

Ready to Succeed

An Early Literacy and School Readiness Newsletter for Professionals

Does a Child See What You See?

How to Tell if a Preschooler Has a Color Vision Deficiency
by Guest Columnist
Arlene Evans, R.N.

Joey Knight was puzzled. What did his parents mean by color? Green shirt, red shirt, brown shirt, gray shirt. Huh? They all looked pretty much the same to him. He figured his parents were just smarter than he was.

More than eight percent of the world's population has some degree of color vision deficiency (CVD), commonly called "colorblindness." This includes one in 12 males and one in 200 females.

Pre-school books, puzzles, games and other toys are colored intensely enough that most children -- even those with CVD -- can tell the colors apart. However, two percent of the male population (and a rare female) cannot see red or green



at all. These children may not catch on easily to pre-school games that are based on color. They may also resist playing with puzzles that are based as much on color as on shape. They may not be as enthralled with crayons as are most children. They'd just as soon draw with a fat pencil. They may not "get" optical illusions that are easy for other children to see. These children, who are severely affected by CVD see all the reds, oranges, yellows and greens as one color and all the blues, violets and purples as another.

Children who are mildly or moderately affected with CVD may have difficulty matching light shades of colors, especially red (or pink) and green. They often confuse these colors with other colors, like gray or tan. Those who see red faintly confuse blue and purple because they don't see the red in purple.

It's important -- for

children with and without CVD -- not to point out "mistakes" or to chide children for not naming colors "correctly." Some children -- and adults -- simply don't see as many colors as other people do.

A mother with a preschooler who had a moderate CVD said her husband had become extremely frustrated with their son because he had tried to teach the boy color names. No wonder the boy couldn't learn color names. Some colors, especially lighter shades, looked identical to him.

Another mother with a son with CVD said she thought her son had a language problem. "I thought he wasn't understanding the words," she said, when he couldn't tell color names.

CVD is known as a sex-linked recessive disorder. It is carried on the X chromosome. A

(Continued on page 2)

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Inside this issue:

Child See What You See? cont'd	2
Helping a Color Deficient Child	2
CVD Web and Book Resources	2
Children's Books for the Season	3
Seasonal Scavenger Hunt	3
Magical Milk	3
What is Cooperative Extension?	4

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aims to assist everyone involved with the development of young children to value and embrace their role in fostering early literacy and school readiness.

Does a Child See What You See? continued

male has an X and a Y chromosome, and a female has two X chromosomes.



When a male inherits an affected X, he will have CVD because, unlike a female, he doesn't have an unaffected X to dominate the affected X. Because a male always passes his Y chromosome to his sons, he does not pass CVD to his sons; he does, however, pass his X to his daughters who are then "carriers." A carrier typically doesn't show symptoms of CVD, but has a 50 percent chance of

passing her affected X on to each of her children. The females who inherit the X will, like their mothers, be carriers; the males who inherit the affected X will, like their maternal grandfathers, have CVD.

If you have a concern about a child's color vision, make a suggestion to the parent to consult an eye care specialist. Specialists generally have color vision tests for pre-school children. Your local school nurse can usually test children as young as four easily and quickly using special books that

utilize an affected person's confusion of red and green with gray.

Best of all, a child need not realize that he "failed" the test.

Often, a child with CVD will have either a maternal grandfather or maternal uncle with the same disorder. He can be encouraged to talk with the older family member to learn about coping strategies.

Arlene Evans is a former local school nurse who has written two books on color vision deficiency. Her Web site is: www.CVDbooks.com.

Helping a Color Deficient Child

Dr. Terrace L. Waggoner O.D., Optometrist Gulf Breeze, Florida suggests the following tips to help color deficient children.

1. Label a picture with words or symbols when the response requires color recognition. For example, a bear for **brown**.
2. Label coloring utensils (crayons, colored pencils, and pens) with the name of the color **red**.
3. Xerox parts of textbooks or any instructional materials
4. Teach color deficient children the color of common objects. Knowing what color things are can help them in their daily tasks. Example: when asked to color a picture, they will know to use the crayon "labeled" green for the grass or blue for the sky.
5. Try teaching children "all" the colors. Remember, most color

printed with colored ink. Black print on red or green paper is not safe. It may appear as black on black to some color deficient children.



deficient children can identify pure primary colors. It is

normally just different shades or tints that give them problems. If they can not learn certain colors, let them

know you understand some colors look the same to them and it is "OK".

6. Make sure a child's color vision has been tested before they have to learn their colors or color-enhanced instructional materials are used.

