Light Box Activity Guide

Level 2

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Introduction

The American Printing House for the Blind's Light Box was designed at the request of teachers familiar with the needs of developmentally young children with limited vision. A number of programs serving young visually impaired children have constructed devices similar to the Light Box and found them useful in teaching basic visual skills. The aim in developing the Light Box was to create a safe, portable version of these teacher-made devices equipped with a dimmer switch and prop to increase its versatility.

Thirteen items were developed for use with the Light Box and included in a Level I set of materials for children functioning from birth to 4 years of age. The written activities accompanying the Level I materials provide practice in the performance of basic visual skills (awareness, localization, tracking), eye-hand coordination tasks, and beginning matching and discrimination using concrete materials.

The Level II materials were developed at the request of teachers evaluating the Level I materials. Evaluators felt the Light Box had value for a range of vision training activities based upon their observations of student interest and performance. The Level II set of materials is designed to teach more complex visual-perceptual skills using concrete and pictured materials. It is intended for visually impaired and multihandicapped visually impaired students functioning from 3 to 5 years of age who have already mastered basic visual skills and have begun to match colors and basic shapes at the concrete level.

The Level II materials were evaluated twice before final specifications were made. Fifteen control and 12 experimental students from 3 to 5 years of age participated in the final evaluation. Experimental students used the Light Box and Level II materials for an hour each week over an eight-week period while control students received no exposure to the materials or Light Box. All students were tested on 50 selected visual tasks before and after the evaluation period and their scores were compared. Results indicated use of the Level II materials effectively increased visual efficiency as measured by pretest/post-test scores ($p < .025$).

In addition to testing students' performance on selected visual tasks, teachers were asked their opinion of the usefulness and interest for students of the materials. Eighty-three to 100% of the evaluators rated eight of the 12 items "high in potential usefulness." Three of the remaining items were judged of moderate or high usefulness by all evaluators. When asked to assess each student's interest in the Level II activities, teachers responded that all of their students had displayed greater interest in vision training activities performed with the Light Box than they normally displayed for other vision training tasks. Ninety-two percent of the students reportedly attended longer to Light Box activities than to similar tasks performed without its aid and appeared to have less difficulty seeing acetate pictures on the Light Box than pictures under normal illumination. For some, the difference was significant; students who were unable to identify pictures under normal lighting were able to identify acetate pictures on the Light Box.

Through increased contrast, elimination of glare, and reduction of surrounding visual distractions, the Light Box appears to make a variety of visual tasks easier to perform. In addition, the brightly colored items used in the Light Box are attractive and the novelty of the materials motivates students to utilize their vision.

NOTE TO THE CONSUMER:
The Light Box is ⓊⓁ approved.

Acknowledgments

The Light Box itself was designed by Tom Poppe, a member of the American Printing House -for the Blind's Design and Development staff. He also assisted in the design of the Light Box Level II materials and constructed prototypes of the items for formative and field evaluations.

Beth Langley, Coordinator for the Diagnostic Prescriptive Project for Profoundly Handicapped in Pinellas Park, Florida, served as a consultant for the project early in its development. She generated numerous ideas for items to be included with the Level II materials.

Ruth Holmes, Low Vision Educator and Coordinator of the Illinois School for the Visually Impaired, contributed her expertise to the delineation of a sequence of skills, to be addressed by the Level II materials.

Before a final selection of materials to be evaluated was made, a committee reviewed the proposed skill sequence and all materials ideas and gave its recommendations. The following participated in the meeting:

Pat Carpenter, DeKalb County Schools, Scottsdale, Georgia

Nan Dempsey, New Jersey Commission for the Blind and Visually Impaired, Newark, New Jersey

Dr. Marvin Efron, Optometrist, West Columbia, South Carolina

Kay Ferrell, American Foundation for the Blind, New York, New York

Sheri Moore, American Printing House for the Blind, Louisville, Kentucky

The following contributed their time and expertise to the evaluation of the Level II materials:

Claudette Coakley, Kentucky School for the Blind, Louisville, Kentucky

Linda Gifford, Prospect School, Clarendon Hills, Illinois

Susan McDonald, Foundation for Blind Children, Scottsdale, Arizona

Darlene Middleton, Kentucky School for the Blind, Louisville, Kentucky

Carol Danielson, Dallas Services for Visually Impaired Children, Dallas, Texas

Bernice Ferdinand, E.D. White Elementary, New Orleans, Louisiana

Laura Gray, Delta Gamma Foundation, St. Louis, Missouri

Ellen Perry, Leawood Elementary, Columbus, Ohio

Ela Shacklett, Children's Special Education Center, Kansas City, Missouri

Melanie White, Dallas Services for Visually Impaired Children, Dallas, Texas

Martha Wyrsch, Children's Special Education Center, Kansas City, Missouri

Kit Items

pegboard – 1

pegs – 64
- Red – 6 Round, 6 Square
- Blue – 6 Round, 6 Square
- Yellow – 6 Round, 6 Square
- Green – 6 Round, 4 Square, 4 Triangular
- Orange – 6 Round, 4 Square, 4 Triangular

Templates – 6
- 6 x 1 Grid – 2
- 3 x 3 Grid – 2
- 5 x 5 Grid – 2

cubes – 110
- Red – 10
- Blue – 10
- Yellow/Orange – 10
- Green – 20
- Purple – 10
- Orange – 25
- Black – 25

parquetry pieces – 100

	Blue	Red	Yellow	Green	Subtotals
Large Square	2	1	1		4
Medium Square	2	3	2	1	8
Small Square	3	4	4	1	12
Large Triangle	2	1	2		5
Medium Triangle	3	4	4	1	12
Small Triangle	2	4	4	1	11
Large Circle	2	1	1		4
Medium Circle	2	3	2	1	8
Small Circle	2	3	2	1	8
Half Circle	2			2	4
Rectangle	3	1	4		8
Rhombus	2		2		4
Diamond	2		2	2	6
Trapezoid	2			2	4
Hexagon	2				2
Subtotals	33	25	30	12	100= Total

Colored shape cards – 30

	Blue	Red	Yellow	Green	Subtotals
Large Square	1	1			2
Medium Square	1			1	2
Small Square	1			1	2
Large Triangle	1		1		2
Medium Triangle	1			1	2
Small Triangle	1	1			2
Large Circle	1	1			2
Medium Circle	1			1	2
Small Circle	1		1		2
Half Circle	1			1	2
Rectangle	1	1			2
Rhombus	1		1		2
Diamond	1		1		2
Trapezoid	1			1	2
Hexagon	1	1			2
Subtotal	15	5	4	6	30= Total

outline shape cards – 30

- Large Square – 2
- Medium Square – 2
- Small Square – 2

- Large Triangle – 2
- Medium Triangle – 2
- Small Triangle – 2

- Large Circle – 2
- Medium Circle – 2
- Small Circle – 2

- Half-Circle – 2
- Rectangle – 2
- Rhombus – 2
- Diamond – 2
- Trapezoid – 2
- Hexagon – 2

raised outline shape cards – 6

- Medium Square – 1
- Medium Triangle – 1
- Medium Circle – 1
- Rectangle – 1
- Diamond – 1
- Rhombus – 1

Geometric shape stencils and Blanks – 5

- Large Square – 1
- Large Triangle – 1
- Large Rectangle – 1
- Heart – 1
- Hexagon – 1

Familiar Object stencils and Cutouts – 15

- Apple – 1
- Banana – 1
- Ice Cream Cone – 1

- Glass – 1
- Knife – 1
- Spoon – 1

- Shirt – 1
- Sock – 1
- Shoe – 1

- Toothpaste Tube – 1
- Toothbrush – 1
- Brush – 1

- Crayon – 1
- Teddy Bear – 1
- Ball – 1

Familiar Object Pictures – 30

Apple – 2, Red
Banana – 2, Yellow
Ice Cream Cone – 2, Yellow/Brown

Glass – 2, Blue
Knife – 2, Yellow
Spoon – 2, Yellow

Shirt – 2, Blue
Sock – 2, Green
Shoe – 2, Red

Toothpaste Tube – 2, Red
Toothbrush – 2, Green
Brush – 2, Green

Crayon – 2, Blue
Teddy Bear – 2, Brown
Ball – 2, Red/Yellow

Sticks – 48

2-inch – 12
3-inch – 12
4-inch – 12
5-inch – 12

Blackout Background – 1

Acetate Sheets – 2
- Clear – 1
- Yellow – 1

Vinyl Sheet – 1

Activity Sheets

Safety

1. No child should use the Light Box unless he is directly supervised by a teacher or other adult familiar with the following safety instructions and Guidelines and Suggestions section of the Activity Guide.

2. Check the Light Box before each use for any damage to the unit, such as exposed electrical components, frayed cord, or any other potential hazard.

3. The Light Box will not operate if it is cold (below 50ºF). Allow time for the unit to reach room temperature if it has been stored several hours at 50ºF or below.

4. Operate only on 120 V AC, 60 cycle electrical outlets.

5. The consumer should not defeat the three-prong, grounded supply line.

6. Do not operate without a tube in the sockets.

7. Check to see that the plexiglass work surface is securely in place whenever the Light Box is in use. Do not remove the work surface unless the unit is disconnected.

8. Do not cover or obstruct the Light Box's vents, or permit the child to stick fingers or objects of any kind in them. (See diagram, page 22.)

9. Do not allow the child to play with the electrical cord, plug, or hinged prop.

10. Do not permit the child to drop, hit, stand, or sit on the Light Box or engage in any other activity which might damage the unit or expose electrical components.

11. Keep the Light Box away from liquid or moisture. When using acetate sheets for marking on, withdraw the sheet from the Light Box to clean. If it is necessary to clean the Light Box, disconnect it and wipe with a damp, not wet, cloth.

12. Do not operate the Light Box continuously for more than eight hours. This will prevent excessive heat buildup within the unit.

13. The Light Box will get moderately warm during normal operation. However, if it becomes quite hot to the touch, disconnect the unit. Before using the Light Box again, have it checked by technical personnel.

NOTE TO THE CONSUMER:
The Light Box is Ⓤ approved.

Guidelines and Suggestions

In November 2002, government regulations concerning electronic components forced a change in the ballast/dimmer system used in the APH Light Box.

Please be advised that the new system will produce a single flash of light when the unit is switched on. To avoid startling the student or exposing a light-sensitive student, we suggest covering the Light Box before switching it on or turn the unit on before positioning the student nearby.

1. When using the Light Box, place it in a darkened corner of the room, positioned so that other children will not come in contact with it or its electrical cord.

2. Examine the Light Box for flickering to guard against seizing in a seizure-prone child. The Light Box may flicker on low intensities, particularly when new. This should
decrease after the first few weeks of use. If feasible, leave the Light Box on for several hours each day the first week you use it to help “age” the lamp/dimmer system.

3. If a child is seizure-prone, be cautious about presenting items or displays on the Light Box which move in a rhythmic, patterned manner.

4. If a child is sensitive or averse to light, it may be helpful to introduce the Light Box with overhead lights on. Set the dimmer at a medium intensity, and/or decrease the size of the illuminated area by using one of the “blackout” backgrounds. Placing one of the colored acetate sheets or a pattern on the Light Box may also reduce the intensity of the light. Experiment to find the conditions which maximize the child’s visual functioning.

5. For the child with sufficient vision who is reinforced by light or the novelty of the Light Box, try working with overhead illumination and set the Light Box at a medium or low intensity. As the child performs an activity on the Light Box, reinforce his appropriate responses by turning up the intensity of the Light Box for a few seconds; then return the intensity to a lower setting to be ready to reward the next correct response.

6. Use the Light Box in a variety of positions (horizontal, vertical, angled) and place the child in a comfortable posture (sitting at a table or on the floor, lying on her side, resting over a wedge or bolster). Check with the child’s physical therapist to find which positions are best for her. Note which postures enhance her visual functioning.

7. Present the Light Box at varying distances and areas in relation to the child’s body and watch him to see whether he demonstrates a preference.

8. When presenting items on the Light Box, put them in different places on the work surface. Note whether the child responds consistently and accurately to the items

regardless of their location, or, instead, shows signs of a field defect. For example, if the child tilts her head to one side, appears to be using only one eye, or reaches for objects on one side only, there may be a field loss or the child may have difficulty crossing the midline. This will affect the manner in which you present activities.

9. Use colored acetate sheets and objects and observe whether the child prefers one color over another.

10. If the child has difficulty manipulating items on the Light Box because of their tendency to slip, use the soft vinyl sheet included with the kit, or use masking tape to attach a large square of clear contact paper, with its adhesive side up, to the Light Box surface. At first, the contact paper may be too sticky, but with a little use it will provide a nonslip surface.

11. Use words like “look,” “see,” and “find” when presenting items on the Light Box work surface. Encourage the child and describe for him what he is seeing – its shape, size, position, and color.

12. Show enthusiasm for each activity you perform with the child, and use strategies that are particularly motivating to her. Show the child a new activity, then ask her to perform it. Provide verbal and physical prompts when necessary.

13. Praise the child’s appropriate responses. It is important to immediately reinforce correct responses with things the child finds motivating—a hug, verbal praise, applause, etc.

14. If the child engages in a disruptive behavior while working with the Light Box, try dimming or turning the Light Box off as a means of discouraging off-task behavior.

15. If the child engages in self-stimulation activities when using the Light Box, such as light gazing or flicking, turn the Light Box off for several seconds. When the child has stopped self-stimulating, turn the Light Box back on and resume the activity. If he begins to self-stimulate again, repeat the procedure. If self-stimulation continues after several trials, end the session; note the stimulus conditions which cause the child to self-stimulate. At the next session, avoid these stimuli as much as possible. Try reducing the intensity of the Light Box and/or the amount of illuminated surface area. Turn on the room lights or use colored acetate sheets as backgrounds for the activities. Continue to turn the Light Box off when the child self-stimulates, reintroducing it when he stops. If the child continues to self-stimulate without improvement after several sessions of following this procedure, discontinue use of the Light Box for several days. When you reintroduce it, you may attempt to eliminate self-stimulation in some other way. For example, try rewarding the child after periods of time in which he does not self-stimulate, gradually increasing the length of time you require him not to self-stimulate.

