

# STEREOSCOPIC FUSION CARD ON-LINE TRAINING WORKBOOK AND GUIDE

STEPHEN MORGENSTERN, OD, FCOVD

The following is a guide for therapists to develop a level of comfort with Fusion Cards. This is a step by step guide - giving many ideas for each card's use –card by card - throughout each set. It will allow the therapist and the patient to be efficient and comfortable with their use from the start. These methods have been employed with excellent responses by experienced and novice therapists alike.

## **DESCRIPTIONS**

Notes: Each “fusion therapy set” contains 10 stereoscopic sized fusion cards, each set designed to address a specific visual area of vision therapy. There are 19 sets listed below with a brief description in their use. This is followed by a section that gives the purpose, type of patient, methods of use (precise descriptions of how to use each card in the set – that may be used for training in-office staff).

## BRIEF DESCRIPTIONS OF EACH SET

### 1. **Pre-Fusion: I start all VT patients with this set**

This set is **BI-OCULAR** and involves **INITIAL BINOCULAR** work. It is used to initiate a patient into therapy and to work with patients with poor fusional systems. This set is designed for patients that are insecure about their ability to perform therapy. Instead of listening to patients who say “**I’ll never be able to do this!**” now you’ll hear them say “**WOW, I can do this**”.

2. **Basic Fusion:** This set is the “workhorse” of therapy. Work from beginning fusion to fines detail aiming. Build stability and consistency. Build binocular alignment. This set progresses from very easy to moderate difficulty.

3. **Convergence A Set:** Build convergence ranges. Traditional (regular) Vision Therapy for convergence fusion ranges and jump ductions. Each successive card has increasing difficulty in prism diopters of vergences needed along with increased ranges of flexibility. All cards feature fun targets and rich colors to add comfort.

4. **Divergence A Set:** Build divergence ranges. Traditional (regular) Vision Therapy for divergence fusion ranges and jump ductions. Each successive card has increasing difficulty in prism diopters of vergences needed along with increased ranges of flexibility. All cards feature fun targets and rich colors to add comfort.

5. **Convergence B Set:** This next step of work after the Convergence A set. Builds large ranges of vergence (pull all the way in and out). **Work in and out of instrument.** Hold in space and fuse, converge, move fused targets and also diverge some. Made for “tromboning” work in the stereoscope as well as “pointing”. Each card features eclectic designs and unique arrangements.

6. **Divergence B Set:** This next step of work after the Divergence A set. Builds large ranges of vergence (pull all the way in and

out). **Work in and out of instrument.** Hold in space and fuse, diverge, move fused targets and also converge some. Made for “tromboning” work in the stereoscope as well as “pointing”. Each card features eclectic designs and unique arrangements.

7. **Mixed Convergence/Divergence C set (one set):** This set has both large ranges of convergence and then large ranges of divergence. This set contains large quantities of multiple fine details. Myriad shapes, colors and designs. This set is excellent for middle to final stages of therapy. Build sustaining ability, resiliency and “transfer” into the real world.

## **VERTICAL FUSION THERAPY**

8. **Basic Vertical Set:** Initiate any Vertical patient into beginning fusion and ranges of fusion. This set is designed to allow any vertical patient to use every card in the set regardless of their vertical imbalance. It can also be used in conjunction with Vertical **right hyper** fusion cards and vertical **left hyper** fusion cards.
9. **Vertical Right Hyper Set:** Do therapy at your patient’s specific right hyper vertical angle. There is a separate fusion card specifically made for each right hyper vertical prism diopter angle. Each card measures the patient’s current disparity, simply and quickly, with a scale of vertical hyper in prism diopters to give you the measurement each time the patient uses the card. Each card contains: a “peripheral lock”, central targets, anti-suppression targets, horizontal ranges, vertical ranges and flexibility in fusion.
10. **Vertical Left Hyper Set:** Do therapy at your patient’s specific left hyper vertical angle. There is a separate fusion card specifically made for each left hyper vertical prism diopter angle. Each card measures the patient’s current disparity, simply and quickly, with a scale of vertical hyper in prism diopters to give you the measurement each time the patient uses the card. Each card contains: a “peripheral lock”, central targets, anti-suppression targets, horizontal ranges, vertical ranges and flexibility in fusion.

## SPECIAL THERAPY SETS

11. **Anti-Suppression Set:** Build anti-suppression in all areas – horizontal zones, vertical zones, specific quadrants, fine details, gross targets, variable sizes and orientations.
12. **Elementary (Kiddy) Set:** Kiddy targets, but made to build fusion. Anti-suppression and ranges of flexibility. Comfortable for small children but fun for older children as well. Effective and thorough in fusion therapy.
13. **Dynamic Set:** Each fusion card is made (smaller in size) shorter and narrower than standard fusion cards. Use IN and OUT of instrument. Can also be used in **FRONT** of another fusion card as “jump ductions” in the stereoscope. Slide cards horizontally in the holder to build fusion stability and flexibility while moving the eyes. Can be used OUT of the instrument doing multiple exercises with movements. These cards contain lots of saccadics targets as well.
14. **Visual Skills Testing Set with modern appearing targets (computer style images):** This set contains 10 fusion cards which are used for adult visual skills testing along with one distance target and 2 “answer charts” that are used for recording patient responses. In the first five tests, each card aligns exactly with most basic 5 cards from the traditional (Keystone) Visual Skills Series answer chart, so that previous testing on the Keystone Visual Skills can be compared equally. Tests 6 through 10 are altogether new tests. Test 6 is a **Convergence Related Visual Acuity test**; test 7 is a **Convergence Related Stereopsis test**; test 8 is a **Speed of Fusion** test that has the patient shift vision from a distance chart (included) to a near point fusion card ...with nine targets in sequence, while being timed; Test 9 is a **Vertical Linear Closure Gradient**, which tests the patient's maximum ability to fuse vertically; and test 10 is **Horizontal Linear Closure Gradient**, which tests the patient's maximum ability to fuse horizontally.

## COMPUTER VISION THERAPY SERIES

**15. Computer Skills “Work” Series:** The computer skills work series set, designed for adults, involves computer concept stereo fusion cards in a “read along”, self-instructional format. As the patient follows through a series of cards, the vergence demand increases. The set includes three unique “target” cards displaying diagrammatic scenes of an office with a computer, including deskwork images. The visual requirements of the “target” cards simulate:

**Card # 1 - “computer screen to near demand”**

**Card # 2 – “ intermediate to near demand”**

**Card # 3 – “ near to far demand”**

Fusion therapy, directed by the text on the stereo fusion cards, involves exercises using the three “target” cards. The purpose of this set is to mimic computer related in-office visual stresses and to apply vision therapy regimens to alleviate them.

