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Hear now. And always



Listen Learn and Talk

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Foreword

Listen Learn and Talk was developed as a resource, for children diagnosed with a hearing impairment under 12 months of age who are part of an auditory habilitation program.

It covers the development of the child from birth until they are ready for school. The information contained in **Listen Learn and Talk** is intended to complement a child's auditory habilitation program and is by no means intended to replace such a program.

The book was written in a style to engage the parents or primary caregivers, as daily interaction with their child is important for the development of spoken language. To improve readability the generic term of 'she' is used to represent the child. Explanation of technical terms used in the book is provided in the glossary.

These terms are printed in gray-bold text. The intention is to provide a user-friendly resource that has a practical approach to using a variety of strategies and ideas for integrating listening into the child's everyday life.

Professionals will find it a valuable resource as it contains fundamental information, references, practical examples and ideas for activities parents can do at home.

This resource would not have been possible without the dedication of Maggie Looney, Lynne Richards and Sylvia Romanik.

- The Listen Learn and Talk Package is an auditory habilitation program for children with a hearing impairment identified under 12 months.
- This program was developed for parents and professionals as a resource to supplement the child's habilitation program. The program follows the natural development of the child from birth to pre-school age. It contains ideas and strategies for developing spoken language through listening.
- The first section of the book provides information on the importance of parent participation in the habilitation process, auditory habilitation strategies and an integrated development scale from birth to 48 months.
- The second part relates to expanding on the strategies shown and providing additional ideas for activities at home.
- The book also includes a glossary, a list of scales of development and assessment tools used by professionals.

Introduction and overview

Developing spoken language through listening in a child with hearing impairment is an exciting process for everyone involved. As a young child with hearing impairment learns to listen and talk there is a great sense of anticipation for parents as they embark on the journey that leads to communicative competence for their child.

Today, because of technological advances, the majority of children with hearing impairment have the potential to access all of the sounds of spoken language through listening alone. Improvements in hearing devices such as hearing aids and cochlear implants mean that babies and children now have access to sounds as never before.

However, it must be understood that simply providing hearing devices does not mean the sounds will automatically be perceived or interpreted. For this to happen, the child must learn to listen using these devices. By learning to detect and interpret the sounds, the child's capacity for spoken language is maximized.

Developing spoken language through listening requires an ongoing commitment and dedication by all involved. Parents/caregivers and families are the key players in their child's development. It is the parents who are there to provide the wealth of spoken language interaction on a one-to-one basis throughout the child's waking hours.

As key players, they need to develop an understanding of the different stages of listening, language, speech and cognition. They need to learn how to develop listening skills through meaningful everyday interactions with their child.

Only if parents have a clear understanding of what is involved will they be on the right road for the journey ahead. Parents are the driving force and motivators in their child's development of spoken language.

In recent years, the recognition of the importance of early diagnosis has led to the introduction of Newborn Infant Hearing Screening Programs in many countries throughout the world.

The advent of these programs has meant that babies are often diagnosed with a hearing loss within the first few days of life. This, along with technological advances in devices, such as hearing aids and cochlear implants, has enormous implications for effective auditory intervention and the child's potential for developing spoken language.

Reports from the second International Conference on Newborn Infant Screening Diagnosis and Intervention at Lake Como, Italy, May 2002 indicated the significance of early diagnosis, the appropriate hearing device and the immediate commencement of auditory learning.

Stimulation of the auditory pathways as early as possible is important to prevent atrophy of the auditory channel. If auditory learning begins in the early crucial years, when the vast growth of development occurs, the child has the opportunity to develop spoken language alongside her hearing peers.

Generally, when a child is diagnosed with hearing impairment, parents will seek a program to suit their goals and needs.

A family centered auditory habilitation program should focus primarily on providing parents and extended family with skills, knowledge and confidence to provide the best possible auditory language learning environment for their child through participation and practice.

Such a program should be based on ongoing diagnostic assessment of the child's individualized needs.

