Introduction to the Visual Perceptual Evaluation

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Outline

❖ Review visual information processing
❖ Review visual perceptual testing
   ➢ Visual Analysis
   ➢ Visual Spatial Testing
   ➢ Body Knowledge and control
   ➢ Laterality and Directionality
   ➢ Visual Motor Integration
   ➢ Visual Verbal Integration
   ➢ Visual Auditory Integration
❖ Tips for introducing perceptual therapy into VT
Visual Information Processing

The quality and efficiency of vision and visual processing have an overwhelming impact on how a person functions in his/her environment.

The visual system is an information processing unit that facilitates a person’s successful analysis and interaction with their surroundings.
Visual Information Processing

- The visual system is an information processing unit
  - Facilitates a person’s successful analysis and interaction with their surroundings
- The information processing network is broken down into two inversely directed and interplaying processing pathways
Visual Information Processing

❖ Pathway 1
- Unsupervised
- Raw, sensory
- Bottom-up

➢ Deals with the initial image information, discovery, and localization

❖ Pathway 2
- Supervised
- Cognitive
- Top-down

➢ Conveys rules, knowledge
➢ Allows for meaningful perception via linking and binding of unsupervised pieces
Visual perceptual processing can be defined in a hierarchical model.
A person can not make decisions or adapt to their environment through the information he/she has gathered visually unless they have analysed the visual information (prefrontal lobe)
Visual Information Processing

- Visual cognition: ability to manipulate and integrate visual inputs with other sensory information to gain knowledge, solve problems, formulate plans, and make decisions.
- Visual cognition / analysis cannot occur without an intact visual memory. While visual analysis is occurring, must be able to create and retain a picture of the object / visual field in the mind.
Before an image can be stored in memory, must recognize the pattern that makes up the image via pattern recognition (distinguish a particular object from another and its surroundings / figure-ground)

Pattern recognition can not be performed without proper visual scanning / saccades (moving the eye towards an object of interest in the environment)
Visual scanning / saccades (using organized search patterns to visually search through the environment) is a product of visual attention:

➢ Automatic / Reflexive level - protective controlled by brain stem and activated with suddenly appearing object in the visual field or initial occurrence of a movement

➢ Voluntary level - voluntary saccadic movement controlled by cortex and utilized for information gathering
Visual Information Processing

- Ability to maintain visual focus and attention on an object for a period of time determines how visual input is analyzed in the cortex, and is the basis for decision making.
- If don’t attend to visual information → don’t initiate a search for visual information or pattern recognition → don’t produce visual memory for that image → don’t use that visual input for decision making.
Higher level processes can not occur unless the cortex receives clear and concise visual information from the environment (visual acuity, visual fields, oculomotor control, accommodation, binocularity)
Visual Information Processing

- Even if the ocular and visual ‘hardware’ of the eyes (visual acuity, visual field, accommodation, binocularity, oculomotor function, ocular health) is intact, the visual processing ‘software’ in the cortex may have difficulty quickly and efficiently analyzing and utilizing the data provided.

- A dysfunction in any component of the ‘hardware’ will make visual information processing that much more strenuous.
Skills required for proficient visual information processing “software”:

- Visual Spatial Skills
- Visual Analysis Skills
- Visual Motor Integration
- Visual Verbal Integration
- Auditory Visual Integration
Skills required for proficient visual information processing “software”:

- Visual Spatial Skills
- Visual Analysis Skills
- Visual Motor Integration
- Visual Verbal Integration
- Auditory Visual Integration
Visual Information Processing

❖ Visual Spatial Skills:
➢ Ability to tell where objects (including your body) are in space
➢ How objects relate to each other in space (how internal and external visual space is organized)
➢ Visual spatial skills are subdivided into three parts
Visual Information Processing

❖ Visual Spatial Skills:

➢ Laterality
  ■ Knowledge of own right and left

➢ Directionality
  ■ Knowledge of other people’s / object’s right and left

➢ Bilateral Integration
  ■ Awareness of both sides of the body
  ■ Ability to use both sides separately and together both unilaterally and bilaterally
Visual Information Processing

Visual Spatial Skill Dysfunction - difficulties in:

- manipulation of visual information (mazes, maps, navigation)
- gross motor function
- recognizing where objects are in space / distances
- telling time
- right / left confusion (was/saw)
- letter reversals (bdpq)
- handwriting
- coordination and balance
- sports
- crossing the midline
- math performance (particularly trigonometry and calculus)
Skills required for proficient visual information processing “software”:

- Visual Spatial Skills
- Visual Analysis Skills
- Visual Motor Integration
- Visual Verbal Integration
- Visual Auditory Integration
Visual Information Processing

- Visual Analysis - ability to recall, locate, select, extract, analyse, and manipulate relevant visual information
- Used in differentiating small differences in letter and number recognition, sight word recognition, mathematics, spelling, idea expression, seeing the ‘bigger picture’ without losing the details, and remembering visual sequences
Visual Information Processing

- Visual Analysis includes:
  - Visual discrimination
    - Recognise similarities and differences between images (hot/hut, 6/9).
    - Essential elementary reading skill for phonics and sight word processing
  - Form perception / Spatial relationships
    - Mentally visualize and manipulate an image
  - Form constancy
    - Recognize forms regardless of orientation
  - Figure-ground
    - Locate and identify an item within a busy background without confusion
Visual Information Processing

❖ Visual Analysis includes:

➢ Visual attention / Attention span
  ■ Select or attend to a subset of visual information for more in depth processing - simultaneous processing of multielement displays (relevant vs. irrelevant)
  ● Span: number of letters / visual information one can take in and accurately process in one look

➢ Visual memory
  ■ Recognize or recall characteristics of previously seen image
Visual Information Processing

❖ Visual Analysis includes:

➢ Visualization
  ■ Spontaneously invision an image in one’s mind
    ● The most highly developed form of visual memory

➢ Visual closure
  ■ Visualize the whole image when only an incomplete part of the image is seen

➢ Visual sequencing
  ■ Perceive, organize, and remember items in a specific order
Visual Information Processing

❖ Visual Analysis dysfunction - difficulties in:
➢ Visual discrimination
  ■ Confuse letters, shapes, colors, position, objects (d/b, p/q, 6/9, o/0)
  ■ Gaining information from maps / charts / graphs / text
  ■ Identifying and exchanging money
  ■ Matching and sorting objects
  ■ Dressing (i.e., matching shoes or socks)
  ■ Self correcting errors in homework / school work
  ■ Discriminating between size of letters and objects
  ■ Matching two dimensional to three dimensional objects
Visual Information Processing

❖ Visual Analysis dysfunction - difficulties in:

➢ Form perception / Spatial relationships
  ■ Distinguishing differences in size, shape, objects, space
  ■ Plan actions in relation to objects around you
  ■ Spatial concepts “in, out, on, under, next to, up, down, in front of”
  ■ Differentiating between “b, d, p, q;”
  ■ Symbol and L/R reversals
  ■ Transposing numbers or letters, math
  ■ Poor sight vocabulary
  ■ Reading charts, maps and diagrams
  ■ Losing place on a page and finding what is being looked for, forget where to start reading
  ■ Attending to a task
Visual Information Processing

❖ Visual Analysis dysfunction - difficulties in:

➢ Form Constancy
- Recognizing letters / numbers when in different styles (font, size, color)
- Slow alphabet and number mastery
- Difficulty recognizing errors
- Differentiating between “b, d, p, q / q, o;”
- Transition from printed to cursive letters
- Assuming size of objects regardless of their distance
- Looking at objects from an angle
- Understanding volumetric concepts (mass, amount, quantity)
- Recognizing familiar objects when environmental conditions change
Visual Information Processing

Visual Analysis dysfunction - difficulties in:

➢ Figure ground
  ■ Pulling out a shape from background (find specific information on page/board)
  ■ Sight word recognition, mathematics, spelling, idea expression
  ■ Remembering visual sequences
  ■ Attending to a word on printed page (inability to block out other words around it)
  ■ Filtering out visual distractions (colorful posters, talking, movement)
  ■ Sorting and Organizing
  ■ Over attend to details and miss the “big picture”
  ■ Overlook details and misses important information (word recognition, locating one object within a group, finding place on the page, skips pages and sections, punctuation)
  ■ Copying from the board / worksheet (omit segments of words)
  ■ Misformed letters and uneven spacing
  ■ Locating a friend on the playground or Finding specific item in a pack
Visual Information Processing

- Visual Analysis dysfunction - difficulties in:
  ➢ Visual attention / Attention span
    ■ Slow reading speed
    ■ Mistaking words with similar beginnings
    ■ Reading accuracy and fluency
    ■ Reading comprehension
    ■ Small VAS requires visual attention to be focused on sublexical units, resulting in serial processing (i.e., word decoding) instead of parallel processing (sight word reading)
    ■ Math (counting)
    ■ Move from task to task without first finishing
Visual Information Processing

Visual Analysis dysfunction - difficulties in:

- Visual memory / Visualization
  - Reproducing figures (letters, numbers, shapes, symbols) from memory
  - Mix up lower and uppercase letters, print and cursive letters
  - Copying (copy only one letter or number at a time from the board)
  - Replicating information (verbal, board, worksheets, tests)
  - Reading comprehension and reading recall
  - Phone number memorization
  - Sight words
  - Reproducing information from memory
  - Navigation / Maps
Visual Information Processing

Visual Analysis dysfunction - difficulties in:

- Visual sequencing / Sequential memory
  - Seeing things in correct order, spelling, counting, arithmetic
  - Recalling what is read
  - Sequence letters or numbers in words or math problems
  - Remembering the alphabet in sequence
  - Copying
  - Spelling
  - Reading comprehension - remembering order of events
  - Forget assignments and steps in instructions
Visual Information Processing

