VERA screening tests are not intended to replace any aspects of a professional eye examination.

The VERA visual acuity screening has test lines which correspond to 20/20, 20/25, 20/30, 20/40, 20/70, 20/200 and 20/400. Visual acuity less than 20/400 will be indicated as 20/400. Other test lines have been omitted to render the program more efficient without changing the pass/fail accuracy. Visual acuity fail points can be set to 20/25, 20/30 or 20/40.

The binocular vision tests determine whether subjects can use both eyes together, at least momentarily. The visual efficiency (vision skills) tests rate a combination of focusing, tracking and eye teaming skills over time to determine whether they may affect schoolwork or near functioning. Test results may be influenced by subject attention, room lighting, monitor settings, etc., and attention should be paid to these conditions. The VERA visual efficiency screening is not diagnostic, and requires professional judgement to determine need for targeted intervention or professional care.

System requirements are WINDOWS OS, Pentium 4 or newer, 200 mb free disc space, 15"-22" monitor.
PROGRAM OVERVIEW

The vision screening is comprised of the following tests:

**DISTANCE VISUAL ACUITY** tested at 10 feet. Right eye, left eye and both eyes are tested individually. The screening utilizes logic-controlled Snellen-equivalent, randomly oriented “E”s presented line-by-line so as to minimize memorization or shape recognition of letters.

**FARSIGHTEDNESS** (Hyperopia or “Plus Lens” test) tested at 10 feet the subject’s best monocular visual acuity level through +2.00D lenses and expressed as pass/fail.

**FUSION** (Suppression) at 16”-20” for simultaneous use of both eyes, expressed as pass/fail.

**STEREOPSIS** (Binocular Integration) at 16”-20” using four random dot stereograms of alternating convergence (prism base out) and divergence (prism base in) demand, expressed as pass/fail.

**PHORIA** (Fixation Disparity) at 16”-20”, expressed as pass/fail.

Vision screening results are automatically placed into selectable reports for eye doctors, letters for parents (initial and follow-up), a generic screening results report or a custom report which you create with the text editor.

The visual efficiency (vision skills) screening is presented at 16”-20” and includes the following tests:

**READING PATTERN EYE MOVEMENT** requiring the subject to accurately track in a simulated reading motion

**FOCUS FLEXIBILITY** requiring the subject to accurately relax and exert focus through special test lenses

**BINOCULAR INTEGRATION FLEXIBILITY** requiring the subject to accurately control their convergence and divergence while maintaining simultaneous use of both eyes

Visual efficiency (vision skills) screening results are automatically placed into one of two reports: a vision skills report which displays all screening results and the pass /questionable / fail status of this screening, or a generic screening results report without the status indicator (for use when professional judgement is available).

Calibrating the Test Character Size

After installation, VERA needs to be calibrated so that the test characters are sized appropriately for your system. To do this, you make simple adjustments on a calibration screen which VERA automatically presents the first time you run the program. The screen consists of a large “E” and two sliders. Hold a ruler marked with millimeters to the horizontal side of the “E” on the screen. Use your mouse to move the slider until that side of the “E” is 100mm(10cm). Then move your ruler to the vertical side of the “E” and adjust the slider similarly until that side of the “E” is also 100mm(10cm). Click OK and then SAVE changes. Calibration should be run from the VERA menu on the home screen if you change your screen resolution.

THE MAIN MENU

**START SCREENING:** Takes you to the subject information screen and then to the screening tests. The FIRST NAME, LAST NAME, and DATE OF BIRTH are required fields. The GRADE field enables schools to create grade-specific lists and letters; for other populations, skip this field. For practice or demonstration, use the 0(zero) field at the top of the drop-down grade list. The ID (Identification) field is used only if you will export vision screening data to another health or other records program. The “ID” input is the unique alpha-numeric subject identifier assigned by the other records program. Next, check “Subject is wearing glasses or contacts to take the screening” if true.
The proctor and/or test site name which you will enter in the PREFERENCES section of the program is displayed in the CURRENT IDENTIFICATION. Check your information carefully as it cannot be edited once you leave this screen, then click START to proceed to the first test screen. **Note:** If you screen the same subject more than once (as in subsequent years), a separate record will be created for each screening. You can differentiate the screenings by putting a number (2, 3, etc.) after the last name or differentiate the screenings by the test date.

**REPORTS:** Use to view or print report(s) for individual or multiple subjects (groups). “Group” reporting enables bulk printing of any report after screening and creation of lists of subjects chosen by any demographic, screening result or date. When selecting dates, you can type in your date or select with the drop-down calendar as shown.

Creating a report for an individual: Any VERA report or letter for an individual can be created from the “Individual” tab. The screen is laid out step-wise: (1) Begin typing the last name of the subject wish to select. The name most similar to what you have typed in at any point will be highlighted. (If your subject is not highlighted, scroll through the names and click on your selection.) (2) Select your desired report type. (3) Choose SCREEN to view without printing or PRINTER as the destination for the report. (4) Click RUN REPORT.