    Work with the child using other vision stimulation and training materials; it may be that the Light Box is not an appropriate tool for him at this point. Brightly colored or

reflective objects, fluorescent materials, a penlight with color caps, and other items may elicit more appropriate visual responses from some children.

16. As the child develops new skills, continue to practice and build upon skills learned earlier.

17. To transfer a skill learned on the Light Box to a normally lit environment, increase room illumination as you gradually decrease the intensity of the Light Box. As you decrease Light Box intensity, some of the plexiglass materials will begin to appear dark and without color. Exchange them for other highly contrasting brightly colored toys.

18. Light Box activities should be used as a part of a total program of visual development. (See Suggested Readings.) The written activities accompanying the Light Box are not intended to provide a comprehensive program of vision stimulation and training activities.

The Child with Cortical Visual Impairment:

Considerations for performing Activities with the Light Box

The child diagnosed with Cortical Visual Impairment may not respond to the activities suggested for the Light Box in the same manner as a child whose vision loss is due to ocular abnormalities. The child whose vision loss is due to damage to the visual cortex and/or posterior visual pathways is said to have Cortical Visual Impairment (CVI) (Groenveld, Jan & Leader, 1990). Damage may be caused by cerebral hypoxia; other causes include cytoplasmosis, toxoplasmosis, meningitis, trauma, and conditions causing cerebral degeneration. (Merrill & Kewman, 1986).

The agent causing CVI may cause additional differences in the functioning of the child's brain and nervous system. It has been observed that many children with CVI are easily overstimulated, a difficulty which may be associated with an inability of the nervous system to selectively attend to important stimuli and screen out irrelevant stimuli in the environment. The child is flooded with many types of stimuli without a sufficient means to sort out and disregard the excess. Overstimulation, it has been theorized, may trigger the child's withdrawal, which serves as a protective response, shielding him from further overstimulation and the resulting stress. (Groenveld, Jan & Leader, 1990; Morse, 1990). *For this reason, intense visual displays, or other intense stimuli, should be avoided,* as a child with CVI may experience discomfort and withdraw, even if he initially shows signs of visual attention.

The literature suggest the following considerations may apply in performing activities on the Light Box with a child who has CVI.

- *Intense visual displays and overstimulation of any kind should be avoided.*
- *Be very cautious about presenting any visual display with movements, shifting patterns, or flickering light. These may trigger a seizure in some children; consult the child's physician before introducing these (Groenveld, Jan & Leader, 1990).*
- The child's cues should be carefully attended to, noting when he is ready for vision stimulation, and stopping when he shows signs of overstimulation or tiredness (Morse, 1990).
- Observation may give you some awareness of the length of time it takes for a particular child to process sensory information; use this awareness to time your presentation of materials and assist the child in organizing his responses (Morse, 1990).
- Surrounding distractions should be reduced (Morse, 1990). (The Light Box itself may be of some help in this regard since it is most often used in a darkened environment, reducing visual input from the rest of the environment.)
- Positioning the child so he is comfortable and secure means he will not need to divert energy to maintain his posture; this may be critical to his visual performance. (Groenveld, Jan & Leader, 1990).

- Taking care to introduce novel items gradually (Morse, 1990), and ritualizing the manner in which tasks are presented, using language to cue the child, and clearly marking the beginning and end of tasks may lessen the chances of overstimulating him (Groenveld, Jan & Leader, 1990).

- Visual displays should be simple in form and items should be presented separately or with adequate space between them, since children with CVI seem to have special difficulty discriminating between foreground and background information (Groenveld, Jan & Leader, 1990).

- Some children with CVI are sensitive to bright light; others require more light (Groenveld, Jan & Leader, 1990). The Light Box should be introduced at low illumination until you are able to determine the level that is comfortable for the child. It may be that the Light Box is not an appropriate tool for some children.

- Observe the child for field losses, which may be associated with CVI; modify his posture and your presentation of visual displays and tasks to accommodate such losses (Groenveld, Jan & Leader, 1990).

- Color may help the child with CVI perceive forms. Color perception is usually normal in a child with CVI, however, he may respond better to bright colors than to pastels, and yellows and reds may be easiest to see (Merrill & Kewman, 1986; Powell, 1996).

- It has been suggested that more severely affected children may relate better to common objects than to toys. (Groenveld, Jan & Leader, 1990). Common objects, both opaque and colored transparent ones, may be used on the Light Box to test this preference.

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Maintenance

Replacement parts for the Light Box are available at the American Printing House for the Blind, where it should be returned if it is damaged or develops a malfunction. Repairs to the Light Box must be made in accordance with standards set forth by Underwriters Laboratories. Technicians at the American Printing House for the Blind are trained to perform such repairs.

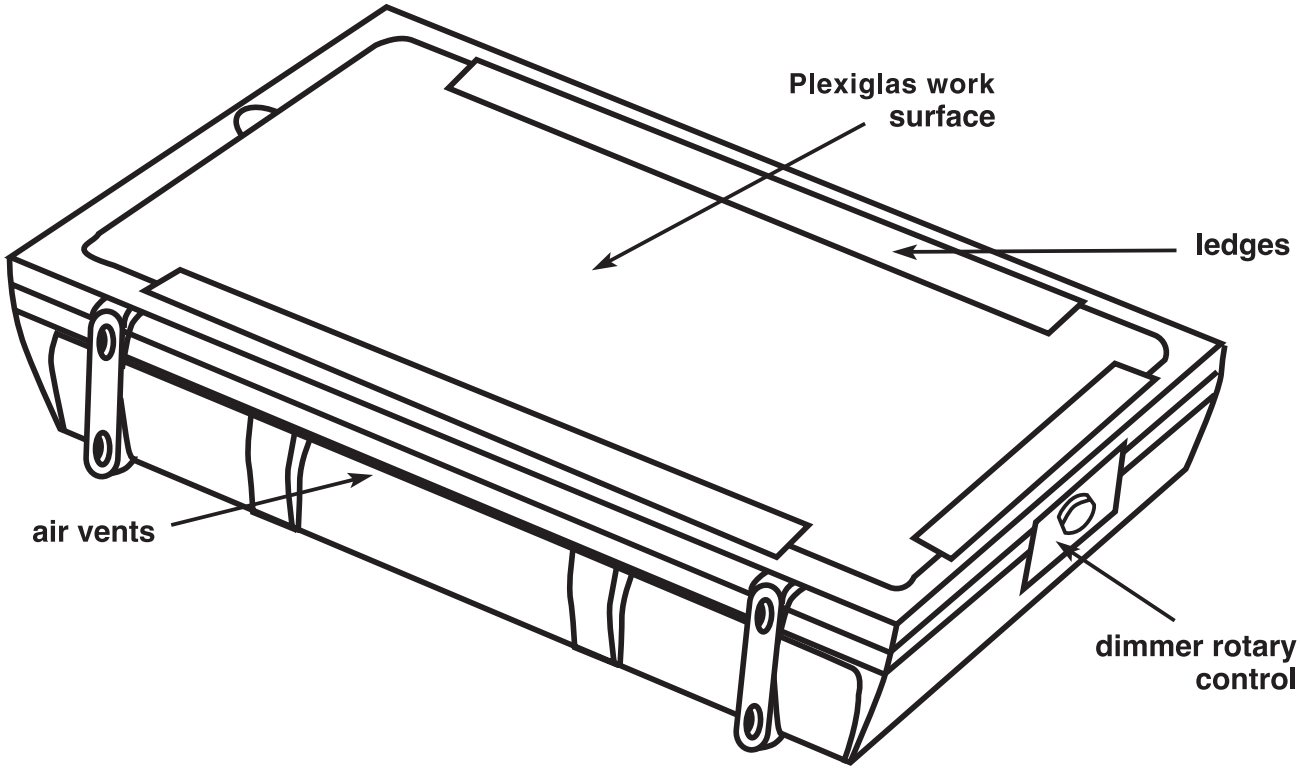
A worn-out bulb, however, may be replaced by the user. Replacement bulbs can be purchased from electrical supply companies for under $20.00. General Electric manufactures the 40 watt fluorescent U-bent tube used in the Light Box (mod-u-line, F40 SP30 U 6). Phillips manufactures a similar bulb. The average life of this particular fluorescent tube is 12,000 hours, however, turning the Light Box off and on reduces its life expectancy, In addition, the bulb gradually loses full brightness over a period of time. Watch for this gradual dimming and replace the bulb early.

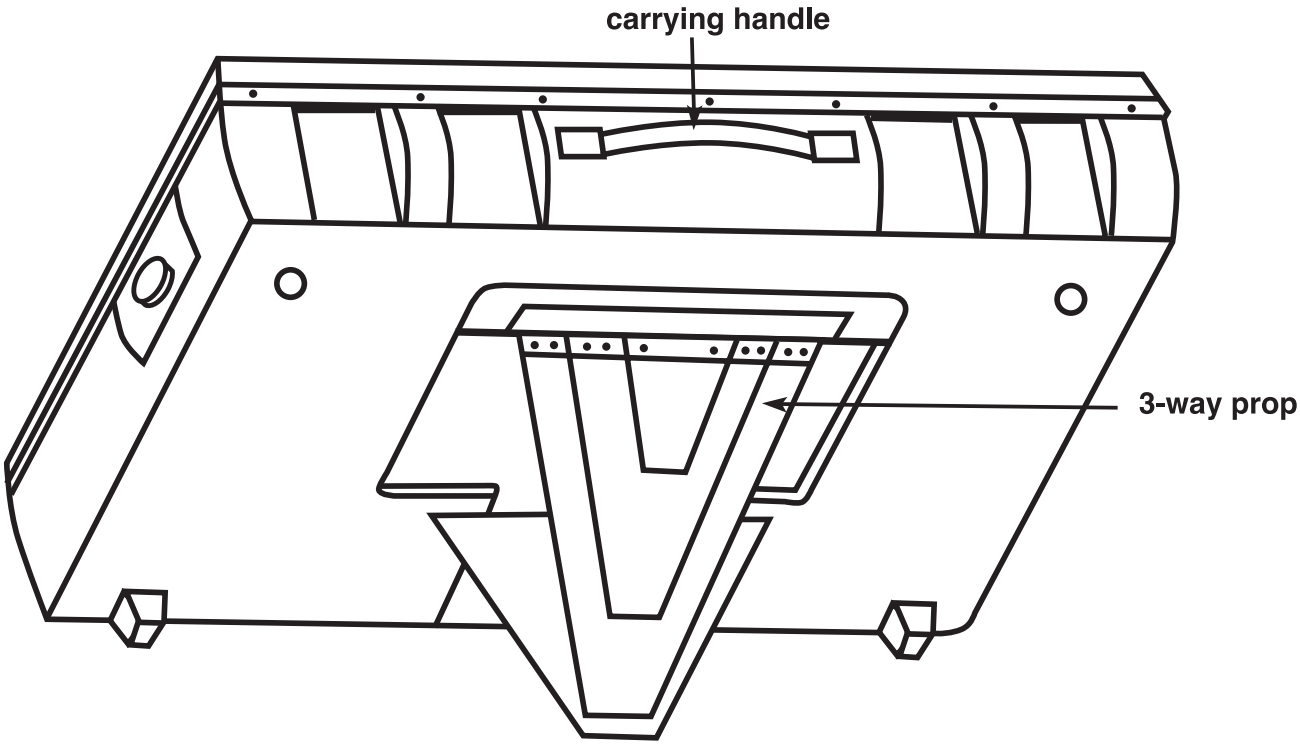
To replace the bulb, UNPLUG THE LIGHT BOX before removing the Plexiglas work surface. Remove the Plexiglas by pushing your finger or a penknife under the Plexiglas at the small molded depression on the left edge of the box. Slide it off the box. Four plastic ties hold the bulb in place. They can be released and should not be cut. Release each tie by pressing down on the molded tab. Pull up on the bulb; the pins connecting the tube to the sockets should release easily. Remove the old bulb and position the new bulb with the pins over the two slots in the sockets. Press the pins down into the slots as the rest of the bulb is lowered in place.

The pins will make a snapping sound as they lock in place. It is important to secure the new bulb, reusing all four plastic ties. Extra ties may also be purchased from an electrical supply company for a few cents apiece.

APH Light Box

APH Light Box





Additional Materials

A number of readily available commercial items can be used on the Light Box for activities involving shape, color, and size discrimination, drawing, and prewriting tasks. Cut and paste or draw colored shapes, patterns, and pictures on a variety of background media. Create cards or board games to teach matching. Select and print the recommended Activity Sheets found on the CD-ROM in the back of this manual, or provide the child with the materials to create original artwork – drawings, or collages.

Acetate Sheets (clear and transparent colored sheets in a variety of sizes; available from art and school supply stores, and Dick Blick catalog).

Transparency Film (available in 8 1/2" x 11" from any office supply store) may be used in some printers or copiers in place of paper to produce transparent copies of the Activity Sheets. (Note: Refer to the owner's manual for your printer or copier to purchase film that is safe to use in your specific equipment).

Art Film (brightly colored transparent film has an adhesive backing, sold in sheets and as rolls of tape of various widths; may be cut to any shape; available from art supply stores, Dick Blick catalog).

"MonoKote" (brightly colored transparent film adheres to any surface when heated with iron; sold in rolls, may be cut to any shape; available from hobby stores which sell model-building materials).

Onionskin or Tracing Paper

Colored Cellophane

Colored Tissue Paper

Colored and Patterned Wrapping Paper

Colored and Patterned Fabric

Colored Projection Markers (water soluble or permanent ink markers; adheres to acetate; available from school supply stores and Dick Blick catalog).

