

Classroom Strategies for Improving and Enhancing Visual Skills in Students with Disabilities



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Educational learning tasks often require adequate eye movements and ocular coordination for students to be successful in the classroom. Vision is intimately involved with 70% to 80% of all tasks that occur in our educational programs (Richards, 1984; Watkins, 1989). Any vision problem may hinder a student's learning ability. In addition to other students with visual impairments, vision problems are also associated with children who have learning disabilities, brain injuries, mental impairments, and sensory disabilities (Appel & Ciner, 1997; Hellerstein & Fishman, 1997; Sacks, 1998; and Scheiman, 1997). Richards indicated that approximately 80% of children who have reading problems have some functional vision problems. Because of the significant role vision plays in learning, all educators should be aware of vision problems and strategies in improving and enhancing the students' visual skills in classroom settings.

What are some of these vision problems that are associated with students with disabilities and their possible symptoms? The article includes infor-

mation on the general management of these visual problems, as well as strategies and activities that teachers can implement in both general and special education settings.

Here's good news: Educators can use strategies to improve and enhance most students' visual skills (with the exception of visual impairments caused by organic anomalies).

The strategies and activities presented here are not just for pullout programs. In both general and special education classrooms, teachers can use the strategies and activities individually, in small groups, or for the whole class. No special equipment or techniques are needed. Types of visual skills (e.g., localization, tracking, visual perception) that each strategy targets are specified here so that teachers can select activities that best suit their students' visual needs and are at the students' level. If the student is developmentally delayed or has multiple disabilities, however, the teacher may need to adjust the activity accordingly by accommodating the student's level of functioning (e.g., cognitive, motor skills). For example, in cer-

tain activities, the teacher may replace letters and numbers with pictures or objects that the student can understand.

Vision Problems Associated With Students With Disabilities

Imagine educational activities that a student may participate in over the course of a day: reading, writing, attending to teaching presentations, physical education, and art. Undoubtedly, more than half a day is spent on close-up or near tasks (such as reading and writing) that take place within 13-16 inches of the eyes. Some are distance tasks (approximately 7-10 feet), such as watching the teacher's presentations. Some activities are near—to distance—to near, such as copying from the board. Some activities involve a motor component, such as writing, catching a ball, or hands-on activities. The following are the visual skills required for learning activities and possible symptoms presented if these skills are lacking :

1. *Visual acuity*: A measure of the eye's ability to distinguish details. Reduced visual acuity causes blurred

vision, squinting, a need to adjust the distance to objects (moving closer or farther away), and lack of interest in reading and writing.

2. *Visual field*: The area that one can see when looking straight ahead. The normal horizontal field is approximately 160-180 degrees and the vertical is 120 degrees (Ward, 1996). If a child has a loss in his or her lower field, the child will probably trip over things, overlook a drop-off, and may have difficulty with tasks on a table close to his or her chest. If the loss is in the upper visual field, the child may have trouble detecting obstacles in the upper fields depending on the child's height (e.g., open drawers, decorations from the ceiling, branches of a tree, or half-open cupboard doors). The child may have a tendency to sideswipe people, objects, and furniture if he or she has a field loss in either or both sides (Watkins, 1989).
3. *Ocular motility (eye movements)*: This category deals with extraocular muscles and their effects on eye movements, such as localizing, tracking (the ability to follow a moving target), tracing (the ability to follow a stationary target), gaze shifting, and scanning. Ocular motility problems frequently cause excessive head movement, frequent loss of place or skipping lines during reading, poor attention span, slow copying, and poor results with coloring and drawing (Scheiman, 1997).
4. *Accommodation*: The adjustment of the eye to maintain a clear focus as objects are moved at different distances by changing the shape of the lens (Corn & Koenig, 1996). Children with accommodative problems may have difficulty with any activities that involve presentations made at different distances such as following a teacher's presentation on the board to the work on their desks. They may have blurred vision, have eyestrain, or tire easily as objects move at different distances (closer to farther away).
5. *Visual perceptual skills (visual-spatial relations, visual discrimination, figure-ground, visual closure, visual*

memory, and eye-hand coordination): Daily school tasks often require visual perceptual skills. In reading for example, the child needs visual spatial skills to determine letters, "d" or "b," and to discriminate words in the passage (visual discrimination) from his memory (visual memory) as he decodes each word. When pondering on the answers for reading comprehension or math problems, visualization is one of the skills involved in the process. In map reading, the child points out a certain spot on the map (figure-background). Without seeing the entire picture or word, the child is able to accurately figure out what the picture is about or the meaning of the word (visual closure). Handwriting, catching a ball, manipulating small objects (buttons, crayons, scissors) require the coordination between the child's eye and hand. One's visual information or judgments guide hand and body movements, which, in turn, provides feedback as visual information.