❖ Visual Analysis dysfunction - difficulties

➢ Visual closure
  ■ Art, spelling, sight word recognition
  ■ Writing
  ■ Using worksheets / test forms that are poorly photocopied
  ■ Complete assignments - leaves out parts of worksheets / tests
  ■ Dot-to-dot worksheets / Puzzles
  ■ Identify mistakes in worksheet / test
  ■ Math (geometry)
  ■ Leave out parts of or entire words
Visual Information Processing

- Skills required for proficient visual information processing “software”:
  - Visual Spatial Skills
  - Visual Analysis Skills
  - Visual Motor Integration
  - Visual Verbal Integration
  - Auditory Visual Integration
Visual Information Processing

❖ Visual Motor Integration Skills:
➢ Coordinate visual processing and motor skills
   ■ Integrate visual information with fine motor movements / eye-hand coordination
   ■ The eyes ‘see’ and then ‘tell’ the body what to do
Visual Information Processing

- Visual Motor Integration Dysfunction - difficulties in:
  - Letter / number reversals and transpositions
  - Copying down information
  - Writing within the lines
  - Misorganization
  - Spacing letters and numbers
  - Pencil grip
  - Writing posture
  - Sports
  - Puzzles
  - Cutting
  - Tying shoes
Skills required for proficient visual information processing “software”:

- Visual Spatial Skills
- Visual Analysis Skills
- Visual Motor Integration
- Visual Verbal Integration
- Auditory Visual Integration
Visual Information Processing

❖ Visual Verbal Integration Skills: “see it - say it”

➢ Speed of rapid automatic naming (RAN)
  ■ Accurately and efficiently calling out a list of presented visual stimuli

➢ Expressive language
  ■ Recognizing visual symbols as written word and quickly and accurately retrieve their sound / label / meaning
Visual Information Processing

Visual Verbal Integration Dysfunction - difficulties in:

- Slow and disjointed reading
- Lost in the text
- Frequent re-reading
- Letter identification
- Word recognition
- Sound-symbol associations, alphabet learning
- Reading comprehension
Skills required for proficient visual information processing “software”:
- Visual Spatial Skills
- Visual Analysis Skills
- Visual Motor Integration
- Visual Verbal Integration
- Auditory Auditory Integration
Visual Information Processing

- Auditory-Visual Integration Skills:
  ‘hear it - match it / write it”
- Identify an auditory stimulus as a visual representation
Visual Information Processing

- Visual Auditory Integration Dysfunction - difficulties:
  - Alphabet learning
  - Sound-symbol association
  - Spelling
  - Slow reading speed
  - Phonetic reading
  - Following verbal directions

Phonics is the instruction of sound-symbol associations:
- Learn graphemes (letters) that represent phonemes.
- Blend sounds of letters to read words.
- Segment whole words into individual sounds to spell.
Visual Perceptual Dysfunction

- Almost everything we do during the day requires some degree of perceptual ability for quick and efficient performance.
- If the child is struggling in school, especially if development, ocular health, visual acuity, accommodative magnitude and stamina, binocularity, and oculomotor function are all intact, then a visual perceptual assessment may be indicated.
Visual Perceptual Dysfunction

- Visual perceptual dysfunction is not solely a pediatric problem:
  - Untreated patients
  - Patients with a history of traumatic brain injury, stroke, intracranial space occupying lesions, demyelinating disorders, head trauma, neurodegenerative disease, and some psychological disorders can all suffer from these deficits
    - Limit their quality of life, activities of daily living, or job performance
Testing Basics
Testing Basics

- Visual perceptual examination evaluates the ability and efficiency of visual information processing
  - Ability to interpret, understand, recall, and utilize visual information
  - Ability to link vision to language
- Many of the tests require proof of an advanced degree for purchase
  - Optometrists are one of the healthcare providers that are qualified to perform these tests
Testing Basics

❖ The test results can be utilized
➢ In the office to evaluate the need for therapy
➢ Report can be written
   ■ Healthcare providers to help with interprofessional care of the patient
   ■ Teacher for any adjustments the doctor may recommend based on the testing
   ■ School board to help incorporate an individualized education plan or other accommodation for the student
Some practitioners perform a smaller battery of tests after treatment to evaluate the progress made.

Have to be careful as there is a learning component to these tests and a child may perform better on a test simply because they have already taken it.
Testing Basics

❖ No one battery of tests that is considered best
❖ Different tests are available on the market
➢ Different doctors will use a combination of different tests and test subsets during the evaluation
■ Most will do at least one test to check all the dysfunctions mentioned
Testing Basics

❖ These are standardized tests - instruction must be read verbatim everytime and must be followed without any deviation
❖ If a time interval is allotted, utilize a stopwatch (in some tests, a second can be the difference between passing or failing)
❖ Keep the room quiet and distraction free, keep the parents or caregivers out of the room, and make the patient as comfortable as possible
Testing Basics

❖ Produce as fun and natural environment as possible to alleviate some of the stress
❖ Make sure they are not able to see the instruction and scoring sheets (they will peek if you give them the opportunity)
❖ Some patients are very sensitive and if they think they are performing poorly then they may give up
➢ Be as encouraging as possible without giving concrete feedback on if they are answering correctly or incorrectly (great job, you’re doing great, let’s keep going…)
Aside from the test results, the practitioner should also be mindful of / record child’s

- Affect
- Cooperation
- Behaviour
- Working distance
- Motor overflow
- Stamina
- Pencil grip

- Body posture
- Crossing midline
- Support of page with non-writing hand
Testing Basics

❖ If the patient habitually wears glasses for near, they should do the testing through the glasses
❖ Most tests can be done on children age 5 and up
❖ Visual perceptual tests are not covered by health insurance
❖ Range from 75-120 minutes depending on the testing battery, age, and cooperation
➢ Plus patient education and report writing
Testing Basics

- **Raw Scores**: Number of items answered correctly on a given test, can get converted into other scores.
- **Scaled Score**: Result of some form of a mathematical transformation of a raw score - useful when comparing test results over time or comparing performance on two different tests.
- **Percentile**: Ranks individuals within a group on a scale of 1-99 with 50 being average. Percentile rank of 75 means the student scored better than 75 percent of the other students.
- **Standard Deviation**: Quantifies the amount of variation or dispersion of a set of data values. A low standard deviation indicates that the data points tend to be close to the mean while a high standard deviation indicates that the data points are spread out over a wider range of values.
- **Z Score**: Relates to a value's relationship to the mean (average) of a group of values, measured in terms of standard deviations from the mean. Z-score is 0, means the data point’s score is identical to the mean score. A Z-score of +1.0 would indicate a value that is one standard deviation above the mean.
- **Grade-Equivalent**: The first digit represents the year of the grade level and the digit after the decimal represents the month of that grade level. If a 2nd grader gets a 5.4, it means that an average 5th grader would have scored as well on the same test 4 months into school.
- **Stanine**: Comes from the combination of the words “standard of nine”. It rates achievement on a scale of 1-9. In general, a stanine of 1, 2 or 3 indicates below average achievement, 4, 5 or 6 indicates average achievement, while 7, 8 or 9 indicate above average.
Testing Basics

We will not discuss scoring and norms here as each test has their specifications of scoring and percentile ranking and should be referred to individually.

25-75th Percentile = Average
Visual Perceptual Testing
Visual Perceptual Testing

- Visual Analysis / Processing / Cognition
- Body Knowledge and Control
- Laterality and Directionality
- Visual Motor Integration
- Visual Verbal Integration
- Auditory Auditory Integration
Visual Perceptual Testing

➢ Visual Analysis / Processing / Cognition
➢ Body Knowledge and control
➢ Laterality and Directionality
➢ Visual Motor Integration
➢ Visual Verbal Integration
➢ Auditory Visual Integration
Visual Processing / Analysis / Cognition

- Test of Visual-Perceptual Skills (TVPS)
- Primary Mental Abilities (PMA)
- Kaufman Assessment Battery for Children (KABC)
- Detroit Test of Learning Aptitude (DTLA)
- BURT Word Reading Test
Visual Processing / Analysis / Cognition

❖ Test of Visual-Perceptual Skills (TVPS)
  ➢ Visual Closure, Visual Figure-Ground, Visual Memory and Visualization, Visual Sequential Memory, Visual Discrimination, Spatial Relationships, Form Constancy

❖ Primary Mental Abilities (PMA)

❖ Kaufman Assessment Battery for Children (KABC)

❖ Detroit Test of Learning Aptitude (DTLA)

❖ BURT Word Reading Test
Test of Visual-Perceptual Skills (TVPS) - Visual Closure Subtest

➢ Match an incomplete target to the correctly completed image
➢ Evaluates the ability to be aware of clues in the visual stimulus that allow determination of the final percept without having all the details present

Age 5 and up all subtests
Test of Visual-Perceptual Skills (TVPS) - Visual Figure Ground Subtest

➢ Find a target image that is embedded in a field of four complex designs
➢ Evaluates the ability to attend to a specific feature or form while maintaining awareness of the relationship of this form to the background information
Test of Visual-Perceptual Skills (TVPS) - Visual Memory and Visualization Subtest

Presented with a target image for exactly five seconds and asked to remember it. Then asked to find the exact image out of four options, on the following page.