Colored Grease Pencils

“Cel Vinyl” (acrylic paint; highly opaque black paint adheres to acetate; apply with a brush; available from art supply stores and Dick Blick catalog).

Fingerpaints (use in clear or translucent white plastic tray or plastic container).

Crayons (use with onionskin or tracing paper)

Black Electrical Tape

Colored Ribbon

Colored Yarn

Rickrack

Doilies

Colored Plastic Buttons

Plexiglas® Sample Squares (available from companies that retail Plexiglas)

For drawing the child's attention to shape and for tracing around and copying shapes, these items may be incorporated into activities with the Light Box:

Coasters

Cookie Cutters

Gelatin Molds

stencils

Wooden Blocks

parquetry pieces

Puzzle pieces

A-Z and 1-10 Panels (available from Exceptional Teaching Aids catalog)

shape puzzles of soft rubber made by Lauri Toys (available in toy stores)

Clay or Playdough®

Posterboard Shapes

Familiar objects with simple contours (a cookie, ball, bar of soap, shoe, or spoon)

Ink and Acetate (draw your own solid or outline shapes on acetate)

Other materials which may be used with the Light Box to develop a number of skills are:

Wikki Stix (colored wax wicking to be bent and pressed into a variety of shapes or construction; available from Exceptional Teaching Aids catalog)

Colored transparent plastic eating utensils, glasses, and plates

Colored plastic “stained glass” ornaments made from simple kit; available from hobby shops)

Brightly colored translucent or transparent plastic toys (Easter eggs, pop-beads, other inexpensive toys)

Balloons

Colored Pinwheels

Small Toy Cars

Halloween Masks

Plastic Halloween Pumpkins

Colored Plastic Clothespins

Costume Jewelry Beads (available from hobby shops)

Mosaic Tiles (bag of 150 1/2-inch transparent plastic squares in 16 colors; available from Dick Blick catalog)

Marbles

Colored Bath Oil Beads

Colored transparent “gummy” candies

Colored, transparent hard candies and suckers

Confetti made of colored acetate closed in a clear plastic bottle

The following items from the American Printing House for the Blind catalog may be used on the Light Box for discriminating and matching shapes, tracing, and introducing part-whole relationships:

Puzzle Form Board Kit (contains three each of circles, squares, triangles, rectangles, and diamonds; some of the shapes are divided into two and three pieces, which must be assembled correctly to form the shape; catalog No. 1-0372-00)

shape Board (board itself is not suited for use on Light Box, but shapes are useful; contains five shapes, including one large, one small and three medium-sized pieces; Catalog No. 1-0371-00)

Additional Materials

Addresses

American Printing House for the Blind
P.O. Box 6085
Louisville, KY 40206-0085
Phone: 800-223-1839
Fax: 502-899-2274
Website: www.aph.org

Dick Blick
P.O. Box 1267
Galesburg, IL 61401
Phone: 800-447-8192
Fax: 800-621-8293
Website: www.dickblick.com

Exceptional Teaching Aids, Inc.
20102 Woodbine Avenue
Castro Valley, CA 94546
Phone: 800-549-6999
Fax: 582-5911
Website: www.exceptionalteaching.com

Suggested Reading

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Activity Section

Notes to the teacher

The following activities have been grouped under the broad "skill areas" listed in the Activity Index on page 38. The activities are not developmentally sequenced; it is unlikely a student will master each skill area before moving to the next. Over the course of vision training, many skills are developed concurrently and learners will progress differently based upon their particular visual handicap, past experience, age, and motivation. In general, the activities presented in later skill areas are more difficult than activities presented in the earlier skill areas. Within each skill area, an attempt has been made to order activities from least to most difficult. Even so, some students may have difficulty with one or more apparently simple activities, yet be able to perform later activities in the same section with ease. The only rule can be: be flexible in the order in which you present activities and introduce new skill areas.

To obtain a rough profile of a student's functioning, select an activity from the beginning, middle, and end of each skill area, making note of the child's performance and the concepts and visual tasks which pose the greatest problems.

Take into account the nature of the student's handicap. For example, a student with a limited field yet fairly good acuity may find smaller objects and pictures easier to recognize than larger ones whose edges extend beyond his visual field. Damage to the macular region may make recognition

of small objects and pictures impossible unless they are viewed using peripheral vision; inner detail of pictures will be lost. The student with poor acuity may only perform visually when objects and pictures are large and boldly outlined; on the other hand, he may want to view materials close to his eyes, and excessively large materials could be difficult to "take in" at very close range. These are only a few examples of the many ways in which the nature of the visual handicap will determine the ease or difficulty of a particular activity.

As you present activities, consider also the student's age and level of motivation. Ninety-two percent of the students with whom the Light Box and Level II materials were evaluated attended longer to tasks performed on the Light Box than to similar tasks performed without it. As stated in the Guidelines and Suggestions section, show enthusiasm for the activities, praise the child, and reinforce his efforts with something motivating. Making an activity more game-like will encourage some students to work to their fullest potential.

A final important observation, the activities provided do not comprise a complete program of vision stimulation and training exercises. They may be considered as a basis for planning a larger program which relies upon the teacher's creativity and utilizes other materials– such as Let's See Sensory Kit, Let's See Perceptual Kit (all available from the American Printing House for the Blind), and a variety of commercial materials appropriate for young visually impaired children.

Listed across the top of the charts at the back of this manual are products designed for vision training and manufactured by the American Printing House for the Blind. Major visual tasks are featured along the side. Individual items or instructional sections intended to develop a particular visual skill are listed under the product to which they belong.

Activity Index

Level 2 Page

Goal: Eye-hand coordination and prewriting

Activity 1: Pegs/cubes

Have the child collect the pegs or cubes and drop them into and remove them from a bag or container. Make the activity into a game, perhaps by suggesting she “hide” all the pegs or cubes in the bag or try to fill up a plastic container before you count to ten.

Activity 2: Pegs/cubes

Let the child manipulate the pegs or cubes, stacking them and rolling them on the Light Box surface.

Activity 3: Pegs/cubes

Give the child enough pegs and/or cubes and suggest building a tower with them. He may only be able to stack two or three at first. Reward the child’s efforts.

Activity 4: Pegs/cubes

Have the child place some of the pegs or a tower of cubes on the Light Box surface. She may enjoy knocking them over with a small toy car. Gradually increase the distance she must move the car to hit the pegs.

Activity 5: Pegboard and pegs, template and cubes

Have the child place and remove pegs from the pegboard or cubes from a template. Devise a game to make the activity more interesting. Suggest, for example, that he put his pegs in the pegboard using up all of his pegs before you use up yours, or have him remove all the cubes from a template before you finish counting to ten.

Activity 6: Parquetry pieces/pegs/cubes

Let the child build simple structures using the pegs, cubes and parquetry pieces.

Activity 7: Parquetry pieces and raised outline shape cards

Give the child the medium circle raised outline card and a medium circle parquetry piece. Have her place the circle inside the raised line on the card. Perform the same task with the other raised outline shape cards and various flat outline shape cards.

Activity 8: Pegs/cubes

Make circles or dots of various sizes in black ink on a sheet of acetate or tracing paper. Have the child put a cube or peg on each dot.

Activity 9: Sticks/pegs/cubes

Using a black marker or color grease pencil on acetate or tracing paper, draw a straight line across the Light Box. Have the child place the sticks, cubes, or pegs on top of the line you have drawn until he reaches the end of the line. Draw vertical, diagonal, and curved lines for the child to use as well.

Activity 10: Sticks and outline shape cards

Using the sticks and the large square outline card, give the child four, four-inch sticks and have her place the sticks on the outline. Call her attention to the four sides and corners of the square. Perform the activity with other simple shapes.

Activity 11: Activity Sheets #1-3

Print or copy Activity Sheets #1-3 onto transparency film or paper. (Activity Sheets are located on the enclosed CD in PDF format.) Have the child trace between two heavy horizontal lines with his finger, then with a marker or color grease pencil. Have him perform the same activity with the lines oriented vertically and diagonally. (Some children may have difficulty understanding that they are to trace *between* the lines rather than *on* the line. You may shade the area between the lines with a yellow marker and have them trace "the yellow path," or simply move on to later Activity Sheets which require the child to trace over a single line.) Have the child trace from left to right and top to bottom. To make the activity more interesting, use ideas like the following:

Place a small token or treat (Teddy Bear, candy, poker chip) at the end of the path the child must trace. If he successfully traces to the end of the path, let him keep the token or eat the treat.

Have him pretend the lines are a path or roadway. Let him use a small toy car or small plastic animal to trace the path, suggesting he "drive the car to the ice cream shop" or "help the horse finish the race."

Trace some of the pictures shown on Activity Sheets #3-7 onto the worksheets. Show the child the pictures and identify them with him. (He probably will be unable to identify them himself but the idea may be motivating for him.) Have him trace between the lines on the worksheet suggesting, for example, that he "help the dog" (pictured on the left, at the start of the line) "find her bone" (pictured at the end of the line).

Activity 12: Activity Sheets #4-6

When the child can mark between two straight lines, curve your lines slightly. Have her follow the resulting "path" with a marker. Use Activity Sheets #4, 5, and 6 or create your own lines for the child to follow. Use some of the ideas suggested under Activity #11 to help motivate her.

Activity 13: Activity Sheets #7

Have the child mark between the angled lines shown on Activity Sheet #7. Encourage him to follow the path to the corner, turn the corner, and continue down. It may be necessary for him to lift the marker to see if he has reached the corner. If he is unsure of the location of the corner, at first, place your finger there. Have him draw across to your finger, then down.

Activity 14: Activity Sheets #8-10

Have the child trace the closed figures shown on Activity Sheets #8-10 and name the shapes with her.

Activity 15: Activity Sheets #11-15

Activity Sheets #11-15 require the child to trace straight, curved, long and short lines. Again use a variety of motivating games to make the exercises more interesting. Always have the child trace from left to right and top to bottom. When he has traced over a line, have him copy the line freehand below the original.

Activity 16: Activity Sheets #16-22

Use Activity Sheets #16-22 and have the child practice tracing multiple curves and angled lines. Orient the figures in different ways and call attention to their features. “This one

points down." "This line curves up, then down." When she has traced the original line, encourage her to copy it freehand.

Activity 17: Geometric shape stencils/ familiar object stencils

Give the child a black or brightly colored felt-tip marker or color grease pencil. Tape a piece of acetate on the Light Box or use the large acetate sheets provided with the Level 2 kit. Have the child trace around the stencils. Name the shapes and objects he is tracing and point out their distinctive features. Let him color in the outline he has traced and compare it to the corresponding parquetry piece or picture.

Activity 18: Outline shape cards/Activity Sheets

Have the child color in the outline shapes with a washable marker or color grease pencil. Activity Sheets showing geometric shapes may also be used for this purpose, or have the child trace around a shape Stencil and color in the resulting shape.

Activity 19: Activity Sheets #23-28

Have the child use Activity Sheets #23-28 tracing around the solid line geometric shapes which are shown. Talk about the features of each shape as the child traces pointing out corners, curves, long and short sides. Orient the shapes in different ways for the child to trace. Have her begin tracing in the left or upper corner of each shape. Have her color in the shape.

Activity 20: Activity Sheets #29-46

Have the child complete the Activity Sheets which require him to trace over straight and curved dotted lines and shapes #29-46.

Activity 21: Activity Sheets #29-46

Create your own dot-to-dot activities involving simple dotted lines, curves, and shapes or adapt activities in coloring books and children's activity books found in the supermarket and discount stores. Use some of the motivating strategies suggested under Activity #8 to vary the exercises.

Activity 22: Activity Sheets #29-46

Continue to provide the child with practice in copying lines and simple shapes you draw. Draw a straight horizontal line on a piece of blank acetate and have the child copy your line in the space below it. Show her that you would like the two lines to look alike–to be the same length and orientation. Have the child copy long, short, vertical, and diagonal lines. Also practice copying curved lines of different types and orientations. At first, have her copy single lines. Then introduce figures consisting of two or more straight or curved lines, like those shown on Activity Sheets #16-28, or simple shapes.

Activity 23: Activity Sheets #29-46

Give the child a variety of opportunities to trace, copy, draw, and color. Look for childrens' coloring books with simple pictures and exercises. The Dubnoff School Program 1, Frostig Developmental Program in Visual Perception, Fairbanks Robinson Perceptual Motor materials, and items produced by DLM (Developmental Learning Materials) can be valuable resources. Transferring these materials to acetate or tracing paper for use on the Light Box will provide a number of useful worksheets. Simple pictures from magazines and other sources may be traced onto acetate as well.

Goal: Matching and Sorting

Activity 1: Geometric shape stencils/raised outline shape cards/parquetry pieces

Have the child perform form board activities on the Light Box using the raised outline shape cards or shape stencils and corresponding parquetry raised outline pieces, the backless rubber form boards made by Ideal and Lauri (see Additional Materials List), or the Light Box Materials: Level 1 Template Backgrounds and Plexiglas Blocks.

Activity 2: Pegs/cubes

Have the child sort the cubes into piles according to their color. (Clear or translucent white plastic containers will make good containers for sorting tasks.)

Activity 3: Parquetry pieces

Have the child sort the pegs or parquetry pieces according to color without reference to their shape.

Activity 4: Pegboard and pegs/template and cubes

Have the child put all pegs or cubes of a particular color in the pegboard or a template, grouping pegs by color until she has filled it. Suggest she work in left to right order in rows, or begin filling in at the corners to give herself enough room for each color.