Parents learn about the different stages of listening, language, speech and cognition. They also gain the skills and understanding to use appropriate spoken language in play and daily routines. They learn to capitalize on the many opportunities for stimulating listening and language learning that arise in natural interactions in the home.

Parents should also be provided with knowledge in the area of audiological management so that their child is optimally fitted with appropriate hearing aids and/or a cochlear implant.

Overview

The book is divided into three sections as outlined below:

Auditory habilitation theory

- Principles of learning to listen
- Family based therapy
- Strategies for developing listening skills
- Integrated scales of development
- Sounds of speech

Auditory Habilitation Practice

- Introduction
- The stages of listening
- Listening levels
- Babies babble
 - Development of spoken language 0 to 15 month
 - Extension activities
- Learning to listen sounds
- Toddlers talk
 - Development of spoken language 16 to 30 months
 - Extension activities
- Children chatter
- Development of spoken language 31 months to school age
- Extension activities

Appendix

- Scales of Development and assessment tools
- Glossary
- Bibliography and reference

Auditory habilitation - theory principles of learning to listen

This section describes a number of important principles that should be followed during the learning to listen process.

Early diagnosis and fitting of hearing aids and/or cochlear implant

The earlier your child is diagnosed and fitted with an appropriate device, the earlier language learning through listening can begin. Digital hearing aids and cochlear implants can allow children with hearing impairment to access all of the sounds of spoken language. Babies diagnosed and fitted with hearing aids and/or a cochlear implant have the potential to develop age appropriate language and speech, provided that they are in a stimulating language enriched environment where learning through listening is the focus.

Ongoing audiological management is critical

The device should be appropriately and optimally fitted for the child's hearing loss. Her hearing aids and/or cochlear implant system must be in excellent working order. Consistent use of the devices is essential. They should be worn all day everyday, during all waking hours.

Audiologists and therapists can assist you to understand how the devices work, which will enable you to troubleshoot any problems. Good audiological management involves learning about well-fitted earmolds, keeping the ear canals clear and healthy, understanding audiograms in relation to your child's hearing

impairment, and having regular hearing tests and/or MAPping sessions. Professionals have a responsibility to ensure that you are provided with as much information as possible to develop these skills.

Parents and professionals are partners

In partnership with skilled professionals, you play a key role in the delivery of an auditory habilitation program for your child. In an effective family based program, you should receive ongoing guidance and support from skilled professionals, and there should be an emphasis on your important role in natural child-centered communication.

Ongoing diagnostic assessment

Therapy should include ongoing diagnostic assessment through observation and evaluation. After the therapist assesses your child's development, an individual program should be carefully designed, following the typical stages of development in listening, language, speech and cognition.

As your child progresses, it is important to set new goals. You will play a key role by giving the therapist information about your child's development at home. The therapist can then work with you to achieve the agreed goals. This ensures that the program is tailor-made for your child.

The development of listening is an ongoing process

Once your child has been appropriately fitted, she has the ability to perceive sounds that can become meaningful. Learning to listen involves following a sequence of development, beginning with the detection of sounds and culminating in the processing of complex language. (See Integrated scales of development.) Even when your child has learned to listen well, she will need listening practice to maintain her listening skills.

Have high expectations specific to your child's potential

The key caregivers involved in your child's life should be committed to the auditory learning program, believe that she will learn to listen and help to develop spoken language through listening. You and other caregivers should have the opportunity to acquire the skills necessary to achieve this.

‘Listening becomes a way of life.’

Doreen Pollak

‘Listening becomes integrated into the child's personality.’

Judith Simser

Meaningful interaction is important

Your child's listening experiences should be appropriate to her age, ability and interests. The sequence of auditory skills should be followed and incorporated into meaningful interactions in daily life. As your child matures, it is important to change the toys, games and language accordingly. In this way, the experiences will reflect her changing interests and ensure that the skill level and complexity of language are increased.

Listening should be FUN

It is important that learning to listen is enjoyable and meaningful. The more time your child is engaged in listening, the greater the possibility for the development of spoken language.