Evaluates the ability to recognize and recall visually presented information along with assessing short-term spatial memory.
Test of Visual-Perceptual Skills (TVPS) - Visual Memory and Visualization Subtest

- Presented with a target image for exactly five seconds and asked to remember it. Then asked to find the exact image out of four options, on the following page.
- Evaluates the ability to recognize and recall visually presented information along with assessing short-term spatial memory.
Test of Visual-Perceptual Skills (TVPS) - Visual Sequential Memory Subtest

- Presented with a sequence of elements for five seconds and asked to remember it.
- Then asked to find the image with the same sequence, from four options, on the following page.
- Evaluates the ability to recognize and recall visually presented information when sequence is important (i.e. spelling).
Test of Visual-Perceptual Skills (TVPS) - Visual Sequential Memory Subtest

- Presented with a sequence of elements for five seconds and asked to remember it.
- Then asked to find the image with the same sequence, from four options, on the following page.
- Evaluates the ability to recognize and recall visually presented information when sequence is important (i.e. spelling).
Test of Visual-Perceptual Skills (TVPS) - Visual Discrimination Subtest

- Presented with five similar images and is asked to find one image that exactly matches the presented target image (no memory component)
- Evaluates the ability to discriminate between similar forms
Test of Visual-Perceptual Skills (TVPS) - Spatial Relationships Subtest

Age 5 and up

- Presented with five similar images and is asked to find the one image that is different from the rest
- Evaluates the ability to think spatially and mentally manipulate images, and perceive patterns between them
Test of Visual-Perceptual Skills (TVPS) - Form Constancy Subtest

Presented with four or five images and asked to find the one image that matches the presented target image.

- The matching image may be larger, smaller, rotated, and/or embedded within a larger design.

Evaluates the ability to recognize items regardless of their change in shape, color, size, texture, context, or orientation.
Visual Processing / Analysis / Cognition

- Test of Visual-Perceptual Skills (TVPS)

- Primary Mental Abilities (PMA)
  - Perceptual Speed, Spatial Relationships

- Kaufman Assessment Battery for Children (KABC)

- Detroit Test of Learning Aptitude (DTLA)

- BURT Word Reading Test
Primary Mental Abilities (PMA) - Perceptual Speed Subtest

- Requires patient to rapidly perceive subtle differences in similar forms and mark down which two forms are similar.
- Evaluates the ability to quickly and accurately compare letters, numbers, objects, pictures, or patterns.
Visual Processing / Analysis / Cognition

- **Primary Mental Abilities (PMA) - Spatial Relationships Subtest**
  - Age 6.4 and up
  - Requires patient to visually manipulate parts of a square
    - Presented with incomplete squares in all questions and must choose which of the 4 options is the missing piece which will complete the square. The correct answer may be turned so have to mentally manipulate the images to complete the test.
  - Evaluates the ability to think spatially and mentally manipulate images, and perceive patterns between them.
Visual Processing / Analysis / Cognition

- Test of Visual-Perceptual Skills (TVPS)
- Primary Mental Abilities (PMA)
- Kaufman Assessment Battery for Children (KABC)
  - Number Recall, Word Recall, Hand Movements, Gestalt Closure, Block Counting, Pattern Reasoning, Triangles
- Detroit Test of Learning Aptitude (DTLA)
- BURT Word Reading Test
Kaufman Assessment Battery for Children (KABC) - Number Recall Subtest  
Age 3 and up
➤ Requires patient to repeat a series of numbers in the same sequence as you say them  
   2,4……5,3,1………7,10,8,2
   ▪ The numbers all have one syllable
➤ Evaluates a child’s working memory, sequential processing, and ability to remember and recall an auditory sequence with a gradually increasing span
   ▪ Capacity of integrating and understanding stimuli in a serial order
   ▪ Capacity to hold small amounts of information in an active, easily accessible state
Kaufman Assessment Battery for Children (KABC) - Word Order Subtest

- Requires patient to repeat a series of *words* in the same sequence as you say them - at, up.....is, he, it.....in, on, he, up
  - All words are one syllable

- Evaluates a child’s working memory, sequential processing, and ability to remember and recall an auditory sequence with a gradually increasing span
  - Capacity of integrating and understanding stimuli in a particular, serial order.
  - Capacity to hold small amounts of information in an active, easily accessible state.
Visual Processing / Analysis / Cognition

- Kaufman Assessment Battery for Children (KABC) - Hand Movement Subtest  
  Age 4 and up

- Patient copies a precise sequence of taps the practitioner makes on the table with fist (F), palm (P), or side of the hand (S)

- Evaluates a child’s working memory, sequential processing, and ability to remember and recall a visual sequence with a gradually increasing span
Visual Processing / Analysis / Cognition

- Kaufman Assessment Battery for Children (KABC) - Gestalt Closure Subtest  
  Age 3 and up
  ➢ Requires the patient to mentally “fill in the gaps” in a partially completed drawing and name/describe the object or action that they see
  ➢ Evaluates a child’s simultaneous processing and ability to perceive the whole by mentally filling in the missing information
Kaufman Assessment Battery for Children (KABC) - Block Counting Subtest

- Age 5 and up

- Requires patient to look at a picture of a pile of blocks, some of which are partially or completely hidden, and say how many blocks are in the pile

- Evaluates a child’s simultaneous processing, ability to visualize objects in three dimensions, form constancy, and spatial relationships
Kaufman Assessment Battery for Children (KABC) - Pattern Reasoning Subtest  
Age 5 and up

- Patient looks at a row of images with one image missing, then selects an image to complete the pattern.
- Evaluates a child’s simultaneous processing and reasoning where the child perceives a pattern in a series, generates and tests a hypothesis about the rule that governs the pattern, and then applies the rule.
Visual Processing / Analysis / Cognition

- **Kaufman Assessment Battery for Children (KABC)**
  - Triangle Subtest Age 3 and up
  - Requires the patient to reproduce the shape shown on the paper using the triangles provided using different colored triangles
  - Evaluates a child’s problem solving skills, simultaneous processing, visual memory, form constancy, spatial relationships, and eye-hand coordination.
Visual Processing / Analysis / Cognition

- Test of Visual-Perceptual Skills (TVPS)
- Primary Mental Abilities (PMA)
- Kaufman Assessment Battery for Children (KABC)
- Detroit Test of Learning Aptitude (DTLA)
  - Design Sequence, Word Sequence, Symbolic Relations
- BURT Word Reading Test
Detroit Test of Learning Aptitude (DTLA) - Design Sequence Subtest Age 6 and up
➢ Requires the patient to look at a picture (ranging from 2-6 images in length), memorize the sequence, and reproduce it using dice with the different images on it
➢ Evaluates a child’s working memory, logical reasoning, sequential processing, and ability to remember and recall a visual sequence with a gradually increasing span
Detroit Test of Learning Aptitude (DTLA) - Word Sequence Subtest Age 6 and up

- Requires the patient to repeat a series of words in the same sequence as you say them
- Evaluates a child’s working memory, sequential processing, and ability to remember and recall an auditory sequence with a gradually increasing span.
Detroit Test of Learning Aptitude (DTLA) - Symbolic Relations Subtest  
Age 6 and up

➢ Requires the child to look at a pattern and then pick an image from a group which best fits the pattern
➢ Evaluates a child’s simultaneous processing and reasoning where the child perceives a pattern in a series, generates and tests a hypothesis about the rule that governs the pattern, and then applies the rule
Visual Processing / Analysis / Cognition

- Test of Visual-Perceptual Skills (TVPS)
- Primary Mental Abilities (PMA)
- Kaufman Assessment Battery for Children (KABC)
- Detroit Test of Learning Aptitude (DTLA)
- BURT Word Reading Test
Visual Processing / Analysis / Cognition

❖ BURT Word Reading Test
➢ Requires the child to read words of increasing length
➢ Evaluates a child’s reading age (standardized for age norms) and word recognition ability (visual attention span)
➢ Untimed

Age 6 -12.11
Visual Perceptual Testing

➢ Visual Analysis / Processing / Cognition
➢ Body Knowledge and control
➢ Laterality and Directionality
➢ Visual Motor Integration
➢ Visual Verbal Integration
➢ Visual Auditory Integration
Body Knowledge and Control

- Standing Angels in the Snow
- Alternate Hop
- Chalkboard Circles
- Incomplete Man
- Movement Assessment Battery for Children 2 (MABC-2)
Body Knowledge and Control

❖ Standing Angels in the Snow
❖ Alternate Hop
❖ Chalkboard Circles
❖ Incomplete Man
❖ Movement Assessment Battery for Children 2 (MABC-2)
Body Knowledge and Control

❖ Standing Angels-in-the-Snow         Age 3-8
➢ Requires the child to make a very specific series of arm and leg movements.

Monolateral Movement
- Right arm
- Left arm
- Right leg
- Left leg

Homologous Movement
- Both arms

Ipsilateral Movement
- Both right leg and right arm
- Both left leg and left arm

Contralateral Movement
- Right arm and left leg
- Left arm and right leg
Body Knowledge and Control

❖ Standing Angels-in-the-Snow  Age 3-8
➢ Look at the limb to be moved?
➢ Abortive movements to get started?
➢ Hesitate at the beginning of the movements?
➢ Movements hesitant and jerky?
➢ Motor overflow to limbs other than those touched?
➢ Instructions have to be repeated?
➢ If an error occurs, can correction be made after one repetition?
Characteristic Behavior for Standing Angels-in-the-Snow

3-4 years
- 3yo: movements need not be related to touched body parts.
- 4 yo: succeeds in homologous movements and to a lesser degree in monolateral movements.

5-7 years
- Succeeds in monolateral, homologous, and ipsilateral movements.
- A differentiating factor is the motor overflow (amount that other nontouched body parts are moved).
  - 5 yo: some motor overflow on most movements
  - 7 yo: almost no motor overflow
- 5yo: attempts at contralateral movement produces massive overflow or breakdown of performance
- 7yo: somewhat competent contralateral movement accompanied by minimal motor overflow and frequent segmented performance (touched limbs are not moved simultaneously)

7-8 years
- 7yo: child succeeds in all patterns with minimal motor overflow on contralateral movement
- 8yo: child succeeds in all patterns without motor overflow
Body Knowledge and Control

- Standing Angels in the Snow
- Alternate Hop
- Chalkboard Circles
- Incomplete Man
- Movement Assessment Battery for Children 2 (MABC-2)
Body Knowledge and Control

❖ Alternate Hop    Age 3-8
➢ Requires the child to hop in place 3 times alternating between right or left foot until you say stop to evaluate body knowledge and control
   ■ Demonstrate hopping on 1 foot for the child
   ■ If having difficulty, they can hold your hand for ‘support’
Body Knowledge and Control

❖ Alternate Hop  Age 3-8
➢ Look at the limb to be moved?
➢ Abortive movements to get started?
➢ Hesitate at the beginning of the movements?
➢ Movements hesitant and jerky?
➢ Falls over while hopping / strong tilt to one side?
➢ Has to hold onto something to stay balanced?
➢ Motor overflow?
➢ Instructions have to be repeated?
Characteristic Behavior for Alternate Hop

3-4 years
- 3 yo: unable to hop in any manner on either foot.
- 4 yo: shows the ability to hop on one foot, but might not be able to program for a three time hop.