**16. Aperture Rule/ Fusion Therapy for Computer Vision –**

**Combination Set:** This set is used with EITHER the Aperture Rule or in a Stereoscope for fusion therapy. The Aperture Rule appropriate settings are noted on the card - shown in a simulation of a 3-D “computer key”. These cards are used in the same manner as other aperture rule target cards, but are more complex and require more detail demand. When used as fusion therapy cards, they are in a series that starts at “ortho” and, alternating between continually increasing convergence and then divergence demands, builds flexibility, resiliency, attention to detail and reduction of fatigue. These cards contain large quantities of details and build large ranges of fusion (leading to high amounts of prism diopters of “Base Out” and “Base In” fusion ranges).

**17. Computer Vision “Task Interpretation” Series:** A

challenging set of fusion cards – challenging both intellectually and visually. *Note: When adults go to work, especially at a computer, they must think and analyze the work they are doing - as well as perform their visual tasks.* This set is visually more demanding with a

requirement (a stimulus) for the adult patient to mentally improvise to complete the therapy tasks. This series presents the patient with simulated computer screens (word processing, e-mail, search engines and unique “floating window panes”. Displayed along the periphery are icons on a “menu bar” that engage the patient with fusion tasks and suppression tasks. The “on-screen” central portion of the presented field requires the patient to engage in vision therapy tasks, while challenging the patient with “intellectual and analytical” requirements.

- 18. Color Shock Relaxation and Discrimination Set:** When working for extended periods of time at a computer screen, especially with colored graphics or color-coded charts, the brighter color contrasts are fatiguing. The maculae are never stationary, and so constantly jump back and forth over the demarcation line separating adjacent bright colors. The cones (of the macula) and (peripherally) the surrounding retina are constantly becoming depleted (and then require full rapid regeneration) in each specific wavelength's chemical base. In addition, the very bright and harsh background colors on a computer screen create supplementary physiological stress.
- ALSO MENTAL FATIGUE:** The cortical interpretation of bright colors, which are adjacent to different (contrasting) bright colors, requires a subconscious expenditure of mental effort. When attempting spatial organization estimations and integrating central details with overall concepts (seeing the whole gestalt), the excessive efforts of subconscious color shock can be distracting approaching generalized avoidance of work over time.
- DIFFERENTIATING SUBTLE COLOR DIFFERENCES:** The subtle differentiation of very similar color tones, shades and hues also require visually sustained effort. These discriminations require optimal nearpoint visual acuity and binocular stability. The color difference must be appreciated efficiently. Reading text written with a grayish blue tint on a “pure” blue background will require greater effort than a blue print on a white background. If the patient has poorer visual acuity, the edges of the image will be blurry and difficult to decipher. If the patient has poor binocular stability, the image will appear to shake or double, more so if the colors are too similar. Since the edges are difficult to discern, then the

alignment of the eyes have less to “lock in on.” This set has two separate formats: the first format of this series builds resiliency in dramatic color changes, especially with individual letters and saccadic shifts between bright colors. In the next format, the series builds color differentiation skills using targets that require subtle color differences. As we develop both of these ends of the “color shock” spectrum, the patient will reduce the asthenopia induced by these stresses.

## **NON-VERBAL PATIENT**

- 19. Non-Verbal Therapy Set:** This set contains ten fusion cards and two “Answer Charts”. This set is designed for a non-verbal patient: one who just points to the correct answer on the “Answer Chart”. Test and train fusion, anti-suppression, alignment. Sequencing through the series, each subsequent card progresses in difficulty from simple to complex and towards more subtle requirements to discern correct answers. Each answer set has 4 possible answers: One correct answer, two erroneous answers and a totally wrong answer (to pick out the patient who “just doesn’t get the picture” – and requires yet more instruction.)



# **EXPLANATION OF THERAPY CARDS SETS: PURPOSE, TYPE OF PATIENT, METHODS OF USE**

## **PRE-FUSION THERAPY CARDS**

### **PURPOSE:**

- a. This is the beginning point for Vision Therapy with every patient.
- a. To establish fusion in patients that never had fusion.
- b. To establish fusion in patients who have extreme difficulty initiating binocularity
- c. It uses large targets with orthophoric alignment.

### **TYPE OF PATIENT:**

- a. Initiate all patients with VT
- b. Gross suppressions
- c. High amblyopes
- d. Strabismics, even intermittent
- e. Convergence Insufficiency
- f. High Esophoria
- g. High Exophoria
- h. Adults
- i. Post surgical strabismics
- j. Lack of stereopsis

### **METHODS OF USE:**

#### **a. PA-1 – Initial alignment**

- 1. Put the two red diamonds together avoiding double vision
- 2. Keep the two letter “A”s together avoiding double vision
- 3. “TRACING” -Have two pointers, one in each hand, trace the outer borders of the red diamond – start at the top and have both pointers move clockwise together  
Then trace the letter “A” with two pointers

**b. PA 2 – Central to Peripheral alignment**

1. Place the large wine colored disc into the square border.
2. Align the disc to have the disc center itself into the square border by pulling in with the eye muscles, (aiming in towards your nose, or learn to converge by using a nearpoint fixation target) or relaxing the eye muscles. (Look far away into the distance as if you are looking through the card to a target far away.)
3. Trace the outer border of the disc and then the inner circle of the disc.
4. Trace the outer border of the square, then the inner border, and then the two “raised” edges of the square.

**c. PA 3 – Detail alignment with central anti-suppression**

1. Align the two stars into a single star.
2. Make sure all the numbers are single.
3. In the central circle, you must see a “plus sign” that is exactly aligned into a “plus sign” ... not with the vertical line off-set to the right or left of the center of the horizontal line.
4. If the vertical line disappears, then you are suppressing the left eye. If the horizontal line disappears, then you are suppressing the right eye. If this happens, blink your both eyes and the “plus sign” should reappear as you have broken the suppression mode. Close (or cover) one eye, then the other to see the binocular input.
5. Have both pointers touch number one (1), together, at the same time. (This is called “pointing” or “touching”)
6. Both pointers should land on the number one (1). If one pointer is on number one and the other pointer is off number one, then the two eyes are not aligned straight and you must work to have them align onto target.
7. Repeat this “pointing” to each number from one (1) to six (6).
8. Touch the “plus sign” center where the vertical and horizontal lines cross.
9. Repeat this cycle five (5) times, pointing from one (1) to six (6) then to the center of the “plus sign”.
10. Trace the perimeter of the star.

