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***Functional Vision Assessment for Cortical Visual Impairment (CVI)***

**Name:**

**Date:**

**Age:**

**I. Background/Process:** This Functional Vision Assessment (FVA) is conducted in order to provide current information on **Student Name**’s functional vision status specific to CVI, and to provide concrete recommendations for **his/her** educational program and functional skills development.

**\*Summary of relevant student background**

**\*Summary of observation – setting, activities, individuals present**

**Cortical Visual Impairment:**

Cortical visual impairment (CVI) is a neurological form of visual impairment which has unique implications for functional vision. This form of visual impairment requires a very different approach to instructional supports and environmental/material adaptations as compared with ocular visual impairments. CVI presents a unique need for interventions to support the learner’s use of vision across environments; Provided with appropriate interventions, children and youth with CVI can be **expected** to demonstrate measurable progress in visual functioning over time.

Learners with CVI have unique visual behaviors, with 10 Characteristics common to these individuals (described in detail below in assessment), each of which is expressed on a scale of visual functioning (**The CVI Range**). Visual functioning in CVI is measured across the Range (0-10), with three major phases describing level of impact of the CVI Characteristics on the individual’s ability to use his/her vision functionally:

* 0-3 Phase I Most severe impact on visual functioning
* 3-7 Phase II Moderate impact on visual functioning
* 7-10 Phase III Closest to typical visual functioning

It is important to identify a child’s specific visual functioning on the CVI Range with regard to each characteristic, as **the intervention approaches needed to support progress in visual functioning are unique to each Phase**.

**II. Results:**

Results for each of the 10 Characteristics of CVI are taken from Rating II of the CVI Range Assessment. Recommendations are provided in the context of how each Characteristic impacts **Student Name**’s ability to use **his/her** vision functionally in the context of his/her typical activities and routines.

**1. Color preferences:** Children with CVI often express a favorite color or a color that they will look at more than other colors. As they advance along the CVI Range, improving use of functional vision, color can be used as a highlight or anchor for more challenging visual information.

**\*Specific information on student’s behaviors with regard to color preferences (taken from CVI Range notes)**

**2. Need for movement**: Children with CVI often require movement to elicit or sustain their visual attention. Further along the CVI Range, children with CVI may require movement to support their attention at a distance, or in order to shift visual attention or maintain fixation at a complex or novel visual target. Shiny objects have a movement quality as light reflects off of them.

**\*Specific information on student’s behaviors with regard to movement (taken from CVI Range notes)**

**3. Visual latency:** Latency is the time between when an object is presented and when a child looks. Children with CVI may experience visual latency all the time, or only with objects/environments that are complex, or when overstimulated/tired/stressed.

**\*Specific information on student’s behaviors with regard to visual latency (taken from CVI Range notes)**

**4. Visual field preferences:** Children with CVI sometimes prefer or can look better at things presented in certain visual fields. A typical progression for visual field development is: one strong peripheral field (right or left), then both peripheral fields (right and left), then central field, then upper, then finally the lower visual field is typically the most difficult for children with CVI to integrate.

**\*Specific information on student’s behaviors with regard to visual field preferences (taken from CVI Range notes)**

**5. Difficulty with visual complexity:** Children with CVI often have difficulty with complexity. Complexity can be in the object (lots of visual detail, multiple colors and sounds); in the array (many objects on a table/floor at once, a visually cluttered background as in a very busy cluttered room, or a busy backdrop as in a table mat or rug); in the sensory environment (lots of background noise, trying to do difficult motor tasks while looking at the same time, unstable positioning [especially for children with low muscle tone], when feeling upset or hungry); and in the complexity of human faces themselves. Children with CVI may have difficulty making eye contact or regarding/shifting toward familiar or unfamiliar faces.

1) **target/object:** **\*Specific information on student’s behaviors with regard to complexity of target/object (taken from CVI Range notes)**

(2) **visual array:** **\*Specific information on student’s behaviors with regard to complexity of array (taken from CVI Range notes)**

(3) **multi-sensory**: **\*Specific information on student’s behaviors with regard to complexity of the multi-sensory environment/input (taken from CVI Range notes)**

(4) **faces**: **\*Specific information on student’s behaviors with regard to complexity of faces (taken from CVI Range notes)**

**6. Need for/attraction to light (formerly described as Light Gazing/Non-purposeful Gaze):** Children with CVI often stare compulsively into primary light sources or spend a lot of time not looking at anything in particular (non-purposeful gaze). This has recently come to be understood as part of a larger Characteristic of attention to light, or benefitting from light and backlighting in particular, to support visual attention and learning.

**\*Specific information on student’s behaviors with regard to light (taken from CVI Range notes)**

**7. Difficulty with distance viewing:** Children with CVI often have difficulty with viewing at a distance. Distance is a function of complexity, because the further away the eyes are from a target, the more other visual targets are in the array (when 6” away from an object, only the object is in view; when 6’ from that object, many other items are likely to be in the array).