Creating reports and lists for multiple subjects: Any report or letter can be re-created for any group from the “Group” tab. The screen is laid out step-wise: (1) Choose criteria: Subjects can be selected from your database by virtue of test date, DOB, grade, and performance on the visual acuity, hyperopia and binocular vision sections of the screening. Each selected criteria further limits the numbers of subjects selected. Think of each subsequent selection criteria beyond the first as: "who also...". (2) Select a report type. (3) Choose SCREEN to view without printing or PRINTER as the destination for the reports. (4) Click RUN REPORT.

In the fictitious example to the right, a group of subjects will be displayed who were screened between 4/12/2002 and 4/12/2004, who in grades 3-6, who also failed visual acuity and who have not returned their completed eye doctor’s reports (letters not returned). The second notice letter is ready to be printed for these 110 students in the "record count".

Only one group of reports may be selected at a time. By example, to also send a copy of the eye doctor’s report to these 110 subjects, finish printing your second notices, re-select your fields and select “Doctor’s Letter”.

To create lists of these subjects, you would select “List” instead of “Doctor’s Letter”.

Note that “skills” is greyed out in this report selection list because the “Visual Skills” field was not selected.

Always select the fewest fields possible. For example, if you select “Visual Acuity fail only” and “Hyperopia fail only” at the same time, only students who failed BOTH will be selected. Instead, you would select “Visual Acuity OR Hyperopia Failures”. Again, think of each subsequent selection criteria beyond the first as: “who also...”.

“Skills” is greyed out because the “Visual Skills” field was not selected.
LETTER RETURN:

Use Letter Return to log returned eye examination reports. When you create your second notices (as above) these subjects are excluded because their examination reports were logged in as returned. You can also send VERA’s custom report as a follow-up to unfulfilled referrals outside school settings or create age, grade or test date-specific lists of subjects with unfulfilled referrals.

Log the returned doctor’s report by using the confirmation number found in the lower right under the school or test site’s address, click SEARCH, and when the subject name appears, click CHECK IT.

VISION SKILLS (Visual Efficiency):

Background:

“Visual efficiency” is a measure of how easily a subject exercises their “vision skills”, and the two terms may be used interchangeably. Visual efficiency is generally independent of visual acuity, refractive error, intelligence and socioeconomic status.

VERA’s unique visual efficiency screening provides a relative measure of how efficiently your subject can control their focusing, tracking and eye-teaming (i.e., their vision skills). While optimal for subjects ages 7-13, subjects into their early 30’s can be screened with reasonably accurate results. Performance limitations for test subjects over 35 are the normal decrease in focusing, convergence and tracking speed with age. If a subject is older than those in your program’s database, the software alerts and then compares screening results to the oldest subjects in the database. When a subject is younger than those in VERA’s database, the screening is not recommended as a developmental lag or uncertainty over test instructions may be mistaken for a vision issue.

Ideally, you will have used VERA’s routine screening to determine whether the subject has sufficient visual acuity and momentary use of both eyes together, both of which are necessary for reliable results on the visual efficiency screening. When a subject is selected for the visual efficiency screening, VERA prompts as to any vision issues noted during the routine screening which might affect the validity of the skills screening. If you are certain that the prompts no longer apply (such as when your subject has a recent vision correction with no abnormalities reported during an recent eye examination), carefully override the prompts.

Compensatory behaviors and symptomatic conditions commonly accompany abnormal visual efficiency. Therefore, candidates for the screening should first have the Behavioral Checklist (on the page after next) filled out or at least be known to have stress or injury-induced compromised close vision functioning. In addition to noting behaviors on the checklist, observe subjects as they take the screening. Note compensatory adjustments in posture, twisting or turning the torso, leaning forward, squinting, rubbing of eyes, turning of the head or fidgeting. This may be helpful in interpreting “questionable” screening results.

After the screening, the subject will be scored into one of three groups:

1. **PASS**: A low likelihood that inadequate visual efficiency contributes to the subject’s learning or performance difficulty.

2. **QUESTIONABLE**: A moderate likelihood that inadequate visual efficiency contributes to the subject’s learning or performance difficulty.

3. **FAIL**: A high likelihood that inadequate visual efficiency contributes to the subject’s learning or performance difficulty.
TREATMENT AND SUPPORT OF SUBJECTS WITH VISUAL EFFICIENCY DIFFICULTIES

While the formal treatment for inefficient vision skills is vision therapy provided by specialist eye doctors (usually optometrists), other support can be extremely helpful. Occupational therapists may provide some treatment exercises and help affected individuals to operate more normally in their work or learning environment. In a school setting, teachers and/or special educators may provide some visual awareness exercises and can modify a student’s learning environment to good effect. Parents of school-age children and supervisors of adults can offer affected individuals understanding and accommodation to perform at levels which insure success.