CVD Web and Book Resources

While the primary source of information for parents should be their eye care professional, listed are some additional resources for teachers and parents:

• *Health Link Medical College of Wisconsin:* <http://healthlink.mcw.edu/article/999211295.html>

• "Colorblind": <http://members.aol.com/nocolorvsn/color.htm>

• *Discovery Health:* <http://health.discovery.com/diseasesandcond/encyclopedia/2367.html>

• *Harvard Vanguard Medical Assoc.:* <http://www.harvardvanguard.com/visualsevices/vscolorvis.html>

• *Vision Forum:* <http://www.ophtalmologychannel.com/colorvision/causes.shtml#topofpage>

• *Seeing Color: It's My Rainbow, Too* by Arlene Evans, R.N.

• *Color is in the Eye of the Beholder* by Arlene Evans, R.N.



Children's Books for the Season

Reading to children is the single most important way to ensure their later success. Here are some suggestions of seasonal books to read during your next story time:

HARVEST

Harvest

- Kris Waldherr
- Apples and Pumpkins*
Anne Rockwell
- Farmers' Market*
Paul Brett Johnson
- Apple Farmer Annie*
Monica Wellington
- Picking Apples & Pumpkins*
Amy & Richard Hutchings
- Possum's Harvest Moon*
Anne Hunter



Tractor

- Craig McFarland Brown
- Pumpkin Circle: the Story of a Garden*
George Levenson

THANKSGIVING

- Albert's Thanksgiving*
Leslie Tryon
- It's Thanksgiving*
Jack Prelutsky
- What is Thanksgiving?*
Harriet Ziefert
- Gracias el pavo de Thanksgiving*
Joy Cowley
- Happy Thanksgiving, Biscuit*
Alyssa Satin Capucilli
- Thanksgiving Day*
Gail Gibbons
- The Night Before Thanksgiving*
Natasha Wing



- Silly Tilly's Thanksgiving Dinner*
Lillian Toban

CHRISTMAS

- The Tree That Came to Stay*
Anna Quindlen
- The Christmas Tree (bilingual)*
Alma Flor Ada
- Elijah's Angel:*
Michael J. Rosen
- Franklin's Christmas Gift*
Paulete Bourgeois
- Merry Christmas Mom and Dad*
Mercer Mayer
- Old Sadie and the Christmas Bear*
Phyllis Reynolds Naylor
- Night Tree*
Eve Bunting
- Santa's Snow Cat*
Sue Stainton



Seasonal Scavenger Hunt

This simple game can be played indoors or out. Either way it is a fun way to get the children physically active! In addition, it will help children develop their visual discrimination skills.

WHAT YOU NEED:

cut outs in a variety of shapes and colors
(red leaves, brown turkeys, green



Christmas trees, orange pumpkins, tan acorns, etc.)

WHAT YOU DO:

1. Place the cutouts around the room or outdoor area.
2. Ask the children to find the cut outs. Can be done one at a time or as a group.
3. For smaller groups you may want to designate each child to find a specific color of cutouts.

For example, Maggie looks for all the red leaves, Jose looks for the green trees.



4. To make this game more challenging for older children, give clues to find each cutout one at a time. For example, take 8 steps forward, walk around the swing etc.
5. Get creative - there can be many ways to play!

Magical Milk

This science activity will help the children in learning what colors are created when colors are mixed together. You can also talk about action and reaction!

WHAT YOU NEED:

whole milk
food coloring
cookie sheet or jelly roll pan - 10x15 or similar
dish soap with grease fighter



WHAT YOU DO:

1. Pour the milk into the pan. The milk should be at least 1/4" deep.
2. Set aside so that the milk will reach room temperature.
3. When milk is ready, carry pan carefully to a table so children will be able to see.
4. Drop 2 drops of each color of food coloring at various spots

in the milk.

5. Have children notice what colors are there.
6. Drop one drop of the dish soap in the middle of the pan.
7. The colors will "magically" start spinning and swirling, creating new colors!
8. The degreaser in the soap reacts with the fat in the milk, causing the colorful reaction.



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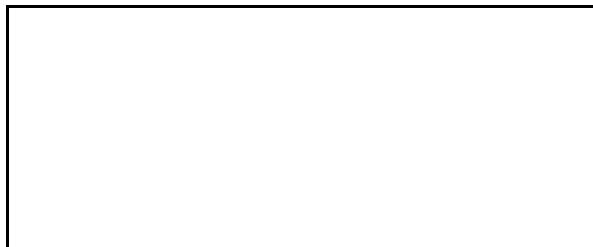
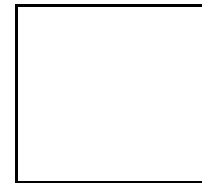
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