



**NewT: New Tools to Accompany the Functional Vision
and Learning Media Assessment (FVLMA) for
Students Who are Pre-Academic or Academic and
Visually Impaired in Grades K-12**

Evaluation Activities Handbook

DESCRIPTIONS AND USES OF TOOLS

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for the Blind, Inc.

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Dr. Rebecca Burnett

This product is dedicated to the memory of Dr. Rebecca Burnett, whose dedication to students with low vision and blindness helped in a remarkable way to make this product a reality.



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Before you use NewT with FV/LMA:

Note: It is tempting to use NewT materials for functional vision improvement exercises. However, APH strongly recommends that NewT be saved for evaluation only. Remember if you use NewT materials for functional vision exercises, you cannot later use it as an assessment tool on a given child. The child becomes familiar with the tools and materials and assessment results are then invalid.

1. Make sure all FV/LMA & NewT materials are organized and ready to use.
2. Gather your materials and student materials for the day. It may be helpful to give the student or his classroom teacher a checklist a few days before your meeting so he will bring appropriate materials. Replace dry pens, etc.
3. Make sure the student uses his spectacles, video magnifiers (CCTVs) and other optical devices in a way that supports his training on the devices. He will use them with NewT materials as he does with his classroom materials.

4. Ask the classroom teacher to provide necessary materials that include an enlarged copy of a classroom worksheet, a dictionary, and other printed classroom or homework materials as needed.
5. Check your student to make sure he is alert enough to be evaluated. He may be sleepy, hungry, not properly medicated, or hyper/hypoglycemic.
6. Check the student to make sure that he is properly aligned. If he needs back, head or neck support, provide it for him. Make sure his head is aligned with his trunk and legs. Provide support where needed. If your student is not properly aligned, he will probably not get the most from his vision. (Langley, 2000)*
7. For text-based exercises, record the font size of the material, the working distance and indicate whether or not the student uses a magnification device. If the student uses a hand-held magnification device, you must measure the distance between the magnifier and the eye, (working distance), and between the magnifier and the reading material, (focal distance). If the student uses a video magnifier, make a note of the magnification used.

8. If the student has a short attention span, give him short breaks between evaluation activities. Most students respond well to soft, recorded music. If the student is young, he may enjoy singing a short song with you. For the health of children, APH suggests the use of music instead of food when a break or supportive action is called for.

*Langley, M. Beth, (2000) Individualized Systematic Assessment of Visual Efficiency. American Printing House for the Blind, Louisville: KY



Evaluation Activities for NewT

The activities shown here are typical for use with NewT tools and materials to gather information for completion of the FV/LMA protocols.

NewT Bowls

Skills/perceptions evaluated with this tool:

- Object permanence
- Matching and sorting
- Object recognition
- Shape recognition
- Color recognition

The NewT Bowls were designed for a number of evaluation activities. Here are three:

- 1.** Show the child a NewT ball, star, card or other objects and let her watch as it is placed under an overturned bowl. Watch to see if she looks under the overturned bowl for the ball. If she does not, then ask the student what's under the bowl. If she cannot answer, or behaves in a way that suggests she does not perceive object permanence record it in the protocols.
- 2.** Ask the student to fill the bowls with objects that are the same color as each bowl, as a matching exercise.
- 3.** Show the student three or four bowls and three or four stars and one apple. Now ask the student to stack all objects that are alike as a sorting exercise. The child should stack the bowls and the stars.



Miss Isham asks Eric to pick the star that matches the color of the middle bowl.

NewT Balls

Skills/perceptions evaluated with this tool:

- Object recognition
- Shape recognition
- Color recognition
- Visual tracking
- Crossing midline
- Object permanence
- Matching and sorting

The NewT Balls were designed for a number of evaluative activities.

- 1.** Ask the student to sit on the long side of the table. Your assistant and you will sit on the short ends of the table. Gently roll the big ball back and forth along the length of the table. Ask the student to watch the ball the entire length of the table. This is a tracking activity. Note if the student can watch it for the entire length. If she can, move to the next activity.
- 2.** Stay in the positions noted in Activity 1. Your assistant and you should roll the small ball back and forth along the length of the table. Instruct the student to capture

the ball when it passes in front of her. If she cannot, try again but use the big ball.

