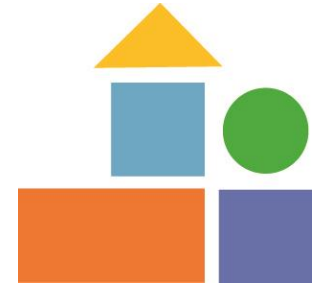




Auditory Skills and Language Development A Parent's Role

Jeanette Smoot, MS, CCC-SLP, LSLS Cert-AVEd
Utah State University, Logan, UT
April 24, 2019

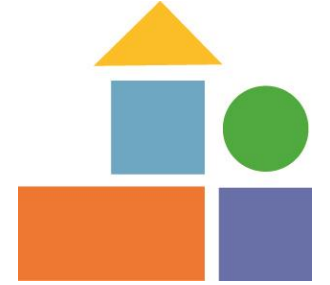
Mr. Rogers Was Right



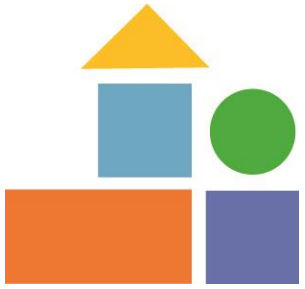
*“Others have smiled us into smiling,
talked us into talking, sang us into
singing, loved us into loving. Remember
them and do likewise.”*

~Fred Rogers

Overview



- THE AUDITORY SYSTEM
- KEEPING THE PATHWAY OPEN
- ESTABLISHING A GOOD LISTENING ENVIRONMENT
- BUILDING THE AUDITORY FEEDBACK LOOP
- AUDITORY SKILLS HIERARCHIES
- BUILDING TARGETS INTO DAILY ACTIVITIES

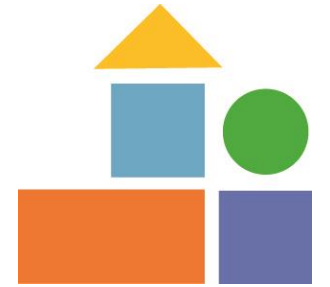


Auditory Development Begins EARLY

- Our auditory system is typically complete and functional around 25 weeks gestation
- The brain can receive auditory information and begin making important connections with sound before birth



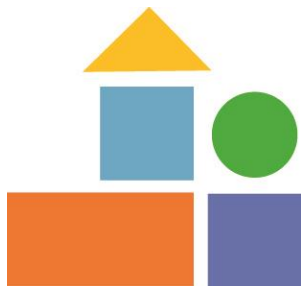
It's All About The Brain



- Like all sensory input, hearing happens in the brain
- Dr. Carol Flexer asks us to, *“Think about hearing loss as a **doorway problem**, because the ears are the doorway to the brain.”*

Video Clip:

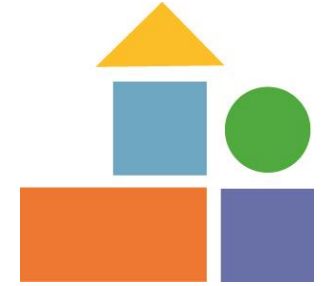
<https://www.youtube.com/watch?v=uTaYu5R45a4>



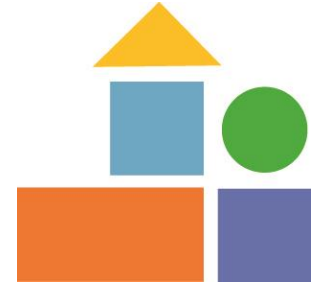
This “Doorman”
has a very
important job!



Parents make sure their child's “Doorman” is on duty all day long



Educating Other Caregivers

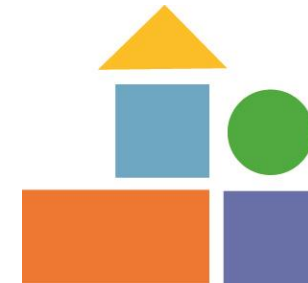


Parents can help their extended family members, daycare providers, and teachers to understand:

- The child's need for hearing devices
- How to properly remove/replace
- Basic troubleshooting
- Cleaning and care



Precious Listening Time



- Baby A

Wearing hearing devices that allow full auditory access for 10 waking hours per day, will get **3,650** hours of listening experience in a calendar year

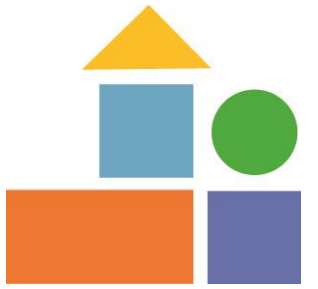
- Baby B

Wearing devices for 3 waking hours per day, will get **1,095** hours of listening experience

- It would take Baby B **over 3 years** to gain as much listening experience as Baby A



The Hours Add Up



- Toddler/Preschooler A

Wearing hearing devices that allow full auditory access for 12 waking hours per day will have **4,380** hours of listening experience in a calendar year

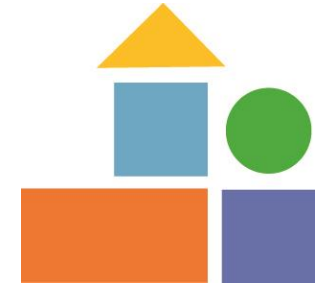


- Toddler Preschooler B

Wearing hearing devices only while at school (3 hours per day, 180 days, no summer) will have only **540** hours of listening experience