The following are examples of environmental and instructional support which would ideally accompany vision therapy, but which are helpful in any case. Note the emphasis on alternative learning paths (auditory and conceptual vs. visual) and the process (not just the result, i.e., grades) of accomplishing tasks in an idealized environment. While some examples are representative of a school setting, many can be generalized to most subjects with reduced near-point functioning.

Instructional support:

- emphasize auditory and conceptual learning
- provide additional time for the subject to observe and self-correct errors
- reduce length and complexity of visual tasks to enable success, then increase
- compassionate acknowledgment of the difficulty to reduce self-doubt
- acknowledge and reward effort that is well-directed in addition to correct answers
- increase feedback to encourage self-correction and self-control (example: discuss answers after work is submitted and allow re-submission with corrected answers)
- encourage relaxation exercises to reduce tension and fatigue
- encourage expression of thought if there is disagreement with test results
- have the subject’s eyes examined to rule out refractive or medical conditions
- confirm eyeglasses are being worn when appropriate
- incorporate visual awareness exercises into learning programs
- delay or reduce special education or other initiatives pending outcomes of support and/or vision therapy

Environmental support:

- provide high contrast and uncluttered visual information (ex: white board with black marker)
- provide guidelines on papers
- maintain a relaxing home, study or work environment with few distractions
- decrease clutter in work area
- provide proper work environment; specifically lighting, seating and posture
  example: providing a slantboard for improved posture during reading and writing

Additional Information, relaxation exercises and visual awareness exercises can be found in the VERA Educator and Occupational Therapist Guide. Your program may have placed a shortcut to this manual on your desktop and/or it can also be accessed from the VERA listing of your Windows program list.
<table>
<thead>
<tr>
<th>SUBJECT:</th>
<th>OBSERVATION DATE(S):</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBSERVER(S):</td>
<td></td>
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</table>

**BEHAVIORAL CHECKLIST - INDICATORS OF VISUAL PERFORMANCE DIFFICULTIES**  
(Five or more consistent behaviors are significant)

### VISUAL
- Difficulty with tasks requiring concentration, memory, reading or problem solving
- Trouble with spelling or vocabulary or ability to complete work during a given time frame
- Complaints of headache associated with near work
- Complaints of double vision or of blurry vision (far or near)
- Covers or closes one eye when reading or doing near tasks
- Complaints of discomfort or inability to learn in tasks demanding attention to fine detail
- Tilts head extremely or works to one side of desk
- Either eye turns in or out
- Rubs eyes or forehead frequently

### VISUAL-MOTOR
- Poor physical or athletic performance (particularly poor spatial awareness)
- Holds reading material very close to face
- Writes in small, cramped style
- Makes frequent errors in copying
- Complains of words or letters jumping around
- Loses place while reading
- Uses finger to keep place
- Handwriting is sloppy
- Easily frustrated trying to draw figures

### READING/LANGUAGE
- Reverses letters or words
- Omits words/letters when reading or writing
- Spells poorly
- Tires easily when reading
- Performs below ability level for no obvious reason

### ATTENTION
- Trouble sitting still; fidgets frequently
- Poor attention to reading
- Responds to directions poorly
- Behavior problems (particularly those related to frustration in the learning/work environment)
- Displays tiredness or lethargy during the day
- Indifference to academic satisfaction and/or work performance, and/or expressions of discouragement related to school or occupational work
- Trouble remembering or relating to material that is read

### COMMENTS


OTHER OPTIONS / MENUS:

From the FILE drop-down menu, you can select:

- NEW for alternate access to the new subject information screen
- BACKUP/RESTORE to back up the data file
- EXPORT to export screening data to other health records programs

From the VERA drop-down menu, you can select:

- CALIBRATE to re-size the test screens (if monitor size or screen resolution changes).
- PREFERENCES: to access the Identification, Screening, System Settings and Reports tabs
- LETTER RETURN for alternate access to the returned eye doctor’s report log-in screen

From the DATABASE drop-down menu, you can select:

- DELETE RECORDS to remove records from the reporting and listing functions of the program.
- PURGE DATABASE to permanently remove records from the program
- RECOVER DELETED RECORDS to recover deleted records to the database and reporting and listing functions of the program

PREFERENCES:

IDENTIFICATION Tab: Use to insert proctor and test site information into the reports. Information entered into this screen will appear on reports and letters until the information is changed.

SCREENING Tab: Use to alter the test selections. The Plus Lens (hyperopia) test cannot be selected without the visual acuity tests since poor visual acuity can also cause failure of the plus lens test. Running all three binocular vision tests is recommended unless the program alerts you as to when poor visual acuity or hyperopia may invalidate the binocular vision screening. When SmartScreen® is selected, the program automatically runs the shortest screening for each subject by exiting the screening at the first point of referral and preparing your selected report(s). Testing alerts are therefore not displayed.

