to maintain scissors on a straight line during cutting

Prerequisite Skills

Before beginning these activities, child should be able to trace straight lines accurately with an index finger, and cut across a piece of paper.

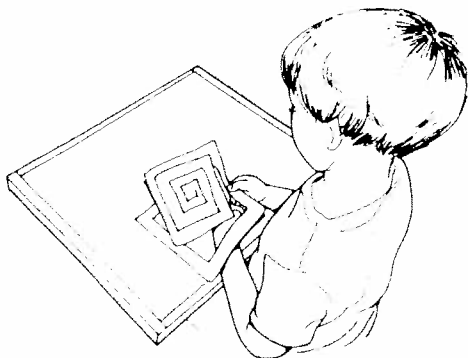
Procedure

Incorporate these practice activities into projects, such as coloring, cutting, then pasting shapes to make pictures.

1. Child cuts on wide lines across short strips of paper. As skill improves, child cuts on narrower lines across longer pieces of paper.
2. Child cuts out large squares, rectangles, and triangles, by cutting along shape outlines. Child progresses to smaller shapes.
3. Child cuts out strips, then glues them into circles to form a chain.
4. Child or teacher glues parallel craft sticks on paper; child cuts between them. As skill improves, sticks are glued closer together, or several pairs are glued parallel to form a maze for cutting.
5. Child or teacher glues parallel pieces of yarn, sandpaper, or string; child cuts between them. Distance between pieces is decreased as skill improves.
6. Child or teacher uses a hole punch to make holes in a straight line across strips or pieces of paper; child cuts through holes.
7. Adult draws continuous concentric squares; child cuts along lines to make a decoration that can be hung with tape or string.
8. Child helps with coupon clipping at home, focusing on cutting along the outlines.



Practice Activity 4



Practice Activity 7

Desired Response

Child cuts on lines.

Undesired Response

Child cuts next to line rather than on it.

Variations and Adaptations

Begin cutting activities with wide cutting lines. Decrease width as skill improves so child is challenged, yet can be successful.

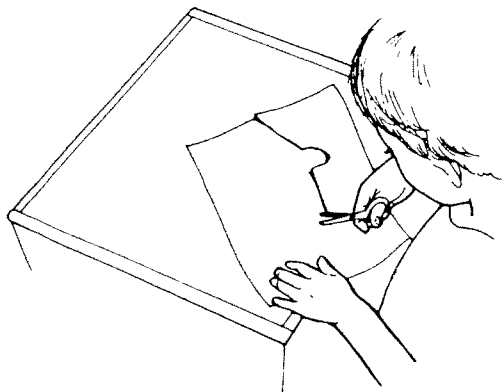
Start with cutting short distances; progress to longer lines.

Start with cutting large shapes; increase difficulty by progressing to smaller ones.

If child has difficulty stabilizing paper with the nonpreferred hand, start with oaktag, poster board, or other thick paper. Often these are easier to stabilize during cutting. Use thinner paper as skills improve.

If using both hands is difficult for the child, hold the paper so child can focus on the visual-motor part of the activity.

If arm coordination is a problem and cutting is very awkward in the normal cutting position, encourage child to keep paper flat on the desk so both wrists are supported during cutting. Fingers of the nonpreferred hand should be straight and palm down, if possible, so the assisting hand can stabilize the paper.



Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

**VISUAL-MOTOR CONTROL
Classroom and Individual Practice**

**SCISSOR ACTIVITIES—
CUTTING ON CURVED AND COMPLEX LINES**

Purpose

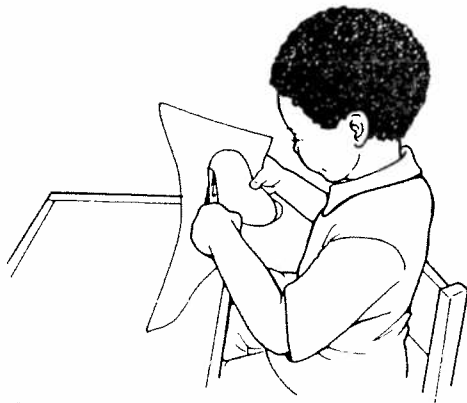
To improve ability to use visual guidance to maintain scissors on a curved or complex line during cutting

Prerequisite Skills

The child should be able to cut on straight lines before beginning these activities.

Procedure

Incorporate these practice activities into projects, such as coloring, cutting, then pasting shapes to make pictures.