Problems resulting from poor visual perceptual skills may lead to the following symptoms (Scheiman, 1997): difficulty learning left and right, reversing letters and numbers when writing or copying, confusing likenesses and minor differences; trouble writing and remembering letters and numbers, difficulty copying from the board, sloppy drawing or writing skills, and poor spacing and impaired ability to stay on line.

Management of Vision Problems

When a child is found to have vision problems (e.g., reduced visual acuity, crossed eyes), he or she needs to be checked by an ophthalmologist or optometrist to obtain a complete eye examination and treatment. Generally speaking, the treatment entails the use of eyeglasses (lenses and prisms for refractive errors and strabismus), patching program for "lazy eyes," the use of vision aids (e.g., telescopes, magnifiers), medication (e.g., for glaucoma), and surgeries for various eye conditions (e.g., cataracts, glaucoma, or strabismus). Students may obtain their best

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visual acuity possible with a doctor's treatment (e.g., a pair of prescribed glasses). Following this, if qualifying for visual impairment (VI) services based on the criteria for visual acuity and visual field, students will acquire services from teachers for students with visual impairments. They provide large-print materials, enhancing contrast of the materials, following up on the use of visual aids, providing orientation and mobility training, and making adaptations, if necessary. Those who do not qualify for VI services, but have vision problems and cannot be treated by eye specialists (e.g., poor visual perception skills), will need assistance in improving or enhancing their visual skills that will subsequently improve their learning and behavior. Teachers can use the following activities to improve or enhance the students' use of vision, regardless of the students' qualification for VI services.

Classroom Strategies and Activities in Improving and Enhancing Students' Visual Skills

The strategies and activities presented in this section are aimed at elementary age students. Except for a few, the majority of activities are designed for those who have basic knowledge of the alphabet and math. However, modifications are suggested to simplify or enhance for different levels of students. Examples are provided in boxes following each strategy/activity.

1. *Math/spelling* (visual skills involved: visual tracing, scanning, accommodation, visual memory, eye-hand coordination):
 - This activity is designed for students who can read numbers and letters.

- Place a 10 × 10 chart (10 rows and 10 columns of letters and numbers) about 5-10 feet from the student. Ask the student to first read the chart (call out the letters/numbers horizontally—left to right, vertically—top to bottom, and diagonally).
- Place a blank chart with 10 × 10 grid corresponding to the first chart on the desk in front of the student. The teacher asks a simple question that requires only one-word/numeral answers (e.g., adding up the cost of two objects, times tables, spelling). The student finds the answer from the first chart and marks it on the corresponding location on the blank chart in front of him or her.
- The chart designs may vary. The teacher may use either a “letter” or a “number” chart before mixing them together. The number of

Mary

Mary, an 11-year-old with Down syndrome, is mainstreamed into a fourth-grade class 80% of her school day. She has mild myopia (nearsightedness) and often loses her place when reading without using her finger as a guide. She has recently joined a special needs dance class and enjoys it very much. Mary’s parents bought her leotards, tights, and ballet shoes for the class. These articles now become a good topic for this activity.

The teacher (or her teacher’s aide) shows three prices in a 1 × 3 grid—\$25.00 for the leotard, \$5.00 for the tights, and \$17.00 for ballet shoes. The grid is presented 7 feet in front of Mary. The teacher verbally tells her the prices on the three items and asks her to write down the price of one of the items in the 1 × 3 grid placed on her desk that corresponds to the one 7 feet away. Following Mary’s correct response, the teacher then asks another question: “Among the three things, which one is the most expensive, the least expensive? Write the price in the matching box.”

rows and columns should be adjusted for the student’s level. For example, at the beginning, use 2 × 3, then 3 × 4, 5 × 5, and progressively increase the complexity. The print size and distance need to vary from student to student. They should be in a size and placed at a level that the student can easily see. Avoid frustration as much as possible so that the student has opportunities to work on his or her visual skills in an enjoyable and positive manner (see box, “Mary”).