Spoken language must be clear, and well within your child's hearing range

In the beginning phases of learning to listen, good acoustic conditions are essential. Your child needs a quiet listening environment. Any extraneous noise will be a distraction that will make learning to listen harder, if not impossible.

There must be auditory input first

Your child should hear spoken words, phrases and sentences before any visual cues are given.

This is the most effective way of learning auditory patterns. Learning through listening is the natural way to develop intelligible spoken language.

Many aspects of speech are not visible and are best taught through listening, for example, suprasegmentals (pitch, duration and intensity) and voicing. When listening is used as the primary input, your child has the best chance of developing a natural sounding voice with appropriate rate, rhythm and intonation.

‘Listening all day every day the maxim for a focused auditory habilitation .’

Sylvia Romanik

Learning to listen should be fun!

Integrating listening into daily activities

Listening should be integrated into all daily activities and routines so that it becomes a way of life. Listening should be part of everyday living, not just confined to the clinical setting. Provide every opportunity for your child to practice listening and talking.

Communication attempts must be acknowledged and encouraged

From the very beginning when your baby interacts by cooing and babbling, acknowledge these communication attempts verbally. Positive reinforcement will encourage her to communicate further. This is vital for the development of spoken communication skills.

Set your child up for success

Set your child up for success by providing a sequenced progression of skills in the four areas of listening, language, speech and cognition. Building on each skill area will provide a comprehensive foundation on which your child can develop to her full potential.

Family based therapy

Why parents are necessary in the auditory habilitation program. As parents, you are the key figures in your child's life. When your child is first diagnosed with hearing impairment you will seek out or be referred to skilled professionals.

You will find these professional services invaluable in understanding and dealing with the impact of hearing impairment. Professionals will help you develop the skills you will need to foster your child's spoken language through listening. Always remember that you are the essential ingredient in the auditory habilitation process.

One of the first questions parents usually ask a professional is if their baby will be able to talk. With the advancements in hearing aid and cochlear implant technology, the answer is Yes, but. Yes, the technology is available to provide clear access to all speech sounds, but the development of clear, intelligible spoken language will only happen if a number of other factors are in place.

The most important factors are ongoing, high quality audiological management and an understanding from you as a parent, that you play the key role in the process. If the goal for your child is the development of spoken language, you will need to commit to a program of auditory habilitation. There are many such programs around the world that families can access to achieve this goal.

In an auditory habilitation program, there will be a partnership between you and the professionals involved. Therapists will guide and support you and your family. They will provide you with the skills you will need to develop your child's spoken language through listening within the routines of daily living.

If all family members develop these skills to interact appropriately, then the benefits will be greater for your child. In turn, you will provide valuable feedback to the therapists about your child's development at home.

Observing, participating and practicing

In an auditory habilitation program, parents and families observe, participate and practice the skills and techniques outlined in the following points.

Developing skills in audiological management

From the very beginning, your child should wear her hearing device(s) during all waking hours and the device should always be in excellent working order. Therapists can help you understand how the device works, and how to troubleshoot any problems. You should help your child to become independent in managing her own device(s) as early as possible.

It is critical that molds be changed regularly as little ears grow and molds need to fit well for maximum auditory input. The whistling feedback from ill-fitting molds is distracting and inhibits the auditory signal. Also, the ear canal needs to be clear and healthy for optimal listening. Work with professionals to ensure that your child is optimally aided and/or MAPped at all times. It is important that you and your therapist provide feedback to the audiologist about the sounds your child hears.

Capitalizing on the natural bond and interaction between parents and child

Language develops as a result of the natural interaction between parents and their baby. The impact of hearing impairment should not inhibit the natural interaction with your child. This natural, communicative bond is important and needs to be maintained.

Learning techniques and strategies to develop listening skills

During the habilitation program, you will learn how to use the multitude of opportunities that occur naturally at home to develop spoken language through listening. Remember that it is the techniques and strategies you use that are the key factors, and not the activities themselves.