SYSTEMS SETTINGS Tab: Use to select a visual acuity fail point to accommodate your local screening regulations. Note: Subjects are graded by whatever the selected fail point is. If you re-select a new fail point, subjects previously screened as well as new subjects will then be (re)graded with the new fail point. You can disable the vision skills screening and remove it from the main menu or leave it active.

REPORTS Tab: Use to choose which report type(s) will be displayed or printed after each screening.

CUSTOM REPORT Tab: A screen similar to figure 1 will display without text in the editor. You may import sample text similar to VERA’s parent letter by selecting GET DEFAULT TEXT or begin typing your own text. To open the text editor features, right-click anywhere within the text screen (figure 1). Maximizing the editor screen (figure 2) provides a better view of your text and formatting.

To preview your custom letter, save the letter and exit the editor (figure 2). In the “Individual” tab of the REPORTS section of the home screen, select “Custom Report” for any individual and run your report to view it. To make changes, close the report and repeat the above steps until you are satisfied with the content and formatting.
MANAGING THE DATA

Backing Up / Restoring the Screening Data File: Screening data are automatically saved to VERA’s default location on your computer, but you should routinely back up your “veraback” screening data file to a removable storage media. To do this, click on “Backup”, then navigate to your storage media and click “Save”. Always back up your screening data before upgrading, transferring or deleting a VERA program.

To restore a data file to VERA, go to FILE / BACKUP/RESTORE and click on “Restore”. Locate your “veraback” data file and click “Open”. Override any messages which display and then close the VERA program and re-open it to set the data. Warning: Any data currently in your program will be overwritten whenever you restore data to the program.

Deleting / Restoring / Purging records: Although screening data takes up very little room on your computer, you can use these functions from time to time to remove subjects from the database who are no longer in the testing population.

Deleting records removes them from the reporting functions of the program but they remain hidden in the database. This is similar to deleting computer files to the trash or recycle bin. Recovering these records restores them to the listing and reporting functions of the program. This is similar to restoring computer files from the trash recycle bin.

Purging records permanently removes them from the database. This is similar to emptying computer files from the trash or recycle bin. Choose carefully!

The DELETE RECORDS screen is laid out step-wise:
(1) Enter the test date range of records to be deleted and click “select records”, (2) Click on “delete selected records”, (3) To make another selection, click “clear selection”.

If the RECOVER DELETED RECORDS option is selected, you will be asked to confirm recovery by typing the word “RECOVER” into the screen presented. Then click OK to recover. If the PURGE DATABASE option is selected to permanently remove deleted records, you will be asked to confirm PURGING by typing the word “DELETE” into the screen presented. Then click OK to purge. Note: After deleting, restoring or purging records, close and re-open VERA to re-set the database.

Exporting vision screening data to other records software:

Exporting is accomplished via “Export” option of the FILE menu of the main screen. The default file name is “vera.csv”. The file is written using standard comma separated values, with fields surrounded by double quotes and separated by a comma. The fields written to the file are:

1. Institution-assigned student ID
2. Last Name
3. First Name
4. DOB
5. Test Date
6. Visual Acuity Right Eye
7. Visual Acuity Left Eye
8. Hyperopia (P, F)
9. Binocular Vision (P, F)

In order to merge exported data with other records software, a subject ID assigned by the other records software must be entered into the ID field of “New Screening” (see “start screening with new student” below). After the file is exported, it can be opened with Microsoft Excel or any text editor. Integration of the fields into an external database or school health records software program will be the responsibility of the administrator of that program.

RUNNING THE SCREENING

Before Running The Screening:

U Remind subjects to bring any prescribed eyeglasses they have to the screening.

U Be sure the keyboard “NUM LOCK” is on when entering test responses from the numerical keypad. All proctor entry is numerical, by the ENTER key, or by the space bar. When using a laptop, an inexpensive USB keyboard can be used to control the screening away from the subject’s line of sight.
U Mark or place a tape line on the floor a distance of exactly ten feet from the screen. Subjects will stand or sit at this line for visual acuity and hyperopia testing. When taking the binocular vision tests, subjects sit 16 - 18 inches from the screen with relaxed but erect posture. The subject's line of sight should be perpendicular to the plane of the screen at the start of each test. The subject wears glasses prescribed for general purpose (distance and near) for the entire screening. Glasses prescribed for near vision or close reading only are worn only for the binocular vision tests.

U The test lenses and monitor screen need to be clean and free of reflections to provide an unobstructed view of the tests. Brightness, contrast and viewing angle of the monitor as well as room illumination should be adjusted for the test screens to be easily seen through the colored test lenses, particularly if a laptop is used.

VERA automatically proceeds from one test to the next. Carefully follow the instructions for administering each test and those regarding when any prescribed eyeglasses should and should not be used. Be sure subjects understand what is expected of them. When test lenses are indicated, be sure that the subject is looking through them and that any red test lens is held in front of the right eye (over the subject’s own glasses if necessary).