Activity 5: Parquetry pieces

Have the child sort parquetry pieces by shape. Encourage him to perform the task visually. Begin with shapes whose differences are clearly distinctive—circles, squares, and triangles. At first, use shapes which are all of the same color, later you may mix colors when the child understands the concept of sorting by shape. The diamond and rhombus are most difficult to differentiate from one another and should be used after the child has had experience sorting a variety of shapes.

Activity 6: Pegboard and pegs

Perform Activity #4, asking the child to group the pegs by shape rather than color.

Activity 7: Pegboard and pegs/template and cubes

When the child is familiar with the colored cubes and the shapes and colors of the pegs, play a game with her. Scatter pegs in the pegboard or cubes in a template. Have her locate and remove from the pegboard or template all the pegs or cubes of a certain type—all the square pegs, all the round pegs, all the red cubes, and so on. When she has had practice in performing this activity, have a race with her. Have her remove all the green pegs; you remove all the red pegs. See who finishes first or who has the most. You could

also play this game using a timer. At first, allow her ample time to locate and remove all of her pegs. As she becomes more capable, reduce the amount of time she has to complete her search until she performs the task accurately and rapidly.

Activity 8: Sticks

Have the child sort the Sticks according to their various lengths. Encourage him to perform the task visually.

Activity 9: Parquetry pieces

Have the child sort the parquetry pieces by size beginning with large and small pieces and later including medium-sized pieces as well.

Activity 10: Parquetry pieces/template and cubes

Use the parquetry pieces to play a form of Bingo. Draw a large 3” x 3” or 4” x 4” grid on acetate with a heavy black marker. Place a parquetry Piece inside each square of the grid. Point to a particular row. Show the child a parquetry piece which matches the shape of the one you want her to remove. When the child locates and removes the proper piece, give her a marker (black cardboard chips do nicely) to place in the empty square. When she has filled an entire row (horizontal, vertical, or diagonal) with markers, she can declare, “Bingo.” Play the same game using cubes in a template. Show the child or tell her the color of the cube you wish her to find.

Activity 11: Parquetry pieces, raised outline shape cards and colored shape cards

Introduce the raised outline shape cards. Select a few cards which are pieces, easily differentiated from one another. Slip a corresponding colored shape outline shape card behind each and place them and their matching parquetry pieces on cards and the Light Box. Allow the child to explore them tactually and visually, discussing colored shape how the shapes on the cards are the same as the parquetry pieces you have placed on the Light Box. Increase the number and variety of shape cards and pieces the child must match until he can successfully match parquetry pieces to all of the raised outline cards.

Activity 12: Parquetry pieces and colored shape cards

Have the child close her eyes and give her a parquetry piece to examine tactually. Take the shape away and show her two colored shape cards, one representing the parquetry Piece she felt. Have her select the card which shows the shape she felt. Begin with obvious shapes — a circle and square. Gradually increase the complexity of the shapes you give her. Introduce the task as a guessing game.

Activity 13: Parquetry pieces and colored shape cards

Introduce matching using only the flat colored shape cards and parquetry pieces. Select shape cards which are distinctly different for the child's first matching tasks. Allow him to slide the parquetry pieces over the shape cards, at first, to check whether their shapes are the same. As he grows more capable, increase the number and type of shapes he must match. Work with him, gradually increasing the difficulty of each exercise until he can match parquetry pieces to all of the colored shape cards.

Activity 14: Parquetry pieces and colored shape cards

Play Lotto, forming a Lotto "card" with several of the colored shape cards. Have the child take parquetry pieces from a bag. If the shape drawn matches one of the colored shape cards the child places the parquetry piece over the card. Play together. The winner is the first to complete their Lotto card.

Activity 15: Colored shape cards

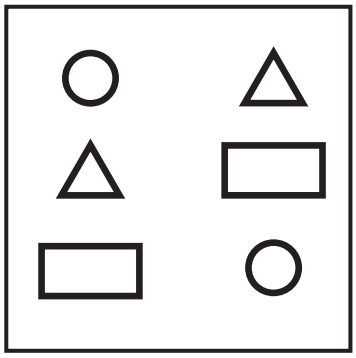
Begin working with the child on picture-to-picture matching – matching the various colored shape cards to one another. You may want to make up cards of your own using acetate and felt tip markers. This way, you can have many more duplicates of a particular shape than are provided. Once again, select distinctly different shapes for the first exercise, and gradually increase the difficulty of the exercises until the child is able to match all the various pictured shapes. (She should, by now, be able to match by shape and ignore color differences.)

Activity 16: Colored shape cards

Play Lotto using the colored shape cards. Spread several shape cards on the Light Box for the child and several for yourself. Place the shape cards which match the ones you have selected in a pile. Take turns with the child drawing from the pile. If you or he draws a card for which you have the match, place it over the matching card. If you do not have a match, return the card to the bottom of the pile. Whoever is first to find matches for all his cards is the winner of this game.

Activity 17: Activity Sheets #47-50

Trace several pairs of shapes shown on Activity Sheets #47-50 on a piece of acetate. Have the child draw a line from the shapes in the left column to their match in the right column.



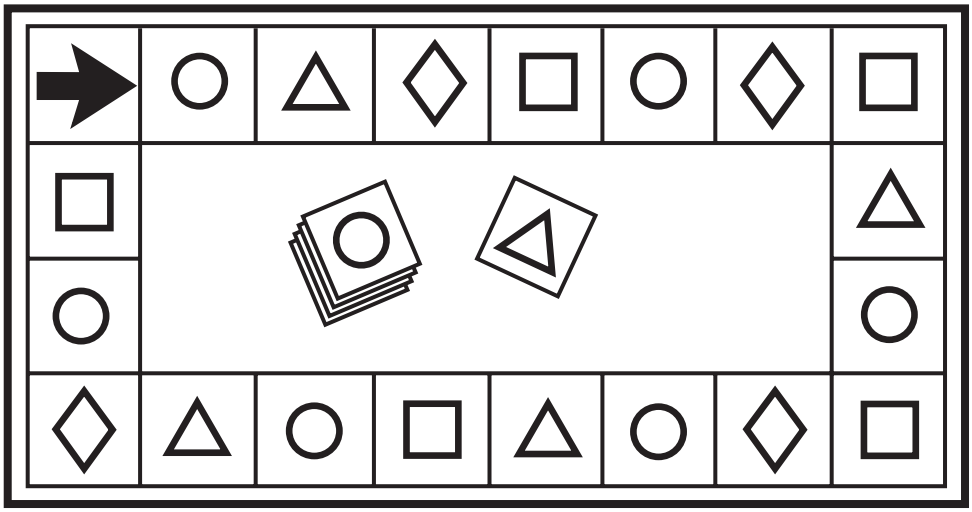
You may also draw your own shapes for the child to match in this way. As she becomes more adept at matching shapes, use more complex figures and include figures which are similar to one another.

Activity 18: Activity Sheets #47-50

Draw shapes, two or more of them alike, on a piece of acetate. Use the shapes shown on Activity Sheets #47-50 or draw your own shapes. Name and/or indicate to the child a particular shape (e.g., circle) and have him color in all the other circles shown on the worksheet. Gradually increase the number and similarity of shapes on each worksheet.

Activity 19: Colored shape cards

Form a board game using the shape cards or create one using a large sheet of acetate and colored markers or shapes cut from colored art film (See Other Suggested Materials). Position or draw shapes in a rectangular path around the edge of the Light Box.



Place a set of acetate cards of matching shapes in the center of the Light Box. Have the child place her token in the upper left-hand corner to begin the game. Have her draw a card and move the token to the nearest matching shape moving in clockwise fashion around the board. The first child to move her token all the way around the board is the winner, or you may play for chips or Monopoly money which the child collects each time she passes “home” or some other designated spot on the board. You may develop simple or complex rules for the game, such as creating a square which, if landed on, forces the player to return to the “home” position.

Activity 20: Raised outline shape cards and parquetry pieces

Place several raised outline shape cards and their matching parquetry pieces on the Light Box. Have the child correctly place each parquetry Piece within the raised outline. As she grows more capable, select shapes pieces which are closer to one another in size and configuration. Have her match more and more pieces at one time until she can correctly match parquetry pieces to all of the raised outline cards.

Activity 21: Outline shape cards and colored shape cards

Select several outline shape cards which are distinctly different and locate their matches among the colored shape cards. Have the child match the outline Shapes to the colored shapes. Allow him to check his matches by sliding the colored shape card over the outline shape card. The colored shape should fill in the outline but not go over it.

Activity 22: Outline shape cards and colored shape cards

Play Lotto using the outline shape cards and colored shape cards. (See Activity #14.)

Activity 23: Colored shape cards

Have the child match outline shape cards to other outline shape cards. At first, she may check her matches by sliding the cards over each other to see that they are identical.

Activity 24: Outline shape cards

Play Lotto using only the outline shape cards.
(See Activity #14.)

Activity 25: Outline shape cards

Create a boardgame similar to the game described in Activity #18. Use only outline shape cards instead of colored shape cards.

Activity 26: Outline shape cards

Play a Bingo game using the outline shape cards.
(See Activity #10.)

Activity 27: Familiar object pictures/stencils/cutouts

Gather some of the actual items depicted in the familiar object pictures–a toothbrush, brush, spoon, knife, glass, sock, apple, and banana. Let the child examine each item

off and on the Light Box. Identify each and point out its distinctive appearance – round or oblong shape, curved or straight sides, wide and narrow places, distinguishing bumps. Place one of the objects and its corresponding familiar object cutouts on the Light Box. Again, point out distinguishing visual features of both—indicating that one is a picture of the other. Do the same with the corresponding picture and stencil.

Activity 28: Familiar object pictures/stencils/cutouts

Choose several familiar object pictures, stencils, or cutouts, depending upon which the child is able to identify most readily. Gather the actual items which correspond to the pictures, stencils, or cutouts and have the child match each object to its representation. At first select items which have distinctly different shapes (e.g., the apple, spoon, and sock). Later choose similarly shaped items, such as the toothbrush, knife and spoon.

Activity 29: Familiar Object stencils and cutouts

When the child capably matches the actual item to its representation, begin a series of matching tasks. For example, give the child a stencil and the cutout. Choose a simple stencil at first, such as the ball. Have him fit the cutout inside the stencil. Have him perform the task using the other stencils.

Activity 30: Familiar object pictures

Have the child match pictures to pictures. Begin with pictures which are distinctly different. The child may slide the pictures over one another. Additional pictures of common objects may be obtained from magazines and other sources. Trace these on acetate, then color with markers or apply transparent, adhesive art film. (See Additional Materials for sources.)

Activity 31: Familiar object stencils and pictures

Have the child match stencils to pictures.

Activity 32: Familiar object cutouts and pictures

Give the child several distinctly different cutouts and matching pictures. Have her match the cutouts to their pictures.

Activity 33: Familiar object stencils and pictures

Use the stencils to make outline pictures. Have the child match the familiar object pictures to their outlines, or match outline Pictures to one another. You may create some which include inner detail showing, for example, the teddy bear's features.

Activity 34: Familiar object stencils and pictures

Create your own object pictures for the child to match. Trace over drawings in children's coloring books, story books, or in magazines. Tracing paper colored with felt tip pens shows up well on the Light Box; laminate it for extra durability, or trace onto clear acetate or Mylar®.

Activity 35: Pegs

Have the child sort the pegs using *shape* and *color* as criteria. For example, *blue square* pegs should be grouped separately from *green square* pegs; *blue round* pegs should be grouped separately from *blue square* pegs, and so on. The child may group pegs using the pegboard, placing each different type of peg in its own row, or he may prefer to sort pegs into piles or containers on the Light Box surface.

Activity 36: Parquetry pieces

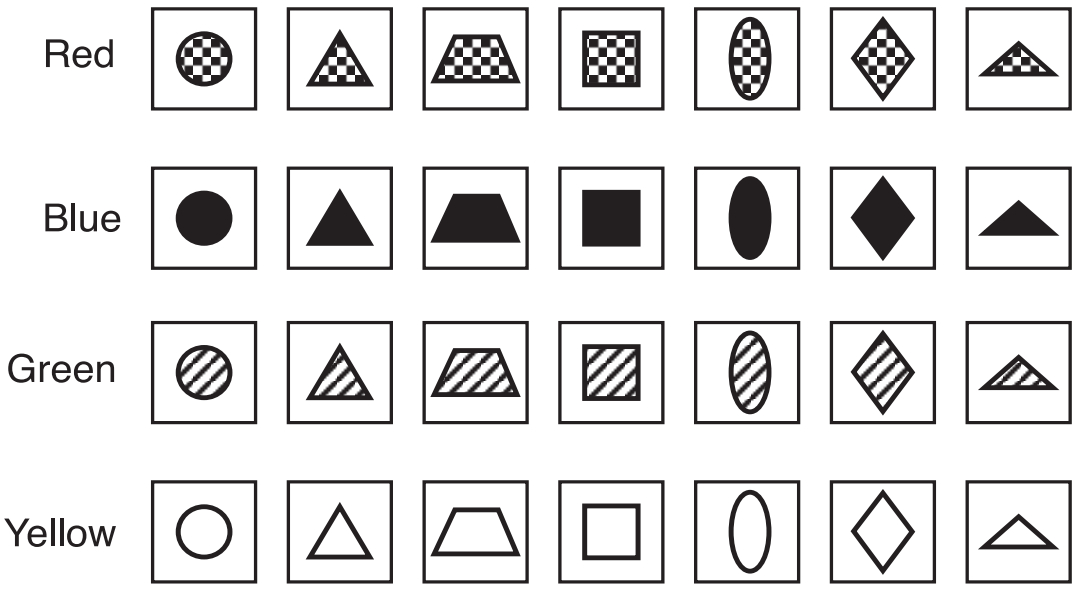
Have the child sort parquetry pieces according to shape and color, as described in activity #1. The parquetry pieces may also be sorted by *shape and size*, grouping separately large, medium, and small triangles and large, medium, and small squares. The child may also sort the parquetry pieces by *color and size*.