11. Trace the central line down the arm of each point of the star ... along the black-orange merge.
12. Trace each central thin black line circle.

**d. PA 4 – Peripheral lock with central orientation**

1. Fuse the large outer rings into a single ring.
2. Align the middle black number two (2) into a direct vertical alignment between the white numbers one and three. The number two should not appear to the right or left of the numbers one or three.
3. Neither the number two, nor the numbers one or three should disappear (suppression).
4. Touch each number in succession.
5. Repeat the cycle five (5) times.
6. Trace the outer border of the large black ring. Now repeat tracing the inner border of the ring.
7. Trace the horizontal line that is the interface of the blue and white sections. Repeat with the red and white interface.

**e. PA 5 – Central alignment and movement**

1. Align the lower triangle to be directly under the center of the upper triangle. The tip of the lower triangle should point to the “0” on the scale above it.
2. By converging and diverging the eyes, move the lower triangle to aim at each positive number and then each negative number. Hold the alignment at each location.
3. Touch the top tip of the top triangle with both pointers. Bring the pointers away from the card and then back to the card by now touching the top tip of the bottom triangle. Go back and forth from the top to the bottom triangles five times.
4. Now, touch the bottom left tip of the bottom triangle. Repeat five shifts, now the bottom right tips.

**f. PA 6 – Central/Peripheral alignment**

1. Align the yellow diamond first to the center of the blue hexagon.
2. Move the diamond to align its midline vertical axis to each of the six axes of orientation on the hexagon. First align the midline of the diamond with the far left border of the hexagon; then move the diamond's midline to align with the left inside vertical “fold”. It looks like a

vertical crease as part of the inner hexagon shape; then move the diamond to align with the top left “point” of the hexagon; then move the diamond to align with the top right “point of the hexagon”; then align with the right vertical crease of the inner hexagon and then, finally, align the midline of the diamond with the far right outer border of the large hexagon.

3. Trace the outer border of the hexagon. Then trace the inner border of the hexagon.
4. Trace the outer border of the diamond. Then trace, consecutively, each diamond as they get smaller and more central.

**g. PA 7 – Multiple Size fixation and alignment**

1. Align the two large central “X”s into a single X.
2. Make sure there is one large gold star on each side of the large central X.
3. Touch each of the four small stars (two on the top of the X and two on the bottom of the X) with your pointers.
4. Touch the center of each of the two large stars. Do not allow either large star to disappear, (suppression) especially when you are touching the opposite star.
5. Repeat the sequence five times.
6. Trace the perimeter of the large X; then trace the perimeter of each large star; then trace the perimeter of the small stars.

**h. PA 8 – Central Fusion with peripheral anti-suppression**

1. Align the image so the large red H is seen with the wide red central horizontal cross line fused into a single red bar and there is one gold star seen above the red horizontal bar and one gold star seen below the red bar.
2. Touch each gold star, keeping the H as a single unit.
3. Trace the perimeter of the H.
4. Trace the perimeter of each star.

**i. PA 9 – Simultaneous anti-suppression**

1. Align the images so there are four diamonds oriented into a diamond alignment.
2. Make sure all numbers are seen simultaneously.

3. Trace the perimeter of each diamond. Do not allow any number to disappear (suppression).

**j. PA 10 – Simultaneous central and peripheral suppression**

1. Align the two large colored plus signs into a single plus sign. Make sure the large outer numbers and the smaller inner numbers are all seen simultaneously.
2. Point to the central plus sign with your pointers without any letters or numbers disappearing (central or peripheral suppression). Repeat five (5) times.
3. Trace the outside border of the large plus sign; then the border of the dark circle; then trace the central plus sign, without any letters or numbers disappearing.
4. Trace each large number and then trace each small letter.
5. Repeat the sequence five (5) times.

## **BASIC FUSION SERIES**

### **PURPOSE:**

- a. To initiate alignment of the two eyes.
- b. To initiate consistent steadiness (keep both eyes stabilized onto a central target).
- c. To initiate peripheral to central fusion.
- d. To build binocular tracking eye shifts – have the eyes “lock in on” a target and then shift to “lock in on” the next sequential target.
- e. Fuse peripheral vision with a more detailed central target.

### **TYPE OF PATIENT:**

- a. Difficulty sustaining the two eyes onto a central target.
- b. Fusional deficits (esophoria; exophoria).
- c. Adults.
- d. Loses place ex: reading, aiming.
- e. A starting point for convergence or divergence therapy.
- f. Binocularity deficits.

### **METHODS OF USE:**

#### **a. BA 1 – Central alignment**

1. Align each letter without diplopia
2. Visually, put the yellow star into the circle. Do not allow the star or any of the arrows to disappear (suppression).

*(This is called “aligning”, as in central alignment)*

3. Have both pointers, one in each hand, touch each letter. This is done repeatedly ... often five times to a circle.

*(This is called “touching” or “pointing”)*

4. Have both pointers trace the outer border outline of the purple circle. Then trace the outer border of the red circle.

*(This is called “tracing”)*

#### **b. BA 2 – Stereo letters**

1. Align the star in the circle

2. Touch each letter. Note the stereo effect. Both pointers MUST be on the appropriate letter (ex: the right pointer on the right "A" and the left pointer on the left "A").
3. Trace the outer border of the brown circle, then the green circle.

**c. BA 3 – Alternate suppression**

1. Align the star in the circle.
2. Point to each letter. Keep the letters within the outer grey circle (neither into the red nor the purple).
3. Do not allow any of the letters to disappear (suppression).
4. Trace around the perimeter of the grey, then the purple circles.

**d. BA 4 – Detail alignment**

1. Fuse the central starburst.
2. Point to each letter.
3. Point to each of the grey arrows (in the orange circles). Note a few arrows with very subtle stereo effects.
4. Trace the outer orange and then the yellow circles.
5. For finer control, first touch the tips of the points of the central starburst, then trace around the border of each starburst point. These tasks may be repeated.

**e. BA 5 – Alternate peripheral suppression**

1. Fuse the central starburst.
2. Point to each letter.
3. Point to each arrow inside the brown circle. Note the two very subtle pink arrows. Do not allow any arrows to disappear.
4. Trace the outer borders of the brown, then the gold circles.
5. Touch the tips and then trace the starburst shape.

**f. BA 6 – Alternate central suppression**

1. Fuse the central small starburst.
2. Point to each letter. Do not allow any letter to disappear. The letters must form a circle around the starburst (the eyes must align).
3. Point to each pink arrow in the purple circle. Note the subtle stereo effects (arrows, green circle).
4. Trace the outer borders of the purple, then the green circles.