**\*Specific information on student’s behaviors with regard to distance viewing (taken from CVI Range notes)**

**8. Atypical visual reflexes:** Children with CVI may have atypical visual reflexes, which can resolve as the child’s functional vision improves. These reflexes are blink to touch, and blink to threat (usually resolved in this order); a child with CVI may have absent, latent, or inconsistent reflexes.

**\*Specific information on student’s behaviors with regard to visual reflexes ( (taken from CVI Range notes)**

**9. Difficulty with visual novelty:** Children with CVI often look at familiar and favorite toys better than novel ones because they have learned to look at those things. As a child progresses in functional vision, it helps to introduce novel targets with a higher level of adaptation, and/or introduce novel objects that share characteristics of familiar objects.

**\*Specific information on student’s behaviors with regard to visual novelty (taken from CVI Range notes)**

**10. Difficulty with visually guided reach:** Children with CVI often have trouble using their eyes and hands together, and may exhibit a variety of look—look away—touch/reach behaviors. This is an indication that the materials, presentation, or environment is too complex for the child to be able to look at and interact with tactilely at the same time. *For a child with additional motoric challenges who is not able to physically coordinate reaching, this characteristic should be considered* *as similar to multi-sensory complexity; Can the child use vision while in physical contact with materials or people?*

**\*Specific information on student’s behaviors with regard to visually guided reach (taken from CVI Range notes)**

# III. Summary of Results:

On a scale of 0 – 10 (with 0 = no vision responses and 10 = almost typical visual responses) **student name** scored a **(insert Range Score, two numbers e.g. “5.5 – 7”)** on the Range, placing **his/her** current functional vision at the beginning of **Phase (I, II, or III)** of CVI. \***Note any improvement since last Range assessment.**

***\*(Insert statement of intervention goal by Phase – see below):***

The goal of intervention in **Phase I** is **to build visual behavior**. In Phase I, most or all of the Characteristics impact functional vision. Children in Phase I require structured and planned activities that practice using their vision to look at preferred/motivating visual targets, in environments that are highly controlled (with minimal visual complexity and additional sensory input). Do not expect visual fixation (eye-to-object contact) in Phase I, and plan short vision activities during down time and warm up time (Identify specific times of day for vision intervention). Minimize verbal and tactile prompting/input and background noise and use positioning that best supports sensory balance and availability. Maximize visual access, but don’t expect visual fixation. Expect visual latency, provide adequate wait time without additional prompting (including verbal prompts).

The goal of intervention in **Phase II** is **to integrate vision and functioning**, in other words, to support the student to use vision more functionally and for increased number and duration of activities throughout the day. The child is able to use vision in the context of activities and routines if the appropriate adaptations are in place. In this sense, intervention is geared toward adapting materials, presentation of materials, and the environment itself, to encourage the student to be able to visually attend to the important aspects and items in activities during the course of the day. Warm-up time and pre-teaching are required before more visually taxing activities and materials with which visual fixation is expected, and visual fatigue will occur when the environment or the task are complex or challenging. Children in Phase II often benefit especially from the creation of a CVI Schedule to plan visual adaptations and approaches.

The goal of intervention in **Phase III** is **refinement of the CVI Characteristics**. The CVI Characteristics continue to impact the learner though they present in a potentially more subtle way. Children in Phase III can demonstrate visual curiosity, which may be more evident in familiar settings. Individuals in Phase III require unique adaptations to support learning and the development/expansion of visual vocabulary, including adaptations to teaching new concepts introduced in visual information, developing a “visual memory bank” (understanding what he/she is looking at), literacy and communication. Children in Phase III often require instruction in salient features and the use of comparative language (pointing out the visual features that are similar and different in a variety of meaningful visual targets/materials) to develop comparative thought and support visual recognition, identification, and discrimination. Responses to instructional or incidental learning that are atypical should be considered an opportunity to use comparative language to indicate the similarities and differences between two or more concepts.

**IV. Recommendations:**

1. **Material adaptations/adaptations to presentation of materials (by Phase and Characteristic) *A few examples provided below – not comprehensive:***
	1. Use highly saturated colors to promote/anchor visual attention, especially for more complex or more novel materials (\*be specific for the student).
	2. Use of color to outline (“bubble”) words and shapes to focus on the unique or “salient” features.
		1. The following website app can be used to create word bubbling for sight words: <http://roman-word-bubbling.appspot.com/>
		2. The following website provides examples of salient features and adaptations to photos for salient feature instruction: <https://cvicollaborative.wixsite.com/salientfeatures>
	3. Allow for extra visual processing time when the student is tired, stressed or overstimulated, and especially in novel/unfamiliar and complex/busy environments. Assume that if he/she is not shifting gaze to a visual target that fits his/her current levels of visual functioning as described in this report, he/she may need more time to process.
	4. Slant boards and raised surfaces to present materials within table-top activities higher up, as he/she has a significant lower visual field deficit.
	5. Reduced complexity on working surfaces in more novel or busy environments, and therefore requires access to trifold boards and other adaptive environmental supports to occlude erroneous visual clutter, in particular in a very busy classroom.
	6. Do not use “hand over hand” strategies; but rather when necessary to support his/her visual reach or tactile interaction with a target, use **hand under hand support.** Hand **under** hand is useful in helping him/her to achieve visually guided reach, while hand **over** hand increases multisensory complexity, and causes him/her to look away.
2. **Planning adaptations in activities:** An example is provided below to support the team to plan adaptations during the beginning, middle, and end of a routine (for a student in Phase II). Note: the **bold** terms are the parts of the routine that the student would be focusing on doing independently/with reduced dependence. **This is just an example to illustrate the method of adapting any activity, functional or academic/curricular, throughout the day.**