Practice Activity 3



Practice Activity 5

1. Child cuts on wide, wavy lines across short strips of paper. As skill improves, child cuts on narrower wavy lines across longer pieces of paper.
2. Child cuts out large circles and semicircles by cutting along shape outlines. Child progresses to smaller shapes.
3. Child cuts around two circular pieces of cardboard with construction paper held between them, to make a circle.
4. Child or teacher glues parallel pieces of yarn or string on paper to make wavy lines; child cuts between them. Distance between pieces is decreased as skill improves.
5. Adult draws continuous concentric circular lines on a piece of construction paper; child makes a spiral by cutting on the line. This can be hung with tape or string to make a mobile.
6. Child or adult uses a hole punch to punch holes across a sheet of paper to form a wavy line (or a circle); child cuts through the holes.
7. Adult makes several parallel wavy lines across a sheet of construction paper with white glue; child covers glue with sparkles. When glue is dry, excess sparkles are shaken off. Child cuts between the lines and glues the resulting pieces on another sheet of paper.
8. Child cuts simple combination lines and shapes which include straight and curved lines.

9. Child cuts out complex combination shapes which include many small changes in line direction. Examples of this kind of cutting include:

- Cutting pictures from a magazine for collages or scrapbooks.
- Cutting out paper dolls.
- Cutting out letter or number shapes.

Desired Response

Child maintains scissors on the line or outline during cutting.

Undesired Response

Child cuts next to the line.

Variations and Adaptations

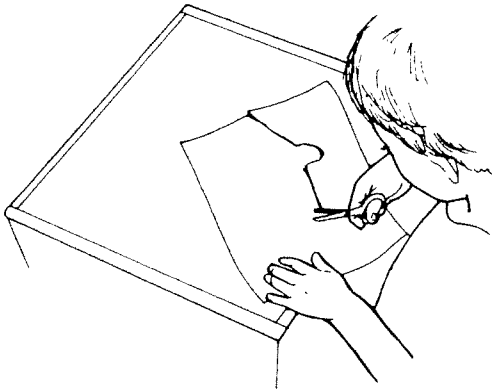
Start cutting activities with wide cutting lines. Decrease width as skill improves so child is challenged, yet still is successful.

Start with cutting short distances. Progress to longer lines.

Start with cutting large shapes. Increase difficulty by progressing to smaller shapes.

If using both hands is difficult for the child, hold and turn the paper so child can focus on the visual-motor part of the activity.

If arm coordination is a problem and cutting is very awkward in the normal position, encourage child to keep paper flat on the desk so both wrists are supported during cutting. Fingers of the nonpreferred hand should be straight and palm down, if possible, so the assisting hand can stabilize the paper.



Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

VISUAL-MOTOR CONTROL
Classroom and Individual Practice

SCISSOR ACTIVITIES—SPATIAL DIRECTION

Purpose

To improve ability to direct movement of scissors towards a target point

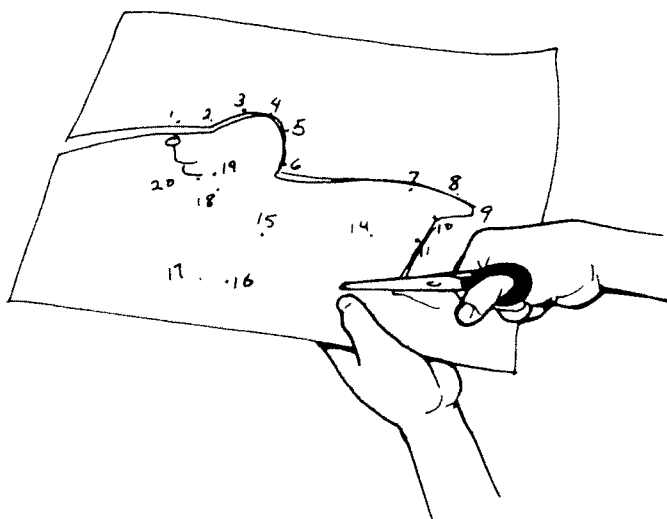
Prerequisite Skills

Child should be able to cut across a piece of paper before practicing these activities.

Procedure

Any activity that encourages child to cut to a particular spot, or from one spot to another, will be helpful.

1. Child cuts from edge of paper to a sticker, star, or hole punched with a paper punch. Start with large targets, such as a group of stars or a large sticker. Decrease the size as child's skill improves. Start with targets placed a short distance from the edge of the paper; increase the distance as skills improve.
2. Adult or child places stars, stickers, punched holes, or dots drawn with markers on paper; child cuts from one to the next. Start with cutting between two targets on one sheet of paper, and progress to many targets. Vary distance between targets to require many changes in cutting direction (for many targets) and more difficult spatial judgments (targets farther apart).
3. Adult places numbers or letters in order on a sheet of paper to form a dot-to-dot shape or picture. Child cuts from one to the next, in numerical or alphabetical order, to cut out the form.



