

What Babies See - October 2008  
Susan Ramsay, Early Literacy Specialist HFL&A  
613-354-9316 (ext 32)

The adage “What you see is what you get.” isn’t so straight forward when two people see the same object in different ways. A newborn sees a teddy bear, for example, very differently from their parent. Babies are born with everything they need to make sense of their visual world, but their ability to focus on objects clearly and meaningfully needs time to develop.

Though newborns focus on objects at any distance, their ciliary muscles, which contract or relax the shape of the lens of their eyes to create clear images on the retina, are weak. These muscles need about two months to strengthen before they are able to focus accurately.

But even then, objects continue to be blurry because the retina (which specializes in seeing detail) and the fovea (which specializes in seeing colour) are still maturing. One-month-old babies have a visual acuity of 20/120. (The very largest letter “E” at the top of an eye exam chart is 20/120.) By four months of age, a baby’s eyesight improves to 20/60 and when the baby is eight months old, her visual acuity will be 20/30 (close to the 20/20 visual acuity of many adults.)

At one month of age, babies can distinguish between two shades of gray that differ in intensity by only 5%. Though this is good, by 9 weeks baby’s sensitivity to contrast will have increased tenfold. He will be able to see almost all subtle shadings in his world. At two months a baby will become aware that a white bear is sitting on a white couch.

Studies through the University of Berkeley have demonstrated that infants as young as two weeks old have colour vision, though they may not be able to distinguish subtle colour differences such as red and reddish-orange or soft pastels. Bright colours attract babies’ attention.

Newborns interpret their world as flat. Depth perception is only understood once the brain has matured enough to interpret the visual images into a third dimension, normally at 3-5 months of age.

Coordination of both eyes to follow moving objects or to hold an object steady in their sight while they move about also takes time to develop. Sometimes the eyes of a newborn will cross or one eye will wander, but by 3 months of age both eyes should be well coordinated.

Maybe the saying should be “What you see is what you have to give.” Knowing what babies see can help adults know what to provide. High contrast, black and white books are perfect for sharing with a newborn. Pages that show solid black pictures, geometric patterns, or facial outlines on white pages are beautifully geared to a one or two-month-old. Older babies gravitate to very simple, brightly coloured pictures, especially ones outlined in black. Pointing to pictures in the book encourage babies to follow a moving object (your finger) in a smooth, coordinated way and bring new images in the book into focus.

It’s worth the look for books to share with babies.