2. Naming animals, foods, seasons, shapes, or planets (visual tracing, scanning, eye-hand coordination):

- This activity is for second grade and higher. The student needs to have name and spelling knowledge of various items. The level of the pictures could be adjusted. For example, use the food, season, animal, and shape pictures for lower-grade students, and more complicated shape pictures (such as hexagon or octagon) and planet pictures for upper-grade students.
- Place a chart containing the letters needed for the answers on the desk in front of the student to serve as the answer sheet.
- Show a picture of an animal, food, season, shape, or planet. Have the student indicate the name of what has been shown on his or her answer sheet by circling the letters needed to spell the item.
- If the student doesn’t know the answer, tell him the first letter of the answer. If it doesn’t help, then directly give the answer. Remember, this activity is to train the student to use his eyes, not to test knowledge (see box, “Mike”).

3. Buying popcorn (visual tracing, eye-hand coordination; see Figure 1):

- This activity is for students in the second grade and up.
- Ask students the question: “How many bags of popcorn can each student buy?” Each bag of popcorn costs 50 cents.
- Through visually tracing the horizontal and vertical curve lines, the

Mike

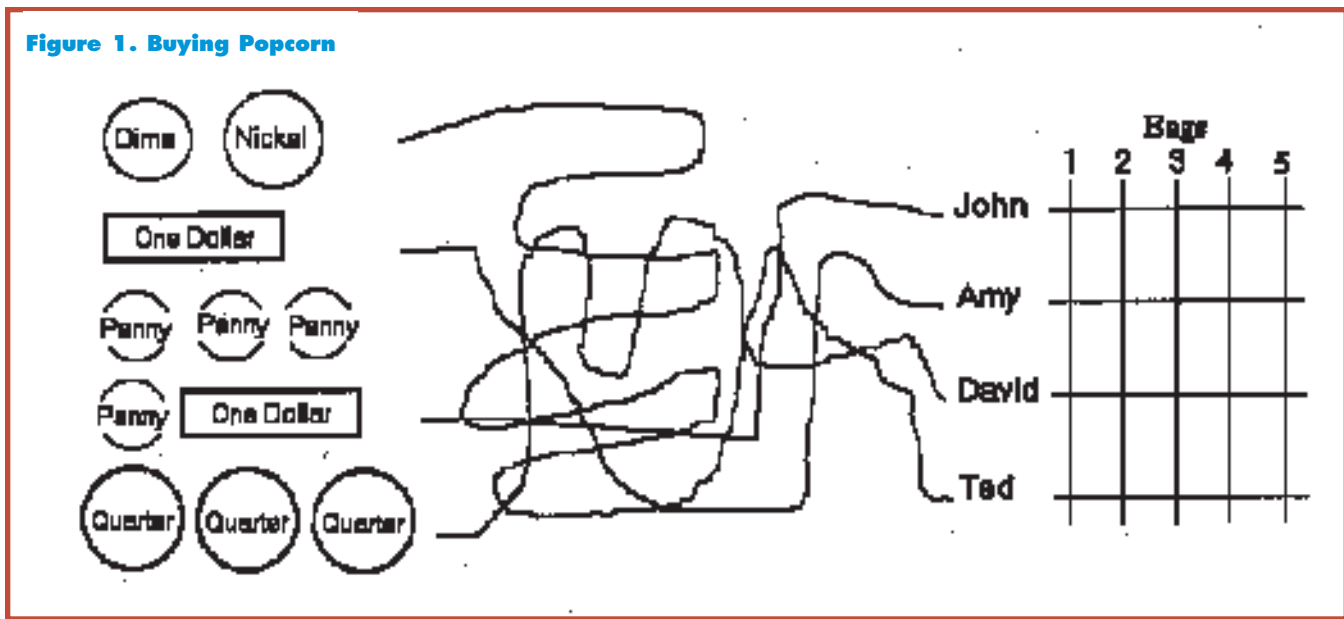
Mike, a 10th grader, was born deaf and has recently been diagnosed with Usher syndrome. He has poor night vision and is slowly beginning to lose his visual fields. His visual acuity continues to be 20/20. In coping with his emerging field loss, Mike has been advised to move his head to scan the entire line or page when reading. Mike has special interests in planets and likes to read about the topic. A colorful planet poster is exhibited in his room.

Having Mike identify different planets would be a good topic for this activity. The teacher shows pictures of planets, explaining a specific one and has Mike identify which planet the teacher is referring to by spelling the name of the planet, that is, to circle the letters in the letter chart in front of him. Because Mike has difficulty with spelling, the teacher may need to provide assistance when necessary.

student first needs to find out how much money each student has. The student is allowed to use their fingers to trace the curve lines only if there is difficulty with visual tracing.