3. Ask the student to kick or roll the ball to you on the floor from a distance of 6-10 feet. Then kick or roll it back to her. Observe whether the student can follow the path of the ball to locate and grab it when it approaches her.
4. Hold a ball in front of the student at distances up to arm's length away. Ask her to point to the ball. Move the ball in varying areas of the visual field and ask the student to point to it each time. Observe if and where in the student's visual field she visually responds to the ball. If the student is unable to detect the first ball, present balls of varying sizes or colors to determine if either of these variables improve detection. Specify size, color, distance, and field location needed to obtain a visual response.



Madison has been instructed to grab the rolling red ball when it passes in front of her.

NewT Light-up Wand

Skills/perceptions evaluated with this tool:

- Visual pursuit
- Crossing midline
- Color recognition
- Shape recognition

The NewT Light-up Wand was designed to use during a few different evaluation activities. Take care not to shine the wand directly into a student's eyes. You can do this by pointing the light toward the student's chest or straight up.

- 1.** Place the white wand tip on the NewT flashlight to form the wand. Turn it on and present it in front of the student's face at a near distance, and then at varied distances up to arm's length away. Move the wand in different areas of the visual field and ask the student to point to it each time you present it. If needed, wiggle the light to get the student's attention. Observe if and where he visually responds to the light. Students may respond better in a dimly lit room. Specify distance(s), and visual field location(s) where visual responses were obtained.

- 2.** In a dimly-lit room, sit directly across from the student. Wear the black apron and gloves from the ToAD kit. Turn on the white NewT Light-up Wand. Gently move the wand from the student's right-to-left, then left-to-right. Move it in a circle. Watch the student's eyes to make certain he follows the movement of the wand. If he does not seem to follow the movement with his eyes, come in closer and change the head on the wand to red or yellow.
- 3.** Using the same set-up as above, pretend there is a pattern of quadrants in front of the child. The pattern would look like a larger version of this as you face the student:

2	1
3	4

Shine the wand in each quadrant, starting with number one. Hold the light in that quadrant for at least ten seconds. Move to the next quadrant. Note if the student's eyes cross midline into quadrant two. Do this for each quadrant. Take note if the student does or does

not follow the movement of the light source from quadrant to quadrant. Report the results on the FV, near vision section of the FV/LMA protocols.

3	2	1
4	5	6
9	8	7

Note: In some instances there may be a need to break down the quadrants in to a grid of 9 squares like a tic-tac-toe board. Report results for each square on the grid.



As soon as the lights are dim, Miss Isham will use the NewT Light-up Wand to explore with Madison whether she can visually cross midline.

NewT Aqua String Light

Skills/Perceptions evaluated with this tool

- Distance vision
- Tracing (vertical and horizontal)
- Peripheral vision/movement detection

The NewT Aqua String Light was designed to use during a couple of different evaluation activities. Take care not to shine the fiber optic light too close to your student's eyes. It is best to dangle the light in a dim environment at a distance of 3 feet or greater. Use your NewT Red Measuring Rope to guide you in the most helpful distances. The distances are marked by little flags with Braille labels.

- 1.** With the student seated in a chair, stand 3 feet away and dangle the NewT Aqua String Light so it will fall in the center of the student's vision. Make sure the child has a clicker so she can click when she sees the light. If the student does not immediately see the light, move it into her right periphery and slowly move it in a curve toward center. Do this again on the left.
- 2.** If the student does not see the string light at all at a distance of 3 feet, place the string light stretched out horizontally on a table in front of her. If she can see it

