



# Hearing and listening are different

**"Hearing is essentially a passive bottom-up driven process; listening is a top-down process that requires attention, many repetitions of stimuli, and tremendous cognitive coordination and effort.**

**Hearing is a sense and listening is a learned skill. Listening experiences in infancy are the foundation upon which language and literacy and cognitive and psychological development occur".**

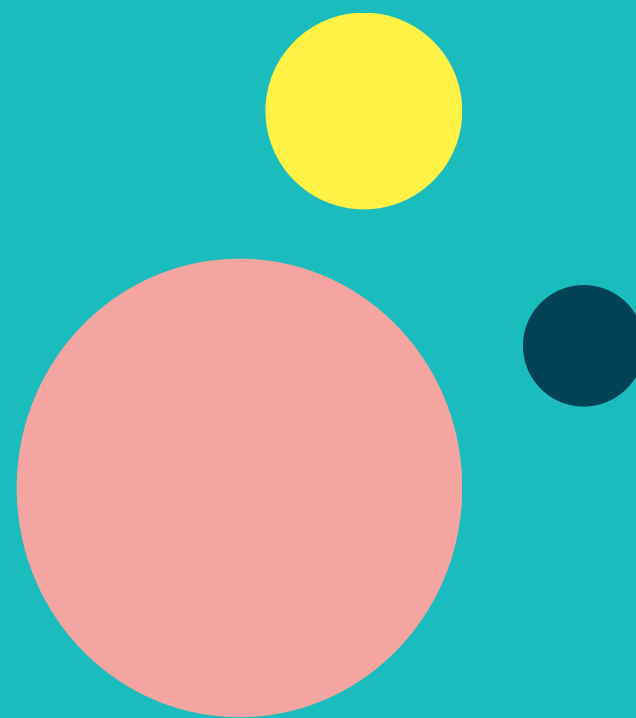


**Hart, B., & Risley, T. R. (1995). Meaningful differences in the everyday experience of young American children. Baltimore, MD: Paul H. Brookes Publishing Company.**



# Listening to Read

**20,000 hours of listening to spoken speech, are necessary in infancy and early childhood for a child to be ready to learn how to read. This is equivalent to 4 ½ years of listening to speech 12 hours a day.**



**Dehaene S. (2009) Reading in the Brain: The Science and Evolution of a Human Invention. New York: Penguin**





# Incidental hearing

**Eighty percent of what a child learns is learned by incidental hearing, by overhearing conversations around them.**

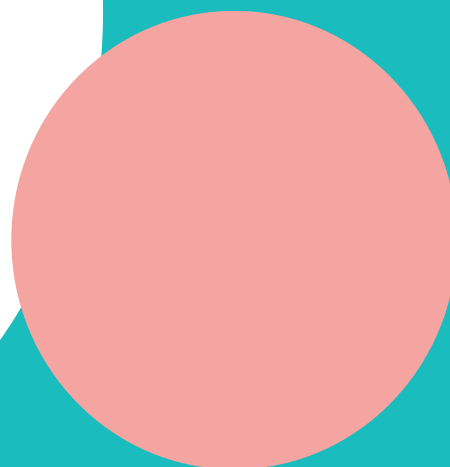


**Jane Madell, 2013**



# Timing is everything

**Children who do not develop auditory cognitive pathways and learn to listen within the first few years of life, do not get the opportunity to do so later due to a reduction in neural plasticity.**



**Sharma, A., Dorman, M.F. and Spahr, A.J. (2002). A sensitive period for the development of the central auditory system in children with cochlear implants: implications for age of implantation. Ear Hear. Vol. 23 (6), pp. 532–539.**





# Growing children's brains

**"We all hear with the brain; the ears are just a doorway".  
To be able to grow our brain, we need to have opportunities to listen, so that we can read, talk and learn.**



**Dr. Carol Flexor Ph.D.**



# The importance of hearing clearly

**“When we want to remember (or learn) something we have heard, we must hear it clearly because memory can be only as clear as its original signal...muddy in, muddy out.”**



**Doidge N. (2007) The brain that changes itself.  
London: Penguin Books, Ltd**





# Auditory/Cognitive Closure

**Children do not have language and life experience that enables them to “fill-in-the-gaps” of missed or inferred information (called auditory/cognitive closure).**

**Children require more complete and detailed auditory information than adults.**



**Smaldino J.J. and Crandell C.C. (31.10. 2000) Classroom amplification technology: theory and practice. Language, Speech and Hearing Services in Schools, pp 371-375.**





# Children with a hearing loss

**Children with hearing loss require three times the exposure to learn new words and concepts because of reduced acoustic bandwidth compared to typical hearing peers.**



**Dehaene, S. (2009). Reading in the brain: The science and evolution of a human invention. New York: Penguin Group.**



# Glue Ear affects 15-20% of your preschool class

**Glue ear does not cause pain, the main symptom is hearing loss. We will not know they are hearing impaired unless accompanied by an ear infection. Forty-two % of three year olds may begin an episode of glue ear over the next twelve months, episodes are usually short which means that 15-20% have it at any one time. Eighty % of children will have had glue ear by the time they are 10 years old.**

