



## **Adapting the Environment for Children with Vision Loss**

Modifications of a child's home and learning environment is an important consideration for maximizing the use of vision. Lighting, color, visual complexity, contrast and organization within a space can be adapted to provide an optimal learning environment for children with visual impairment.

### **Considerations**

#### **1. Contrast and Contrast Sensitivity**

Contrast can be thought of as the differences between one object and another object. If we can tell visually the differences between the two, then it's easy to see where one thing begins and the other one ends, or vice-versa. Children with visual impairment will benefit when a high level of contrast (visual and textural) is present throughout the environment. Some examples are:

- dark floor with light-colored walls
- varied floor surfaces (different texture or hardness surface for children with very low vision to know where they are based on the feeling of the floor)
- highlight edges of steps or stairs with contrast to show exactly where that next stair step is going to be
- a contrasting color of tape can be placed around the perimeter of tables and cabinets, light switches, etc.
- use primary colors to accent specific items or areas. For example, paint the door jamb with a bold blue paint
- colored bowls or utensils that provide contrast to food
- contrasting placemats or trays
- light soap dish with dark colored soap
- paint the circle and triangle on the bathroom door in bold high contrast paint to allow the children with vision to be able to use their vision to identify the door

Contrast can be enhanced by using colored masking/electrical tape on the floor to define one room from another or along a wall to create a "trail" for children to follow when navigating an environment. Lighting and positioning

#### **2. Lighting and Positioning**

One of the most important things that children with vision loss need to have is good, even illumination. If there is not enough lighting, most children will have difficulty seeing in the room. The best lights will be ceiling lights that will distribute the light evenly across the floor. The color temperature of the bulb should be 5,000 kelvin or less. However, some children are very sensitive

to the light and will benefit from task lighting from a lamp. Task lighting means supplemental lighting that can be directed on a particular task that a child may be performing. The Berryessa desk lamps are the best as these lamps have a dimmer and a magnifier. Some children need more lighting and some children need less. By having task lighting, it always gives the option to control the amount of light.

### **3. Glare**

The downside to illumination, or additional lighting, is glare. Imagine if you were sitting in a room facing a window and the light is coming through and it's shining directly on your eyes. You may still be able to perform the task, but it tires you out to have to work that hard.

Windows should be covered with window coverings to reduce glare for children with visual impairment. In cases where you have chairs and desks, position the chairs and desks such that the children's backs are towards the window - not facing the windows. The colors of the walls should be a non-glare surface with off-white or other light colors. If the floors are shiny, consider using a floor rug. If other surfaces are shiny, use a tablecloth or a placemat.

### **4. Reduce Visual and Physical Clutter**

Cortical or Cerebral Visual Impairment is the number one cause of pediatric vision loss in all developed countries and these children have trouble modulating a large amount of sensory information at once. Reducing visual clutter will help a child know where to direct their visual attention or where to look. If they become over stimulated, they may turn off their vision or become inattentive. Suggestions include:

- narrow down the toys or materials to a few
- use the contrast of a placemat or solid contrasting background to increase visual attention
- use a curtain or sheet to minimize areas of the room that are visually complex
- wear a solid color shirt or apron or drape a solid blanket over your clothes when working with a child with CVI so you are not part of the distraction

Physical clutter can be reduced by avoiding excessive furniture or equipment. If possible, have areas well-defined by creating high contrast borders or distinctly colored or textured floor surfaces to indicate different areas. Also:

- provide clear traffic paths for children practicing mobility skills
- containers or cubbies should be (a child's) shoulder height

### **5. Visual Cues for Orientation**

For children with vision loss, the more they can rely on objects being in the same place every time they enter a room or every time they start a task, the easier it is to learn. Knowing where to look for visual information makes tasks easier for children and when they can anticipate finding objects in a specific location it is reassuring. Some ways to provide visual cues:

- consider color coding - a child can learn that they're in a particular place because of the color of the walls or the color of the floor.

- use wood or other material cut out in the shape of a circle and triangle to be the tactile sign to allow the child with visual impairment to find the bathroom independently
- create boundaries to section off certain areas. If a child knows that a specific area of the classroom is where the blocks are, and a different area is where we listen to audio books, it will help the child to locate specific areas of the classroom
- consider visual labels throughout the room to help children locate materials, put them away, explore or play independently (large print, pictures, actual objects)
- create landmarks to help children develop orientation and mobility skills

Adapted from a Perkins School for the Blind webcast presented by Darick Wright in addition to contributions by Dr. Bill Takeshita, O.D. Parent Educator, Partners for Pediatric Vision and Tori Schladen, MA, Executive Director, Partners for Pediatric Vision

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