5. Touch the tips and then trace the pink starburst.

**g. BA 7 – Finer detail alignment**

1. Fuse the central horizontal and vertical black lines into a PLUS SIGN in the central yellow circle. Do not allow either line to disappear (suppression).
2. Point with both pointers onto the central plus sign repeatedly.
3. Touch each white number.
4. Trace the outer border of the green “gear” shaped figure, then the outside border of the red circle, then the outside border of the central yellow circle.

**h. BA 8 – Fine detail with alternate suppression**

1. Fuse the central yellow plus sign.
2. Point to the central plus sign repeatedly.
3. Touch the white gear number. Each number must fall within the appropriate red notch of the “gear”, with no numbers disappearing.
4. Trace the outer red gear borders, then the gold circle border, then the small purple circle border.

**i. BA 9 – Alignment and fine detail tracing**

1. Touch each number repeatedly.
2. Trace the perimeter outline of the soccer ball.
3. Trace each black pentagon within the soccer ball.
4. Trace each white hexagon within the soccer ball.

**j. BA 10 – Alternate central/peripheral suppression**

1. Touch each number. While touching the peripheral even white numbers, do not allow the central odd black numbers to disappear ... and vice versa.
2. Keep the numbers in their appropriate white or black “boxes”. Do not allow them to drift around.
3. Trace the perimeter of the soccer ball.
4. Trace the black pentagons and the white hexagons.



# **CONVERGENCE SERIES**

## **CONVERGENCE “A” SERIES**

### **PURPOSE:**

- a. Build convergence
- b. Build ranges of convergence
- c. Build relative convergence (appreciate relative stereo-depth differences) to see the subtle gradation when one target requires slightly more convergence than another or when one target is slightly nearer the patient than it's neighbor.
- d. Build fusion during convergence exercises.
- e. Avoid suppression during convergence exercises.
- f. Make convergence shifts and convergence spatial jumps.

### **TYPE OF PATIENT:**

- a. Convergence Insufficiency
- b. Rigid, inflexible, “locked in” in space.
- c. Cannot sustain convergence.
- d. Sees diplopia or words jumping around with nearpoint work.
- e. Use as a counter-balance to build ranges with Divergence Insufficiency therapy.
- f. Use as a starting point for divergence therapy.
- g. Intermittent Exotropia.
- h. Exotropia
- i. For restricted base out ranges.
- j. Avoids center; cannot “pull in” towards midline.

### **METHODS OF USE:**

#### **a. CA 1 - Ramp relative convergence shifts**

- 1. Fuse the background Dallas skyline into a single image.

2. Align the yellow star into the center of the brightly lit "tower". Do not allow the star or white glow to disappear.
3. Have two pointers touch number 1 together - at the same time. Bring the pointers back away from the card and touch the stereoscope with the pointers, then bring back the pointers and touch number 1 again. Repeat the cycle back and forth with number 1... five (5) times.
4. Repeat this "pointing" cycle to each number from one (1) to number ten (10).

**b. CA 2 - Ramp relative increased convergence shifts**

1. Fuse the pyramids into a single image.
2. Place the star into the white oval. Do not allow either the star or the oval to disappear.
3. Touch each number five (5) times consecutively in numerical order.

**c. CA 3 – Sequentially increasing convergence (bubble chain)**

1. Fuse each insect sitting on each leaf.
2. Place each balloon into it's corresponding black and white circle with internal arrows. Do not allow any arrow or balloon to disappear (suppression).
3. Point to each number five (5) times in consecutive order.

**d. CA 4 – Sequentially greater increasing convergence (bubble chain)**

1. Fuse the hockey, basketball and football players into single images.
2. Place each star into each black and white circle disallowing any suppression.
3. Point to each number five (5) times in consecutive order.

**e. CA 5 – Jump convergence – large shifts**

1. Place the upper star into the upper brown circle and hold it in place.
2. Now, place the lower star into the lower brown circle and hold it in place.
3. Fuse the upper cowboy into a single image with the number 1 in the gold square. Touch the number 1 with both pointers.

4. Now, fuse the lower Indian (Native American) into a single image. Then fuse the number 2. Touch the number 2 with both pointers.
5. Now, touch the number 3 and bring the pointers back, then number 4, then number 5.
6. Repeat the above cycle five (5) times.

**f. CA 6 – Jump greater convergence – large shifts**

1. align and touch the upper star and grey sphere with both pointers, and then jump to the lower star and sphere avoiding suppressions.
2. Fuse the upper Samurai image and then the lower Samurai image.
3. Now, fuse the number 1 in the upper image and point to it, then jump to number 2, then numbers 3, 4 and then 5.
4. Repeat the cycle five (5) times.

**g. CA 7 – Convergence alignment in order**

1. Fuse number 1 into a single image. Touch it with your two pointers.
2. Now, in numerical order, from one (1) to seven (7), proceed to fuse each number and point to each. As the fusion proceeds downward, the black bar will make an “X,” crossing where the number fuses. As you proceed downward, the convergence increases.

**h. CA 8 – Convergence jumps – In and Out**

1. Fuse number 1 (the most divergent on this card) into a single image and touch with your pointers.
2. Now, jump to the bottom (the most convergent on this card) to number 2.
3. Now, jump back up to number 3.
4. Proceed up and down, in numerical order, alternating between relative convergence and divergence.
5. Repeat the above cycle five (5) times.

**i. CA 9 – Convergence ranges with anti-suppression**

1. Place the upper star into the gray circle.
2. Then, separately, fuse the upper mountain lion into a full single image. Do not allow either half of the mountain lion to disappear (horizontal anti-suppression alignment). Stabilize the image into a full single image.
3. Now, place the lower star into a full single image.

4. Then, separately, fuse the lower lion into a single image. Do not allow either half of the lion to disappear (vertical anti-suppression alignment).
5. Align and stabilize the red arrow under the “0” on the alignment line. Now, stabilize the red arrow under the number 1, then stabilize the red arrow under the letter “A.” Keep moving the red arrow progressively further out. Stabilize the arrow under the 2, then B, then 3, then C, then 4, then D.

**j. CA 10 – Convergence jumps with antisuppression**

1. Place the upper star into the upper gray circle.
2. Now, place the lower star into the lower gray circle.
3. Now, fuse the upper car into a single image without suppressing either side of the car. Stabilize the car into a complete image with no black separation down the middle. Do not allow either side of the car to disappear (horizontal anti-suppression alignment with crossed images).
4. Now, fuse the lower car into a single image without suppressing either side of the car (horizontal anti-suppression alignment without the need to cross the images to fuse uncrossed).
5. Align and stabilize the red arrow under the “0” on the alignment line and follow the alignment sequence ... 0-1-A-2-B-3-C-4-D.