- After the student figures out the answer with or without teacher assistance, ask the student to connect the name and the number of bags of popcorn by marking the grid with a marker.
 - The contents can be simplified or complicated by changing the question. For example, use a simplified question, such as “How much money does each student have?” and then adding another column for answers, such as “How much money left with each student?” to make it more complicated. The maze to the correct response can also be made more difficult (see box, “Tammy”).
- ### 4. John visits Grandma (visual tracing, visual-spatial relations):
- This activity can be played by second graders and up. For students in third grade and up, compass direc-

Figure 1. Buying Popcorn



tions could be incorporated. "Turning right/left" could be replaced with "going east/west."

- Place a large map on the wall or on the floor. Have the student draw the route he or she is going to take by following Grandma's instruction. The teacher will be the "Grandma" dictating the instructions.
- The student needs to have basic spatial concepts, such as up and down, top and bottom, front and back, and right and left.
- Instructions to Grandma's house: After John exits his house, he needs to turn right and walk one

Tammy

Tammy, 13-years old, is a student with learning disabilities. She is placed in a general education sixth-grade classroom and goes to the resource room four times a week (seventh period on Monday through Thursday) for reading and math assistance. Tammy frequently skips lines when reading, so she has developed the habit of using her finger to keep her place.

In the "Buying Popcorn" activity, Tammy is asked to trace the curved lines with her eyes first. If she demonstrates difficulty or frustration, allow her to use her finger intermittently.

block to the bus stop, which is located in front of an apartment complex. He rides on the bus for two stops. After he exits the bus, John needs to turn left to proceed to the intersection, passing a gas station, and turn left after one block. Grandma's house is on the corner (see Figure 2 and box, "John").

5. *Strange waves* (visual tracing, eye-hand coordination): See Figure 3 for a variety of waves the boat is going through to reach the island.
 - a. Preschoolers to first graders may play steps (b) to (d). Second graders and up, who have learned cursive writing, may follow the entire sequence.
 - b. Ask the student to trace each wave with his or her fingers, crayons, or markers from left to right.
 - c. Once the student is able to trace in a smooth fashion, time the student to accelerate his or her speed.
 - d. Following the tracing with fingers, crayons, or markers, the student visually traces the waves. Use a strip of paper to cover the waves. The student removes the strip as he or she visually traces the waves to ensure a coherent tracing without skipping.
 - e. Ask the student to count certain symbols within the waves. For

example, "How many cursive "b" waves does the boat need to go through before it reaches the island?"

- f. Ask the student to place a sticker or highlight with a marker every third "w" wave (see Figure 3 and box, "Nathan").

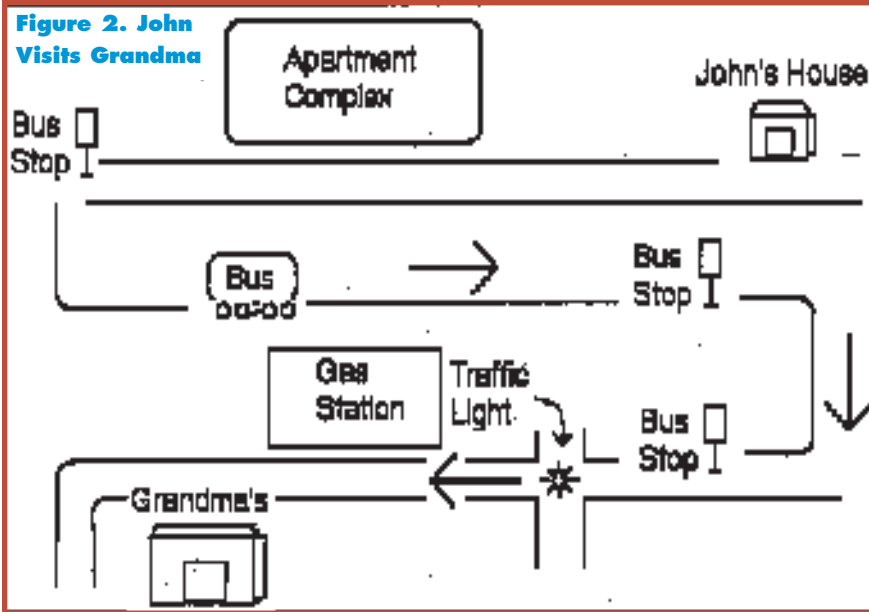
John

John, 14 years old, has mild mental retardation. He is placed in a general education seventh grade classroom and is daily allowed to go to the resource room for help with any subject during the last period. John goes daily whether he needs help or not because of the individualized interaction he receives from the teachers.