For example, in a hand-washing routine:

|  |  |  |
| --- | --- | --- |
| Routine Step | CVI Characteristic(s) Most Impacted | Adaptation (material, presentation, or environment) |
| Beginning:**Locate sink****Put soap on hands** | Complexity, distance, visually guided reach, visual fields | Red or gold shiny tape on edge of sink (direct attention to this at a distance of 4-6’, with flashlight if necessary); Place materials at eye level; Shine flashlight on brightly colored soap dispenser |
| Middle: Turn on Sink**Wash hands/rub hands together under water** | Complexity; visually guided reach | Support stable positioning at sink; let water run briefly, splash slightly or shine light on water, or use red/gold shiny tape around end of tap; hand under hand support/modeling for hand washing. |
| End: Turn off sink**Find towel**Dry hands | Complexity; visually guided reach | Bright colored towel, move slightly in right central visual field to direct the student’s attention |

1. **CVI Schedule:**

The careful planning of adaptations is best done through a CVI Schedule, a chart used to plot out how each activity is impacted by CVI, and what adaptations or approaches are necessary to maximize visual functioning. The CVI Schedule approach can be used to adapt routines throughout **student name**’s day. The team is recommended to meet to review important routines in **student name**’s day, both functional and educational, to begin determine the most important things to adapt. An example of a partial CVI Schedule is provided below for reference.

Example of a CVI Schedule for the first 3 activities of a day (not specific to **student name**)

|  |  |  |
| --- | --- | --- |
| **Time and Activity** | **CVI Characteristics** | **CVI Adaptations** |
| 9:00 Getting off the bus and travel to the classroom | Distance viewing, complexity of array, light gazing | Red mylar highlighting landmarksSelect route to classEnvironmental light as cues |
| 9:30 Morning Meeting | Color, complexity, novelty, latency, visual fields | Present materials against flat black felt boardBegin with familiar objectHighlight with yellow or redAllow wait time for responsePresent using best peripheral field |
| 10:00 Literacy | Complexity, color, novelty | Begin with familiar words, symbolsHighlight salient features with yellowPresent on black slant board |

**3. Training for Educational Team Members:**

CVI is a unique form of visual impairment requiring unique approaches and strategies in order to allow for access to instruction, curricula, and all interactions and routines throughout the school day. The educational team working with **student name** will require at the very least introductory training to understand the Characteristics and Phases of CVI, and the approaches necessary to implement effective intervention. CVI intervention is not a singular “therapeutic approach” that can be implemented by a vision specialist alone; in order to ensure access to the school day and materials, every member of the educational team requires a working knowledge of the implications of CVI, and a shared vision of the plan for effective intervention.

***Additional Resources:***

* + Many resources for professional and family development on CVI are available through Perkins School for the Blind’s website: <http://www.perkinselearning.org/topics/cvi>
	+ General resources are available for ideas on CVI:
		- <http://littlebearsees.org/cvi-resources/>
		- <http://wvde.state.wv.us/osp/vi/cvi/>
		- <http://gsap.coe.uga.edu/resources/cortical-visual-impairment/>
	+ Resources for literacy supports specific to CVI:
		- <http://www.pathstoliteracy.org/blog/category/cvi>
			* <http://www.pathstoliteracy.org/strategies/modifying-books-cvi>
			* <http://www.pathstoliteracy.org/resources/cvi-strategies-pre-readers>
* Professionals working with **student name** should consider more advanced training:
	+ - An online workshop is offered by Dr. Roman in Phase III intervention: <https://www.perkinselearning.org/earn-credits/online-class/phase-3-cvi>
		- A comprehensive introductory class on CVI: <https://www.perkinselearning.org/earn-credits/online-class/cortical-visual-impairment-winter>
		- An “Endorsement” in CVI Range assessment is offered by Perkins: <https://www.perkinselearning.org/cvi/educators/overview-endorsement-cvi-range>

**Summary:**

**\*Summarize results and recommendations here**

Please feel free to contact me with questions, and for any clarification on the above information. Please see the attached CVI Range Assessment for detailed evaluation data regarding the CVI Characteristics.

Regards,

**\*Chris Russell**

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