5-7 years
- 5 yo: can hop on either foot, but alternate hopping can not be accomplished (can not go smoothly from one side to the other – as if he activates the one side and then must completely reprogram to hop on the other side).
- 6 yo: still have pauses in going from one side to the other, to a lesser degree. Might either add or lose a beat frequently. Will improve performance with support

7-8 years
- 7 yo: still has difficulty in smoothly going from one side to the either with a slight pause. Can do 1-2 cycles
- 8 yo: able to smoothly execute 3 cycles without any pause
Body Knowledge and Control

❖ Standing Angels in the Snow
❖ Alternate Hop
❖ Chalkboard Circles
❖ Incomplete Man
❖ Movement Assessment Battery for Children 2 (MABC-2)
Body Knowledge and Control

❖ Chalkboard Circles Age 3-8

➢ Symmetrical Phase
  ■ Both hands go toward or away from the body mid-line at the same time (if one hand moves clockwise, the other hand must move counterclockwise)

➢ Reciprocal Phase
  ■ One hand moves toward the body mid-line while the other simultaneously moves away from the body mid-line (both hands move clockwise or counterclockwise)

➢ Evaluates body knowledge and control, ability to crossing midline
Body Knowledge and Control

❖ Chalkboard Circles       Age 3-8

➢ Child should be looking at the x, not hands
➢ Take the child's two arms and simulate circles of about one foot in diameter in the air for both symmetrical and reciprocal
➢ Child should trace over the circle for 5 repetitions of symmetrical. Then erase and have them do 5 repetitions of reciprocal
Characteristic Behavior for Chalkboard Circles

3-4 years
- 3 yo: inability to use the two arms at the same time; usually able to use one arm at a time.
- 4 yo: can use both arms at the same time in symmetrical circles, only for a short time (usually not for 5 revolutions)

5-7 years
- Characterized by the ability to use the two arms at the same time.
- 5 yo: performs symmetrical circles with relative ease, but on attempting reciprocal circles, reverts back to symmetrical circles almost immediately.
- 6 yo: able to do two or three reciprocal circles, but still either reverts back to symmetrical circles or develops a phase difference between the two hands
- 7 yo: does the reciprocal circles, but usually with a phase difference

7-8 years
- 7 yo: reciprocal circles performed with a breakdown of phase. Can not reverse the reciprocal circles, but has a reverting of behavior to symmetrical circles or a greater phase loss than previously
- 8 yo: reciprocal circles are done without phase loss and can be reversed on demand without hesitation or phase loss
Body Knowledge and Control

❖ Standing Angels in the Snow
❖ Alternate Hop
❖ Chalkboard Circles
❖ **Incomplete Man**
❖ Movement Assessment Battery for Children 2 (MABC-2)
Body Knowledge and Control

- Incomplete Man   Age 3-10
  ➢ Complete the picture of a stickman
    ■ Evaluates body knowledge and control, visual closure, as well as child’s maturity, capacity, and individuality
    ■ Note any paper tilt, body posture, pencil grip, if the non-writing hand is used for support, and which details the child is paying attention to in the drawing
Body Knowledge and Control

- Standing Angels in the Snow
- Alternate Hop
- Chalkboard Circles
- Incomplete Man
- Movement Assessment Battery for Children 2 (MABC-2)
Body Knowledge and Control

❖ Motor Assessment Battery for Children 2 (MABC-2)

➢ Meant to test visual perception independent of motor ability
➢ 3 subsections
  ■ Manual Dexterity (unimanual, bimanual, drawing trail)
  ■ Aiming and Catching
  ■ Balance (static and dynamic)
➢ Compares gross motor vs. fine motor skills
➢ Testing broken down by age
  ■ 3-6.11 yo, 7-10.11 yo, 11-16.11 yo
Body Knowledge and Control

❖ Motor Assessment Battery for Children 2 (MABC-2)
➢ Manual Dexterity 3-6.11 yo
  ■ Posting Coins (unimanual)
    ● Put coins into a coin clot
    ● Each hand is tested
  ■ Threading Beads (bimanual)
    ● Thread beads onto a string
  ■ Drawing Trail
    ● Draw a line going through the center of a curving maze
Body Knowledge and Control

❖ Motor Assessment Battery for Children 2 (MABC-2)

➢ Aiming and Catching 1
  ■ Catch a beanbag thrown from 6 feet away

➢ Aiming and Catching 2
  ■ Throw beanbag onto target 6 feet away

3-6.11 yo
Motor Assessment Battery for Children 2 (MABC-2)

- Balance 3-6.11 yo
  - Stand on one leg (static)
  - Walk tiptoe on a line on the floor (dynamic)
  - Jump with both feet together (dynamic)
Body Knowledge and Control

❖ Motor Assessment Battery for Children 2 (MABC-2)
➢ Manual Dexterity 7-10.11 yo

■ Placing Pegs (12 holes)

■ Threading Lace

■ Drawing Trail
Motor Assessment Battery for Children 2 (MABC-2)

- Bounce ball off wall and catch with 2 hands
  - Wall - Floor - Catch (7-8 yo)
  - Wall - Catch (9-11 yo)

- Throw beanbag on target
Body Knowledge and Control

❖ Motor Assessment Battery for Children 2 (MABC-2)
➢ Balance 7-10.11 yo
  ■ Balance Board on one leg (static)

■ Walk heel-to-toe on a line on the floor (dynamic)

■ Hop with 1 foot (dynamic)
Body Knowledge and Control

❖ Motor Assessment Battery for Children 2 (MABC-2)
➢ Manual Dexterity 11-16.11 yo

■ Screwing in Pegs (12 holes)

■ Make a triangle from nuts and bolts

■ Drawing Trail
Body Knowledge and Control

❖ Motor Assessment Battery for Children 2 (MABC-2) 11-16.11 yo
  ➢ Bounce ball off wall and catch with 1 hand
  ➢ Throw at wall target
Body Knowledge and Control

❖ Motor Assessment Battery for Children 2 (MABC-2)
➢ Balance 11-16.11 yo
   ■ Balance Board on two legs (static)

■ Walk backward toe-to-heel on a line on the floor (dynamic)

■ Zig-Zag hop with 1 foot (dynamic)
Visual Perceptual Testing

➢ Visual Analysis / Processing / Cognition
➢ Body Knowledge and control
➢ Laterality and Directionality
➢ Visual Motor Integration
➢ Visual Verbal Integration
➢ Auditory Visual Integration
Laterality and Directionality

- Gardner Reversal Frequency Test
- Piaget Test of Left-Right Concepts
- Jordan Left-Right Reversal Test
Laterality and Directionality

❖ Gardner Reversal Frequency Test
❖ Piaget Test of Left-Right Concepts
❖ Jordan Left-Right Reversal Test
Laterality and Directionality

❖ Gardner Reversal Frequency Test  Age 5-15
➢ Does the child exhibit an abnormal number of reversals relative to their age?
➢ 3 subtests
■ Execution - Ability to write numbers and lower case letters while dictated
■ Recognition - Ability to retrieve an internal visual picture of letters and numbers
■ Matching - Ability to visually discriminate similar choices
Laterality and Directionality

❖ Gardner Reversal Frequency Test
➢ Execution Subtest
  ■ Ask the child to write a series of numbers or letters in a blank space
  • Mark the number or reversals and unknowns
Laterality and Directionality

❖ Gardner Reversal Frequency Test
➢ Recognition Subtest
■ Ask the child to look at the pairs of numbers / letters and mark the one in each pair that is pointing in the wrong direction / reversed

Calculate the reversed image that is not marked as reversed and the correct image that is marked as reversed
Laterality and Directionality

❖ Gardner Reversal Frequency Test
➢ Matching Subtest
■ Ask child to pick out a correctly written number or letter from a group of 4 options
■ For 5-8 yo or children that perform very poorly on previous subtests
Laterality and Directionality

- Gardner Reversal Frequency Test
- Piaget Test of Left-Right Concepts
- Jordan Left-Right Reversal Test
Laterality and Directionality

❖ Piaget Test of Left-Right Concepts 5-11yo
➢ Divided into 3 sections designed to test the developmental progression of left / right knowledge
  ■ Designation of subject’s body parts - identify right / left on self
  ■ Designation of examiner body parts - identify right / left on examiner
  ■ Relative position of objects - identify relative position of 3 objects
Laterality and Directionality

❖ Piaget Test of Left-Right Concepts 5-11yo
➢ Designation of subject’s body parts
   ■ Ask the child to show you his/her:
     ● Right hand
     ● Left leg
     ● Right ear
     ● Left hand
     ● Right leg
     ● Left ear
Laterality and Directionality

❖ Piaget Test of Left-Right Concepts 5-11yo
➢ Designation of examiner body parts
 ■ Ask the child to show you YOUR:
  ● Left hand
  ● Right ear
  ● Left leg
  ● Right hand
  ● Left ear
  ● Right leg
Laterality and Directionality

❖ Piaget Test of Left-Right Concepts 5-11yo
➢ Relative position of objects
   ▪ Have child sit in front of a desk and place 3 items in front of them with A directly in the center, B slightly to the right and C slightly to the left
     ● Is C to the right or left of A?
     ● Is A to the right or left of B?
     ● Is B to the right or left of C?
     ● Is C to the right or left of B?
     ● Is A to the right or left of C?
     ● Is B to the right or left of A?
Stage 2
Relation of External Opposition but Subjective Only

- Stage 2 - relation of external opposition but subjective only
  - Correctly answers all questions in Section 1 and 2
    - Correct answers by actual left-right or by systematic reversals.