John has difficulties with map reading and often has problems following directions in social studies when maps are involved. He is able to identify basic directions, such as left/right and compass directions, but needs extra time to process before he can accurately point out a direction.

Because of John's difficulty with directions, it would be beneficial for him to first place a large copy of the map in Figure 2 on the floor. When he is able to use the map on the floor with reasonable speed, it could then be placed on the wall and he can complete the given directions.

Figure 2. John Visits Grandma



Nathan

Nathan, an 11-year-old boy with autism, is placed in a self-contained cross-categorical room. He is finally able to read simple words and first-grade-level books with one-on-one assistance. He does not stay on tasks or follow instructions without this assistance. The staff working with Nathan has observed that visual clues, such as colors, pictures, special designs, or patterns, attract his attention and keep him on tasks much longer. Nathan likes to flick or make noises with his fingers, but does not like activities requiring the use of his hands (e.g., catching a ball, drawing, cutting). On his better days, he'll engage in activities using his hands for short periods of time (usually less than 5 minutes). At other times, the hand-under-hand approach (i.e., placing the teacher's hands under the student's), needs to be used. This approach has been found to be more likely to encourage the student to think, taking more active participation on the student's part.

In the "Strange Waves" activity, Nathan likes the pictures of the boat and island. He is asked to mark every "b" wave along the way. Stickers are not used because Nathan does not like using stickers (i.e., separating stickers from the backing although he's capable of doing it). Since Nathan does not have the concept of "every third" wave, he is asked to mark "every" wave of a certain letter shape (e.g., "b").

- 6. *Dancing in dots and grids* (gaze shifting, spatial relations, visual memory, eye-hand coordination):
 - This activity is for students in kindergarten and up.
 - Copy figures (animals, houses, boats, cars) by connecting dots, then put the figures in grids (see Figure 4; Scheiman, 1997).
 - Copy letters by connecting dots in a 5 × 5 matrix of dots, then in grids (see Figure 5).
 - Ask the student to verbalize his or her strategies in duplicating figures and letters in dots or grids. In this way, the student revisits his or her cognitive process of duplicating, which guides the eye and hand to accomplish the task.

- If the student has visual field restrictions or scanning problems, ask the student to use the "window shade pulling" approach. This divides the dots or grids into several sections. The student concentrates on one small area as if the window shade has been pulled down to allow only a small amount of light in. More space will be pulled open as the student accomplishes a small step and is ready to move on to next step (see box, "Josh").
- 7. *An ant gathers food* (accommodation, tracking, scanning)
 - This is for students who have the ability to count (first grade and up).