## **CONVERGENCE “B” SERIES**

This series is a continuation of the Convergence “A” series, often requiring increased convergence effort with the same tasks required as in Convergence “A” (fuse each target, touch each letter and trace each design).

### **PURPOSE:**

- a. Build more convergence
- b. Build even larger ranges of convergence

- c. Build increased relative convergence (appreciate relative stereo-depth differences) to see the subtle gradation when one target requires slightly more convergence than another or when one target is slightly nearer the patient than it's neighbor.
- d. Build fusion during convergence exercises.
- e. Avoid suppression during convergence exercises.
- f. Make greater convergence shifts and convergence spatial jumps.

#### **TYPE OF PATIENT:**

- g. Convergence Insufficiency
- h. Rigid, inflexible, "locked in" in space.
- i. Cannot sustain convergence.
- j. Sees diplopia or words jumping around with nearpoint work.
- k. Use as a counter-balance to build ranges with Divergence Insufficiency therapy.
- l. Use as a starting point for divergence therapy.
- m. Intermittent Exotropia.
- n. Exotropia
- o. For restricted base out ranges.
- p. Avoids center; cannot "pull in" towards midline.

## **DIVERGENCE SERIES**

#### **PURPOSE:**

- a. Build Divergence
- b. Build ranges of divergence
- c. Build relative divergence
- d. Build fusion during divergence exercises
- e. Avoid Suppression
- f. Make divergence shifts and divergence spatial jumps

## **TYPE OF PATIENT:**

- a. Convergence excess
- b. Rigid, inflexible, “locked in” in space
- c. Cannot shift from near “pulling in” convergence to diverge the eyes (to gaze outward and far off)
- d. Myopia control
- e. Ocular headaches, eye muscle “cramping”, inability to ease off eye muscle strains
- f. Use as a counter-balance to build ranges with convergence insufficiency therapy
- g. Use as a starting point for convergence therapy if patient cannot use convergence fusion card
- h. Esotropia
- i. Restricted base-in ranges
- j. Avoids periphery – is too “centered” – too locked in with minutiae of data – must learn to see the “big picture” – to gaze (as divergence) into the distance
- k. Helps nystagmus – peripheral lock – divergence lock

## **METHODS OF USE:**

### **DIVERGENCE “A” THERAPY SERIES**

#### **a. DA 1 - Ramp relative divergence shifts**

1. Fuse the background Monster Truck into a single image.
2. Align the purple star into the center of the white circle with the internal arrows. Do not allow the star or the circle or any of the arrows to disappear (suppression).
3. Have two pointers touch number 1, together, at the same time. Bring the pointers back away from the card and touch the stereoscope with the pointers, then bring

back the pointers and touch number 1 again. Repeat the cycle five (5) times.

4. Repeat this “pointing” cycle to each number from 1 to 10.

**b. DA 2 - Ramp relative increased divergence shifts**

1. Fuse the submarine into a single image.
2. Place each star into each black and white circle. Do not allow any arrow or circle or star to disappear (suppression).
3. Touch each number five (5) times consecutively in numerical order.

**c. DA 3 – Sequentially increasing divergence (bubble chain)**

1. Fuse each Dinosaur into a single image.
2. Place each star into it's corresponding black and white circle with internal arrows. Do not allow any arrow or circle or star to disappear (suppression).
3. Touch each number five (5) times consecutively in numerical order – with increasing divergence needed as the numbers increase.

**d. DA 4 – Sequentially greater increasing divergence (bubble chain)**

1. Fuse the Aircraft Carrier, Coast Guard Cutter, and Hydrofoil into single images.
2. Place each star into each black and white circle. Do not allow any arrow or circle or star to disappear (suppression).
3. Touch each number five (5) times consecutively in numerical order.

**e. DA 5 – Jump divergence – large shifts**

1. Place the upper yellow star into the upper circle and hold it in place.
2. Now, place the lower purple star into the lower circle and hold it in place.
3. Fuse the upper helicopter into a single image with the number 1 in the green square. Touch the number 1 with both pointers.

4. Now, fuse the lower helicopter into a single image. Then fuse the number 2 and touch the number 2 with both pointers.
5. Now, touch number 3 and bring the pointers back, then number 4, and then number 5.
6. repeat the cycle five (5) times.

**f. DA 6 – Jump greater divergence – large shifts**

1. Align and touch the upper purple star and white circle with internal arrows with both pointers, then jump to, and touch the lower yellow star and white circle with internal arrows avoiding suppressions.
2. Fuse the upper cowboy into a single image and then fuse the lower cowboy on a horse into a single image.
3. Now, fuse the number 1 in the upper image and point to it, then jump to number 2 in the lower image and point to it, then numbers 3, 4, and 5.
4. Repeat the cycle five (5) times.

**g. DA 7 – Divergence alignment in order**

1. Fuse number 1 into a single image. Touch it with your two pointers.
2. Now, in numerical order, from 1 to 7, proceed to fuse each number and point to each. As the fusion proceeds downward, the black bar will make an “X”, crossing where the number fuses. As you proceed downward, the need for more divergence increases.

**h. DA 8 – Divergence jumps – In and Out**

1. Fuse number 1 (the most divergent on this card) into a single image and touch with your pointers.
2. Now, jump to the bottom (the most convergent on this card) to number 2.
3. Now, jump back up to number 3.
4. Proceed up and down, in numerical order, alternating between relative convergence and divergence,
5. Repeat the above cycle five (5) times.

**i. DA 9 – Divergence ranges with peripheral/central anti-suppression**

1. Fuse the upper blue and red butterfly into a single image.
2. Do not allow either the outer large blue/red portions of it's wings to disappear (peripheral suppression) or the



inner blue portion of it's wings with it's white body to disappear (central suppression).

3. Now, shift down to the lower butterfly. Fuse the yellow butterfly into a single image.
4. Do not allow either the outer large yellow/grey portions of it's wings to disappear (peripheral suppression) or the inner yellow/blue portion of it's wings with it's black body to disappear (central suppression).
5. Repeat jumping from the upper to the lower butterfly five (5) times.