Incidental Learning



- As children, we “pick up” the majority of our vocabulary and grammatical structures through hearing them used in our environment

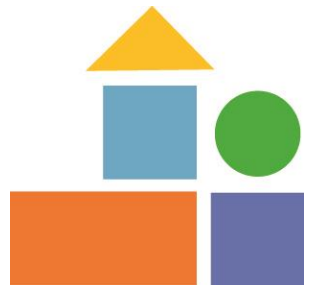


- Ensuring your child is using their amplification during all waking hours increases their ability to learn in this way, wherever they are

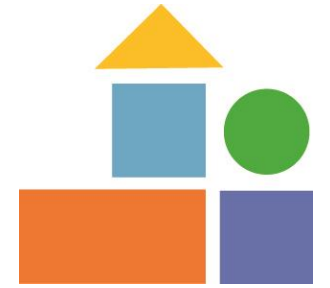
Establish A Good Listening Environment

At home, at school at play, be aware of:

- Distance
- Background Noise
- Reverberation



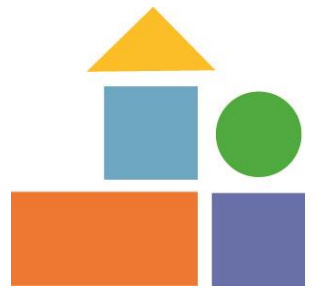
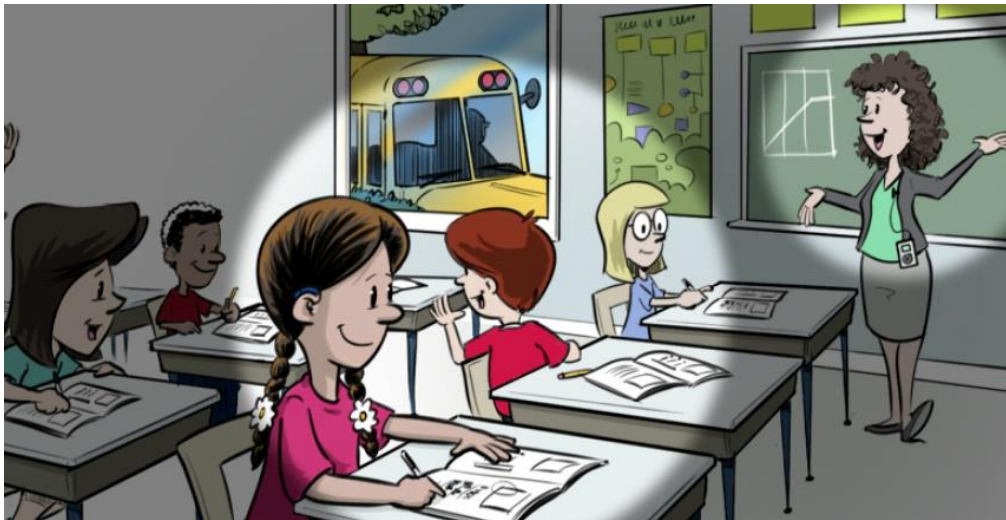
Distance from Sound Source



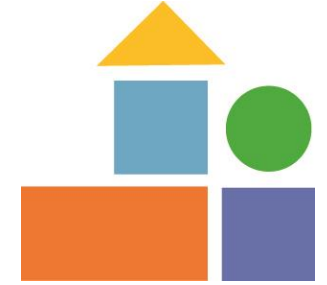
- Keep children close when communicating (easier with babies)
 - The 6 dB Rule → each time you cut the distance by half, there is an increase of 6 dB in volume
- Sit together at meal times
- Share books while seated together
- Get down on their level to talk and play with them

Background Noise

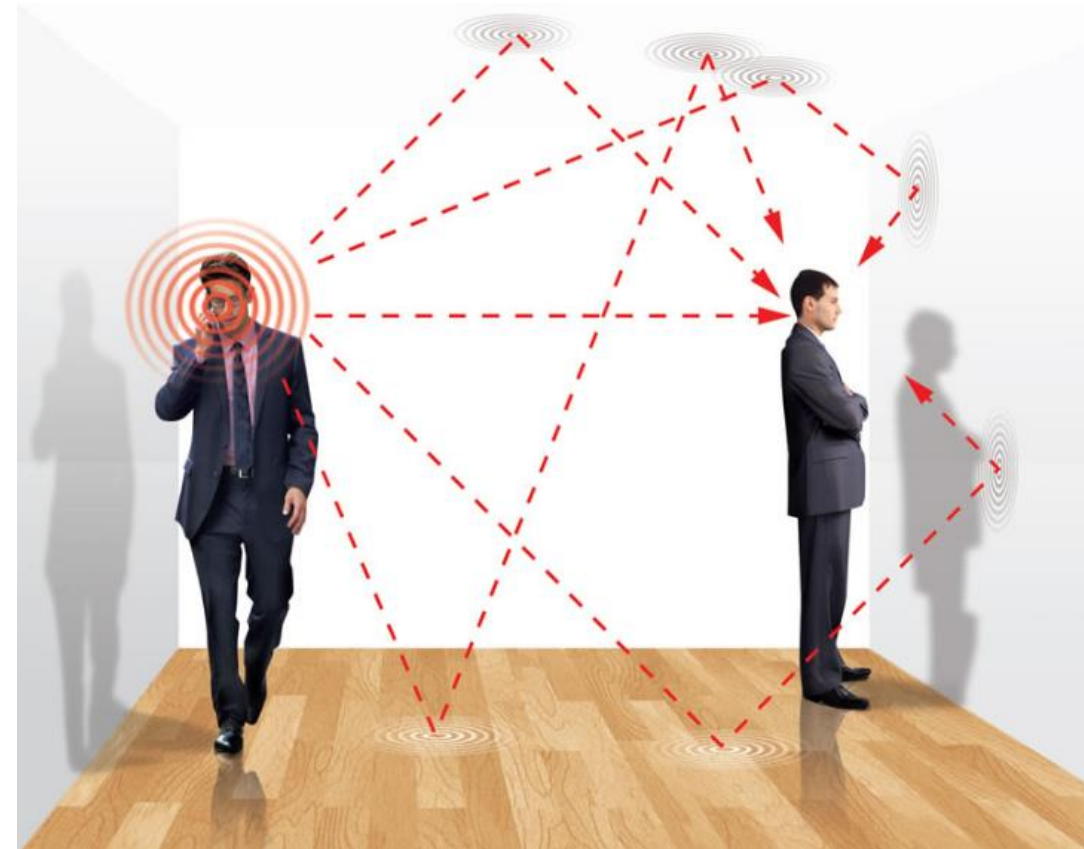
- Whenever possible, eliminate competing sound sources such as the television, radio, fans, etc.
- Talk to your audiologist about a personal FM system for noisy places (including home)