4. Child squirts squirt gun at targets (into bucket or at balloon) to get the idea of looking at a target point and directing line (stream of water) toward it. As skill improves, decrease target size and increase distance between child and target.

Desired Response

Child directs scissors (or squirt gun) to cut (or squirt) directly to the spot.

Undesired Response

Child cuts an indirect path to the target spot, with numerous detours and corrections.

Variations and Adaptations

If child has difficulty stabilizing paper with the nonpreferred hand, start with oaktag, poster board, or other thick paper. Often this is easier to stabilize during cutting. Use thinner paper as skills improve.

If using both hands is difficult for the child, hold paper so child can focus on the visual-motor part of the activity.

If arm coordination is a problem and cutting is awkward in the normal position, encourage child to keep paper flat on the desk so both wrists are supported during cutting. Fingers of the nonpreferred hand should be straight and palm down, if possible, so the assisting hand can stabilize the paper.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

VISUAL-MOTOR CONTROL
Classroom and Individual Practice

CLASSROOM ACTIVITIES, GAMES, AND TOYS

Purpose

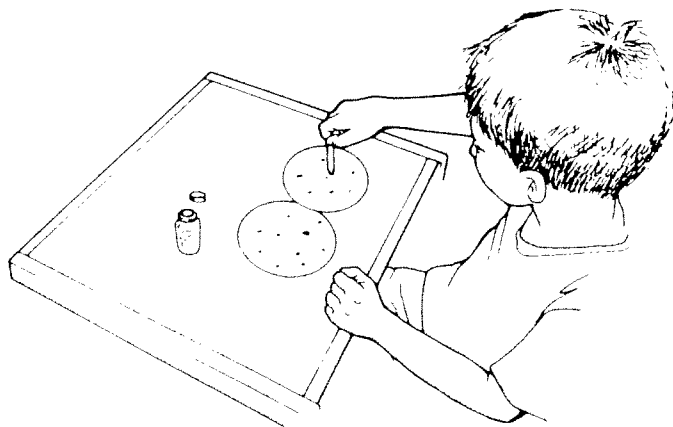
To improve coordination of vision and fine movement

Procedure

Provide plenty of activities that involve watching hand movement. Easels, chalkboard, wall mural paper, and other upright surfaces require child to place hand at eye level. This provides a good view of hand movements and the resulting lines, shapes, and pictures.

Any toy or game that requires visual guidance of movement may help to develop visual-motor skills. Examples include:

- Drawing and scribbling
- Dot-to-dot books and activities
- Tracing activities
- Maze activities and books
- Coloring—Encourage staying within lines; use bright marker to outline boundaries.
- Jacks
- Using eyedropper to drop dots of water onto spots of paint
- Pick-Up Sticks®
- Lite Brite® and other peg sets
- Puzzles
- Labyrinth game—Child watches ball and uses both hands to tilt surface to move it through a maze.



- Etch-a-Sketch®—Child uses both hands to create lines on a screen.
- Video games
- Cutting on lines to create collages and scrapbooks
- Stringing beads—Begin with large beads, Tinkertoy® building blocks, or buttons and thick cord or twine. Progress to smaller beads and string or yarn as skill improves. Wrap tape around end of string or yarn to make it stiff, if necessary.
- Hammering nails or peg toys
- Tinkertoy® building blocks and other interlocking construction sets
- Stencils and templates
- Painting—Encourage use of finger paints, tempera, or poster paints to paint small objects, pictures on upright easel or table-top surfaces, small “paint-by-number” pictures, or large wall murals.
- Painting with brush and water on chalkboard
- Sewing or lacing boards—Punch holes in a picture glued to a piece of poster board or cardboard; have child practice lacing.
- Imitate and copy letters, shapes, and numbers in a variety of media, such as chalk, crayon, in wet sand, in shaving cream on desk top, in paint.

Desired Response

Child engages in this type of activity with greater frequency and completes projects with greater ease.

Undesired Response

Child avoids this kind of activity or becomes frustrated and embarrassed when participating.

Variations and Adaptations

If child has difficulty with visual-motor activities, make the activity easier by decreasing the accuracy required. For example, create larger targets for dot-to-dot pictures, lacing holes, and bead holes when stringing beads.