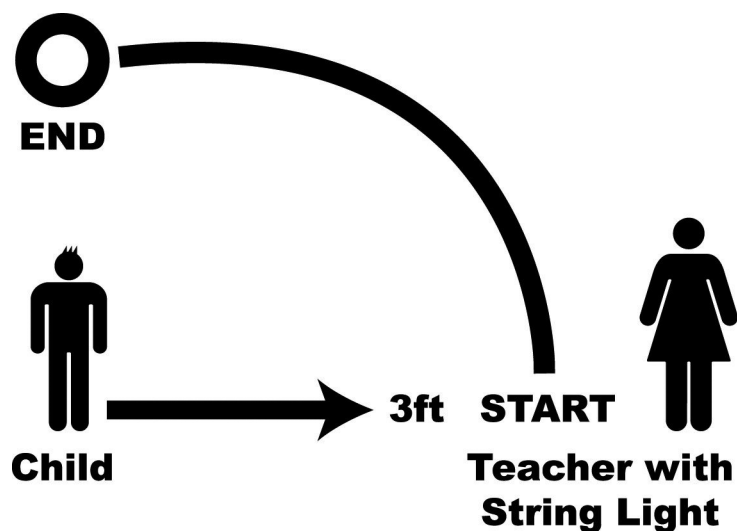
there, then she likely has near vision only and should be evaluated if she has not yet been. When you think about application of this information, this would be a student who needed to sit in the front of the room, for example, unless she was good at using a monocular.

If the student can see the light at 3 feet, move back to five feet and do the same activity. Then ask the child to trace the line of the string light with her finger. She will be tracing the line in the air. Move back to another distance until you reach 10 feet and perform the same routine.



If Caroline can see the string light at 3 feet, Mrs. Lancaster will back up 3 more feet. She will continue to test until she determines how far away Madison can be from the light and still see it.

- 3.** Seat the student in a chair in a dimly lit room. Stand beside the child at a distance of about 3 feet. The child and you should be facing the same direction. Hold the string light dangling vertically about 8 inches in front of you. Very slowly walk in an arc from the child's right shoulder to a point where you face her and stand directly in front of her; still maintain a distance of 3 feet. Tell the student to click her clicker as soon as she sees the aqua light. Repeat this on her left side. You should be able to get some sense of whether or not she has peripheral vision, and at what point her peripheral vision is engaged on each side.



This diagram shows the starting point and direction the teacher should move with the string light. If the student does not have sufficient vision on the right, the same movement should be done on the left.

NewT Bright Key Chain LED

Skills/perceptions evaluated with this tool:

- Distance fixation
- Distance tracking
- Distance crossing midline

All these evaluative activities should take place in a dim light environment at a distance of 4 feet or greater. Take care not to shine the LED directly into the student's eyes. It is very bright.

1. Give the student a clicker or activation switch. Sit directly across from the student at a distance of 4 feet.



Ask the student to activate the clicker when she sees the light you hold. Turn on the LED and point it at the student's navel. Hold it in that

Madison is introduced to the penlight by her teacher. Miss Isham will dim the lights and determine how well Madison can see the light at varied distances.

position for at least 5 seconds. If you hear no clicker, move the light slightly up so it is pointed at the student's chest. If you hear no clicker, ask the student if she can see the light. If she says "no" move back by one foot. Point the light at her navel but wiggle it around a bit.

- 2.** Repeat step 1, moving back by one-foot increments until either the student indicates she can see the LED light, or until you are convinced she cannot see it.
- 3.** Move in to 3 feet if the student has shown no indication of seeing the light at the original starting point. If she sees it, then you should indicate the limits of her distance vision under these conditions in the FV/LMA protocols.

NewT Markers, Dry Erase Board, Dry Eraser

Skills/perceptions evaluated with this tool:

- Color identification
- Tracing
- Symbol identification

- 1.** In a medium-to-bright light environment, draw thick colored lines or make 1-inch polka dots, on the dry erase board, one for each colored marker.

Ask your student to point to the right dot as you call out the color names. If your student consistently misidentifies green, red, orange, purple or brown, he may have a color perception deficiency. He should still be able to identify blue, yellow and black.

2. Choose a dark color and make a thick wavy line across the dry erase board. Ask the student to use his forefinger to trace the path of the line all the way across. (Have wipes ready to clean his finger.) If the student is successful, erase the line and draw a thinner wavy line across the board. Keep doing this until the student can no longer trace the line. Note the widths

and colors of the lines which he can trace.



Graeson easily touches and identifies colored dots as Miss Isham says the name of each color.

3. Give the student the pens and ask him to draw lines or circles of colors as you call out the names of the colors. Keep track of which colors he identifies correctly and incorrectly. See if there is any consistency in which ones he is unable to identify. If there is consistency, he may need a referral for color discrimination deficiency.