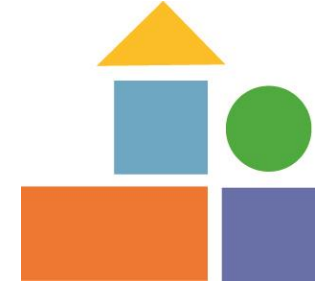
Reverberation



- Usually more of a problem in large indoor spaces (cafeteria, gym)
- Open floor plans can be prone to it
- Soft furnishings absorb sound
- Carpets are better than hard floors
- Curtains are better than bare windows or blinds



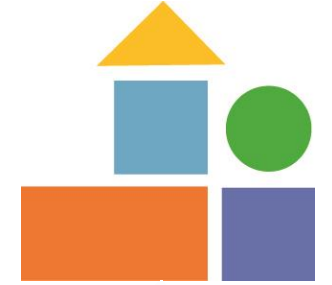
WHAT SKILLS COME FIRST?



- Become familiar with the auditory skills hierarchy your service providers uses
- Parents may need to introduce these materials to their SLP or early intervention providers if they have not had specialized training
- Knowing the order in which skills develop will help parents focus efforts and expectations in the appropriate areas



Auditory Skills Hierarchies

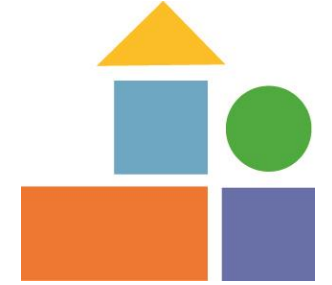


- Auditory Learning Guide
- Auditory Skills Checklist
- Integrated Scales of Development
- Cottage Acquisition Scales for Listening and Spoken Language