Understanding the stages of language, speech and cognitive development

Knowledge of these stages will enable you to provide language and speech models that are developmentally appropriate. It is important to be aware of the subsequent stages of development for your child so you are ready to increase her progress ability and provide exciting new challenges. Therapists should explain these stages and suggest ways to promote ongoing progress. (See Integrated scales of development.)

Understanding the sequential stages of auditory development

Developing language through listening is a natural way to learn language. The hierarchy of listening begins with the detection of sounds and achieves the ability to process complex language. You will also learn the importance of using listening as the primary mode for developing intelligible spoken language. (See Integrated scales of development, The Stages of Listening and Listening Levels.)

Understanding the importance of play

Play is very important for the development of spoken language and cognitive skills. As your child develops physically and cognitively, she engages in play. Follow your child's lead by giving language in context and talking about what she is doing. Model and expand your child's utterances to enrich her language.

Through play, she can learn about the world outside her immediate environment. She can enter the world of imagination, fantasy and story telling. Therapists will guide you in optimizing play situations to develop language through listening. Resources can be adapted to provide interesting and age/stage appropriate materials for play. It is not necessary to provide expensive commercial toys. Language learning can occur through play with simple materials.

Providing experiences outside the home

It is important to provide experiences outside the home environment.

An effective way of developing your child's language and cognition is by providing a multitude of experiences, in particular, hands on experiences. Visits to the zoo, the beach, the mountains, a farm, a puppet show, the nursery, the hardware store, etc. will provide stimulus for verbal interactions and language extension activities. Taking photos, creating scrapbooks, re-enacting experiences and role-playing are some of the ways to reinforce and extend the new language.

Acquiring the skills to record your child's progress

By recording your child's progress, you can assist the therapist in the setting of listening, language, speech and cognition goals (both short and long term). This is necessary for the therapy to be diagnostic. By actively participating in the goal setting, you will be better able to reinforce these goals at home.

Developing appropriate behavior management techniques

Providing enjoyable activities will reinforce language learning. As your baby grows into a toddler and a young child, she will continue to have fun if she knows the boundaries of behavior. It is important to use the same rules and guidelines as with hearing children. A child with hearing impairment is a child first and has to learn what is acceptable and what is unacceptable behavior in the same way as other children.

Assisting the therapist

As well as observing, participating and learning, you will provide assistance to the therapist in many different ways. Some of these are described below.

Informing the therapist of your child's interests and family events

Children love talking about their interests and about the activities of their various family members. You know best what your child likes and what will capture her attention. By providing this information to the therapist, the program can be tailor-made to meet individual needs.

Helping the therapist interpret your child's early attempts at communication

In the early stages, you are the best person to understand your child's communication attempts. Your input is invaluable and will enable the therapist to respond appropriately. By being understood, your child is rewarded for her communication attempts. In this way, she will be encouraged to communicate further.

Modeling for your child in therapy sessions

Parents can act as models when new language or new skills are introduced. Some examples of these are stimulus/response listening tasks and role reversals to encourage vocalization. Parents can also model the complexity of conversational skills such as turn taking, question and answer, initiating/ending/changing a topic. It is essential that your child learns these skills from the earliest possible age.

Reporting on your child's development at home

Sometimes in therapy, your child may not exhibit the extent of her language and cognitive development. You can give the therapist valuable information about her development in different areas, for example, new vocabulary, new language structures acquired (receptive and expressive), emerging speech sounds, and generalization of listening skills.

Informing the therapist of any cultural issues particular to your situation

This information will further assist the therapist in tailoring the program to meet the needs of the family, for example, the language relating to religion, cultural celebrations, social activities, roles played by particular family members.

By taking an active role in therapy sessions, you can develop appropriate skills and knowledge to provide a listening and language learning environment at home to maximize your child's spoken language potential.

Strategies for developing listening skills

The strategies used to develop spoken language through listening are outlined below.