Figure 3. Strange Waves

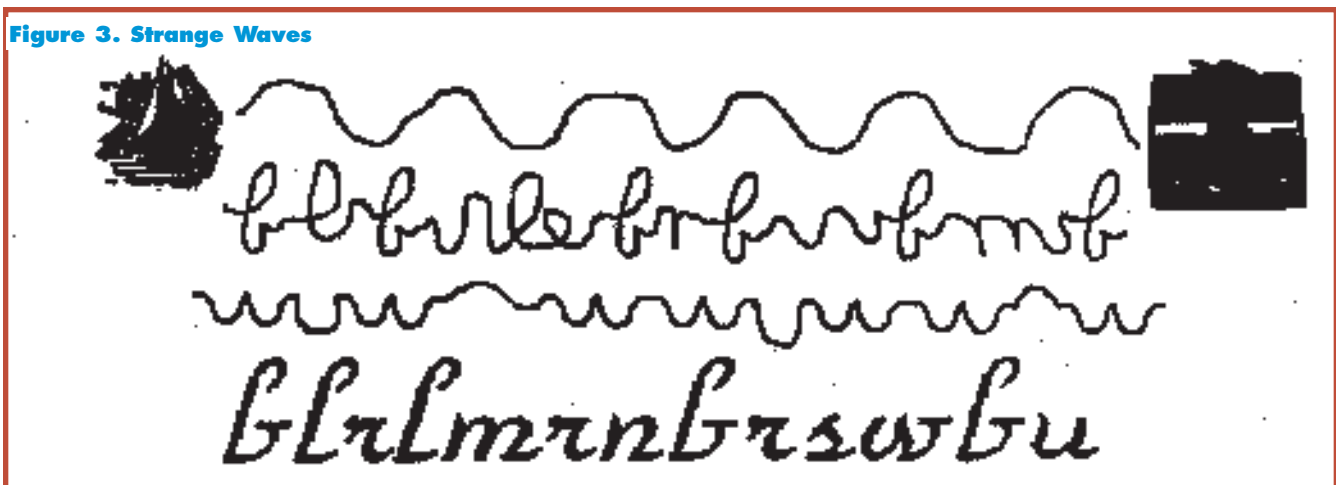


Figure 4. Dots and Grids With Pictures

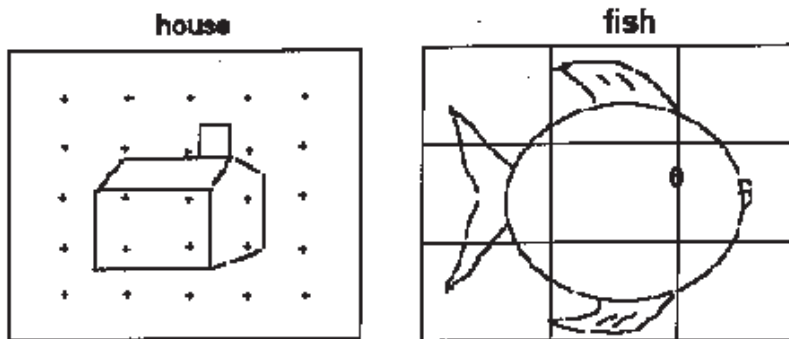
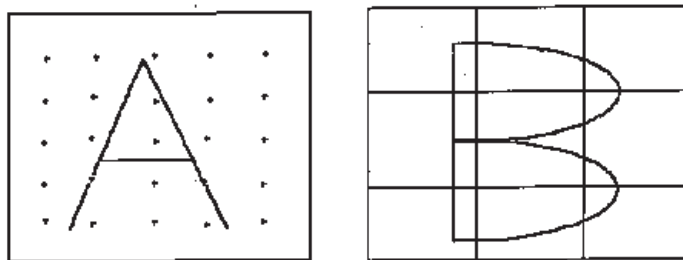


Figure 5. Dots and Grids With Letters



- Draw a 7-10 foot line on the floor or on a long table (a piece of yarn could be used in place of drawing). Move the ant (a toy ant or draw one and attach it to a small object to make it three dimensional). The ant is transporting food for winter and travels from one end (his cave) to the other end along one side of the line and back to his cave along the other side of line. Begin a dialog with the student about the ant's travels. You may ask the student how many trees the ant has passed, or other such question.
 - For students who can read (second grade and up), the following could be used: Place an enlarged map or spread several town names between two cities. Ask the names of the towns he or she has passed when traveling from one city to another (see box, "Steve").
8. *Ladybugs are hungry* (accommodation, scanning, eye-hand coordination):
- This is for students who are able to identify numbers (kindergarten and up).

- Place a paper strip of numbered ladybugs on the desk. Cover the numerals. Place another strip of numbered foods that are out of sequence on a board. Have the two boards separated by a space of 7-10 feet.
- Ask the student to uncover a number. Then visually fly the ladybug with that number to the food board to get food. Since the foods are out of sequence, the student will need to scan the entire strip to find the food with the corresponding number. When that task is completed the student should fly the ladybug back to its original position and write down the name of the food beneath the ladybug. Repeat the process until all the ladybugs have gotten food (see box, "Janet").
- For students in third grade and up, this could be replaced with multiplication facts. A paper strip of single digits is placed in front of the student. Each number is covered. Place another strip of multiplication problems on the board, 7-10 feet away.

Josh

Josh is an 8-year-old with cerebral palsy (mild diplegia) as a result of a premature birth. He has excellent verbal skills but has difficulties with fine motor skills and any spatial related tasks (e.g., drawing a tall tree on the left side of the house; writing the letter "p" which is a stick with a "right" balloon, etc.). Josh is placed in a general education second-grade classroom and possesses basic concepts comparable to that of a second grader without disabilities.

In this activity, Josh is asked to verbally illustrate as he draws a house or writes a letter within the grid or dots. If he has problems, the teacher then demonstrates, for example, "drawing a line on the second row between the second and the fourth dot, the chimney is sticking out between the third and fourth dot." If Josh is confused with rows and lines of dots, the teacher may number the dots so that he can follow the numbers instead of the lines and rows of dots. However, numbered dots should be faded out gradually so that Josh will use spatial concepts rather than numbers. For example, after Josh is comfortable with numbered dots, then number the first and last dot of each row and line, then fade it out by numbering only the first dot, and eventually no numbers will appear along with dots.