*See handouts

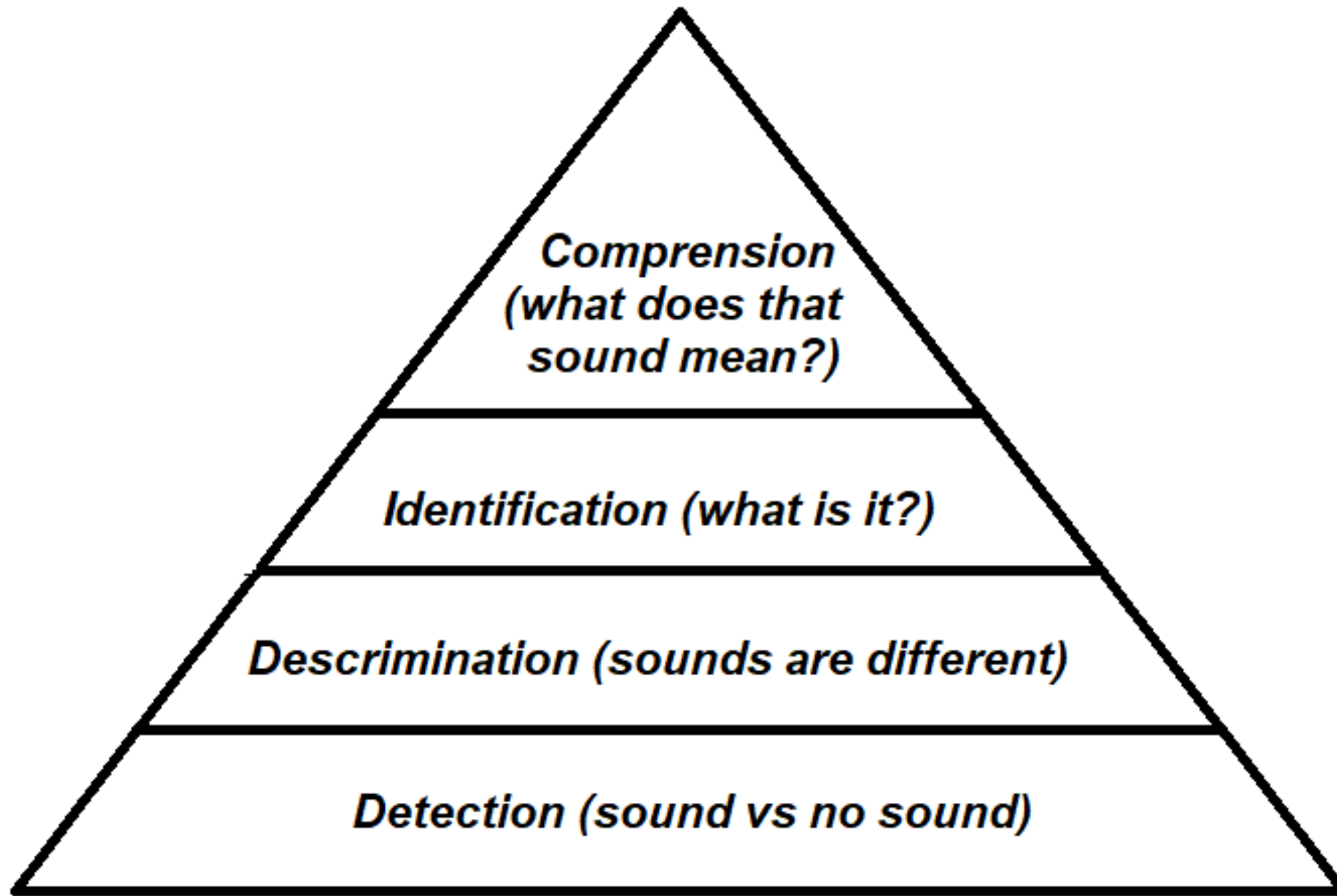
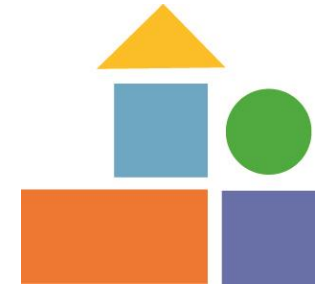


Listening and Language Lingo

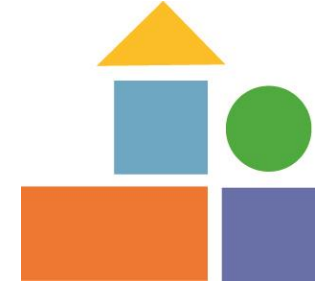


- Let's discuss a few common terms on auditory skills hierarchies
 - Detection
 - Discrimination
 - Identification
 - Comprehension





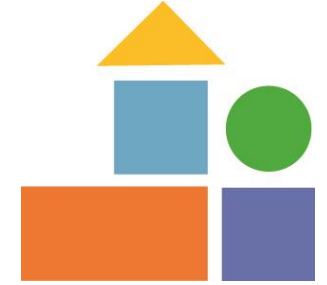
Detection Level



- Ability to respond to the presence or absence of sound
 - Spontaneous responses include observable physical changes immediately following a sound in the environment
 - Examples: pausing, smiling, turning eyes or head, vocalizing
 - Conditioned responses have to be taught and require specific actions immediately following a sound
 - Examples: Dropping a block in a bucket, stacking rings, pushing a button to get the picture to change



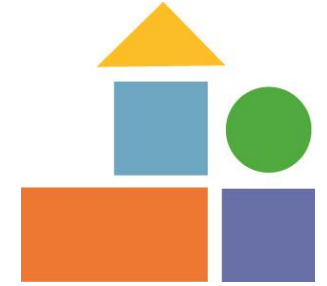
Discrimination Level



- Ability to perceive similarities and differences between two or more speech stimuli
- The child learns to respond differently to different sounds/words
 - Example: When a toddler hears familiar nursery rhymes or songs such as “Itsy Bitsy Spider” or “Wheels on the Bus”, they attempt to do the associated actions

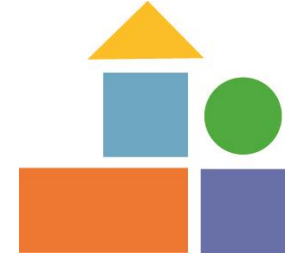


Identification Level



- Ability to label by repeating, pointing to or writing what was heard
- Involves both suprasegmental and segmental features of speech
 - **Suprasegmental features**
 - The pitch, volume, length of sounds
 - Example: The paired sound for the airplane is the pitch moving up and down on the “ah” vowel, the sound paired with the snake is a sustained “sss”, the sound paired with the mouse is an intermittent “ee-ee-ee”
 - **Segmental Features**
 - The manner, place and voicing of vowels and consonants
 - Examples: Minimal pairs like “man” vs “pan”, “hat” vs “hot”, “big” vs “bit”