**j. DA 10 – Divergence jumps with horizontal crossed/uncrossed antisuppression**

1. Fuse the upper surfer into a single image without suppressing either side of him or his surfboard or the wave. Stabilize him into a complete image with no black separation down the middle. Do not allow either side of him to disappear (horizontal anti-suppression alignment with crossed images).
2. Now, fuse the lower man on a Jetski into a single image without suppressing either side of him or his Jetski (horizontal anti-suppression alignment without the need to cross the images to fuse [uncrossed]).
3. Repeat jumping from the upper surfer to the lower man on the Jetski five (5) times.

## **DIVERGENCE “B” SERIES**

This series is a continuation of the Divergence “A” series, often requiring increased divergence effort with the same tasks required as in Divergence “A” (fuse each target, touch each letter and trace each design).

### **PURPOSE**

- a. Build more Divergence
- b. Build even larger ranges of divergence
- c. Build increased relative divergence
- d. Build fusion during divergence exercises
- e. Avoid Suppression

f. Make greater divergence shifts and divergence spatial jumps

#### **TYPE OF PATIENT:**

- a. Convergence excess
- b. Rigid, inflexible, “locked in” in space
- c. Cannot shift from near “pulling in” convergence to diverge the eyes (to gaze outward and far off)
- d. Myopia control
- e. Ocular headaches, eye muscle “cramping”, inability to ease off eye muscle strains
- f. Use as a counter-balance to build ranges with convergence insufficiency therapy
- g. Use as a starting point for convergence therapy if patient cannot use convergence fusion card
- h. Esotropia
- i. Restricted base-in ranges
- j. Avoids periphery – is too “centered” – too locked in with minutiae of data – must learn to see the “big picture” – to gaze (as divergence) into the distance
- k. Helps nystagmus – peripheral lock – divergence lock

#### **MIXED CONVERGENCE/DIVERGENCE C SERIES**

This series has both large ranges of convergence and then large ranges of divergence. Use the same techniques for therapy as used in the above series. This affords the patient greater flexibility in fusion and develops greater ranges. This series can be used to “push” a patient into working hard to build resiliency and also as a finishing series at the end of therapy.

#### **VERTICAL SERIES**

***There are three series of fusion cards made for the vertical patient. There are specific fusion cards for either the right or left hyper patient and there is an additional general “Basic Vertical” fusion card series which will build overall fusion and anti-suppression.***

## HOW TO TREAT THE VERTICAL PATIENT

Patients with vertical misalignments (right hyper or left hyper) that have either vertical phoria deficits or vertical tropia deficits require a multi-faceted therapy regimen:

They require development of ranges of fusion in four meridians.

a. We must build both hyper and hypo ranges – that is: if we start at their relative orthophoric position, they must sustain binocularity with the addition of prism base up and also base down.

b. We must also build eso and exo ranges. That is: if we start at their relative orthophoric position, they must sustain binocularity with prism base out and prism base in (convergence and divergence ranges development). For example: If I have a patient with an Rx of 10 prism diopters base down in the right eye (the right eye is aimed higher than the left eye by 10 prism diopters) then the relative orthophoric position is with 10 prism diopters base down already in place. To develop his ranges and to give this patient comfort and efficiency and sustaining ability, he must build his vertical ranges for at least three (3) prism diopters base up and also three (3) prism diopters base down – from his orthophoric position. Also from this 10 prism diopter base down in the right eye position, he must develop full base in and base out ranges. These are all available on the 10 prism diopter base down right eye vertical fusion card.

c. We must build a “peripheral lock” to stabilize misalignment. This “peripheral lock” allows fusion in the periphery (as in normal vision) while the patient works with relative vertical and horizontal central fusion tasks. This is done with the large peripheral circles.

d. Since the vertically misaligned patient is often inconsistent in his quantity of vertical prismatic deficit, a gradient is given in the form of an arrow alignment to a vertical scale on each card. Of note, if the patient is ill, fatigued, weak or under stress, often the vertical misalignment will vary from it's norm or significantly fluctuate.

e. A primary method for the avoidance of symptoms in the vertical deficit patient is by suppression of one eye (often

intermittent central suppression or a generalized gross suppression). Each card has a central anti-suppression target set.

f. To build vertical flexibility – which can definitely be done with hard work and consistency and concentration, work at only one vertical prism diopter at a time. The “alphabet letters” have relative vertical ranges which vary up to three (3) prism diopters. The letter “D” target, the center target in the range, has a vertical disparity equal to the rest of the whole card. The higher placed letters (A,B,C) build relative vertical ranges by one prism diopter base up right eye at a time. Ex: letter C is one prism diopter higher than letter D; letter B is two prism diopters higher than letter D; letter A is three prism diopters higher than letter D. -- The lower placed letters E, F and with some cards G) build relative vertical ranges one prism diopter base down right eye at a time. Ex: letter E is one prism diopter lower than letter D; letter F is two prism diopters lower than letter D; letter G is three prism diopters lower than letter D. .... Start by fusing letter D. Then have the patient fuse letter C and letter E. Then fuse letters B and F. Finally fuse letter A and, if on the card, letter G. Note the anti-suppression dots on either side of the letter design. The right eye sees the right dot and the left eye sees the left dot. Finally note the relative depth orientation of the letter and the stereometric geometric background it is on. Is the letter closer than the geometric background?

g. The central “picture” image provides a central fusion target as well as an interesting focal point. The central image is vertically aligned to a prismatic quantity equal to the peripheral fusion circles as well as the central anti-suppression targets, the horizontal fusion targets (the numbers), the letter D target and the numerical equivalent on the vertical gradient scale of the prism power of the card. :ex: On the seven prism diopter base right hyper card, the arrow should appear to align to “7” for the patient on the card.

h. Patient Variability - There will appear to be a variability in measurement of the exact prismatic quantity with vertical fusion cards to different patients due to a number of factors. (You might measure a seven prism diopter base right hyper card at a different amount of prism power – the same card may appear as six or eight prism diopters to different patients). Among the factors affecting the measurement inconsistencies:

i. Head tilt – a modest head tilt can misalign the reading by three or four prism diopters. Since the vertically misaligned patients have often been adapting in this manner, you must instruct your patients to maintain consistent head alignment. These head tilts can be insidious and you must be vigilant. A fusion card balanced on the head during therapy is a consistent reminder and if ignored, will fall off when the head tilts.

j. Misalignment of stereoscope – the prisms of the ocular viewer, the attachments of the ocular viewer to the shaft and the card holder itself are all areas of possible inconsistency for vertical alignment. The above areas, if loose, will cause instability with subsequent inconsistency of vertical measurement.

k. Even the distance of the eyes from the ocular, or the depth the prism lenses in the ocular are causes for differences. If the patient is wearing an Rx with vertical prism in it, the distance his glasses are from the ocular will directly affect vertical prism measurement. You must establish a baseline for each patient and his equipment and work from there.