Pick-Up Sticks® is a registered trademark of Lakeside Industries, a division of Leisure Dynamics, Inc.

Lite Brite® is a registered trademark of Hasbro, Inc.

Etch-a-Sketch® is a registered trademark of Ohio Art Company.

Tinkertoy® is a registered trademark of Playskool, Inc., a subsidiary of Hasbro, Inc.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

VISUAL-MOTOR CONTROL
Gym, Playground, and Extracurricular Practice
RECREATIONAL ACTIVITIES

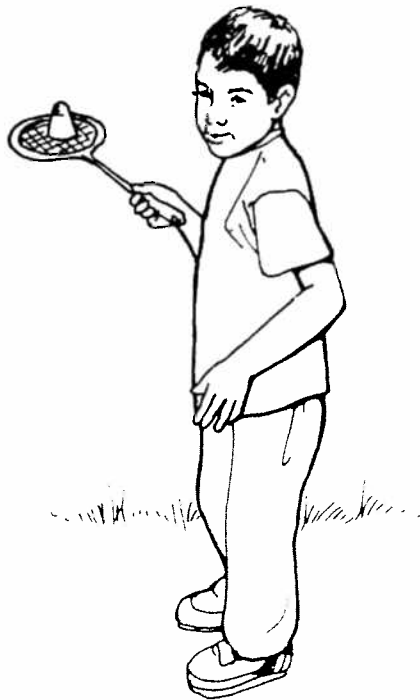
Purpose

To improve coordination of vision with large upper extremity movements

Procedure

The kinds of activities that develop visual-motor skills are commonly done in gymnasiums, on playgrounds, and at home. Activities include:

- Throwing balls and beanbags at targets (into buckets and through hoops). Start with a large target close to child, and decrease target size and increase distance from the target as skills improve.
- Target games—Darts, throwing rings on sticks, horseshoes
- Catching and throwing balls—Start with large balls, and throw and catch from short distances. Decrease ball size and increase distance as skill improves. Children with weak visual-motor skills often respond defensively when a ball is coming toward them (hands up in protective gesture to push ball away or keep it from hitting the face). Soft, light foam balls are often less threatening and good to start with. Teach how to position the hands to catch the ball without looking at them, and have child focus vision on watching the ball.
- Frisbee® throw and catch
- Games involving a ball or shuttlecock and racket, such as tennis, badminton, table tennis
- Bowling
- Air hockey
- Tetherball
- Volleyball
- Baseball—Use a large bat, large light ball, and a T to support ball during swing. Decrease use of these adaptations as skills improve.



Desired Response

As visual-motor control improves, more of this kind of activity is chosen spontaneously and is performed with greater ease.

Undesired Response

Child is frustrated and embarrassed when participating in this kind of activity. If this occurs, modify the activity (or child's role) to require less visual-motor accuracy, and provide additional individual practice.

Frisbee® is a registered trademark of Wham-O Manufacturing.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

**VISUAL-MOTOR CONTROL
Compensatory Strategies**

SCHOOL AND HOME ADAPTATIONS

Purpose

To adapt fine motor activities so they can be performed with minimal visual-motor control

Strategies

A child with weak visual-motor skills will have difficulty achieving accuracy when performing motor tasks that depend on visual guidance. When adapting activities for this child, consider:

- Ways to modify visual-motor activities so they require less accurate movement.
- Providing sensory cues (tactile, auditory, or visual) to help guide movement.
- Minimizing visual-motor aspects of activities whenever possible.
- Changing classroom expectations to match the child's level of ability.

Simplifying visual-motor demands of the activity

1. If copying from the chalkboard is difficult, provide work to be placed on the desk to copy from.
2. Use Velcro® fasteners on shoes.
3. Provide large manipulatives for stringing beads, building with construction-type toys, and other eye-hand activities.
4. Use large holes for lacing or threading activities. Use a tapestry needle instead of regular needle.
5. Have child practice doing activities kinesthetically (by feel), with eyes closed as well as open, so they can become automatic and require little visual-motor control. For example, writing can be done with little visual guidance, once the "feel" of the motor pattern has been learned.
6. Choose activities that require little visual-motor control, such as paint-with-water books that have pictures with color that appears when the area is moistened. The result is a bright and attractive picture even though the child is unable to paint within the lines.
7. Use of a word processor may be difficult for this child to learn but eventually will provide a means of writing that decreases or eliminates spacing and produces letters and words on the line.