Stage 3
External and Objective Opposition Relations

- Stage 2 - external and objective opposition
  - Correctly answers all questions in Section 1, 2, and 3 by either left-right or by systematic reversals.
Laterality and Directionality

❖ Piaget Test of Left-Right Concepts
➢ Can make systemic reversals (consistently call left as right) through all 3 parts and still get credit

Age at which 75% of that age group attained the various stages.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1a</td>
<td>6.0 years</td>
</tr>
<tr>
<td>Stage 1b</td>
<td>7.0 years</td>
</tr>
<tr>
<td>Stage 2</td>
<td>9.0 years</td>
</tr>
<tr>
<td>Stage 3</td>
<td>&gt;12 years</td>
</tr>
</tbody>
</table>
Laterality and Directionality

- Gardner Reversal Frequency Test
- Piaget Test of Left-Right Concepts
- Jordan Left-Right Reversal Test
Laterality and Directionality

❖ Jordan Left-Right Reversal Test   Age 5-15
➢ Evaluates existence, nature, and frequency of occurrence of receptive letter and number reversals (reversals that the child can recognize).
■ Age 5-8.9, perform level I
■ Age 9-12, perform both level I and II.
● Lever II demands third-grade reading skills to obtain a valid score
Laterality and Directionality

❖ Jordan Left-Right Reversal Test  Age 5-8.9
➢  Level I
- Ask child to cross off the numbers or letters in the paragraph that are written backwards

2 1 e f 3 9 f e f
Laterality and Directionality

❖ Jordan Left-Right Reversal Test  Age 9-12
➢ Level II a
■ Ask child to cross out the word that has a letter that is written incorrectly / backwards

city  jar  liq  cat  bed
Laterality and Directionality

❖ Jordan Left-Right Reversal Test   Age 9-12
➢ Level II b

■ Ask child to look at a sentence and find the word that is backwards - some sentences have no backward incorrect words

The dog ran no the grass

The dog was the big bone
Laterality and Directionality

❖ Jordan Left-Right Reversal Test
➢ Scoring level I
  ■ Count reversed test symbols that were not marked or correct symbols that were marked as incorrect.
➢ Scoring level II
  ■ Count incorrect words missed or correct words marked as incorrect

❖ The raw scores can be converted to a percentile score for boys and girls
Visual Perceptual Testing

➢ Visual Analysis / Processing / Cognition
➢ Body Knowledge and control
➢ Laterality and Directionality
➢ Visual Motor Integration
➢ Visual Verbal Integration
➢ Visual Auditory Integration
Visual-Motor Integration

- Beery Buktenica Developmental Test of Visual-Motor Integration
- Circus Puzzle
- Winterhaven Copy Forms
- Wold Sentence Copy
- Wide Range Assessment of Visual Motor Abilities (Pegboard)
- Pegboard Reproduction
Visual-Motor Integration

- Beery Buktenica Developmental Test of Visual-Motor Integration
- Circus Puzzle
- Winterhaven Copy Forms
- Wold Sentence Copy
- Wide Range Assessment of Visual Motor Abilities (Pegboard)
- Pegboard Reproduction
Visual-Motor Integration

❖ Beery       age 2-17.11

➢ Asses child’s ability to integrate visual and motor abilities and visually guided fine-motor skills
   ■ Also involves form perception, motor precision, and the integrity of the feedback loop, visual attention and concentration

➢ Three Subtests
   ■ Motor Coordination - fine motor / graphomotor skills
   ■ Visual Perception - perception of visual info
   ■ Visual Motor Integration - form reproduction, how visual perception and fine motor skills interact
Visual-Motor Integration

❖ Beery       age 2-17.11
➢ Motor Coordination Subtest
  ■ Child has to trace the interior of progressively complex geometric shapes without touching the outline or erasing
  ■ Test is timed
  ■ Specific scoring guidelines
Visual-Motor Integration

- Beery age 2-17.11
- Visual Perception Subtest
  - Child shown progressively complex geometric shapes and asked to find the identical match
  - How well does the visual system perceives the information received
  - Test is timed
Visual-Motor Integration

- Beery age 2-17.11

- Visual Motor Integration Subtest
  - Replicate the same progressively complex geometric shapes without erasing
  - Assess how the visual perceptual and fine motor systems coordinate - how well does the motor system produce what the visual system is processing?
Visual-Motor Integration

❖ Beery Buktenica Developmental Test of Visual-Motor Integration
❖ Circus Puzzle
❖ Winterhaven Copy Forms
❖ Wold Sentence Copy
❖ Wide Range Assessment of Visual Motor Abilities (Pegboard)
❖ Pegboard Reproduction
Visual-Motor Integration

❖ Circus Puzzle 3-8yo
➢ Assesses bimanual integration, midline crossing, form matching, form reproduction, and visual-motor hierarchy
➢ Randomly place all even numbers to the child’s right and odd to the child’s left
■ Watch the child place pieces back in place
<table>
<thead>
<tr>
<th>Age Group</th>
<th>Characteristic Behavior</th>
</tr>
</thead>
</table>
| 3-4 years | **3yo**: picks up and attempts placement by one hand with little or no involvement of the other hand (unilateral performance). Child also has a tendency to tilt his body toward the side where the piece belongs so that he avoids manually crossing his body midline.  
**4yo**: has trend toward more bilateral performance |
| 4-7 years | **4-6 yo**: marked increase in the use of both hands in the placement of the particular pieces. Commonly picks up the piece with one hand but places it with both hands (bilateral placement). Will usually pick up the piece with the hand closest to the piece (right hand used to pick up pieces on the right and visa versa).  
**6-7yo**: might still perform as above but might also pick the pieces on the left with his left hand and pass it to this right hand for placement on the right side and visa versa. If this is consistently done child might have inability to manually cross the midline |
| 7-8 years | **There is a progression toward greater ability to cross the midline with facility.**  
**Bilateral placement described as characteristic of 6-7 yr level is deemed immature at these ages.**  
**Behaviors characteristic of this age:**  
**a.** Consistent use of one hand for picking and consistent use of the other hand for placing  
**b.** Consistent use of one hand for placing, but appropriate use of the other hand for picking those pieces which are closest to it.  
**c.** Picking and placing of all or most pieces on the right side with the right hand and visa versa. There should be no avoidance of crossing the body midline.  
**d.** Picking and placing of all or most pieces with one hand with minimal or no involvement of the other hand. Unlike the 3-4yr old, child can cross the midline with facility. |
Visual-Motor Integration

- Beery Buktenica Developmental Test of Visual-Motor Integration
- Circus Puzzle
- Winterhaven Copy Forms
- Wold Sentence Copy
- Wide Range Assessment of Visual Motor Abilities (Pegboard)
- Pegboard Reproduction
Visual-Motor Integration

- Winterhaven Copy Forms 3-8yo
  - Evaluates bimanual integration, crossing midline, form matching, form reproduction, organization, visual-motor hierarchy, and fine motor control
  - Give child a blank piece of paper and present 7 separate images. Child has to fit a reproduction of all 7 shapes on the blank page
<table>
<thead>
<tr>
<th>Bimanual Integration</th>
<th>Form Reproduction</th>
<th>Organization</th>
<th>Visual – Motor Hierarchy</th>
</tr>
</thead>
<tbody>
<tr>
<td>3yo: ambidexterity is present (might write with either hand, and might switch the pencil to the other hand during writing to avoid manually crossing the midline)</td>
<td>2yo: circular or vertical scribbles</td>
<td>2-3yo: little organization is evident. Figures might be superimposed</td>
<td>2yo: child involves much of his body in the performance of the task. (will frequently involve his trunk in the production of the circle)</td>
</tr>
<tr>
<td>4yo: might still not show a consistent preference for a writing hand, but is rare for him to switch hands during the execution</td>
<td>3yo: circle and cross are produced with some success</td>
<td>3-4yo: less superimposition of figures. There is random placement of figures</td>
<td>4yo: might have to involve only head movement with total arm movement</td>
</tr>
<tr>
<td>5yo: generally uses the same hand for writing consistently.</td>
<td>4yo: cross and square are completed. Others are unsuccessfully attempted.</td>
<td>4-5yo: some type of organization becomes evident. (i.e.: circle placed centrally with other figures either placed randomly around it or in some kind of order (circular, vertical or horizontal).</td>
<td>5yo: less gross body movement, but might have to move tongue or mouth in order to gain body support. Tilts body or paper particularly during the reproduction of oblique lines</td>
</tr>
<tr>
<td>The other hand is on the paper, but is not productively orienting it or holding it (the writing hand is both holding the paper with its 'heel', while trying to write at the same time)</td>
<td>5yo: triangle is distorted in a vertical manner and one side is frequently vertical.</td>
<td>5yo: inconsistent vertical or horizontal arrangement begins to appear; (two to three figures might be placed in this order, but the arrangement isn’t carried out for the rest of the figures)</td>
<td></td>
</tr>
</tbody>
</table>
### Characteristic Behavior for Winterhaven Copy Forms