Comprehension Level

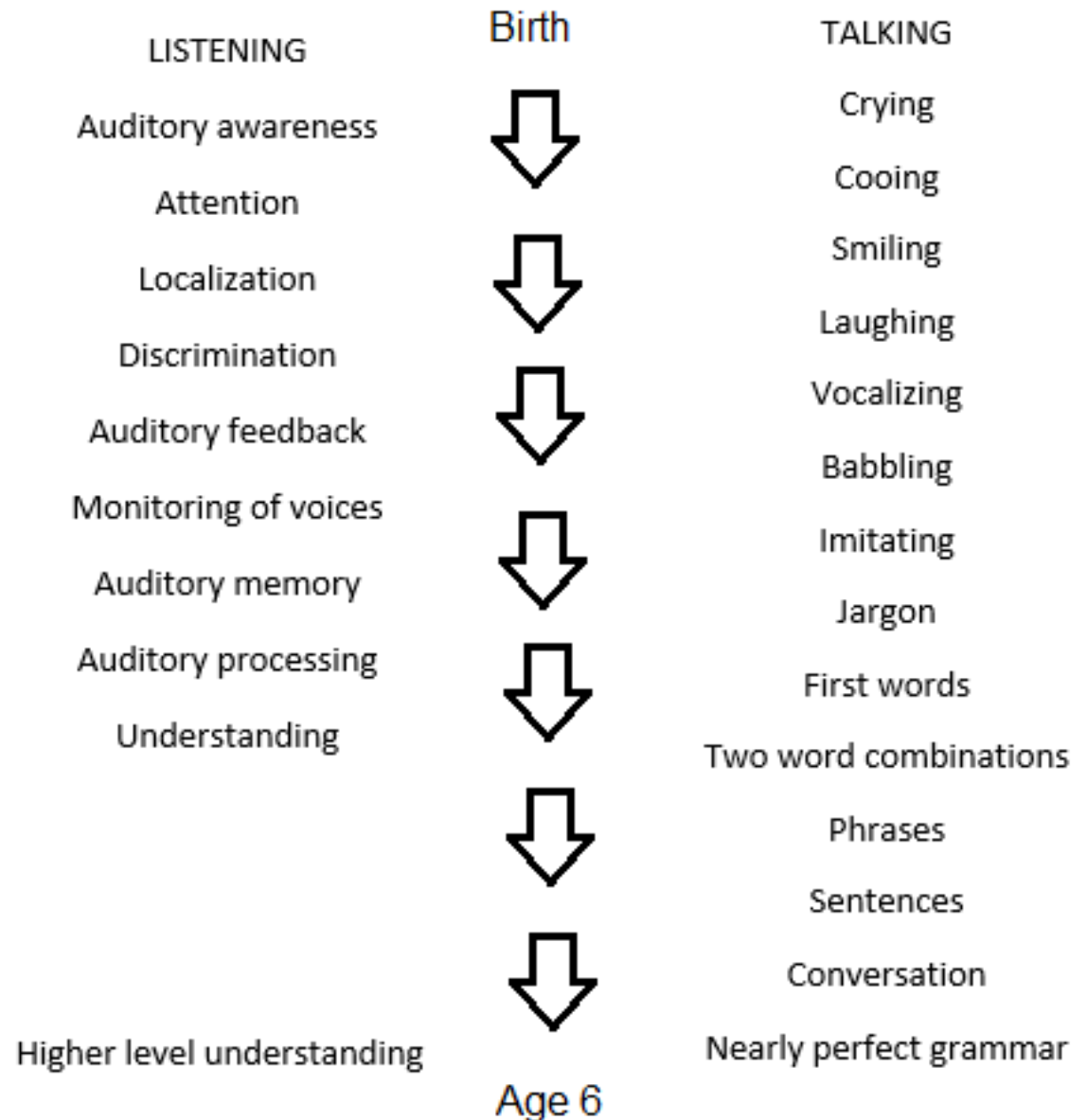


- Ability to understand the meaning of speech
 - Examples: Answering questions, following directions, paraphrasing, or participating in a conversation
- The child's response is qualitatively different from what conversation partner has just said (not just an echo)
 - Examples: Parent—"Look at that puppy!" Child—"It's little."
Parent—"What do you need?" Child—"More juice!"
- Requires auditory memory to follow the sequence
- Ability to listen and attend in noise



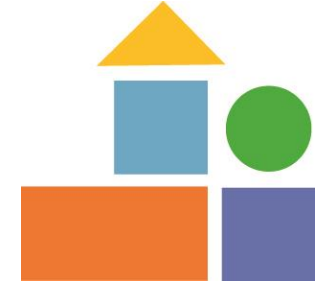
Parallel Skill Sets

- Don't confuse talking for listening
- Both are necessary
- Both require practice