Testing Glasses:

Two double-sided lens holders (flippers) hold four sets of test lenses used for screening with VERA. The upper flipper pictured contains a pair of clear convex test lenses (referred to as “glasses #1” or “test lens set #1) used in the hyperopia test of the routine screening. The other side of this flipper contains the plain red and green test lenses (referred to as “glasses #2” or “test lens set #2”) used in the binocular vision tests of the routine screening and in the Binocular Integration test of the visual efficiency screening. The lower flipper pictured contains a pair of red and green test lenses on each side and is used only for the two parts of the Focus Flexibility, or “Accommodflex” test of the visual efficiency screening. VERA testing lenses are always recommended, however a pair of over-the-counter +2.00 strength reading glasses may be substituted for glasses #1.

Test Screen Layout

Each test is preceded by an introduction screen displaying test procedures and test conditions.

Special Shortcut Keys:

F8 key: Skipping the current screening test and proceeding to the next: The F8 key stops the current test and advances to the next. The results of the stopped test will be zero. This key may used for demonstration purposes or if a subject cannot see certain test screens.

F10 key: Stopping the current screening test and returning to the Main Menu: The F10 key will stop the current screening test and return to the Main Menu. Use if an interruption prevents the screening from being completed. To re-start a routine screening, start over again with the subject information screen, this time assigning a numeral after the student's name, i.e.; “John Smith2”, for the second screening. If time permits, you could delete the first incomplete record from the database. To re-start a vision skills screening, no additional steps are necessary.
THE ROUTINE VISION SCREENING TESTS

Distance Visual Acuity

**Description:** This tests of clarity of sight, scaled to standard Snellen test characters. A line should be marked on the floor exactly 10 feet from the screen. Subjects will stand or sit immediately behind this line with the screen surface perpendicular to their line of sight. If the subject has glasses prescribed for general use (near and far vision) or for far vision only, they must be worn during this test. Glasses prescribed only for reading up close should not be worn.

The test has three segments. In the first, the left eye is covered and the right eye is tested beginning at the 20/20 line. In the second, the right eye is covered and the left eye is tested beginning at the 20/20 line. In the third, both eyes are uncovered and tested beginning at the smallest line which the better of the two eyes was able to see. Each character response is recorded by the program to control subsequent line sizes for highly accurate and repeatable measurement.

**Running the test:** Press ENTER or click START TEST to proceed from the title screen to the test screen. A row of “E”s will be displayed which point either up, down, right or left. A moving arrow under the row of “E”s points to the character being tested and the subject calls out the direction in which that “E” is pointing. If subjects or young students may be unsure of right and left or are non-verbal, have them indicate the direction of the “E” by pointing instead of responding verbally.

If the subject correctly identifies the direction of the “E,” press ENTER. If the subject incorrectly identifies the direction of an “E,” press the 0 (ZERO) key. If the proctor makes an incorrect entry, the BACKSPACE key moves the arrow backwards to correct it.

**Note:** For efficiency without affecting pass-fail accuracy, VERA does not measure every level of visual acuity below 20/40. VERA has visual acuity test lines of 20/20, 20/25, 20/30, 20/40, 20/70, 20/200 and 20/400, since visual acuity less than 20/40 requires an eye examination by virtually all school, motor vehicle, vocational or occupational protocols.

Plus Lens (Hyperopia)

**Description:** This tests uncorrected hyperopia (farsightedness). As in the previous test, the subject is positioned 10 feet from the monitor and wears prescribed glasses, unless they are for near vision only. Neither eye is covered and the subject looks through test lens set #1 (with the clear test lenses) which is held directly in front of their eyes, over their own glasses if necessary.

**Running the test:** Press ENTER or click START TEST to proceed from the title screen to the test screen. A single row of “E”s equal in size to the smallest line seen by either eye in the visual acuity tests is presented. The subject calls out the direction in which each “E” is pointing. A moving arrow under the row of “E”s points to the character being tested.
If the subject correctly identifies the direction of the "E," press ENTER.
If the subject incorrectly identifies the direction of an "E," press the 0 (ZERO) key.
If the subject cannot see any of the "E"s, press the 0 (ZERO) key once for each "E" on the screen.

If a response is entered incorrectly, the BACKSPACE key moves the arrow backwards to correct the entry.

**How the test works:** The clear test lenses are of the type used to correct for farsightedness (a "plus," or convex lens). The only way a subject can see the direction of the "E"s is if they are farsighted, therefore expect that most will not be able to see the "E"s through the test lenses well enough to identify the directions. This test concludes after one line of "E"s has been presented.

**IMPORTANT:** If a subject's visual acuity or uncorrected farsightedness might effect the validity of the following binocular vision tests, a prompt will alert you to this before the binocular vision tests begin. In this cases, you should make your referral on the basis of the visual acuity and farsightedness screening. If you are running the SmartScreen® mode, the screening will automatically stop at or before this point.

