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How Eye Charts Are Failing Our Children

(and How We Can Help)

by Katie Johnson

In every school nurse's office in the United States there is a big chart on the wall (a Snellen chart) with letters or pictures on it. In the fall, every first grader in the country stands 20 feet away from one of these charts, toes positioned on a strip of tape on the floor.

"Now cover your right eye with your hand," says the nurse, "no, your right eye. The other one," she corrects him quickly. She has a lot of kids to screen today. "Now tell me the letters on this row," she says, standing next to the chart and pointing to the top row.

The child reads the letters (or pictures) for the top row and for a couple of other rows until he falters and reads the letters incorrectly.

"Now cover the other eye," the nurse says, and he repeats the process.

Later, after she has checked all the children, the nurse will report to the teacher that there are three who don't see 20/20 and she will let the parents know. The teacher is happy to know that almost all of her children have 20/20, or perfect, vision in each eye.

In fact, 25 percent of them probably don't, and those children will have trouble reading. This is because what eyes do when they read is not measured by 20/20 vision screening.

What does that mean, 20/20? The '20/20' or 'perfect' really only tells about eyesight, and specifically eyesight at distance. It means that you can read at 20 feet a letter that most human beings *should* be able to read at 20 feet. It is a perfectly good test for vision at a distance, such as seeing the chalkboard... or the approach of a stealthy lion!

However, neither chalkboards nor lions show up in classrooms these days. And the 20/20 designation doesn't tell us anything about how a child in 2017 might see letters and words when he is reading a book or a laptop from six to ten inches away. Also, the ubiquitous whiteboard in classrooms is usually located across the room from student desks and tables. (The document camera that sends images to it enlarges the print and/or other symbols to be clear at that range.)

It has been estimated that 80 percent of what children and other humans take in from their environment comes through



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by learning about developmental movement and vision and how they affect the lives of her primary-age public school students. After teaching two years in high schools, Katie moved into the elementary grades, discovering in 1973 that first grade is where her heart is. Katie has taught first grade, in both Maine and Washington, for 37 of the 46 years she has been a teacher. She has published three books about teaching writing to young children, worked as an adjunct professor of literacy in the teacher-training programs of Pacific Oaks College (California) and University of Washington (Bothell campus), in the graduate school of Lesley University (Cambridge, Massachusetts), and delivered many professional development presentations across the United States. She is a fellow of the Southern Maine Writing Project and the Puget Sound Writing Project. Katie has retired from teaching to work on raising awareness about vision issues. She likes to dance, read, cook, garden, write, talk, go to the symphony, and sample the ever-evolving microbrew production in the Northwest. She has two daughters, three granddaughters, and two great-grandchildren. Visit Katie's website: www.katiejohnsonauthor.com

their vision. (The second most important sense? The tactile sense of touch.) Our eyes are very important and also very complicated. It is essential that parents and teachers know that children's eyes are working well, especially when the time comes for them to learn to read, at age six or earlier.

Reading in school is often still something you do with your eyes to the symbols we call letters on paper at a distance of 6–15 inches; more and more in these times it involves a screen of some sort, also at about that distance — smartphones, tablets, computers, and other devices are everywhere, including classrooms. Reading signs and other materials from 20 feet away is essential when a child is learning to drive a car, but not something she needs for books and printing in the primary grades.

Screenings for near vision can determine if the child's eyes are working together. This is called *convergence*, and it occurs when both eyes focus on the same word, image, or shape at that reading distance. How well they see quarter-inch high letters in a book at a distance of 6–15 inches is very different from how well they see across the room or across the playground. Such a screening may be called a *test for eye-teaming*, a *test for convergence*, or a *test for near vision*. Such a screening will determine if the child's eyes are working together to focus on letters and print at that near reading distance. (This is also typically writing distance.)

There are several ways to find out whether the child's eyes are converging or working together to focus on print at that near reading/writing distance. One of the easiest ways is to get a pencil, and put a little-fingernail-sized blob of playdough or clay, or simply a fun sticker, on the end of the eraser. When administering this test, I sit facing the child, holding the pencil vertically about

an arm's length away with the eraser end at the level of her eyes.

"Now I am going to do something with this pencil to see what your eyes can do," I begin. "I want you to look at this sticker and keep your eyes focused on it. I am going to move the pencil in toward your eyes and then away again. It might make your eyes feel a little funny, so tell me if it does."

I move the pencil in toward the child's eyes, slowly — for a count of five or six — and I watch what happens. If the child's eyes begin to cross, that is good; if the child's eyes do not cross, or if one turns away from the pencil, that is not good. I don't say so, of course; I merely ask, "Did that feel funny?"

Then I do it again, and with six-year-olds and older I first say, "Now I'm going to do that again, but this time tell me when you see two pencils as I move this in toward your nose — just say 'two' — and then I'll move it back away from your nose and I want you to say 'one' when there is only one pencil again."

Generally speaking, this is easy for children. When we finish, I say thank you and write down what I saw. Smooth crossing, 'two' at two inches or less, 'one' at five to seven inches, no teariness, maybe even a giggle, and I put that child in the 'Okay' list.

If any of those observations are not what I see, I suggest a vision exam by a developmental optometrist. That doctor will find out if the child's eyes are not converging, or teaming, as he or she tries to read.

Teachers and parents need to know whether their children's eyes can move smoothly along a line of print, or not; how well their eyes can focus, and sustain a focus, on print, or not; and

whether their vision blurs or doubles the words as they try to read.

Most children cannot tell you that they can't see, or that they see things in a blur, or that words and pictures move around on the page, because, over time, those things have become their 'normal.' For 25 percent of our elementary-age children, that is their normal. They have no idea that it is *not* normal.

When I asked Alexandra, in second grade, what the words were doing as she (tried to) read *Frog and Toad are Friends*, she told me that the words were moving across the page and it was hard to tell what they were because they were moving. Then she asked me, "Don't they do that when *you* read?"

When I asked Darek, in fourth grade, if the words ever got blurry when he was trying to read, he just sighed. "All the time," he answered quietly.

Alexandra and Darek and all children need the ability to see at close range and the only way to find out what they're able to see is to ask. A near-vision screening should be done when a child enters school, and it should be mandated as well as the Snellen, so that every fall children are tested for both.

Currently only four states mandate both tests in school. Kentucky and Illinois have been doing them for some years; last year California passed such screening into law; and Washington's governor signed a similar provision for near-vision screening in the spring of 2016. Children all need to be screened for far and near vision, so that their teachers can know who the 25 percent are who may need more help than they can give.

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