<table>
<thead>
<tr>
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<th>Form Reproduction</th>
<th>Organization</th>
<th>Visual – Motor Hierarchy</th>
</tr>
</thead>
<tbody>
<tr>
<td>6yo: non-writing hand used for some degree of support and orientation</td>
<td>6yo: proportioning of the circle, cross, square, and triangle improve. The verticality of the triangle is lost an equilateral triangle results. &quot;Cross over&quot; performance on the inner details of the divided rectangle normalizes, but segmentation might still be seen on a basis that allows an accurate production to result. The diamonds are still not accurately reproduced.</td>
<td>6-7yo: vertical or horizontal placement predominates</td>
<td>6yo: Complete rotation of the paper is needed in order to draw a vertical or horizontal line that will appear oblique when the paper is oriented back to its original position</td>
</tr>
<tr>
<td>7-8yo: the supporting hand becomes increasingly productive in anchoring.</td>
<td>7-8yo: quality of reproduction of all figures continues to increase. Segmentation of the divided rectangle is considered immature performance. The seven year old can still show some slight distortion of the diamonds, but by eight years, all figures should be accurately drawn.</td>
<td>7yo: arrangement of figures in any order other than vertical or horizontal is considered immature</td>
<td>7yo: Tilting is far less pronounced, (i.e. only a slight head tilt might be seen)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8yo: figures are all drawn without the need for any extraneous body involvement: (i.e. only the eyes and hands should be actively involved in the task)</td>
</tr>
</tbody>
</table>
Visual-Motor Integration

- Beery Buktenica Developmental Test of Visual-Motor Integration
- Circus Puzzle
- Winterhaven Copy Forms
- Wold Sentence Copy
- Wide Range Assessment of Visual Motor Abilities (Pegboard)
- Pegboard Reproduction
Visual-Motor Integration

- Wold Sentence Copy 6-14yo
  - Evaluates ability, speed, and accuracy of coping sentences and handwriting
  - Child has 3 minutes to exactly copy the sentence written on top
  - Calculate letters written per minute (total of 110 characters)

  - Score does not consider legibility
Visual-Motor Integration

❖ Wold Sentence Copy       6-14yo

➢ Observe child’s behaviour, body posture, pencil grip, motor overflow, paper positioning, working distance, hand support of the paper, vocalization of the words, loss of place/omission/substitutions, letter reversals, letter spacing, size, and formation, frustration or extra effort, and stamina

➢ If the child is able to read a word at a time or few words, memorize them and write them down or if they need to copy the sentence letter by letter
Visual-Motor Integration

- Beery Buktenica Developmental Test of Visual-Motor Integration
- Circus Puzzle
- Winterhaven Copy Forms
- Wold Sentence Copy
- **Wide Range Assessment of Visual Motor Abilities (Pegboard)**
- Pegboard Reproduction
Visual-Motor Integration

- Wide Range Assessment of Visual Motor Abilities (WRAVMA)
  - Evaluates visual-spatial, fine-motor, and integrated visual-motor skills and fine motor precision and speed
  - Child must insert as many pegs as possible, moving right to left, row to row, into a pegboard within 90 seconds
Visual-Motor Integration

- Beery Buktenica Developmental Test of Visual-Motor Integration
- Circus Puzzle
- Winterhaven Copy Forms
- Wold Sentence Copy
- Wide Range Assessment of Visual Motor Abilities (Pegboard)
- Pegboard Reproduction
Visual-Motor Integration

❖ Pegboard Reproduction Test
➢ Evaluates visual-spatial, fine-motor, visual-motor, fine-motor precision, bimanual integration, visual motor hierarchy, form reproduction, directionality
➢ Phase 1 - direct reproduction of a pattern seen
➢ Phase 2 - reversal of pattern seen
❖ Child does not watch you produce the pattern
Phase 1
Phase 2

Doctor 1

Patient 1

Doctor 2

Patient 2

Doctor 3

Patient 3

Doctor 4

Patient 4

Doctor 5

Patient 5
<table>
<thead>
<tr>
<th>Bimanual Integration</th>
<th>Form Reproduction</th>
<th>Visual – Motor Hierarchy</th>
<th>Visualized Reversals</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-3yo: holds and places pegs with one hand or places pegs on the table. Will not cross midline but will perform a body tilt to place pegs</td>
<td>2-3yo: unable to reproduce any pattern</td>
<td>2-3yo: unable to reproduce or relate to the task (peg placement not at all related to sample pattern)</td>
<td>2-4yo: unable to visualize or reproduce any reversals</td>
</tr>
<tr>
<td>3-4yo: some bilateral involvement but reverts to use of one hand and body tilt as patterns become more complex</td>
<td>3-4yo: able to reproduce pattern 1 and 2 with spontaneous lateral reversal of the pattern</td>
<td>3-4yo: works from the center to the periphery (placing central peg first and then placing the rest of the pegs in proximity to it)</td>
<td>5yo: able to correctly reproduce reversal of patterns 1 and 2</td>
</tr>
<tr>
<td>5-6yo: uses both right and left hands equally but reverses hands as patterns become more complex</td>
<td>5-6yo: able to reproduce pattern 1, 2, 3, and oblique elements of patterns 4 and 5 are verticalized or horizontalized</td>
<td>5-7yo: tilting of the head, body, or board to complete all patterns. No identifiable central to peripheral approach</td>
<td>6yo: able to correctly reproduce reversal of patterns 1, 2, and 3</td>
</tr>
<tr>
<td>6-7yo: starts using one hand to hold pegboard and one hand to place pegs</td>
<td>7yo: all patterns reproduced but with errors on one or two patterns which is able to self correct</td>
<td>7yo: tilting of the head, body, or board to complete patterns 4 and 5 only</td>
<td>7yo: central part of pattern 4 is reversed correctly but oblique tail is either improperly reversed or reproduced with a loss of obliquity</td>
</tr>
<tr>
<td>8yo: consistently shows one hand holding pegboard and one hand placing pegs with some body tilt</td>
<td>8yo: able to reproduce all patterns</td>
<td>8yo: patterns 1-4 reversed correctly</td>
<td>8yo: patterns 1-4 reversed correctly</td>
</tr>
<tr>
<td>9yo: consistently shows one hand holding pegboard and one hand placing pegs with no body tilt</td>
<td>8yo: vision predominates with no tilting of head, body, or pegboard</td>
<td>9yo: all patterns reversed correctly</td>
<td>8yo: vision predominates with no tilting of head, body, or pegboard</td>
</tr>
</tbody>
</table>
Visual Perceptual Testing

➢ Visual Analysis / Processing / Cognition
➢ Body Knowledge and control
➢ Laterality and Directionality
➢ Visual Motor Integration
➢ Visual Verbal Integration
➢ Auditory Visual Integration
Visual-Verbal Integration / Oculomotor

- King Devick Saccadic Test
- Developmental Eye Movement Test
Visual-Verbal Integration / Oculomotor

- King Devick Saccadic Test
- Developmental Eye Movement Test
King Devick Saccadic Test 5-7yo

- Evaluates visual-verbal automatic naming and stimulus-generated reading related saccadic control and accuracy
- Rapid automatic naming, short term visual memory, attention, and spatial awareness can cause poor performance and are not evaluated
Visual-Verbal Integration / Oculomotor

- King Devick Saccadic Test
- Developmental Eye Movement Test
- ReadAlyzer / Eye Tracker
Developmental Eye Movement Test  6-13.11 yo

- Evaluates rapid automatic naming, visual-verbal automatic naming and stimulus-generated reading related saccadic control and accuracy
- By comparing performance on test A+B and C, can differentiate between language and oculomotor dysfunction
- Short term visual memory, attention, and spatial awareness can cause poor performance and are not evaluated
**Visual-Verbal Integration / Oculomotor**

- ReadAlyzer  age 6 and up
  - Eye movement recording and analysis system
  - Measures
    - Fixations, Regressions, Fixation duration, Reading speed, Cross Correlation between right and left eye, Playback of recorded Eye Movements on top of text read
  - Read a story and answer comprehension questions. Repeat with material below grade level
Visual Perceptual Testing

- Visual Analysis / Processing / Cognition
- Body Knowledge and control
- Laterality and Directionality
- Visual Motor Integration
- Visual Verbal Integration
- Visual Auditory Integration
Visual - Auditory Integration

- Detroit Test of Learning Aptitude
- Birch-Belmont Test of Auditory Visual Integration
Visual - Auditory Integration

- Detroit Test of Learning Aptitude
- Birch-Belmont Test of Auditory Visual Integration
Visual - Auditory Integration

❖ Detroit Test of Learning Aptitude
➢ Reversed Letters Subtest    6-18 yo
   ■ Child listens to a sequence of letters and writes them down in reverse order
      ● 6-9yo questions 1-8
      ● 9-18yo all questions
➢ Must wait until you finished and write letters in reverse order in the correct box without touching the box outline

You say “A - B - C”

They record C B A
Visual - Auditory Integration

- Detroit Test of Learning Aptitude
- Birch-Belmont Test of Auditory Visual Integration
Visual - Auditory Integration

Birch-Belmont Test of Auditory Visual Integration

Evaluate ability to match temporally distributed auditory stimulus to a spatially distributed visual response - intersensory and temporal-spatial integration, auditory memory

- Tap out patterns with a coin under the table so there are no visual cues
  - is a snort tap, the space between the dots = a pause in the rhythm
Birch-Belmont Test of Auditory Visual Integration

- Child listens to the pattern and picks the card that represents the patterns.
Example of a VIP Battery

- Visual Analysis / Cognition
  - TVPS, PMA, KABC, DTLA design sequence, BURT Word Reading

- Body Knowledge and Control
  - Standing Angels in the Snow, Alternate Hop, Chalkboard Circles

- Laterality and Directionality
  - Gardner Reversal Frequency, Piaget Test of Left-Right Concepts

- Visual Motor Integration
  - Beery VMI, Circus Puzzle, Winterhaven Copy Forms, Pegboard Reproduction

- Visual Verbal Integration
  - ReadAlyzer

- Auditory Visual Integration
  - Detroit Test of Learning Aptitude
Coding and Billing - Testing

- **96110:** Developmental screening (e.g., survey, screener, questionnaire) with scoring and documentation, per standardized instrument. Screening is subjective and only reports the assessment of the patient’s skills through observation by the informal observer (e.g. parent).