**The following binocular vision tests:** The three binocular vision tests determine whether the subject can at least momentarily use both eyes together. Each test emphasizes a different aspect of binocular vision: combining the image from each eye with the other, depth appreciation and eye alignment. If any two of the tests are passed, the program scores a PASS.

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**Fusion (Suppression)**

**Description:** The subject sits with their face 16 - 20 inches from the monitor screen and wears any glasses prescribed for near vision and/or far vision. The subject looks through test lens set #2 which is held directly in front of their eyes, over their own glasses if necessary. The flipper is held so that the RED lens is over the RIGHT eye.

**Running the test:** Press ENTER or click START TEST to proceed from the title screen to the test screen. Through the test glasses, figure A is seen by one eye and figure B by the other. Allow the subject to view the screen for 5-10 seconds, then question the subject exactly as follows:

1. (1) Ask: "What shapes do you see on the screen?" The correct answer includes "a square, an X and a circle" (2) Then ask: How many of each shape do you see? The correct answer is one. The proctor presses ENTER if both answers are correct or 0 ZERO if either answer is incorrect.

![Fig. A](image1) ![Fig. B](image2)

**How the test works:** Binocular vision is demonstrated when the subject superimposes the image from each eye and sees the whole picture; i.e., all three shapes. Ideally, the composite image seen will be stable and single.

**Subjects who are not using both eyes simultaneously will likely report seeing figure A or figure B;** i.e., “a circle and X”, or “a square and X”.

**Subjects who are not combining the images from each eye will likely report seeing figure A and figure B;** i.e., “two rectangles with a square and X in one, and a circle and X in the other”.

**Subjects who are tuning out, or suppressing part of their vision will likely report seeing figure A then figure B then figure A, etc.;** i.e., “the square or circle flashing on and off.”
Stereopsis

**Description:** The subject sits with their face 16 - 20 inches from the monitor screen and wears any glasses prescribed for near vision and/or far vision. The subject looks through test lens set #2, held over their own glasses if necessary. The flipper is held so that the RED lens is over the RIGHT eye.

Explain to the subject that they will see a screen of tiny colored dots (and random shapes). While looking through the test lenses, the outline of a number 1, 2, 3 or 4 should appear to float slightly in front of or behind the plane of the screen. The subject is to call out the number seen.

**Running the test:** Press ENTER or click START TEST to proceed from the title screen to the test screen. The proctor enters the number the subject sees. **Note:** Do not press ENTER after the number entry.

The test has 4 trials. If the subject is unable to identify the number in the first trial within 1 minute, the test will automatically conclude. The proctor may press F8 to end the test sooner if it is certain the subject will not see the number. In the remaining three trials, no proctor action is necessary; if the subject does not report a number, the test will automatically advance in 10 seconds.

**How the test works:** Test lens set #2 allows the subject to see a slightly offset image from each eye which creates a depth effect and makes the floating number visible. The numbers cannot be seen unless the vision from each eye is integrated with the other.

Phoria (Fixation Disparity)

**Description:** This is a test of eye alignment when binocular vision is interrupted. The subject sits with their face 16 - 20 inches from the monitor screen and wears any glasses prescribed for near vision and/or far vision. The subject looks through test lens set #2, held over their own glasses if necessary. The flipper is held so that the RED lens is over the RIGHT eye.

**Running the Test:** Press ENTER or click START TEST to proceed from the title screen to the test screen. Remind the subject to keep both eyes open and confirm that the subject can see both the vertical line and the target through the test lenses. Note that this is a similar vision demand to the suppression test; if they passed that test but can't see the vertical line and target, adjust the screen and/or room brightness and try again. If both the line and the target are not visible through the test lenses after approximately 20 seconds, press the 0 ZERO key and accept the prompt to end the test.

With the line and target visible, instruct the subject to call out “NOW”, or “STOP” as they see the line cross over the center of the target, as illustrated in the instruction screen. When the subject is ready, tap the SPACE BAR once to start the line moving toward the target. When the subject calls out, the proctor immediately taps the SPACE BAR once to stop the line movement. **Note:** Avoid continual pressure on the space bar as this will advance the test too quickly.

The test runs two trials. If the difference between the two trials is too large to be a reliable result, you will be prompted to repeat the test. The screening concludes after this test.
How the test works: Test lens set #2 allows the subject to see the target with one eye and the line with the other. If a subject indicates alignment when the line is not actually near the center of the target, they may need to exert greater effort to keep an image clear and single.

This Concludes The Routine Screening

REFERRAL CRITERIA FOR THE ROUTINE SCREENING

Subjects failing the visual acuity and/or hyperopia (farsightedness) screening should be referred to an Optometrist or Ophthalmologist for an eye examination. Subjects who pass the visual acuity and hyperopia screening but fail two of the binocular vision tests may be considered for referral to rule out medical or neurological vision issues. Subjects failing the binocular vision screening will likely have unreliable results on the vision skills screening.