## **VERTICAL RIGHT HYPER AND LEFT HYPER THERAPY SERIES**

These are two separate series – one for patients with a right hyper deviation and one for patients with a left hyper deviation.

*Of note: The “Basic Vertical” series (a totally different series – used in conjunction with the Right Hyper or Left Hyper series) is used for patients with either deviation.*

Due to the particular nature of the Hyper phoria/tropia patient that require these cards, this series was made with a similar format on each card. Each card has the following similar features:

1. Central fixation target which will aid fusion, give details and add interest.
2. Large peripheral ring to establish peripheral lock.
3. Vertical prism diopter scale along the far right.

4. An arrow, located in the center of the card, to align with the scale, measuring the vertical prism diopter imbalance at any time.

***NOTE: THE VERTICAL SCALE WITH THE ARROW SHOULD BE USED EVERY TIME A PATIENT STARTS TO USE THE CARDS. IT IS A QUICK MEASUREMENT OF THE PATIENT'S VERTICAL IMBALANCE AND WILL GIVE THE DOCTOR INSIGHT INTO THE PATIENT'S CURRENT STATUS.***

5. Plus sign – a vertical line seen with the right eye and a horizontal line seen with the left eye for exact fusional alignment.
6. Numbers (1 through 12) to develop horizontal fusional ranges, both convergence and divergence. Numbers two and five require large convergence efforts and number seven requires large divergence effort.
7. Letters (A through G – in most cards – some higher prism diopter cards required elimination of some letters due to the physical limitations of the card). Each letter is located on a geometric shape with some stereopsis noted. Letter D (the central letter) has the same vertical alignment as the rest of the images on the card. The letters then increase in vertical range differences to build vertical flexibility.
  - C and E ... 1 prism diopter excess range
  - B and F ... 2 prism diopters excess range
  - A and G ... 3 prism diopters excess range
8. Each card is labeled with the appropriate prism diopter imbalance on the top of the card (for a patient with an eight prism diopter right hyper imbalance, use the card labeled “VA 8 pd” on the left and “Vertical – RH” in the center

## **METHOD OF USE:**

1. Note the vertical alignment of the arrow on the scale each time the card is used.
2. Fuse the central fixation target and large peripheral ring.
3. Trace the central target and the peripheral ring with a pointer in each hand.
4. Fuse the plus sign and trace it.
5. Align each number, one at a time in numerical order and point to it with both pointers. Repeat five (5) times.

6. Keeping the head steady, point to the letter in increasing vertical range order. Use the following sequence:  
D,C,E,B,F,A,G
7. Work to feel the vertical muscles flexing. This requires time and effort but is very effective. Repeat five (5) times.

## **BASIC VERTICAL**

**PURPOSE:**

**TYPE OF PATIENT:**

**METHODS OF USE:**

**a. BVA 1**

1. Align the blue-green trapezoid in the yellow diagonal stripe. The trapezoid will fit exactly within the stripe. Depending upon the degree of vertical imbalance, the trapezoid will be located proportionally towards the top or bottom of the stripe.
2. Work to keep the trapezoid within the borders of the yellow stripe, not drift to the right or the left.
3. Keep the head erect and steady (do not tilt the head to the right or to the left because tilting the head will directly impart vertical misalignment of the fusion card image).
4. Using the vertical eye muscles, move the trapezoid slightly upward and slightly downward within the yellow stripe. Be patient. This is effective, but requires sustained effort. It will take time to build vertical ranges.
5. Blend the colors of the yellow stripe with the blue-green of the trapezoid background and the blue internal diamond. The blending of these colors is called "LUSTRE". It is as if there is a mixing of finger paints. Both colors should be seen simultaneously. If the yellow disappears, the left eye is suppressing. If the blue-green color disappears, the right eye is suppressing.

6. Now, blend the red and blue colors to the left of the trapezoid while you are fixating (visually locking on) the trapezoid.
7. With a pointer in the left hand (the pointer on the yellow stripe), trace the image of the trapezoid border. Then trace the outer border of the blue diamond, and then each progressively smaller and more central diamond shape.
8. During the tracing procedure, do not allow the trapezoid to drift to the right or left and do not allow portions of the yellow stripe or the trapezoid or diamond to disappear.

### **BVA2**

1. Repeat the above sequences, using the reversed visual images.
2. To build ranges, switch back and forth between cards BVA1 and BVA2 for five (5) cycles.

### **BVA3**

1. Align the yellow oval seen with the right eye with one of the red ovals seen in the central alignment of the left eye. There is a general numerical gradient (not meant to be prism diopters- just for explanation to the patient and note taking for patient progress) seen on the left side. So, noting that patient A starts at + 7 on Monday when rested or patient B ends the session at – 3 but unsteady, on Friday when tired, helps keep therapy organized and can be used as a gradient if more than one therapist works with a patient at different times or on different days.
2. Have the patient build convergence by “pulling inward” the yellow oval image into the dark blue vertical line and build divergence by “pushing outward” the yellow oval into the dark green vertical line. Now let’s try horizontal “jumps”, going inward (converging) by quickly shifting the yellow oval from the green line then to the red oval and then to the blue line. Then let’s jump outward (diverging) by having the yellow oval jump from the blue line, then the red oval and then the green line. We are now building horizontal flexibility at the patient’s own vertical misalignment.



#### **BVA4**

1. Repeat the above sequences, using the reversed visual images.
2. To build ranges, switch back and forth between cards BVA3 and BVA4 for five (5) cycles.

#### **BVA5**

1. These images are larger than in BVA3 and BVA4, however the patient must work to align them centrally and avoid suppressions. The blue circle, plus sign and two side smaller circles on the right side are difficult to suppress, however the oranges vertical lines and the central green line will quickly suppress, blending into the yellow background seen with the right eye.
2. Work to blend the colors (orange and yellow) and (green and yellow) in a technique called "luster".

#### **BVA6**

Repeat the above sequences, using the reversed visual images.

#### **BVA7**

1. When this chart is seen in the stereoscope, it will appear as an "X". The blue and orange diagonals will cross at some demarcation on the vertical scale.
2. Record the point on the scale that the patient sees the crossing of the "X" initially.
3. As the patient tries to converge (pull the eyes inward), the crossing on the scale will move downward. Divergence moves the "X" crossing upwards.
4. Record the greatest amount of movement on the scale both converging and diverging.

#### **BVA8**

1. Have the patient attempt to align the vertical column of letters seen with the right eye into the narrow yellow and orange column seen with the left eye.
2. Record which geometric design aligns with "0".