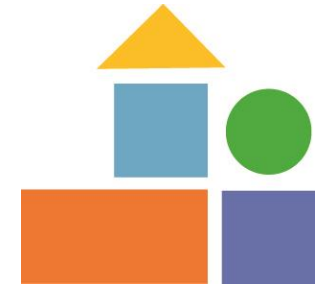
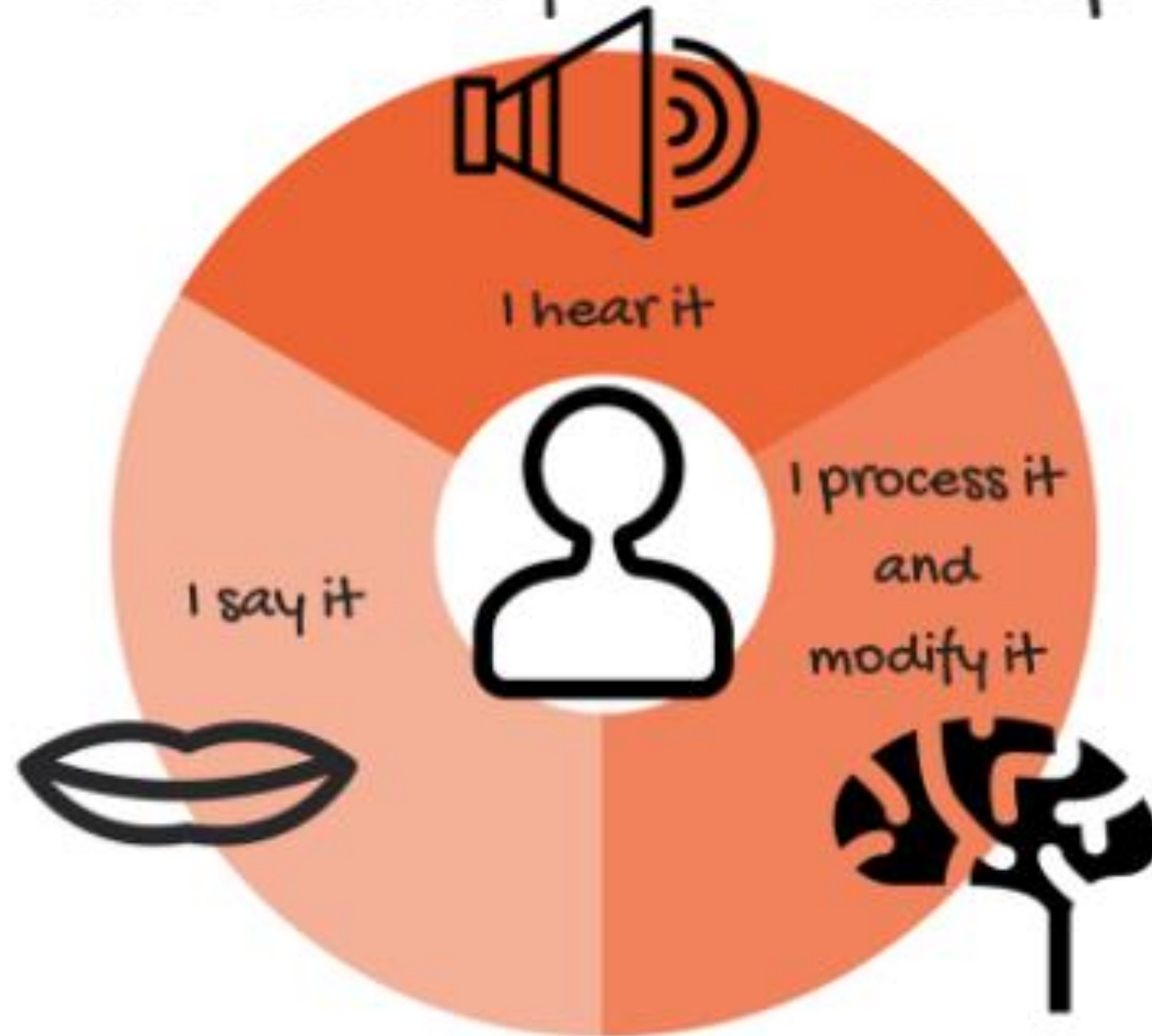
Serve and Return

- Interactions are like a game of tennis
- Children instinctively “serve” through babbling, facial expressions and gestures
- Adults return by responding in a directed, meaningful way
- Each interaction facilitates new connections in the brain

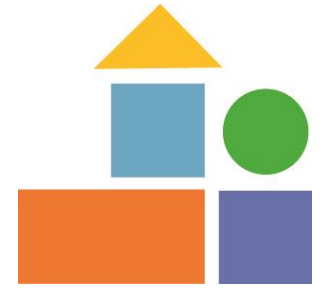


Video Clip: https://www.youtube.com/watch?v=m_5u8-QSh6A

The Auditory Feedback Loop



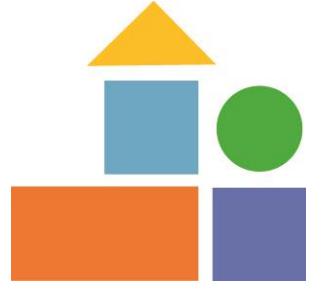
Worth The Investment!



“Building the Auditory Feedback Loop is an investment. It gives the child skills to become a lifelong listener and to continue monitoring, improving, and correcting his speech and language long after he leaves the therapy table.”

~Elizabeth Rosenzweig, MS, CCC-SLP, Cert. AVT

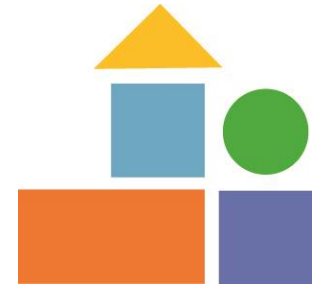
Building the Auditory Feedback Loop



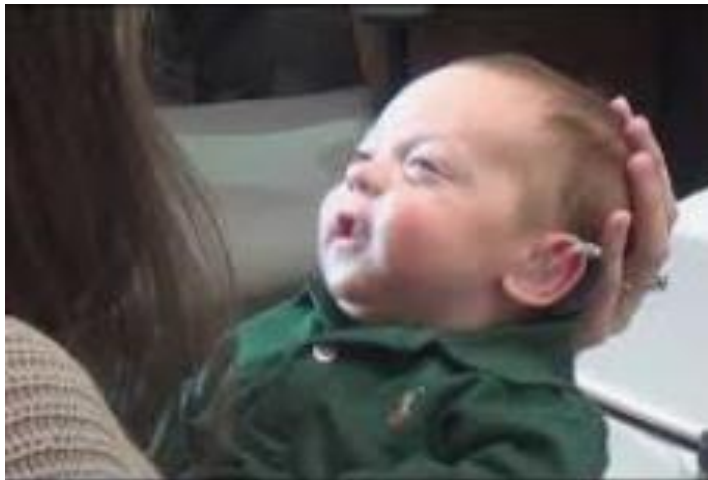
1. **Externalize**
2. **Analyze**
3. **Repair**