- **96111:** Developmental testing, (includes assessment of motor, language, social, adaptive, and/or cognitive functioning by standardized developmental instruments) **with interpretation** and report.
New in 2019 to replace code 96111

- **96112: Developmental test administration** (including assessment of fine and/or gross motor, language, cognitive level, social, memory and/or executive functions by standardized developmental instruments when performed), by physician or other qualified healthcare professional, with interpretation and report; first hour

- **96113: Developmental test administration** – each additional 30 minutes (List separately in addition to code for primary procedure)
96116: Psychological and Neuropsychological Testing (testing of the cognitive function of the central nervous system including cognitive processes, visual motor responses and abstractive abilities)

- Including interpretation and report.
- Timed code
  - If testing multiple days, combine time and bill one code.
  - Usual testing 4-8 hours.
Rules for timed codes:

- You can report a timed code if you have spent at least half of the code’s specified time with the patient (51% rule).
  - An hour is attained when 31 minutes have elapsed (more than midway between zero and 60 minutes).
  - A second hour is attained when a total of 91 minutes have elapsed.
E/M codes can be billed with developmental testing codes *if the services are separate and distinct.*

- The time and effort to perform the developmental testing itself should *not* count toward the key components of accompanying E/M code (history, physical exam, and medical decision making).

- Need to show that the developmental testing services were separate and necessary at the same visit - can use either:
  - Modifier 25 *added to E/M code* (significant, separately identifiable evaluation and management service by the same physician on the same day)
  - Modifier 59 *added to developmental testing code* (distinct procedural service)
Coding and Billing - Therapy

- **92065**: orthoptics and/or pleoptic training, with continued medical direction and evaluation

- **97533**: interventions used for sensory integrative techniques to enhance sensory processing and promote adaptive responses to environmental demands, with direct one-on-one patient contact.
  - Timed code.

- **97532**: interventions used to enhance cognitive skills, (e.g., attention, memory, problem solving) with direct one-on-one patient contact.
  - Timed code.

check with your state board to see if you are allowed to use 97--- codes
Integrating Visual Perceptual Therapy into Standard Vision Therapy
Adding Perceptual Aspects to Therapy

acuity, field, binocularity, accommodation, and oculomotor dysfunction can all interfere with visual perception
Adding Perceptual Aspects to Therapy

- Talk them through steps of how to perform the analysis and give them strategies for success

  ➢ Help them make sense of the activity – help them make a plan of how to attack the problem and solve it
    ■ Talk through what the goal is and what steps need to take place for completion
    ■ Help them identify what the first step should be

- Then work on automaticity

  ➢ Use distractors, pacers, load the task, increase visual / cognitive / auditory stimulation, multi sensory integration
Adding Perceptual Aspects to Therapy

- Focus on the skills they need to succeed in their everyday tasks and school work
  - Promote capitalization on the patient’s strengths and situational advantages
  - Improve functional abilities by retraining specific perceptual skills
- Add lenses, prisms, polarized / acetate strips, near / far to incorporate perceptual with accommodative, binocular, and oculomotor
  - Group activities together – don’t over stimulate
- Perceptual therapy is largely being done by OT’s
General Home and School Considerations

- Make sure you have the child’s attention before speaking
- Make sure they understand instruction by having them repeat
- Remove distractions wherever possible
  - sit in front middle of class, declutter desk, no distractors on handouts
  - use a window or page to hide work not being attended to
  - quiet environment for tests
- Dot / sticker to show what side of page to start writing / reading
- Graph paper for spacing and sizing of letters / numbers
- Let child copy from a piece of paper on the desk rather than from the board
- Place reminders of letter, numbers, common misspelled words on desk as a reference
- Give one by one, step by step instructions
Visual Spatial Skills – laterality, directionality, bilaterality integration

- Give directions or Talk someone through an obstacle course / maze / military turns
  - moving in/on/over/under/through/around objects – use spatial commands
- Use hand / card / verbal gestures to move a car through town or a maze
- They walk you through building something
- Simon Says, Head shoulders knees and toes, Hide and seek
- Basketball, Tee-ball, Marsden ball, Saccadic fixator
- Complete unfinished or Copy pictures of characters / people
- Clapping games, Imitate moving like an animal
- Body awareness game / Identify picture of body parts
- Directionality workbooks / Kirschner arrows
- Tangrams, Parquetry blocks, Geoboards, Pentominoes, Tangoes, Non-jigsaw puzzles, Mirror puzzle books, Tic Tac Toe, Nesting dolls, Bean bag toss, Hopscotch, Twister, Pegboard, Left Center Right, Montessori Sensory Material Color Matching Games Puzzle – verbalize steps, cross midline
Adding Perceptual Aspects to Therapy

❖ Visual Spatial Skills – initial considerations in the classroom
  ➢ Graph paper to help with spacing
  ➢ Tongue depressor or strip of paper to mark space between words
  ➢ Mark top and starting side (left) of the page to know where to start reading
  ➢ Taping paper to desk so child can not angle it
  ➢ Encourage to complete art projects that require precision
  ➢ Use blank sheet of paper or frame to cover all work not presently worked on
  ➢ Colored lines on the paper or paper with raised lines – help know where to place letters on the page
  ➢ Cues / visual aids to help with reversals (palms facing the chest and thumbs up, make two fists. The left hand will form a ‘b’ and the right hand will form a ‘d’)
  ➢ Cue cards for common reversals and misspelled words
Visual Discrimination

➢ “Grade” a paper that has letters and numbers formed incorrectly (size or shape)
➢ Play ‘find 5 examples of the letter ___ in the room”
➢ Sort fruit loops into colors and then bead them onto a string
➢ Sorting/matching games for color, shape, letter, number, direction...
➢ Make flash cards with incorrectly formed letter and have them write it the right way in salt or with finger paint
➢ Identify words with incorrect capitals inside them
➢ Feel objects with eyes closed, then ask them to describe what they feel
➢ Matching drawn silhouettes to objects
➢ Look for objects around room, identifying them by shapes, size, color...
➢ I spy, Where’s Waldo, Hidden Pictures, Puzzles, Lotto, Spot the difference, Matching games, Dominos, Mosaics and color collage, Differix, Eye Cue puzzles, Perfection, What’s missing cards, Hidden pictures, Shape ups, Workbooks, Blue orange ring it!
Adding Perceptual Aspects to Therapy

❖ Visual Discrimination – initial considerations

➢ Reduce distractions, sit in front of the room
➢ Reduce amount of information presented (highlight the relevant area of work)
➢ Use worksheets rather than copying from the board
➢ Increase size or print on worksheets/books
➢ Use multi-sensory approach – tactile, kinaesthetic and visual (younger children)
Form Perception / Spatial Relationships

- Use spatial terms and encourage their use
  - Shape - circle, square, sphere, pentagon...
  - Dimensional adjectives - large, long, tall ...
  - Spatial features - pointy, curvy, corner, straight,
  - Spatial relations - on top of, under, across, behind...
- Navigate through an obstacle course with spatial commands
- Spatial concepts in relation to self (is my head bigger than my hand? Is my hand higher than my knee? Put your hand behind your back...)
- Copy 3-D block designs, talk you through building a design
- Place plastic letters into a bag, and have the child identify the letter by “feel”
- Identify numbers or letters that have been made incorrectly
- Ask 1 student to build a structure and another to copy it
- Legos, Magnets, Toothpicks and marshmallows, Nesting dolls, Pegboard, Blocks
Adding Perceptual Aspects to Therapy

Form Perception – initial considerations

- Graph paper can help with spacing of letters or math problems
- Allow oral arithmetic
- Papers with raised lines
- Directional arrows for letter and number writing
- Visual cues on the top and left of the page
- Use a raised line/dot on the margins of a cutting task to help them “feel” where to cut
- Use visual cues (colored dot) to indicate place on a map, chart, or puzzle pieces
- Draw directional arrows to help with directions or placement
- Wear something on one arm to indicate right / left
Form Constancy

➢ Find all the squares in the room or in a picture book...
➢ Practice sorting, naming, and classifying (by shape, size, color, texture, purpose...) and use adjectives
➢ Look at the same object but in different sizes, heights, widths and depths
➢ Use toothpicks, straws, pipe cleaners, clay to make shapes
➢ From a bag of mixed sized balls, roll one across the floor. Child has to select the same sized ball
➢ Tangrams, Parquetry blocks, Pegboard, Block designs, Shape and form copying, Origami, 3D models, Sort socks into matching pairs, NADA!, Blokus, Set, Spot it, Pixy cubes, Mental blox, Alphabet squiggle, Qwirkle, Blink, Qbitz, Crazy letters
Form Constancy - initial considerations in school

- Give child what is to be copied on a paper laying flat on their desk, rather than on the board.
- Use same font or style of letter on all work.
- When learning a letter form, have the child work in the same plane as it is being taught (need a vertical desk board if being taught on a whiteboard).
- Teach them to tilt head or eyes if have trouble visualizing something at a certain angle.
Figure Ground

- Find specific objects in a cluttered room or in a cluttered picture
- Use 4–6 everyday objects laid out in front of the child. Ask the child to remember the objects before looking away. Remove an object and ask the child to look and identify what is missing
- Highlight specific words that are repeated in the text
- Highlight places on a map
- Bingo, Zingo, Lotto, Puzzles, Pixy Cubes, Dominos, I Spy, Waldo, Spot-the-Difference, Color-by-number, Word-search, Sudoku, Mosaic, Mazes, Jigsaw, Highlights Magazines, Geometric colouring sheets, Paint by numbers, NADA!, Blokus, Set, Spot it, Pixy cubes, Mental blox, Alphabet squiggle, Qwirkle, Blink, Qbitz, Get the picture, Crazy letters,
Adding Perceptual Aspects to Therapy