Activity 37: Colored shape cards

Have the child sort the Colored shape cards by shape and color, shape and size, and color and size. (Make a few additional cards to provide a wider variety of colors and sizes for sorting.)

Activity 38: Colored shape cards

Play a card game using acetate cards you have made which display shapes colored with a marker or cut from adhesive art film (See Other Suggested Materials). Make 7 to 13 different shapes in four colors.



Play Rummy, matching cards of the same shape or color to form groups of three or four. Crazy 8's may be played by dealing six to eight cards to each player, depending on the size of your deck. In Crazy 8's a card is turned over from the top of the deck. The first player attempts to match the color or shape of this card witj a card from her hand. For example, if a *red square* is turned over, the first player may put on the stack any card showing a *red shape*, or a square. If she does not have a match in her hand, she must draw from the deck until she obtains a match. The second player plays her card based on the card put down by the first player. The winner is the first person to play all of her cards. (In a traditional game of Crazy 8's the "8" card is treated as its owner specifies [e.g., the owner can dsignate the card as clubs]. For more fun, incorporate this feature into your game, creating a special wild card which the child must recognize.)

Activity 39: Familiar object pictures

Have the child match pictures according to their function grouping toys, clothing, food, and utensils separately. Demonstrate the activity first by grouping several pictures. "These things are alike. Can you tell me how?" Have the child complete the sorting.

Goal: Spatial Relationships

Activity 1: Cubes

Place two cubes side by side on the Light Box. Give the child two cubes and ask him to place his cubes just like yours. Perform the same task, having him imitate the positions of several cubes, pegs, or other objects placed in a row, in a stack, under a cup, and in various other arrangements. See if he can perform the task without verbal cues. After he has arranged his cubes, have him describe their positions.

Activity 2: Pegs/cubes

Have the child make a line of pegs or cubes across the Light Box, spacing them as evenly as she can. If she performs this easily, suggest she make a line from the top edge of the Light Box to the edge closest to her. She may also follow the edges of the Light Box surface, making a large rectangle of pegs or cubes.

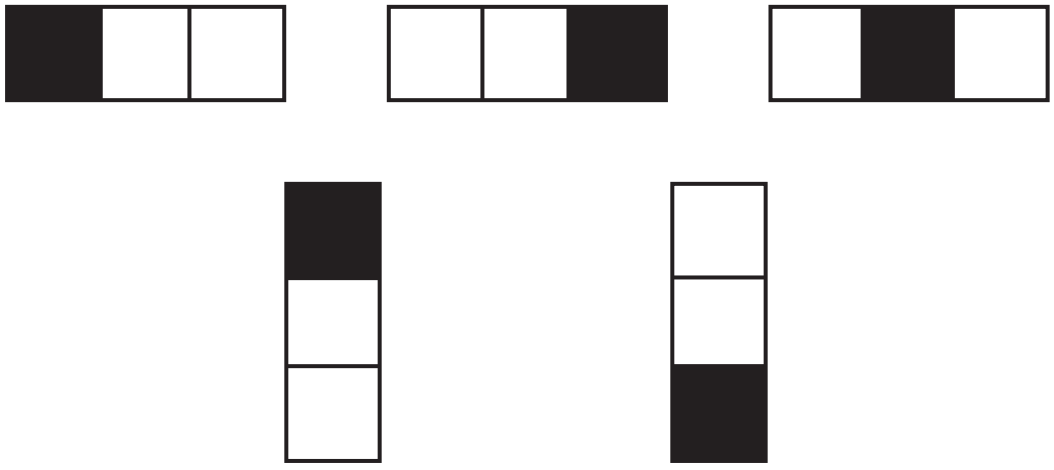
Activity 3: Pegboard and pegs/template and cubes

Fill the 6 x 1 template with cubes. Give the child a template and cubes. Have him orient the template like yours and fill it with cubes. Perform the same task with the 3 x 3 template. Encourage the child to work in a left to right, top to bottom order.

Activity 4: Template and cubes

Block out all but three squares of the 6 x 1 template. Give the child the other, matching, 6 x 1 template showing only three squares.(Have him orient the cubes like yours.) Fill your template telling the child you are making a row. Work in left to right (or top to bottom) order. Have the child fill her template in the same manner.

Demonstrate and give names for the following placements and have the child imitate:



Activity 5: Pegboard and pegs/template and cubes

Completely fill the pegboard or a template with pegs or cubes. Remove several pegs or cubes in a horizontal row. (Have the child remove the rest of the pegs or cubes in that horizontal row.) Have him remove a vertical row, determining which pegs or cubes should be removed in a left to right, top to bottom order.

Activity 6: Pegboard and pegs/template and cubes

Use the cubes or pegs to demonstrate the meanings of other positional words: above, below, beside, center, and corner. Use the pegs or cubes in or out of the pegboard or a template. Identify their positions relative to one another, the Light Box surface, pegboard or template (e.g., red peg below the green peg or blue peg in the corner of the pegboard). When she is familiar with these words place a peg or cube on the Light Box and ask the child to put another peg or cube *below* it. Explore all of the positional words with her in this way. Have her further demonstrate her understanding by putting out pegs or cubes according to your specifications:

"Put out two cubes, one below the other."

"Put a peg in each of the corners of the pegboard."

In addition, have her identify the position of pegs or cubes which you arrange.

Activity 7: Pegboard and pegs/template and cubes

Place some pegs in the pegboard or cubes in a template and direct the child to locate and pick up a particular peg.

"Pick up the peg closest to you."

"Pick up the peg in the middle."

"Pick up the peg in the corner."

This can be made into a game for one or more children. A child may "keep" all correctly identified pegs.

Activity 8: Parquetry pieces/sticks

Let the child experiment with the Sticks and parquetry pieces, playing with them as she chooses. Verbalize what she is doing and point out spatial relationships and the orientation of the pieces:

"You put the circle on *top* of the Stick."

"The Stick is pointing *up* and *down.*"

'You put the red one *beside* the blue one."

Activity 9: Parquetry pieces/sticks

Place three sticks on the Light Box. Orient two alike, one different. Have the child point to the one which is oriented differently. Perform the same activity using the parquetry pieces.

Activity 10: Parquetry pieces/sticks

Place a triangle on the Light Box. Give the child an identical triangle and have him position it like yours. Perform the activity using other shapes and other kit items—pegs, sticks.

Activity 11: Familiar object cutouts

Make duplicates of the Familiar Object Cutouts. Perform activities #11 and #12 using the Cutouts.

Activity 12: Familiar object cutouts

Explore the meanings of positional words with the child by having her draw or mark on blank acetate, as you describe what she is doing.

"Your line is going *up*!"

"You made an X *below* the line."

"Your line curves *around* and *around*."

Also have her draw as you give directions.

"Make a dot in the *middle* of the sheet."

"Now, make a line *over* the dot."

"Make a row of dots *across* the sheet."

Activity 13: Template and cubes/pegboard and pegs

Play a modified checkers game with the cubes or pegs. If two adjacent cubes or pegs have an empty space to one side or the other, the child may jump the first cube over the other and claim and keep the jumped cube, You and the child may continue the game until all possible jumps have been made. Help him count to see who has the most cubes.

Activity 14: Cubes/parquetry pieces

On acetate, draw a tic-tac-toe grid. Use cubes of two colors to play tic-tac-toe with the child, or use parquetry pieces of different shapes and/or colors.

Goal: Identification

Activity 1: Parquetry pieces/pegs/cubes

Place pegs, cubes and/or parquetry pieces in a bag. Have the child remove an item and name its color as she places it on the Light Box.

Activity 2: Parquetry pieces/cubes

Scatter parquetry pieces or cubes on the Light Box. Name a particular color and have the child find and pick up one of that color.

Activity 3: Parquetry pieces

Perform Activity #1 using the parquetry pieces. Help the child identify the shapes he selects. (It is difficult to remember the names of geometric shapes; use this exercise as a way of practicing naming them. It may be easier for him to name the familiar object pictures.)

Activity 4: Pegboard and pegs

Place pegs in the pegboard and direct the child to locate and pick up a particular peg(s):

the yellow pegs

the red, square peg

all the triangular pegs

the round peg

Activity 5: Pegs/cubes

Have the child build a tower or other arrangement according to your specifications. Let her find and place each piece. ("Put a yellow square peg on top of the blue cube.")

Activity 6: Template and cubes/pegboard and pegs

Play a modified Bingo game. Randomly fill a template or pegboard. Indicate a particular row and name a particular type of peg ("orange and round") or colored cube ("green"). If there is a peg or cube matching that description in the row you have indicated, the child locates it and removes it. "Bingo" is declared when an entire row (vertical, horizontal, or diagonal) has been removed.

Activity 7: Parquetry pieces

Perform Activity #6 using parquetry pieces.

Activity 8: Colored shape cards/outline shape cards

Perform Activity #6 using the colored shape cards or outline shape cards.

Activity 9: Colored shape cards/outline shape cards

Create your own deck of acetate shape cards with a colored marker or by cutting out shapes from art film (See Other Suggested Materials). Play simple card games which involve naming the color and/or shape he has drawn. For example,

as each new card is turned over, have the child name the card. If he can, he may keep the card; if not, you or the next child has a chance to name and keep the card. The winner is the child with the most cards.

A simplified version of "Go Fish" would also be an interesting game for several children to play. As each turn comes around, the child asks the player to his left for the particular card he needs to complete a set of four cards. If the player on his left has the card (e.g., a "red triangle"), he must surrender it. If he does not, the child who asked must draw from the pile. The child who is first to group all of his cards into sets of four is the winner.

(You may want to devise screens for card games in which several players take part. A screen can be cut from a shoe box. Provide room for the child to place his cards on the Light Box yet still have the deck easily visible.)

Activity 10: Familiar object pictures

Tell a story using the familiar object pictures. "There once was a boy who was very, very hungry. He couldn't wait to eat! When he got home after school, this is what he saw." (Point to the familiar object pictures; use several at first, later expand and include more pictures.) "Help the boy find something good to eat. Show me what you would give him to eat." The child should point to an edible object and name it, if possible. Make up other stories to motivate the child to discriminate and identify the object pictures and the functions of each.

Activity 11: Familiar object pictures

Spread several pictures on the Light Box and create a story around the objects they display. As you tell the story, have the child point to the appropriate picture. If the story follows a particular sequence, have the child arrange the Pictures in left to right sequence.

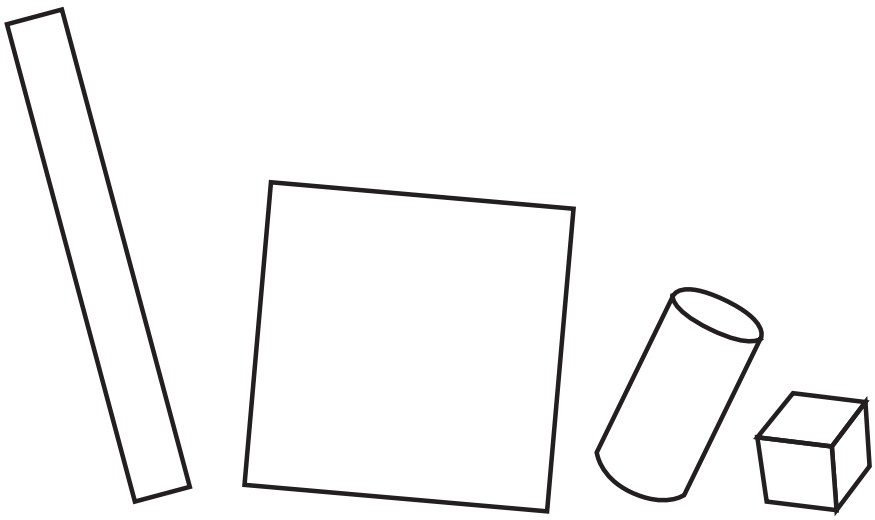
Goal:Visual Memory

Activity 1:

Place a familiar object on the Light Box. Let the child view it for a few moments, then remove the item. Replace it and add several other items on the Light Box. Have the child name or point to the object he was first shown. Initially, select additional items which are very different from the first object Later, choose items similar to it, requiring the child to improve his ability to remember the object's visual appearance.

Activity 2: Parquetry pieces/cubes

Spread several pegs, cubes, or parquetry pieces in a row on the Light Box. Let the child view them for a short time, then have her turn away, and remove one of the items. Let her view the new array and show her several pieces—one of which is the missing piece. Have her name or point to the piece you removed. Let her replace it in the array to see if it "looks right." At first select pieces for this task which are very different from one another. For example, show the child the following:



If you remove the yellow peg, mix it with items which are widely varied such as an orange cube, blue parquetry piece, and one of the sticks. As the child becomes more capable, group the missing piece with pieces which are similar to it and present arrays using only parquetry pieces, cubes, or pegs. Experiment with reducing the amount of time you allow the child to view the array and the amount of time you give her to select the missing piece.

Activity 3: Colored shape cards/outline shape cards/ familiar object stencils/cutouts/pictures

Perform Activities # 1 and #2 using the colored shape cards, outline shape cards, familiar object stencils, cutouts, or pictures.

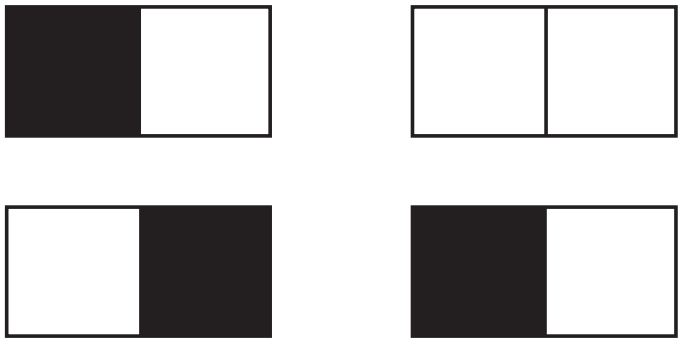
Goal: Sequencing and Patternmaking

Activity 1: Template and cubes

Review Activities #3 and #4 given under spatial relationships, emphasizing to the child that he should arrange his cubes to look just like yours.