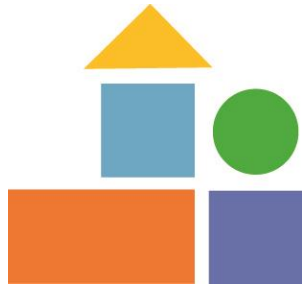


Externalize



- Echo back the child's productions
- Let them know you heard them
- Let them know what you heard
- Help them learn to listen to their own productions



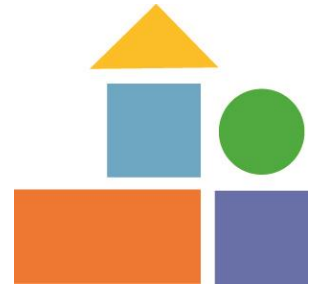


Analyze The Utterance

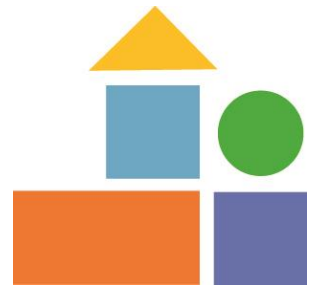
- Draw attention to the child said, not what you may know they meant. (Sabotage!)
- Examples:
 - “You want a *tootie*?”
 - “I heard you say, ‘*I want pretzel*’. Here is a pretzel....oh did you want *pretzels*?”
 - “*Them* my favorite?”



Repair/ Recast



- “Try again” is not a punishment, it is an opportunity for growth
- “Try again” can be implied with an expectant look and wait time
- Model the correct speech sounds, vocabulary or sentence structure that was missed and WAIT
- Be prompt and specific with praise (“Wow! I heard you listen and fix _____ all by yourself!”)
- Use a “party voice” when confirming the corrected productions (different from your prompting tone)



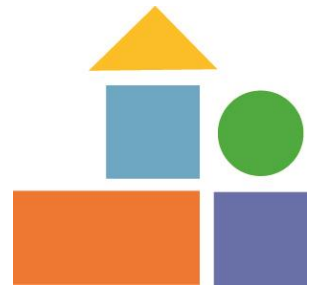
Daily Opportunities To Teach Skills

Skill: Detecting presence/absence of sound

Setting: Listening to music

Example

- Pick up the child and dance to the music, stop music and pause, point out when it stopped (“I don’t hear it”), start music again point out that it’s back (“Now I hear it!”) and move to the beat. Repeat. Repeat. Repeat.



Daily Opportunities To Teach Skills

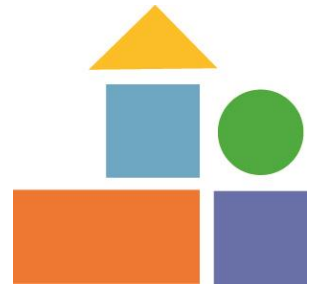
Skill: Localization (searching for sound source)

Setting: Playing at home

Examples:

- Set a timer on a phone, stash it behind a pillow on the couch, distract baby with something else for a minute, wait to see if they alert when it goes off, dramatically call attention to the sound (“I hear that...where is it?”), then go looking for it around the room with baby
- Have older siblings or other family members call the baby’s name or make a silly sound from around the corner or somewhere out of their direct line of sight, make a big deal about finding them, cheer and celebrate with baby when you do
- If baby spontaneously alerts to a sound, acknowledge what they did and label the sound for them (“Oh, you heard the dog barking. Silly dog! Maybe he wants to come inside.”)

Daily Opportunities To Teach Skills



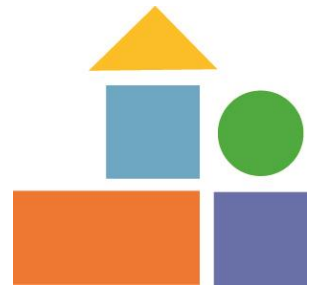
Skill: Identifying common phrases or sentences

Setting: Playing with cars, dolls, stuffed animals

Examples



- Model saying “your turn” or “my turn” as you give them a car, take it back for a second, then give it to them again. Give them the chance to share it when you say “my turn”...give expectant look and wait for them to share (may need additional prompts)
- Model putting a blanket over the doll or stuffed animal and saying something like “night-night, got to sleep”, give the child a turn with another doll and see if they can cover it with the blanket



Daily Opportunities To Teach Skills

Skill: Recalling 2 critical elements

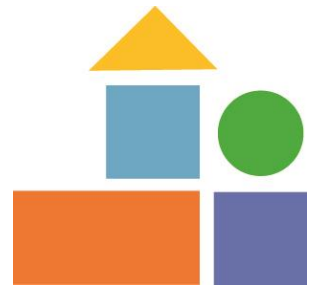
Setting: Playing with stuffed animals

Example:

- Have at least two agents (the bear and the doll) and possible actions (sleeping or eating) and talk about different combinations like “Bear is tired. Bear needs to sleep” vs. “Dolly is hungry, she needs to eat.” vs. “Bear wants to eat” vs. “Dolly wants to sleep”. Notice if the child is making the right combinations of agent and action. Model again with acoustic highlighting if needed.