Figure Ground – initial considerations

- Developing a routine – where everything has its set place
- Using specific colors for specific objects that will help to highlight the objects
- Reading/copying – cut out a template, use a ruler, or paper to cover distractors
- Declutter their working space and sit in front of room
- Developing auditory and tactical skills to assist visual skills (finger on the page)
- Make things visually clean and not cluttered (worksheets, homework)
- Cue the child when thing change
- Use cue cards for multi-step tasks, one by one – step by step instructions
- When working on a chalkboard, make sure it is erased well so that the child has less clutter to look at
- Use a red marker to outline boundaries for coloring, mazes, cutting tasks
- Planning and preparation (going to the store, playground, or arranging a room)
Visual Attention / Attention Span

➢ Workbooks, Tachistoscope, Visual search / scan program
➢ Wayne saccadic fixator, Word search, Crosswords, Solitaire, Dominos, Games with moving targets, Drawing with ruler, Connect four, Sequence, Ejection target, Wizard roll, Paint by numbers, NADA!, Blokus, Set, Spot it, Pixy cubes, Mental blox, Qwirkle, Blink, Qbitz, Memory game, Chutes and ladders, Ninja squirrels, Jigsaw puzzles, Sudoku, Chess, Checkers, Bingo, Zingo, Tricky fingers, ThinkFun math dice, Otrio,
Adding Perceptual Aspects to Therapy

❖ Visual Attention / Attention Span – initial considerations
   ➢ Gain focus prior to any activity using a recognised indicator (clapping, buzzer)
   ➢ Say ‘look at me’ before giving any other instructions
   ➢ Use visual words to transfer child’s attention to something specific “Look at the blackboard”
   ➢ If child’s attention lapses, stop mid sentence and see if he will attend
   ➢ Check they understand instructions / task by having them repeat
   ➢ Reduce visual/auditory distractions / declutter where possible
   ➢ Use varied short quantity activities to maintain focus and give frequent motion breaks – GoNoodle, jog in hallway, wiggle toes, wiggle tongue
   ➢ Allow extra time to copy information
   ➢ Section work into boxes / cover part of the sheet that is not being worked on
   ➢ Something active may help raise the child’s energy level which could help with visual attention
Visual Memory

- Memorize items on table, close eyes, you remove one, which item is missing?
- Which number / letter did you hit before on the Marsden ball
- Scan and Search worksheets with memory
- Show a simple picture, cover the picture and have him recall the main objects
- Discuss specific details and work on good observation habits
- Draw letters with eyes closed to remember the shape of the letter
- Use pipe cleaners, straws, toothpicks, play dough to form letters and shapes
  - Can the touch to “feel” the shape of the letter
- Playing Memory, Concentration, I Spy and Waldo with memory, Pixy cubes, Mental blox, iTrax, Chunks word building game, Scrabble, Brainology, Alphabet lotto, Spot it, Stay alive, Battleship, Mental blox, Pairs, Slap jack, Memory, Concentration, Flash cards
Adding Perceptual Aspects to Therapy

Visual Memory – initial considerations

- Minimising need to copy from the whiteboard – have the information on the desk
- Examples for the alphabet, numbers and often used words on the desk to copy
- Give instructions already written down, such as homework.
- Make verbal descriptions of the letters (m and n have humps)
- Use spell check to help find misspelled words or ‘Hey Google’ to remember how to spell a word
Visualization

- Visualize what arrow looks like at 90°, 180°, 270° turns on arrow sheet
- Guess the trajectory of a ball that is thrown
- Look at an image, close eyes, and re-create the image for you in detail
- Tachistoscope, Visual Thinking Program
- Block pattern building, Sequence cards, Visual thinking cards, Visual brainstorm cards, Rush hour, Pengoloo, Chess, Checkers, Connect four, Battleship, FlowingData, Scrabble, Rewordable, Rumis, Clue, What’s my number?, Guess who?, ThinkFun math dice, Rock me Archimedes game, Otrio,
Visual Closure

➢ Have a completed project placed on table and step-by-step instructions to complete a new project
➢ Work with form puzzles with the pieces partially covered
   ■ Concept of finding and describing the sameness and differences between puzzle pieces (flat, cornered or curved edge, type of color, words or objects on the piece.)
➢ Workbooks
➢ Finding the hidden objects within pictures
➢ Partially cover 4 shapes and have them tell you what they are
➢ Cover part of a picture and ask the child to tell the whole story
➢ Dot to dot, Jigsaw puzzles, Mazes, Tracing pictures and letters, Mazes, What’s wrong with the picture games, Smart car, Ready 2 learn alphabet, Ready 2 learn numbers and signs, On the dot, Pixy cubes, Pix mix!, Squint Jr., Laser maze, Square up!, Swish, Oh snap!
Visual Closure – initial considerations

- Have a completed project placed near the student, as well as step-by-step instructions to complete the assigned project
- Sit in front center row
- Cleanly and sharply photocopied worksheets and test forms with no distractions
- Give “helpful hints” about mistakes and give a second chance to correct the errors
Sequential Memory / Visual Sequencing

- Set out 2 cards then take them away, child has to reproduce the cards in correct order (use vocabulary like ‘first, next, then, last’)
- Place objects in a specific order, have child close eyes, reorganize, have child re-order
- Give them multi step instructions to follow – Multi-step Simon Says
- Perform several body movements and have them remember and copy them
- Remembering and retelling or recognizing words and number of increasing length
- Encourage looking at detail and good observation
- Workbooks, Visual sequencing cards,
- Word search, Bingo, Sequencing cards, Pairs, Memory and recall games, Qwirkle, Sequence, Simon, Memory maze, Clapping games, Bead sequencing
Adding Perceptual Aspects to Therapy

❖ Sequential Memory / Visual Sequencing – initial considerations

➢ Minimising need to copy from the board by having the information on the desk
➢ Give sheets for the alphabet, numbers and often used words on the desk to copy
➢ Giving instructions already written down, such as home work
Visual-Motor Integration

➢ Wayne Saccadic Fixator, Pegboard, Keystone Rotator, Workbooks, Marsden ball,
➢ Tracing and Drawing, Drawing tracks / images on white board, Trace over mazes / spirals, Replicate picture drawn on a grid, Dot to Dot, “How to Draw” books, Pegboard and Peg puzzles, Animal upon animal, Jenga, Kendama, True balance, Ring toss, Darts, Catch-a-Ball toss, Marble labyrinth and maze, Montessori memory chess game, Geo rubber band board, Montessori Sensory Material Color Matching Games Puzzle, Legos, Puzzles, Stack it peg game, Lacing, Peg mosaics, Perfection, Fishing game, Fruit avalanche, Suspend!, Magnetic labyrinth, Operation, Gems-n-pets, Gem counting magnetic game, Lite brite, Jump rope,
Adding Perceptual Aspects to Therapy

❖ Visual-Motor Integration – initial considerations

➢ If errors in noticing the sign has changed in math, highlight the math sign in a different colors before starting (pink for addition, yellow for subtraction...)
➢ Avoid visually complex worksheets or cover up all the problems except the one they are currently working
➢ Providing copies of the notes and allowing child to type out notes / homework
➢ Extra time to complete longer writing assignments
➢ Answer verbally instead of in writing
Visual-Verbal Integration

- Call out the letters, words, numbers, shapes, colors, objects they see to a metronome or while performing other therapy tasks
- ‘Missing Letter’ worksheets
- Sight word work
- Use a white board and have them copy ‘real’ and ‘made up’ words in a family (like ‘at’ – at, bat, cat, dat, jat)
  - Do with letter magnets and replace the first letter to show that the ending is the same
- Write words in white crayon on the paper, have them use watercolor to paint over it to show and read the word, then match it to a printed picture
- Play the kazoo with dots, dashes, and spaces, Scrabble, Scattergories, Pantomimo, Pictionary, Apples to apples, Look who’s listening! Blurt! Alphabet match (lower and upper case), Big Box of Word Chunks, Oh Snap Sight Words
Adding Perceptual Aspects to Therapy

Visual–Verbal Integration – initial considerations

- Extra time for reading
- Decrease distractors
- Isolate items being worked on
- Listening to audiobook instead of reading a book
- Give instructions orally
- Allow for recording of lecture material to re-listen instead of taking notes
- Read word problems out for the child for homework and tests
Auditory-Visual Integration

- Play listening games
- Dictate and they write down what you say then self grade it
- Use a white board and have them write out ‘real’ and ‘made up’ words in a family that you say (like ‘at’ – at, bat, cat, dat, jat) - Do with letter magnets
- Spelling and Vocabulary drills / worksheets
- Read them a short ‘story’ / ‘situation’ and have them draw it out
- Spinning symphony, Look who’s listening!, Social skills board game, Dancing, Pizza scramble, Super Duper Auditory Processing Chipper Chat Board Game, Songames for sensory processing, Phonological Awareness Chipper Chat, Bop it, Simon Says with writing, Find it with auditory prompts, visual prompts to search games, Thinkfun distraction fun game, Sound it found it! Jr., Telestations, Interactive metronome
- Metronome use on any activity
Adding Perceptual Aspects to Therapy

Visual-Auditory Integration - Initial Considerations

- Present information in several modes (verbal, written, notes to parents)
- Decrease distractions
- Give directions one step at a time and have them repeat the instructions
  - Speak concisely, eliminating superfluous detail
  - Make sure have attention before speaking
- Increased time to process information / tests
- Has difficulty with reading, comprehension, spelling, and vocabulary
Vision Therapy and Neuro-Rehabilitation: Optometric Considerations in Third Party Reimbursement

4-16-2018
Vision Therapy and Virtual Reality Applications

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Resources

❖ Learning Resources, ThinkFun, Educational Insights, SmartGames, Cuisenaire, Discovery Toys (on Amazon)
❖ Bernell, Good-Lite, OEP, COVD
❖ Educational Catalogues
❖ Dale Seymour Publications
❖ academictherapy.com
❖ yourtherapysource.com
❖ eyecanlearn.com
❖ teacherspayteachers.com
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❖ Mindware.com
❖ Funandfunction.com
❖ theottoolbox.com/p/visual-motor-skills.html?m=1