NewT Object, People, Action and Animal Cards in 3 Sizes

Skills/perceptions evaluated with this tool:

- Identification
- Matching
- Sorting
- Fine detail discrimination

Note: Students who are photosensitive, should have the cards presented in a dim light environment with the cards illuminated by a task light or a flashlight.

1. Choose a selection of 12-15 of the large black and white cards. Show them to your student in a well lit environment (unless she is photosensitive.) Place them about arm's length away from her face.

Ask her to identify what is on each card. If she can identify the items, move to the next activity. If not, move the cards 1 foot closer and try again.

2. Place three black-and-white animal cards on the table. Get one full-color photo card that shows the same animal as one of the cards on the table. Show it to your student at a distance from which you know she can see. Ask her to find the black-and-white picture that represents the same animal as that shown in the card you hold.



Graeson points to the elephant card that matches the card Miss Isham holds up.

3. Place three black-and-white action cards on the table. Get one full-color photo card that shows the same action as one of the cards on the table. Show it to your student at a distance from which you know she can see. Ask her to find the black-and-white picture that represents the same action as that shown in the card you hold. If she is successful, do the activity again with the next size smaller cards.

ENVISION Distance Cards

Skills or perceptions evaluated with this tool:

- Ability to identify common images at a distance
- Ability to identify numerals at a distance
- Ability to identify street signs at a distance

1. Use your red rope to measure a distance of 10 feet. Stand 10 feet away from your student and hold up the large ENVISION stop light card. Ask the student to identify what's on the card. Any answer will do as long as it describes the image. He does not have to say "stop light" exactly. If he cannot identify it at 10 feet, move in 2 feet at a time until he can identify the image. It may be that he cannot identify it without his telescope. Just record that he can identify it at a certain distance

only with his telescope. Repeat this exercise again with the no smoking sign and again with an ENVISION street sign.

2. Hold up 2 different cards with large numerals on them. Again stand 10 feet away from the student. Ask him to identify the numbers on each card. As in exercise 1, move in closer if he cannot see them at 10 feet. Identify at which distance he can identify the numbers. If he cannot do it without his telescope, record what he can identify, at what distance, and with what telescope. Repeat with the numeral cards that have smaller numerals.



Eric identifies the telephone and stoplight symbols at a distance of 8 feet, without telescopes.



Ethan identifies numbers at a distance of 3 feet. The distance will gradually increase and Ethan will be encouraged to use his monocular to identify numbers.

Nigel Newt's Portfolios

Skills or perceptions evaluated with this tool

- Text size discrimination
- Font feature discrimination
- Image identification
- Figure/ground discrimination
- Image size identification
- Contrast Sensitivity

Note: The skills listed previously are usually best evaluated by using the student's own classroom books and materials. After all, those are the materials he must interact with daily. However, APH has provided Nigel Newt's Portfolios for teachers who cannot visually or physically access the student's materials. The exercises in the portfolios are divided according to grade level and simulate school social studies, science, math, language and daily living materials.

Each exercise in Nigel Newt's Portfolios has its own instructions which the teacher should follow, while he/she shows the student the image on the opposite side of the easel.



Each student should use his visual devices as he normally does during evaluations for the near skills listed above.

Madison reads labels that identify the exterior parts of a tuna. The font used on the chart Madison examines is labeled for both font type and size so the teacher can determine what font features are best for the student.

Nigel Newt's Goodies

Skills or perceptions evaluated with this tool:

- Numeral identification at varied sizes
- Word identification at varied sizes
- Photo identification
- Figure/ground discrimination
- Contrast sensitivity
- Size, color, orientation discrimination
- Visual closure
- Sequencing
- Parts of a whole
- Micro/Macro discrimination
- Color perception
- Detail discrimination
- Visual fields (functional)

Note: Nigel Newt's Goodies folder saves the practitioner time and trouble in the search for puzzles, mazes, pictures, and samples that can be used for perceptual discrimination activities/evaluations. These materials have been field tested and shown to be effective for these purposes. The practitioner is encouraged to add his/her own favorite

personal materials. But the use of standardized materials helps the whole vision team, particularly the optometrist, know how the evaluation was done and with which tools. This standardization helps ensure confidence in the practitioner's report.