Activity 2: Pegs/cubes

Using the pegs in or out of the pegboard, or the cubes with or without a template, make several pairs of pegs or cubes. For example:



Ask the child to find the pair which matches the blue/orange pair. (Point to the upper left-hand pair.) Or, as a somewhat more difficult task, ask him to find the two pairs which are alike.

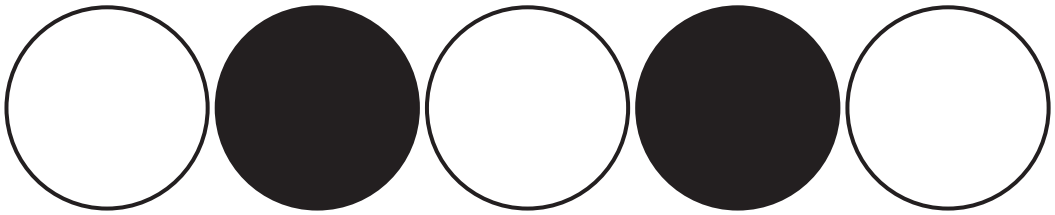
Activity 3: Parquetry pieces/pegs/cubes

Place two or three parquetry pieces, pegs, and/or cubes in a row horizontal or vertical. Underneath this first row, make a second row containing indentical items but in a different order. Have the child examine both rows, showing her that each row contains the same items but in a different order.

Ask her to arrange the second row so that it is the same as the first one. If she has difficulty, it may be helpful for her to talk aloud as she goes through the sequence: “First the blue one, then the red one, then blue again.” As she becomes able to perform this task, increase the number of pieces in each row and/or make them more similiar to one another. (Try using all pegs, all tiles, or all parquetry pieces.)

Activity 4: Pegboard and pegs/template and cubes

Place a row like the following in the pegboard or template:



With the child, name the color of the pegs or cubes, and ask him what color peg or cube should come next to continue the pattern. Have him continue the pattern until he runs out of appropriate pegs or cubes. Set up other simple sequences for him to imitate. Vary shape, or shape and color. Increase the number of pegs or cubes in the pattern from two to three.

Activity 5: Pegboard and pegs/template and cubes

Place several pegs in the top row of the pegboard or cubes in the top row of a template. Give the child a limited number of pegs or cubes like the ones used in the sample row. For example, if your row contains a round red, round blue, and round yellow peg, give the child several each of these pegs, excluding, for the time being, other colors and shapes. Have her duplicate your row in the row below it, then duplicate that row in the next row down, and so on until she runs out of pegs or cubes. Perform the activity using more and more pegs or cubes. Gradually increase the variety of pegs or cubes you use, requiring the child to attend to shape as well as color.

Activity 6: Parquetry pieces and colored shape cards

Arrange several of the colored shape cards in a sequence; have the child imitate your sequence using the parquetry pieces.

Activity 7: Sticks

Arrange the Sticks in a simple sequence and have the child imitate it. Experiment with orienting the Sticks differently to create different sequences for him to copy.

Activity 8: Familiar object stencils/pictures

Use the stencils to make two sets of cutouts from black posterboard. Arrange several cutouts in a sequence. Have the child arrange his cutouts or the familiar object pictures in a matching sequence. You can arrange the cutouts so they tell a story in left to right order.

Activity 9: Template

Select cubes of the same color and place them in the 3 x 3 template. Give the child the correct number of cubes, all of the same color, and have her duplicate your pattern on her template. Provide prompts when necessary, such as pointing to the first cube. Verbal prompts may also help the child:

"Which one comes first?"

"You put the first one in; where does the next one go?"

"That space is empty."

Always work in left to right and/or top to bottom order.

Activity 10: Template and cubes

Have the child duplicate the patterns shown on pages 87-93 using the 5 x 5 template. Use cubes of the same color and provide prompts only when necessary.

Goal: Part/Whole Relationships

Activity 1: Parquetry pieces and pegs

Build a simple structure using pegs and parquetry pieces. Use only a few pieces. Have the child imitate your structure.

Activity 2: Pegboard and pegs

Show the child that two triangular pegs create one square peg when both are positioned in the same hole. Give him the remaining triangular pegs. Have him put two together to make a row of square pegs like the one you have shown him.

Activity 3: Parquetry Pieces and raised outline shape cards/Geometric shape stencils

Show the child that two Right Isosceles triangles make a square when positioned correctly. Use the raised outline shape card of the medium square and two medium Triangles or use the square shape Stencil and two large Triangles. Help the child discover the following relationships using the shape stencils, raised outline shape cards, and parquetry pieces (see next page):

Shape Stencils

Square – 2 large triangles
2 rectangles
4 small squares
4 medium triangles
(See Activity Sheet #51b for additional configurations)

Triangle – 2 medium triangles
4 small triangles
(See Activity Sheet #54b for additional configurations)

Rectangle – 2 medium squares
4 medium triangles
(See Activity Sheet #53b for additional configurations)

Heart – 2 half-circles
1 medium square

Hexagon – 2 trapezoids

Raised Outline Shape Cards

Square – 2 medium triangles
4 small triangles

Circle – 2 half-circles

Triangle – 2 small triangles

Rectangle – 2 small squares
4 small triangles

Rhombus – 2 small triangles

Activity 4: Sticks and parquetry pieces

Place a large square and four Sticks on the Light Box. Show the child how to put a Stick along each side of the square, outlining the square. Have the child do this on his own. You may need to help him get started by putting the first Stick or two in place yourself. Talk about the four sides of the square.

Activity 5: Sticks and outline shape cards

Place the outline shape card showing the large square on the Light Box or draw a large square on acetate. Give the child four Sticks and have her place them over the lines of the square. Perform the activity with other outline shape cards or simple figures drawn on acetate.

Activity 6: Sticks

Using only two sticks, make a configuration on the Light Box, such as one of the following:

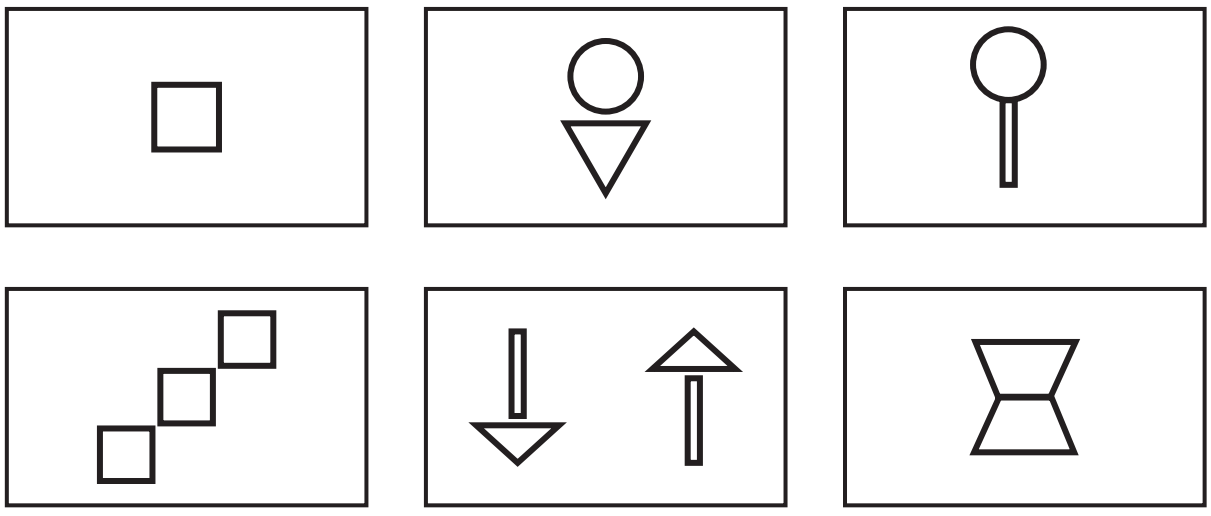
Give the child two sticks and have him imitate the figure you have just made.

Activity 7: Sticks

If the child capably performs other Part/Whole activities with the Sticks, have her build a Stick square, triangle, or other figure using yours as a model.

Activity 8: Parquetry pieces/Sticks

If the child seems capable, draw some very simple designs on acetate with a marker or cut stencils from Posterboard. Have the child fill in the appropriate parquetry pieces and/or Sticks. If your patterns are representative of something – at first, represent familiar objects in his near environment – an ice cream cone or cup – rather than an airplane or house. Limit the number of pieces in each pattern.



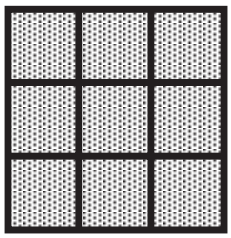
Activity 9: Activity Sheets #51a-72b

Assemble one of the geometric shapes or designs shown on Activity Sheets #51a-72b. Use parquetry pieces of different colors. Have the child identify the whole shape, if it has a name, and describe its features. Have her look within the shape and identify the smaller shapes which comprise it.

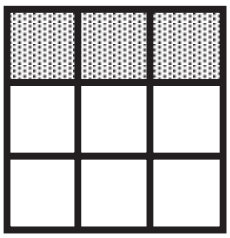
Activity 10: Activity Sheets #51a-72b

Trace one of the shapes shown on Activity Sheets #51a-72b with a heavy black marker. Give the child the black outline and appropriate parquetry pieces and have him form the whole shape. At first, trace lines inside the shape showing placement of the individual pieces. Work through the Activity Sheet designs and others of your own creation, beginning with simple 2- and 3-piece designs and leading to more complex configurations.

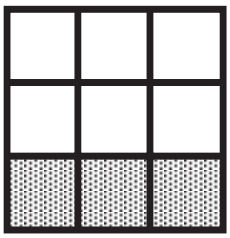
Some suggested patterns for the 3 x 3 template



All Rows



Top Row



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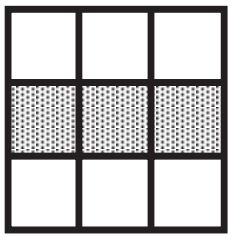
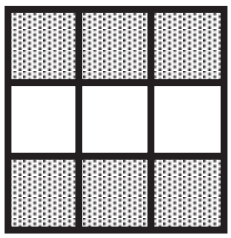
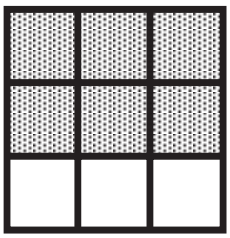


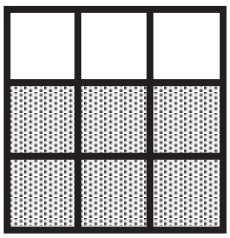
Middle Row



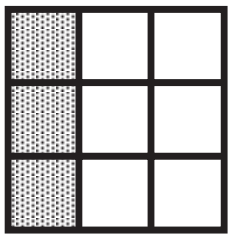
Top and Bottom Rows



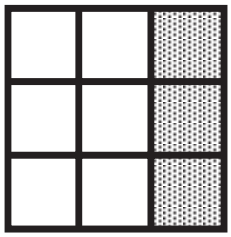
Top and Middle Rows



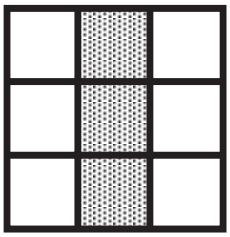
Middle and Bottom Rows



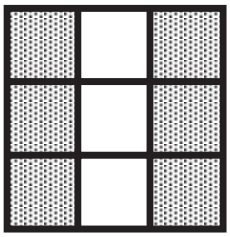
Left Column



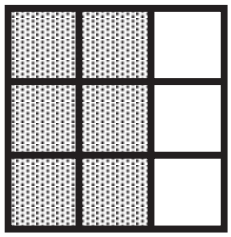
Right Column



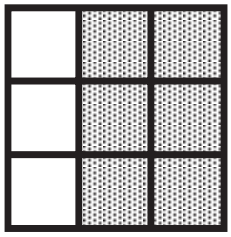
Middle Column



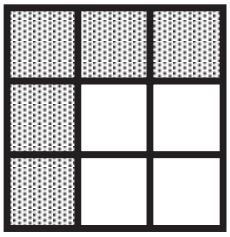
Left and Right Columns



Left and Middle Columns



Middle and Right Columns



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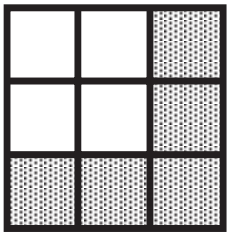

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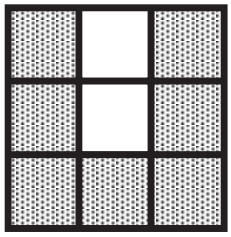
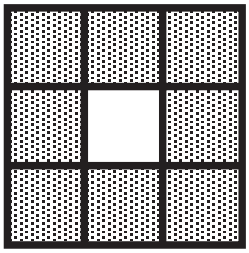


Bottom Row; Left and Right Columns

Goal: Part/Whole Relationships (continued)



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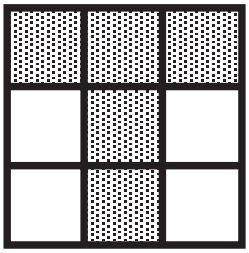

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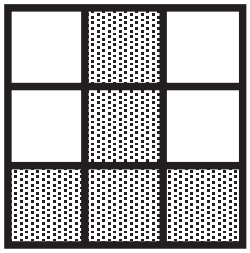