Daily Opportunities To Teach Skills



Skill: Identifying 3 critical elements

Setting: Playing picnic or snack time



Examples:

- Have and two or more agents (people, stuffed animals), two or more types of food
 - Agent + food type + quantity of food = “Bear wants three crackers” vs “Monkey needs two raisins”
 - Agent + food type + food type = “Barbie wants a carrot and a cookie” vs. “Ken needs a chip and a banana”

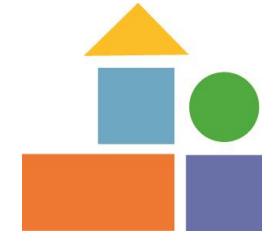
Let's talk about your day, your targets...

Skill:

Setting:

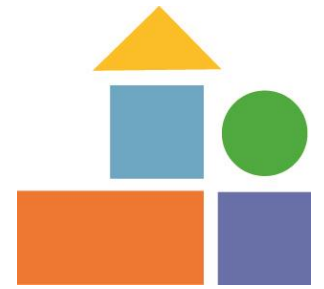
Examples

Free Online Resources



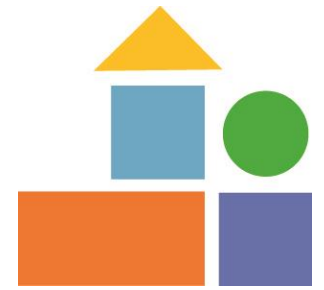
RESOURCE AND WEBSITE (free with registration or download)	ACCESS	AGE RANGE
<p>Baby Beats: For families with children experiencing hearing loss, BabyBeats from Advanced Bionics is a motivating, fun program to foster listening and communication development in natural settings, both before and after using hearing aids or receiving cochlear implants.</p> <p>https://advancedbionics.com/nz/en/campaign/babybeats.html</p>	CD/Paper App via Apple or GooglePlay	Infant-Toddler
<p>Communication corner: Resources to improve listening, encourage conversations, and instill confidence so that you can achieve your best</p> <p>https://www.cochlear.com/us/communication-corner</p>	Website Paper	Infant-Toddler School Age Tween-Teen Adult

Free Online Resources (continued)



RESOURCE AND WEBSITE (free with registration or download)	ACCESS	AGE RANGE
<p>The Listening Room: A host of free, fun activities and resources to support the development of speech, language, and listening skills in people of all ages with a hearing loss. The Listening Room features three sections with content created specifically for their respective age groups: Infants & Toddlers, Kids, and Teens & Adults.</p> <p>https://thelisteningroom.com/en/</p>	Website	Infant-Toddler School Age Tween-Teen Adult
<p>Sound Scape: Provides various games are designed to help you test and hone your listening skills. There are different interactive listening activities designed for various age groups.</p> <p>https://www.medel.com/us/soundscape/</p>	Website	Infant-Toddler School Age Tween-Teen Adult

Free Online Resources (continued)



RESOURCE AND WEBSITE (free with registration or download)	ACCESS	AGE RANGE
<p>Angel Sound: This is an interactive auditory training and hearing assessment program that lets you take control of your listening rehabilitation independently through a series of self-paced modules that cover different aspects of the listening process. The level of difficulty is automatically adjusted to match your developing listening skills.</p> <p>http://angelsound.tigerspeech.com/angelsound_about.html</p>	Website App via Apple	Infant-Toddler School Age Tween-Teen Adult
<p>Sound Success: Advanced Bionics Sound Success was created to enable people with a hearing loss to work independently to get optimal benefit from their hearing aids or cochlear implants. It focuses on building your confidence and skills to speech-read (lip-read) and follow speech without speech-reading cues.</p> <p>http://www.absoundsuccess.com/</p>	Website	Adult

Additional References & Image Credits

- John Tracy Clinic <https://www.jtc.org/babys-first-hearing-aid/>
- Alexander Graham Bell Association <http://www.agbell.org>
- Aussie Deaf Kids <https://www.aussiedeafkids.org.au/surgery-for-a-cochlear-implant.html>
- Be Hear Now <https://twitter.com/behearnow1>
- Shutter Stock <https://www.shutterstock.com/search/child+hearing+aid?studio=1>
- Elizabeth Rosenzweig www.auditoryverbaltherapy.net
- Ear Community <https://earcommunity.org>
- Center for Hearing and Communication <http://chchearing.org/>
- Sunshine Cottage <https://www.sunshinecottage.org>
- Cochlear <https://www.webmd.com/parenting>
- Hearing First <http://www.hearingfirst.org>
- <https://www.familyeducation.com>
- <http://recipegeek.com>
- <https://www.oticon.com>
- <https://www.healthyhearing.com>
- <https://successforkidswithhearingloss.com>

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**Building Success
One Step at a Time**
Hearing-Language-Literacy



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National Center for Hearing Assessment and Management
2620 Old Main Hill, Logan, Utah 84322
Tel: 435.797.9234
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