THE VISUAL EFFICIENCY (VISION SKILLS) SCREENING

Click on VISION SKILLS from the Main Menu, begin typing the last name of your subject where indicated and then click on "begin visual skills" when the proper name is highlighted. Carefully override any prompts about routine vision issues if they no longer apply. Review the section on “Before Running The Screening” on page 8. Even though tests are preceded by instruction screens, don’t skip the remainder of this manual. If you’re over 35 and try these tests, you may have difficulty with them as the tests require the greater speed and flexibility of younger eyes.

Note: To bypass the routine screening and run only visual skills: Fill in the subject information screen to create a screening record and click START. When the first (visual acuity right eye) instruction screen displays, hit the F10 key to return to the home screen. Select VISUAL SKILLS and then your subject. Override any prompts if you are certain testing condition have been met and start the screening.

THE VISUAL EFFICIENCY (Vision Skills) TESTS

Reading Pattern Eye Movement

Description: This is a test of eye tracking in a simulated reading pattern.

Setting up the test: Subjects sit with their face approximately 16 inches from the monitor screen.

Running the test: Press ENTER or click OK to proceed from the title screen to the practice test screen. A single number from 1 to 9 will appear in the upper left-hand box and then move through the boxes in a simulated reading motion; from left to right, then to the left side of the next row down and so on. The numbers stop at a random points for each trial.

Instruct your subject to practice following the numbers a few times, and to call out the last number seen when the number stops moving. There is no keyboard entry during practice. Once the test is completely understood, press ENTER to advance from the practice screen.

When ready, click OK to proceed to the test screen. When the subject calls out a number, enter that number and press ENTER. If the student is unsure of the answer, they can venture a reasonable guess. If they are completely unsure, input 0 (ZERO) and press ENTER. The test will repeat 9 times for a total of 10 trials.
Focus Flexibility (Accommoflex), Part One and Part Two

Description: These are two identical tests of accommodative or focusing flexibility.

Setting up the test: Subjects sit with their face approximately 16 inches from the monitor screen. The accommoflex test has two parts, each one minute long. Both parts are conducted the same way; the only difference is the test lenses used for each part. In the first part, the subject looks through glasses #3, the set with the green magnifying lens (over their own glasses if necessary). In the second part, the subject looks through glasses #4, the set with the red magnifying lens (over their own glasses if necessary).

Glasses #3 and glasses #4 allow test screens to be seen with only one eye at a time and require subjects to alternately exert and relax their focus to identify the test characters.

Running the test: Explain that sets of three numbers will be presented in the center of the screen. Instruct the subject to call out the numbers as quickly as they can get them into focus. If all three numbers are correctly identified, press ENTER. If any of the three numbers are incorrectly identified, press 0 (ZERO). When you are certain the subject understands the instructions, press ENTER or click OK to proceed from the title screen to the test screen.

Remember to . . .
1. Make entries as quickly as possible as this is a timed test.
2. Remind subjects to keep both eyes open at all times.
3. Make no entry if no numbers are seen; the test will advance automatically.

Binocular Integration (Fusionflex)

Description: This is a test of controlling the integration of vision from each eye. A practice exercise will be presented before the actual test.

Setting up the test: The subject sits with face approximately 16 inches from the monitor screen and looks through glasses #2, the set with the plain red and green lenses (over their own glasses if necessary). Explain that they will see a screen of tiny colored dots (and random shapes). The outline of a number 1, 2, 3 or 4 should be visible floating in the center of the field, but only when looking through glasses #2.

Glasses #2 present a slightly offset image to each eye which creates a depth effect making a number appear to float behind or in front of the plane of the screen. The subject calls out the number as soon as it is recognized.

Running the practice test: Press ENTER or click OK to proceed from the practice title screen to the practice screen. Practice requires correctly identifying at least 2 of 4 numbers presented. The proctor enters the number only (DO NOT press ENTER after the number entry). If the subject cannot identify the first number presented within one minute, the test will stop automatically. In the remaining three trials, no proctor action is necessary if the subject does not report the number visible; the test will automatically advance in 10 seconds. The subject must correctly identify at least two of the four practice numbers to advance to the actual test.
Running the actual test
The actual test numbers are harder to see than those during practice. If the first number is not recognized within one minute, the test will stop automatically; no proctor input is necessary. If no numbers are reported during the test, no proctor input is necessary, as the test will automatically advance in 10 seconds.

Remember to . . .
1. Make entries as quickly as possible as this is a timed test.
2. Remind subjects to keep both eyes open at all times.
3. Make no entry if no numbers are seen; the test will advance automatically.

This concludes the visual efficiency screening.