- Ask the student to uncover one number and go to the other board to answer the multiplication problem(s) that begins with that same number. The student should write down the answer under the uncovered single digit. Repeat the same procedure until all the problems are answered.
9. *Magnetic letter game* (tracking, scanning, visual memory, visual closure):
- This is for students who are able to identify alphabet letters (first grade and up).
 - Place a magnetic board 12-13 inches away from the student. The magnetic board can be obtained

Steve

Steve, an 11-year-old, had been an above-average student before a bicycle accident 3 years ago that resulted in brain injuries. His skills in all areas have been affected. With strong family and school support, Steve performs in the range of below average to average in a general education fourth-grade classroom. He goes to the resource room daily for one period for assistance in any subject he needs help with.

Steve has a short attention span, has poor selective attention, and often leaves out answers or work on a page regardless of his normal visual field. He has been taught systematic checking patterns to ensure the thoroughness of his work.

Steve is asked to identify the towns or cities on an enlarged map placed on a table as his car travels from one city to another.

from Vision Associate, Inc. (Lake City, Florida).

- Spread magnetic letters (5-10 letters) around the edge of the board.
- As the teacher drags the letters to place them together to form a word, ask the student to verbalize what letter has been moved in the process. Encourage the student to guess the word as it is being formed. At the end, confirm the actual word (see second box, "Janet").

10. *Phone numbers* (scanning, visual memory):

- This game is for students who can identify numbers and letters as they make words.
- Make a 5 × 5 grid board with hooks or envelope pockets attached so that number cards can be hung or placed in the envelope pockets.
- Place a list of five students' phone numbers beside the board.
- Ask the student to pick a phone number from the list.
- All the numbers on the board are shown to the students for 1 minute. Then turn the numbers over.

- Ask the student to find the phone numbers by turning the number card. Once the student is familiar with the procedure, time the student.
- Another way of playing this game is for the teacher to randomly turn the cards over to show the numbers. The student checks the phone list to determine whose phone number the teacher is showing.
- This game can be replaced with letters to spell the names of persons, objects, and events (see box 10, Mrs. Smith).

11. *Finger-popping* (scanning, visual memory, eye-hand coordination):

Janet

Janet, 10-years old, has speech impairments and is an average student in her general fourth-grade classroom. Reading and math are her favorite subjects. However, she often needs more time to complete her work, especially when tasks involve distance (e.g., watching a teacher's explanation on the chalkboard and answering questions on the worksheet at her desk, or copying something from the board). She is also somewhat slow in completing spelling worksheets and writing related assignments.

The entire class, including Janet, is engaged in the multiplication game. Students take turns in uncovering a number in front of them. Then they visually look at the chalkboard to identify a multiplication problem with the same number, work the problem, and write the answer on the strip in front of them. They are to accomplish the task within 10 seconds.

Janet

Janet, the 10-year-old described previously, likes to play the "Magnetic Letter" game. She is able to identify the letters as soon as the teacher drags them out, but has difficulty guessing the word as it is being formed or when it is formed.

Mrs. Smith

Mrs. Smith is a teacher of a self-contained classroom for nine upper-grade students (fourth and fifth) with mental retardation at Taylor Elementary School. She likes to schedule a game or relaxing activity 30 minutes before the students go home.

When playing the "Phone Numbers" game, Mrs. Smith asks for volunteers or calls on students to uncover the numbers corresponding to the phone number shown, or to spell the names of the main characters in a book or the names of the current event that has just been discussed by turning over the letter cards. Initially, Mrs. Smith uses a 2 × 5 grid board with hooks. Later, more lines are added. At times, the teacher's aide works with a group of students who can only manage a 2 × 5 grid. Mrs. Smith works with those who are able to handle more lines of a grid.

- This game can be played with kindergartners and older students.
- The teacher holds a number of fingers up. The student copies the teacher's finger movements.
- Once the student is familiar with procedure "a," the teacher then calls on someone to look at the teacher's finger movement for 3 seconds and make the same movements from memory (see 11, "Mrs. Johnson").

Mrs. Johnson

Mrs. Johnson has seven students with mental retardation ages 6 to 9. She sometimes schedules a game or activity between two demanding subjects (e.g., reading and math). Although many of her students can imitate Mrs. Johnson or her teacher's aide's finger movements (in the "Finger Popping" game) on one hand within a reasonable time limit, they have difficulty when two hands are involved with different movements.

12. *Letter circling* (visual tracing, scanning, eye-hand coordination; Richards, 1984):

- Students who are able to identify numbers and letters (first grade and up) may work on this activity.
- Ask the student to circle a certain letter in a newspaper or magazines. For example, circle “b”s in the paragraph.
- Errors are counted for any missed letters and any extra letters circled.
- In the same manner, numbers could be circled (see box, “Mary, Mike, Tammy, and John”).