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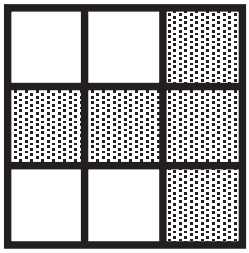

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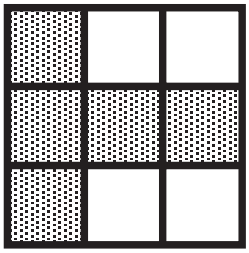

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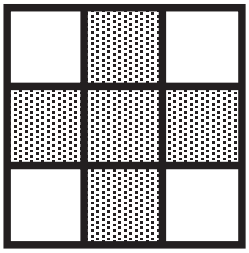
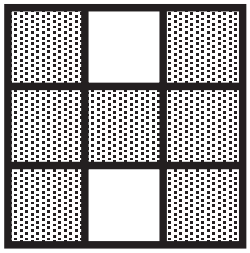
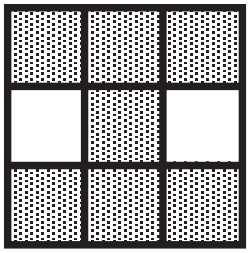


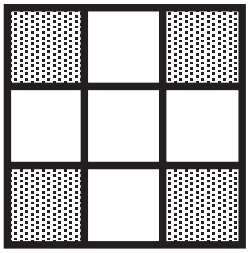
Middle Row and Middle Column



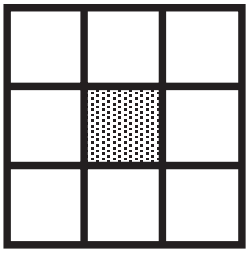
Middle Row; Left and Right Columns



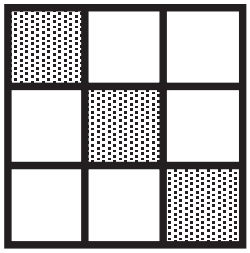
Top and Bottom Rows; Middle Column



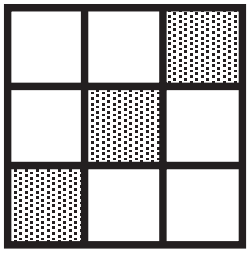
4 Corners



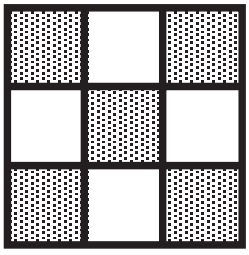
Middle



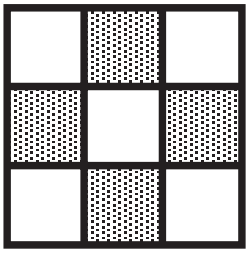
Diagonal

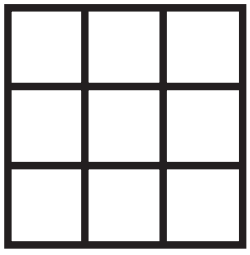


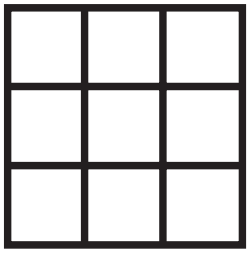
Diagonal



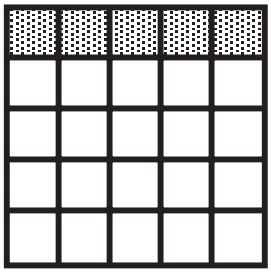
Both Diagonals



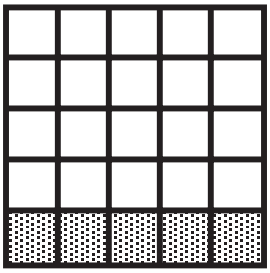




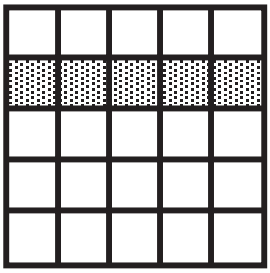
Some suggested patterns for the 5 x 5 template



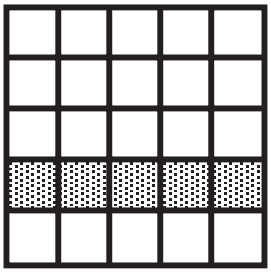
Top Row



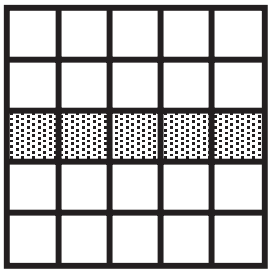
Bottom Row



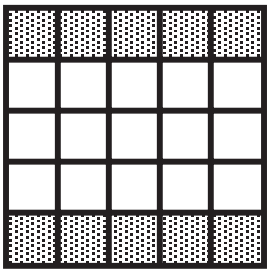
One Down From Top Row



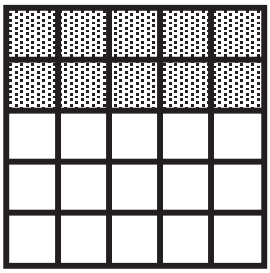
One Up From Bottom Row



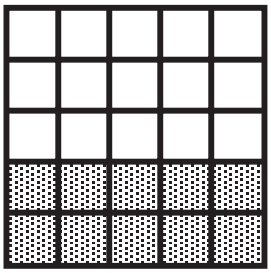
Middle Row



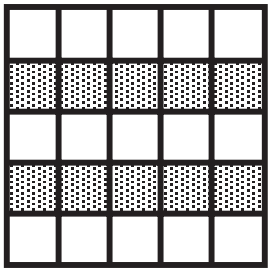
Top and Bottom Rows



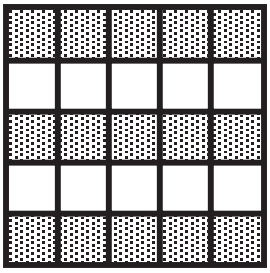
Top Two Rows



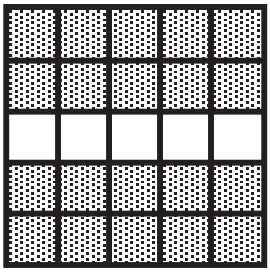
Bottom Two Rows



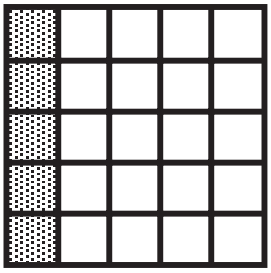
One Down From Top Row and One Up From Bottom Row



Top, Middle, and Bottom Row

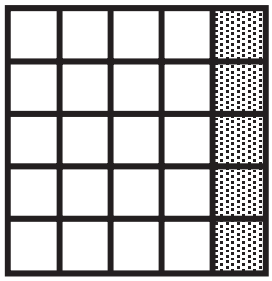


Top Two Rows and Bottom Two Rows

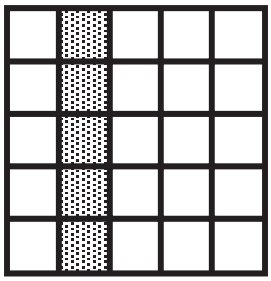


Left Column

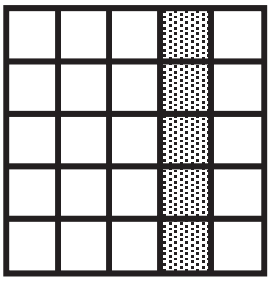
Goal: Part/Whole Relationships (continued)



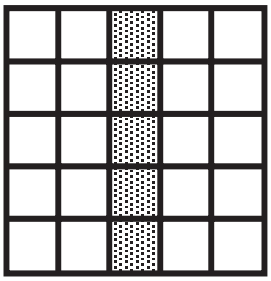
Right Column



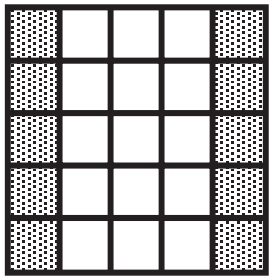
One Over From the Left Column



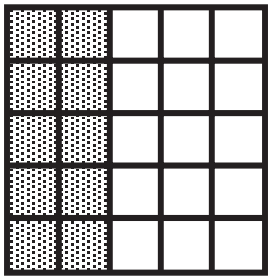
One Over From the Right Column



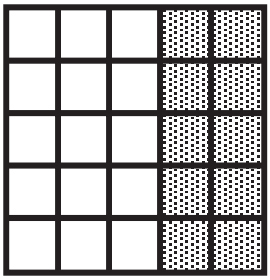
Middle Column



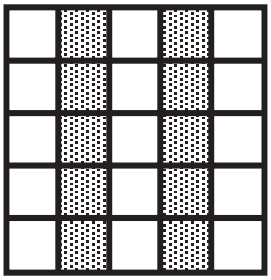
Left and Right Column



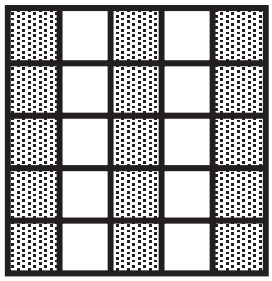
Two Left Columns



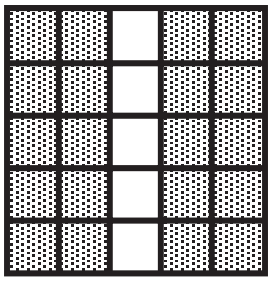
Two Right Columns



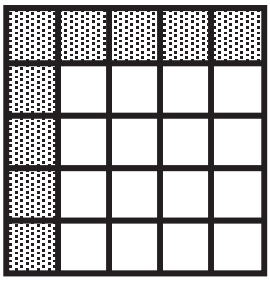
One Over From Left Column and One Over From Right Column



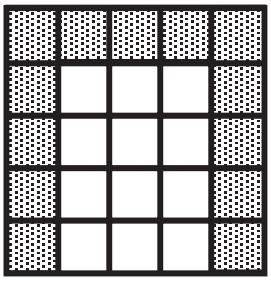
Left, Middle, and Right Columns



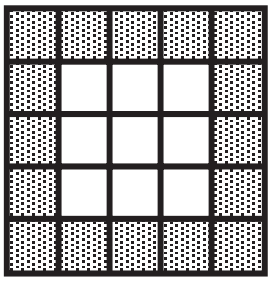
Two Left and Two Right Columns



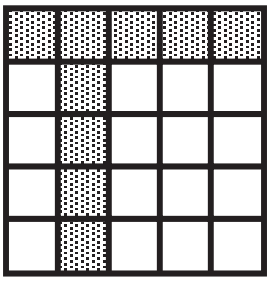
Top Row; Left Column



Top Row; Left and Right Columns



Top and Bottom Rows; Left and Right Columns



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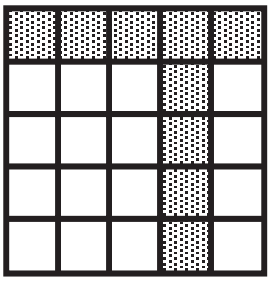
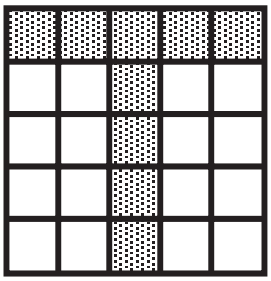
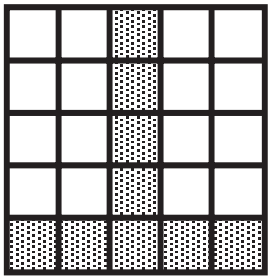


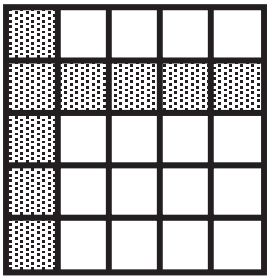
Top Row; One Over From Right Column



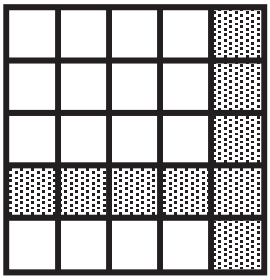
Top Row; Middle Column



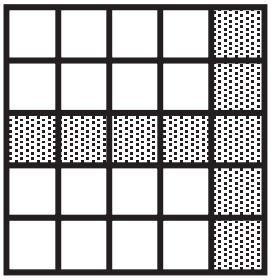
Bottom Row; Middle Column



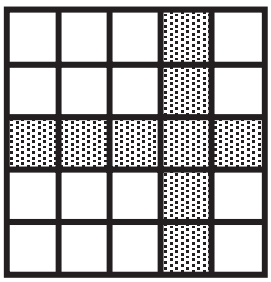
One Down From Top Row; Left Column



One Up From Bottom Row; Right Column



Middle Row; Right Column



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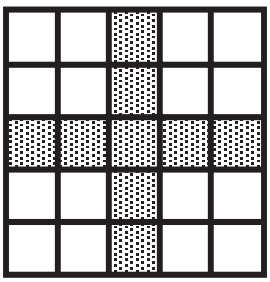
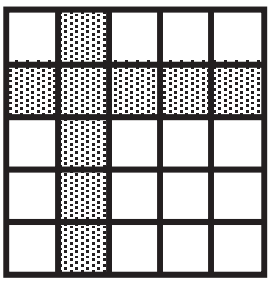
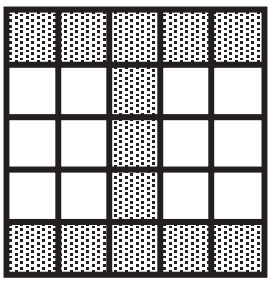