3. Have the patient try to vertically “flex” or move the geometric designs up and down within the narrow column.

### **BVA9**

1. What colored note does the black line go through?
2. Tilt the patient’s head slightly and have them try to pull the line vertically back to the same orientation as when they started.
3. Now tilt the head in the opposite direction and repeat.
4. We are building vertical flexibility with a minimally detailed background.

### **BVA10**

1. Repeat the same techniques as in BVA9.
2. Try to align the planes seen with the right eye into the center of the runway seen with the left eye. Here, then, we are trying to horizontally stabilize the binocular alignment while “flexing” vertically.

## **DYNAMIC FUSION CARDS**

### **PURPOSE:**

- a. To allow horizontal tracking movements during fusion therapy.
- b. To allow sequential shifts from a moving target at near (ex: initiating reading ocular movements) up to a convergence or divergence target.
- c. Sustain fusion with horizontal eye movements.
- d. Build fusion through progressive steps (gross fusion, central fusion, binocular fixation, convergence and divergence ranges, fine stereopsis, then saccadics followed by saccadics utilizing anti-suppression) while moving the eyes horizontally with consistent maintenance of binocularity.
- e. Enhance other fusion cards by adding horizontal movements and fusion jumps other than those on the other cards.
- f. The final stages of therapy, add more complex and difficult, but realistic tasks needed in the day to day world.
- g. Add interest to therapy.

## **METHODS OF USE:**

Each dynamic card is narrower and shorter than any other fusion cards. This allows horizontal movement (actually moving the card in the card holder to the right and to the left) while fusion is maintained. When we read our eyes move along the line horizontally and we must also maintain fusion. Since each card is shorter than the other cards, by placing the dynamic card in the holder in front of the larger card, fusion shifts are made from the exposed top of the larger rear card to the smaller forward dynamic card. NOTE: On each dynamic card, move the card right and left fully, maintaining fusion.

### **a. DY 1 –**

1. Fuse the purple disc into the red square.
2. Move the card right and left maintaining fusion.
3. Trace the disc and the square.

### **b. DY 2 –**

1. Fuse the 1, 2 and 3 into a single image
2. Move the card right and left maintaining fusion.
3. Trace the large oval, the horizontal lines and the numbers 1, 2 and 3.

### **c. DY 3 –**

1. Fuse the star, the central plus sign and the numbers.
2. Move the card right and left maintaining fusion.
3. Touch each number five (5) times.
4. Trace the star and central plus sign.

### **d. DY 4 –**

1. Fuse the numbers.
2. Trace the central target.
3. Move the card right and left maintaining fusion.
4. Point to each number five (5) times.

### **e. DY 5 –**

1. Fuse the entire spiral image.
2. Fuse the rocket into a single image and touch the rocket with two (2) pointers.
3. Touch each number five (5) times and then trace it's corresponding spiral arrow to the next number.
4. Touch each "star in the big dipper" with two (2) pointers.
5. Move the card right and left maintaining fusion.

**f. DY 6 –**

1. Fuse the entire spiral image.
2. Fuse the satellite into a single image and touch the satellite with two (2) pointers.
3. Touch each number five (5) times and then trace it's corresponding spiral arrow to the next number.
4. Touch each "the earth" with two (2) pointers.
5. Move the card right and left maintaining fusion.

**g. DY 7 –**

1. Fuse the letters, dots and arrows into a single image.
2. Touch each letter, then each dot between the letters, then trace each arrow. Work in the same direction in which we read (left to right).
3. Have an assistant move the card right and left, maintain fusion and point to each letter and dot. Try to hold on target.
4. Do not allow any letters or dots to disappear (suppression).

**h. DY 8 –**

1. Fuse the letters, dots and the bars into a single image. The letters should align in order. Work to keep the letters in place.
2. Touch each letter, then each dot between the letters. Work in the same direction in which we read (left to right).
3. Have an assistant move the card right and left, maintain fusion and point to each letter and dot. Try to hold on target.
4. Do not allow any letters or dots to disappear (suppression) or to shift around.
5. Trace the green lines. Touch the pink and red boxes five (5) times.

**i. DY 9 –**

1. Fuse the parrot.
  2. Touch each number five (5) times.
- Move the card right and left five (5) times.

**j. DY 10 –**

1. Fuse the chick.
2. Touch each foot.
3. Fuse the letters into a circle of letters around the chick.
4. Touch each letter.
5. Do not allow the chick or any of the letters to disappear.
6. Move the card right and left maintaining fusion.

## **“COLOR SHOCK SERIES” WHY DO WE NEED IT?**

Today's visual environment consists of high definition, often bright, screens in a myriad of electronic displays, such as High Def TV's, computer monitors and cell phones. These require an adaptation to the constant changing of color presentations in intensity (the colors are often bright), wave lengths (different colors presented), hues (subtle differences) and these color changes are very rapid. Also, the subtle interpretation of different shades of similar colors require a different state of visual attention that is difficult for some and easy for others.

This series presents color shifts of conflicting colors and requires those color shifts to take place while attending to targets while shifting from far to near (accommodative shifts).

### **METHODS OF USE:**

Place the large **yellow Color Shock distance chart (CS11)** 6 to 8 feet in front of you.

Color Shock cards (CS01) and (CS02) work in coordination with **yellow distance chart CS11**. Place card CS01 into the stereoscope and fuse the top left pink circle. Now shift your focus from the letter A in the pink circle on the small card in the stereoscope to the letter A in the blue circle on the large distance chart. Shift focus through each of the letters from the small cards CS01 and CS02 to the large cards. Fuse the central dots in the circles and shift from near to far. Shift focus on the central multicolored stars from far to near and from color to color.

Repeat near to far focus shifting with cards CS03 and CS04 in coordination with the **green distance Color Shock Chart CS 12**. Shift focus from the peripheral larger letters on the large Chart CS12 to the outer letters on the smaller fusion card CS03. Then shift focus from the (finer) inner letters and numbers and also shift attention from each of the central circles on CS03 to the central circles on CS12. Continue with the next card (CS04). Try to color blend the backgrounds of CS03 and CS04 (ex: blend the green on the left background with the pink on the right).

Card CS05, CS06 and CS07 require blending of the colors in that the right eye must learn to fuse the color presented to it with the (different) color presented to the left eye. There are anti-suppression targets (pointing fingers) in card CS06.

Cards CS08 and CS09 have colors that recede into the background and require (color) visual attention and awareness of differences. Also the backgrounds must be color blended.

CS10 requires fine color fusion and blending.