13. *Vision ball* (Tracking, scanning, depth perception, accommodation; Zaba, 1989):

- Students who are able to count (kindergarten and up) may play this game.
- A soft ball with a variety of stickers attached is hung from the ceiling. As the ball is oscillating in different directions 10-13 inches away at the student’s eye level, ask the student to find three “star” stickers on the ball and describe the position of each sticker.
- Ask the student to count the number of certain stickers as the ball oscillates (see box, “Jenny”).

14. *Hitting a ball* (tracking, accommodation, depth perception, eye-hand coordination; Richards, 1984; Zaba, 1989):

Table 1. Strategies/Activities

Strategies/Activities	Skills		
	Ocular Motility (Tracking, Tracing, Scanning, etc.)	Accommodation (the Adjustment of Eyes as Moved at Different Distances)	Visual Perception (Visual-Spatial Relations, Visual Memory, Eye-Hand Coordination, etc.)
1. Math/Spelling	X	X	X
2. Naming Animals, Foods, Other Items	X		X
3. Buying Popcorn	X		X
4. John Visits Grandma	X		X
5. Strange Waves	X		X
6. Dancing in Dots and Grids	X		X
7. An Ant Gathers Food	X		
8. Ladybugs Are Hungry	X	X	X
9. Magnetic Letter Game	X		X
10. Phone Numbers	X		X
11. Finger-Popping	X		X
12. Letter Circling	X		X
13. Vision Ball	X	X	
14. Hitting a Ball	X	X	X

Mary, Mike, Tammy, and John

Mary, Mike, Tammy, and John, described previously, are also asked to do the “Letter Circling” activity. Mike, Tammy, and John are asked to circle two or three letters/numbers in a word/numeral instead of a single letter/number.

- Students who are physically able can do this activity. No specific academic skills, such as number or letter identification, are required.
- Hang a ball at the waist level of the student. The student holds a dowel or stick with both hands and attempts to hit the ball as it swings back and forth.

- Change the swinging direction of ball so that the student hits the ball from an angle.
- Have the student change the position of the dowel from horizontal to vertical and attempt to hit the ball with this position of the dowel.
- Divide the dowel or stick into three areas or more and mark them with different colors. Ask the student to hit the ball with a particular color.

See Table 1 for a summary of strategies and activities and the visual skills on which they primarily work. From the previous descriptions of possible symptoms that show a lack of certain visual skills, the teacher chooses the strategies or activities that may improve the student’s visual skills. The teacher should

consult with the special education teacher for students who are visually impaired in the event of any uncertainty regarding what visual skills are weak or missing and what strategies or activities could be of help.

Final Thoughts

Many visual skills are not evaluated, and students with difficulty in these skills may develop learning and behavioral problems. Teachers should be aware of the symptoms of vision problems as they work with students. The earlier that vision problems are detected, the sooner teachers—and the students themselves—can manage the problems.

The improvement and enhancing of visual skills should not be an isolated

Jenny

Jenny is a 10-year-old with mild mental retardation and is placed in a general third-grade classroom. In addition to academic difficulties, Jenny has a hard time in physical education (PE) and consistently receives poor ratings in her PE progress reports. Jenny is scared of fast-approaching balls and cannot catch or dribble a ball very well. Regardless of the PE teacher's concern, both the physical and occupational therapists do not feel Jenny needs therapy on a regular basis. They check on her once a month or when the need arises.

Jenny's classroom teacher is concerned about her ability to judge distances because she sometimes over or under reaches for objects as if she has vision problems. An ophthalmologist has examined Jenny and no apparent eye problems were found that warranted glasses or any type of treatment. She has also been referred to the teacher for the visually impaired. Jenny's visual acuity and visual field were found to be within normal ranges, but she didn't do well on the depth perception test. It was noted that Jenny is always nervous when crossing a street where no traffic lights are available and uncomfortable with fast-moving cars.

Jenny likes stickers and has collected boxes of them over the years. She knows basic directional concepts (top, bottom, middle, left, and right). She is asked to do the "Vision Ball" activity to improve her tolerance of moving objects and from there build on her visual skills (tracking, scanning, and depth perception).

component, but integrated into the student's current curriculum. This article has included reading, spelling, math, and map reading skills in the classroom strategies and activities so that students can engage in activities to improve their visual skills while reviewing and applying learned knowledge. The activities provided are only samples that can serve as a springboard for teachers to

develop other strategies and activities that will assist students with visual difficulties.

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