INTERPRETING THE VISUAL EFFICIENCY (VISION SKILLS) SCREENING REPORT

Visual Skills: The PERCENTILE represent the subject's relative performance on the battery of tests and is the average of the individual test “percentiles”. The STATUS is expressed as "pass", "questionable", or "fail" and to characterize the subject's visual performance. The PERCENTILE RATING is based on statistically derived “cut points” to a 95% confidence level or specificity, as indicated in the upper of the two rating scales above. This high specificity is chosen so as to minimize false positives. The lower of the two rating scales above shows cut points for 80% specificity.

When interpreting screening results, consider that performance testing inherently varies with the subject's emotional and physical state at the time of testing. In this case, variance could be up to +/-10% of the value indicated. In addition, screening subjects older than those in VERA's database may skew results downward by a few percentage points. The accuracy of the screening result also depends on the number of behaviors characteristic of vision skills difficulties which are noted (See VERA behavioral checklist). The greater the number of noted behaviors, the more statistically sensitive the skills screening is.

Note: When using VERA in a professional office or clinic where professional judgement and additional vision testing are available, VERA's "Screening Results" report, which omits the STATUS and PERCENTILE RATING, may be substituted for the "Vision Skills" report.
Percentiles: Individual test percentiles may not identify areas of vision difficulty (i.e., a focusing problem, a tracking problem, etc.) with certainty, as each test may be too brief to be diagnostic of individual visual-motor skills. Individual test percentiles are presented to clarify some questionable or failing screening results.

*If only one test percentile is very low with the rest near or above average.* This may indicate subject or proctor error on that one test. More reliable screening failures generally have 2 or more individual test percentiles that are well below average.

*If only the Focus Flexibility Part 1 test percentile is very low with the rest near or above average.* This may indicate that the subject has the necessary skill and was able to quickly learn to control focus and improve on Focus Flexibility Part 2.

**REFERRAL CRITERIA FOR THE VISUAL EFFICIENCY SCREENING**

Referral for diagnosis and/or treatment of vision skills are generally to optometrists who provide vision therapy services or who will appropriately refer to one who does. Once treated, many children have improved reading ability and may need fewer or no special educational services, and many adults are similarly helped with near visual functioning. Of course, the option for professional treatment is subject to the availability of suitable practitioners and the ability to bear the associated costs for these vision services. Even if a specialized vision evaluation is not forthcoming, creating a more idealized learning or operating environment can help subjects to perform more effectively.

Additional information about and locations of suitable practitioners can be found at the College of Optometrists In Vision Development ([www.covd.org](http://www.covd.org)) and the American Optometric Association ([www.aoa.org](http://www.aoa.org)).

**VERA IN OTHER SCREENING ENVIRONMENTS**

Although originally designed for an educational context, VERA can also be used in a professional practice settings or as part of occupational therapy assessments. VERA's routine screening can be a universal pre-test for visual acuity, hyperopia and binocular vision, but may differ from usual clinical testing as follows:

1. VERA does not measure every level of visual acuity below 20/40, and has test lines which correspond to 20/20, 20/25, 20/30, 20/40, 20/70, 20/200 and 20/400. Visual acuity less than 20/400 will be indicated as 20/400. The other test lines have been omitted for efficiency without changing pass/fail accuracy. The program provides an accurate gauge of whether a subject's visual acuity requires correction and is suitable for the vision skills screening.

2. The routine binocular vision screening includes tests for suppression, stereopsis and phoria which are not scored individually. This indicates whether binocular vision is adequate for the vision skills screening or requires additional testing.

The visual efficiency screening indicates the relative ease with which subjects with normal or corrected visual acuity exercise their visual skills. If the behaviors characteristic of vision skills difficulties (see checklist) are manifest, the screening affirms the potential benefit of vision therapy and environmental support. If a professional practice does not provide vision therapy services, appropriate referrals are made with a minimum of time and effort.

**Running one or both parts of VERA:** Select START SCREENING from the Main Screen, fill in the subject information screen to create a record for your subject and continue to “Visual Acuity Right Eye”. To run the routine screening, continue with the tests and the program will return to the Main Menu when the routine screening is completed. To skip to the visual efficiency screening, press the F10 key before starting the “Visual Acuity Right Eye” test to return to the main screen, choose VISUAL SKILLS from the main menu, select your subject and begin.

To reduce false positives on the visual efficiency screening, the program checks the subject’s routine screening data for reduced visual acuity, possible anisometropia, hyperopia and whether the subject’s age is supported by the database. Prompts which do not apply can be overridden. If you are prompted that your subject’s age is not supported by the database, you may elect to override the prompt if your subject is under age 35 and non-presbyopic. Your subject’s test results will be compared to the closest age supported by the database and still reasonably characterize their visual efficiency.

Since the “Screening Results” report omits the STATUS and PERCENTILE RATING, it may be substituted for the “Vision Skills” report when professional judgement determines the need for treatment or support.