Middle Row; Middle Column

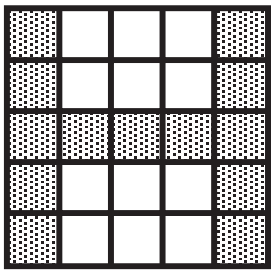


One Down From Top Row; One Over From Left Column

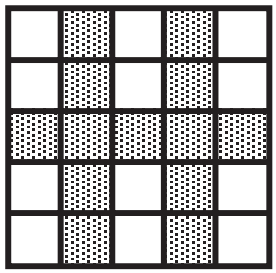


Top and Bottom Rows; Middle Column

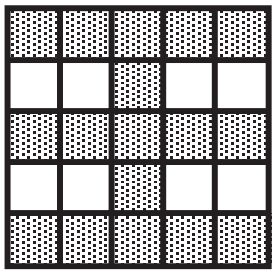
Goal: Part/Whole Relationships (continued)



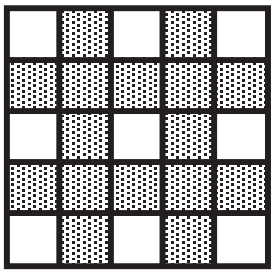
Middle Row; Left and Right Columns



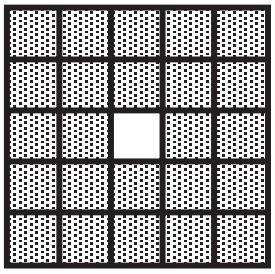
Middle Row; One Over From Left Column, One Over From Right Column



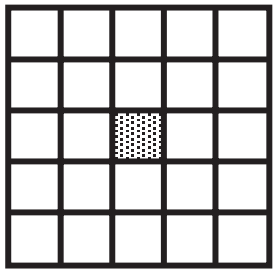
Top, Middle, and Bottom Rows; Middle Column



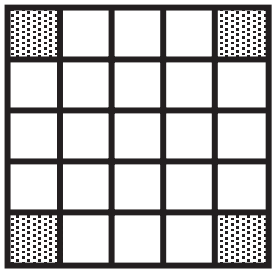
One Down From Top Row, One Up From Bottom Row, One Over From Left Column, One Over From Right Column



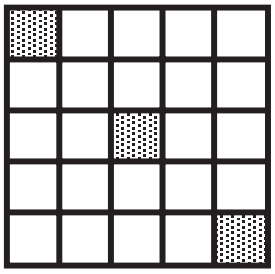
Top Two Rows, Bottom Two Rows, Left Two Columns, Right Two Columns



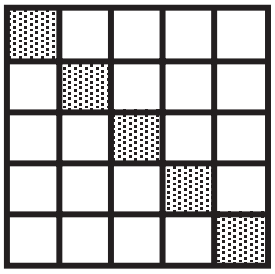
Middle Hole



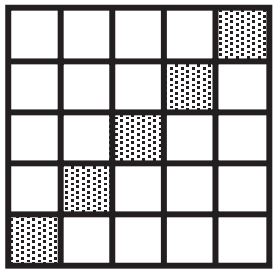
Corner Holes



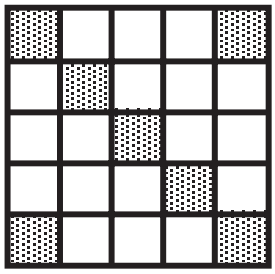
Middle Hole and Two Corner Holes

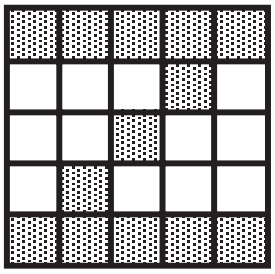


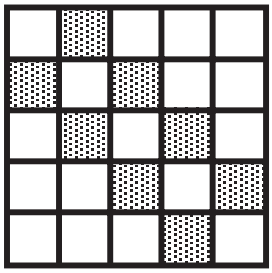
Top to Bottom Diagonal

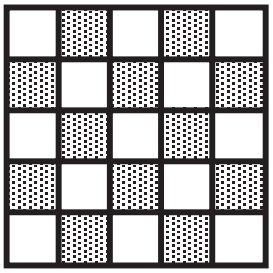


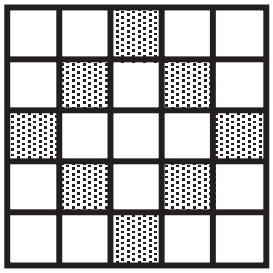
Bottom to Top Diagonal

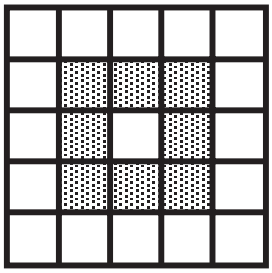


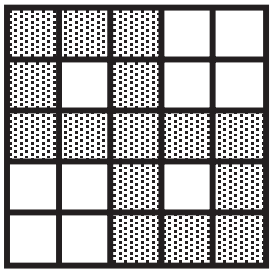


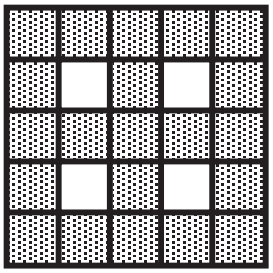


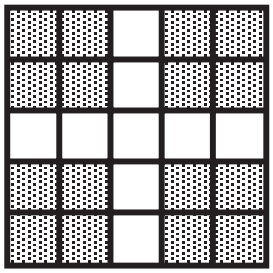


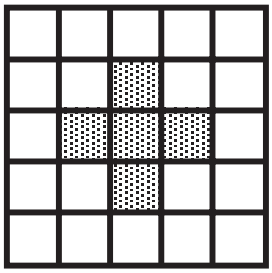


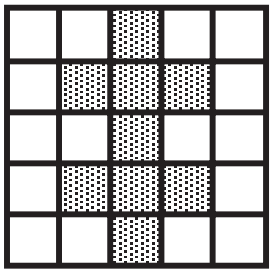


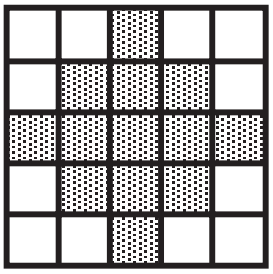


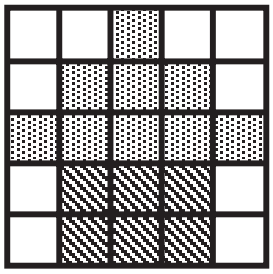




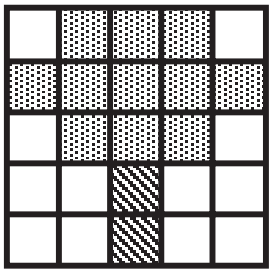




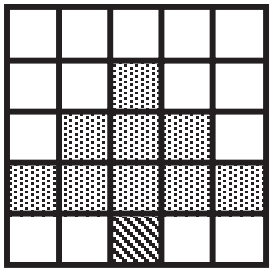




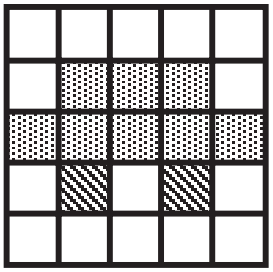
House



Tree



Christmas Tree



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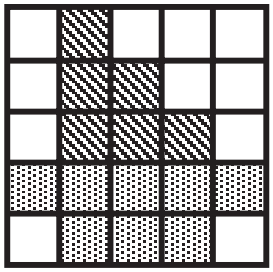

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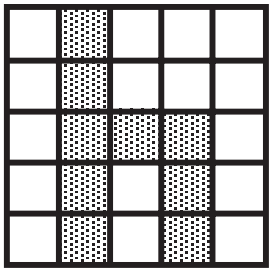
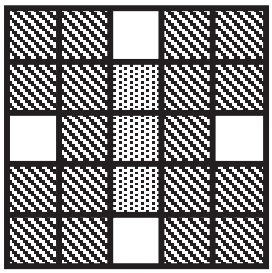


Chair



Butterfly

Appendix:

Vision Development Materials from APH & Related Visual Tasks Chart

VISUAL TASKS	Let's See: Vision Development Activities	Light Box Materials, Level I (Use with Light Box)
Light awareness	Light up wand / Flashlight	Colored acetate / pattern and blackout backgrounds / spinner / suggested activities
Light fixation and focus	Same as above	Same as above
Light tracking (horizontal, vertical, and circular) and scanning	Light up Wand / Flashlight with Moon Ball	Colored acetate / Spinner / Suggested activities
Object awareness	Bell Bracelet / Squeaker Ball / Foam Shapes / Gel Balls	Acrylic shapes / Threading beads / Tumblers / Suggested activities
Object fixation and focus	Same as above / Bunji Ball / Duck Puppet / Socks with Balls / Pom-poms / Moon Ball / Puppet	Same as above

Light Box Materials, Level II (Use with Light Box)	Light Box Materials, Level III (Use with Light Box)	Program to Develop Efficiency in Visual Functioning
		Section A (1-3 months)
		Same as above
		Section A (1-3 months) Section B (4-12 months)
		Section A (1-3 months)
		Same as above

VISUAL TASKS	Let's See: Vision Development Activities	Light Box Materials, Level I (Use with Light Box)
Object tracking and scanning	Puppet / Pom-pom / Squeaker Ball / Socks with Balls / Bunji Ball / Whistle Stick	Acrylic shapes / Threading beads / Tumblers / Suggested activities
Eye-hand coordination (reaching and manipulation)	Moon Ball / Quilt / Foam Shapes / Gel Balls / Pail / Squeaker Ball / Puppet / Pegboard / Snap-lock Beads / Whistle Stick / Slinky	Tracing backgrounds / Acrylic shapes / Threading beads / Tumblers / Spinner
Matching / concrete level (color, shape, size)	Foam Shapes / Rubber Balls / Blocks / Form Board / Pegboard	Templates / Acrylic shapes / Threading beads / Tumblers / Puzzle pieces / Suggested activities
Simple spatial relationships	Same as above / Pail / Gel Balls	Same as above

Light Box Materials, Level II (Use with Light Box)	Light Box Materials, Level III (Use with Light Box)	Program to Develop Efficiency in Visual Functioning
		Section B (4-12 months)
Pegs and pegboard / Cubes and template		Section B (4-12 months) Section C (1-3 years)
Pegs / Cubes / Sticks / Parquetry Pieces		Section C (1-3 years) Section D (2-4 years)
Same as above / Sticks		Section C (1-3 years)

VISUAL TASKS	Let's See: Vision Development Activities	Light Box Materials, Level I (Use with Light Box)
Matching / concrete level (detail)	Shape Deck / Foam Shapes / Form Boards / Snap-lock Beads / Pegboard	Suggested activities
Visual identification / concrete level (name, color, shape, size, object)	Foam Shapes / Shape Deck / Form Board / Quilt	Most kit materials
Simple part / whole relationships / concrete level	Pegboard / Blocks / Snap-lock Beads / Foam Shapes / Form Board / Shape Deck	Ball puzzles / Face puzzles
Matching / pictures (shapes, familiar objects)	Shape Deck / Teacher made pictures using paper, poster boards, crayons, etc.	

Light Box Materials, Level II (Use with Light Box)	Light Box Materials, Level III (Use with Light Box)	Program to Develop Efficiency in Visual Functioning
		Section C (1-3 years) Section D (2-4 years)
Pegs / Cubes / Sticks / Parquetry Pieces		Section C (1-3 years) Section D (2-4 years)
Pegs and Pegboard / Cubes and template / Parquetry pieces / Sticks		Section C (1-3 years) Section D (2-4 years)
Colored shape cards / Outline shape cards / Familiar object pictures / Stencils / Pattern guides / Activity sheets / Suggested activities	Picture cards used in game formats: card or board game, Lotto, Bingo / Activity sheets	Section D (2-4 years)

VISUAL TASKS	Let's See: Vision Development Activities	Light Box Materials, Level I (Use with Light Box)
Matching / pictures (detail)	Shape Deck / Teacher made pictures using paper, poster boards, crayons, etc.	
Visual identification / pictures (shapes, objects, detail)	Shape deck / Snap-lock Beads / Pegboard	
Part/whole relationships / more complex concrete and pictures	Blocks / Pegboard / Snap-lock Beads / Foam Shapes / Quilt with hidden object underneath / Teacher-made pictures using paper	
Prewriting, tracing, copying shapes, outlines	Paper / Crayons / Tracing foam shapes / Tracing form board with inserts	

Light Box Materials, Level II (Use with Light Box)	Light Box Materials, Level III (Use with Light Box)	Program to Develop Efficiency in Visual Functioning
Activity Sheets	Picture cards with differing detail used in game formats	Section D (2-4 years)
Colored shape cards / Outline shape cards / Familiar object pictures / Activity sheets	Picture cards with differing detail used in game formats	Section D (2-4 years) Section E (3-5 years)
Pegs and pegboard / Cubes and templates / Parquetry pieces	Picture puzzles	Section D (2-4 years) Section E (3-4 years)
Activity Sheets	Activity sheets	Section D (2-4 years) Section E (3-4 years)

VISUAL TASKS	Let's See: Vision Development Activities	Light Box Materials, Level I (Use with Light Box)
Figure-ground differentiation	Any object on quilt	
Visual closure	Any object protruding from under quilt	
Matching / figures (abstract figures, letters, numbers)	Symbols by tracer drawn on paper	
Visual identification / figures (abstract figures, letters, numbers)	Same as above	
Writing letters, numbers	Crayons and paper from kit	

Light Box Materials, Level II (Use with Light Box)	Light Box Materials, Level III (Use with Light Box)	Program to Develop Efficiency in Visual Functioning
	Large picture scenes and matching individual picture cards / Activity sheets	Section E (3-4 years)
	Picture cards / Activity sheets	Section E (3-5 years)
	Letter and Number cards used in game formats: card game, board game, lotto, bingo / Activity sheets	Section F (4-5 years) Section G (5-6 years)
	Same as above	Section G (5-6 years)
	Activity sheets	Section G (5-6 years) Section H (6-7 years)

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