8. Write and draw on upright surfaces, where movement of the hand and the resulting lines are clearly visible.

Reducing accuracy requirements

1. Increase the size of the space to be colored in.
2. Increase the width of cutting lines; or allow child to cut a square around pictures to be cut out rather than cutting on complex lines.
3. Instruct child to focus on the content of the writing assignment, and not to be concerned about placement on the line or appearance of letters as long as writing is legible.

Providing sensory cues

1. Use a wide-tipped red marker to outline lines for the child to color within. Provide verbal feedback when the child goes out of the lines.
2. Outline writing lines on paper with bright markers (green for top, red for bottom line if child has trouble remembering top-to-bottom direction for forming letters).
3. Paper with raised writing lines is helpful for some children.
4. Place tape on paper to assist with maintaining right and left margins.
5. Construct a "writing frame" from cardboard. Cut out a rectangle from poster board, and place it over paper during writing so child is reminded of the outer boundaries of the writing area.
6. To help child stay on the line, place an index card under the writing line and move it down as child writes.
7. Draw a line with white glue around the outer edge of the line to be cut. Let it dry.

Changing classroom expectations

1. Allow more time for child to complete visual-motor activities, if this improves performance.
2. Provide worksheets with fill-in answers for math rather than requiring child to focus on lining up numbers for problem copying.
3. Focus on written content, and praise child for this aspect of writing. Make it clear that the content, and not the penmanship, is the priority for written assignments. During activities designed to improve penmanship, allow extra time, encourage checking and correction of written work, and stress legibility.

Comments

These suggestions may increase the child's ability to participate in activities independently. It also is important to provide practice of visual-motor skills, unless it has been determined that the child's visual-motor abilities will not improve with practice, making compensation the top priority.

Velcro® is a registered trademark of Velcro U.S.A., Inc.

Use of these activities should be directed by a qualified therapist.

Child's Name _____

Date _____

**VISUAL-MOTOR CONTROL
Compensatory Strategies**

SPORTS AND EXTRACURRICULAR ACTIVITIES

Modifying Sports That Involve Visual-Motor Control

Purpose

To improve ability to participate in sports activities that depend on visual guidance of movement

Strategies

If visual-motor weakness is causing difficulty, modify activities so they require less accuracy, less complex spatial judgments, or less reaction speed. Since they involve an area of known weakness, be sure that these kinds of activities are taught or approached in a noncompetitive and individualized manner. Following are a few examples of this kind of modification.

Adaptations

1. Independent sport activities (golf, darts, archery, and so on) may be easier than team sports because the child is able to work at an individual speed rather than responding quickly to the actions of other players.
2. For all ball activities, use a large, light ball and racket or bat. Throw or hit balls slowly to the child. For example, for baseball, if the child is unable to hit the ball, use a larger bat and ball, pitch the ball slowly, and use a T to support the ball during hitting.
3. For throwing and catching games, beanbags are often easier to catch and throw than balls. A commercially available rope ball has large, open spaces which make gripping, catching, and throwing easier. When teaching ball skills, practice with large balls first, throwing from and to someone nearby; decrease size of ball and increase distance as skills improve. When this child participates in games such as dodge ball, provide a larger ball and allow the child to stand closer to the child who is IT. Softer or lighter balls are less likely to be threatening (and safer) for children who cannot consistently protect themselves by catching a ball thrown in their direction.
4. If the child is unable to coordinate movement for serving in tennis or badminton, modify serve to allow the child to place ball or shuttlecock on racket and throw it across the net. For volleyball, allow the child to throw ball during serve.



5. For any activities that involve aiming at a target, allow the child to stand close to the target and increase the target size. For example, in basketball, allow the child to shoot at the basket from less distance than the other children. If necessary, provide a lower basket under the regular one.
6. Soccer and other ball-kicking games are often easier than throwing-and-catching games because balls are projected on a flat surface, making spatial judgments simpler than in baseball or basketball, where balls can travel in more complex arcs.
7. In team sports, choose or create a position that minimizes visual-motor control. For example, if the child is unable to hit a ball even off a T, consider allowing the child to be a runner, a player who runs from base to base after another child hits the ball.

Desired Response

Child is able to participate in sport activities without frustration or embarrassment.

Activities That Do Not Depend on Visual Guidance

Purpose

To maintain or improve child's self-esteem and confidence in motor abilities by focusing on strengths

Strategies

Encourage child to develop skills in sports that do not depend on fine visual-motor control. Choose activities based on the child's individual strengths and interests. Some activities are:

- Swimming
- Jogging
- Dancing
- Running games
- Skating
- Hiking
- Climbing
- Wrestling
- Riding a bicycle

Use of these activities should be directed by a qualified therapist.