Each exercise in Nigel Newt's Goodies folder has its own instructions which should be followed by the practitioner, as he/she shows the student the image on the opposite side of the easel.

Each student should use his visual devices as he normally does during evaluations for the perceptual skills listed above.



Ethan studies the large mushroom in the photo. His visual acuities are greatly diminished, but the shape might help him with the identification.

NewT Gradient Color Strips

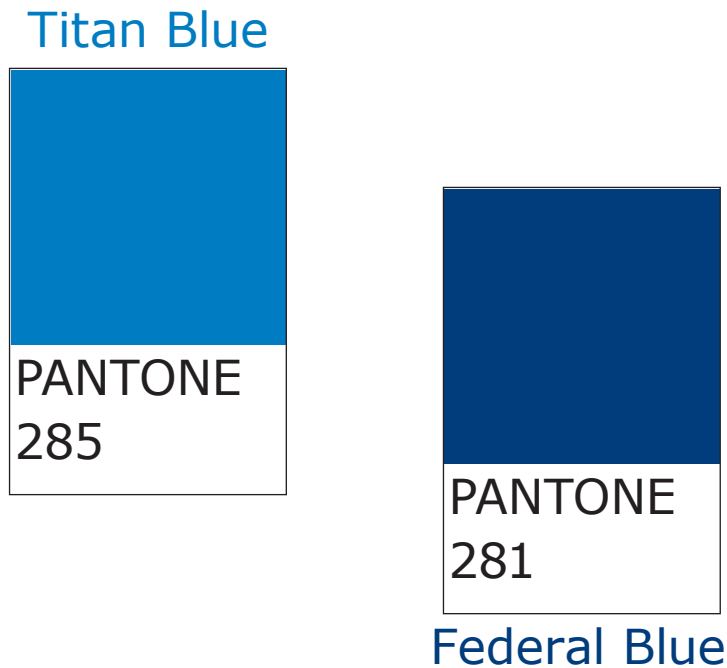
Skills or perceptions evaluated with this tool:

- Color perception
- Gross color saturation
- Color sorting

- 1.** Follow the white lines to cut the color strips into 3 sections each. Give the sections to the student and ask him to stack up all the dark sections, all the medium sections and all the light sections.
- 2.** Now ask the student to sort by color. It helps to know your football teams' uniforms. There are 2 families of blue represented; one is federal blue, the same dark blue that colors the New England Patriots uniforms. The other is medium turquoise blue, the main color of the Tennessee Titans uniforms. Fans call it "Titan Blue." Ask the student to stack all the blue sections, then the red sections, then the yellow sections.

There are some colors that may look similar such as some of the yellow sections and some of the orange sections, or the Titan blue and the federal blue sections. So the student may pile up more sections in the blue category and the yellow category, than in the red

category. If this happens, ask the student if he can further sort the yellows out of the yellow and orange stack, and sort the federal blues out of the Titan blue stack. Please make a note of the results in the FV/LMA protocols.



3. Now ask the student to sort colors with a bit more difficulty. These would be green, purple, and orange. Again record your student's ability to sort the colors.
4. Ask the student to now sort the grays, browns, greens and reds. This should give you a good indication if the student needs to be evaluated by his optometrist for color perception deficiency. A student with this deficiency may easily perceive that browns, greens and reds all look the same. Again record your findings.

NewT Carrying Case

The NewT Carrying Case is designed to store everything that is in the NewT kit. When you pack the kit remember not to put too many items beneath the large ball or it will not fit. It is best to lay one or two flat items, such as the portfolios, beneath the large ball, then fill the case around it.

The full case of items is very heavy. Designers at APH do not expect practitioners to carry this heavy case full of items around. This is why 2 APH Innovation Tote Bags are included.

You will probably find it much easier if you plan which materials you will use the following day or week, place them in the APH Innovation Tote Bags to store in your car, or carry with you. This is the solution that NewT field testers preferred.



Mrs. May (left), helps Miss Isham pack up the NewT kit of materials.



Andrew is on his way to store the NewT materials on the library shelf.





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