1. Ensure hearing aids/cochlear implants are worn all day everyday

If your child is to develop spoken language, it is vital that her hearing device(s) is in excellent working order and is worn throughout the day. There will be certain times, for example, bath time when the hearing aids or implant speech processor cannot be worn but it is imperative that they are worn at all other waking moments. This maximizes the opportunities for you to provide your child with language learning experiences through listening.

2. Be close to the microphone of the hearing device when speaking

When your child starts to learn to listen, be close to the microphone when speaking so that she receives the maximum auditory input. Being in your child's hearing range is important as this provides the best access to speech sounds and sets her up for success.

As the speaker moves farther away from the listener, sound becomes much softer. Learning to listen is much easier for your child if you are close to her microphone (approximately 15 centimeters) from the microphone). Use a normal voice quality, with normal rate, rhythm and level of intensity. Speaking loudly or shouting does not make the speech signal more audible but on the contrary can result in a loss of clarity.

At a later stage, learning to listen at increased distances from the speaker is a skill to be developed. However, in the early stages, the speaker should be close to the microphone so the speech signal is clear and audible.

3. Have a quiet environment

In the initial stages of listening, it is important to provide a quiet environment. If the environment is noisy, your child will have great difficulty accessing sound. As she becomes a good listener, listening in noise is a skill that she will develop. However, in the initial stages, the speech signal must not be masked by background noise.

4. Use a singsong voice

Using a singsong voice is typical of the way that adults speak and naturally interact with very young babies. This is particularly important for a child with hearing impairment who is learning to listen. When a singsong voice is used, there are greater changes in the pitch, duration and intensity (the suprasegmentals) in the spoken message, providing a wealth of acoustic information. Highlighting these features will greatly assist in the development of auditory awareness.

Suprasegmentals convey meaning in sentences. For example, a speaker's surprise can be understood from the intonation rather than the words used. As these features are not visible but are highly audible, children with hearing impairment who develop spoken language through listening alone will readily use appropriate intonation and will have natural sounding voice quality.

5. Establish eye contact

Eye contact with your baby is extremely important. Eye contact connects you with your baby, and accentuates the bond between you. By holding your baby close and looking directly at her face, the baby is in a position to look back at your face. Eye contact is an important part of spoken communication, as we acknowledge speakers by looking at them.

6. Establish joint attention

Successful communication requires each person to know how to initiate a topic, respect the other person's choice of topic, maintain a topic, adapt to topic changes and close a topic appropriately. There are a number of steps in the development of these skills. One of the first steps is to establish joint attention. You can prepare your child to hold conversations at a later stage by developing her ability to share attention with an adult towards an object/activity/event while talking about it.

This can be done in a variety of ways:

- Use interesting objects and toys that capture your child's attention.
- Follow her lead.
- Show clearly when a game or activity is beginning and ending as this signals when to establish attention and when there is to be a change of activity.

7. Talk about daily routines

In the early stages, your baby is reliant on you for every need, (eating, toileting, bathing, dressing and communicating). Language is more meaningful when it centers on daily routines. It is vital to use every opportunity throughout the day to talk about what is happening when involved in these routines.

8. Develop turn taking

Oral communication involves taking turns at listening and talking. Vocal turn taking is a prerequisite for spoken conversation. It starts at a very young age. To develop turn taking,

you should vocalize, then wait for your baby to vocalize. Repeat the baby's vocalization, then add a different vocalization or add some appropriate language. By waiting, you are signaling to your baby that it is her turn to talk. Children with hearing impairment need to learn these pragmatic skills just like any other child. Vocal turn taking should be encouraged from the very beginning. As your child begins to use phrases and sentences, continue to develop turn taking skills as these are necessary for conversation.

9. Have another person call baby by name

The parent-baby bond is a natural link that needs to be established in the beginning. Usually a baby learns to listen first to the person with whom she is most involved. She will tune in to her mother's voice first and make the connection that her mother or father is close by when she hears that voice. The next step is for baby to learn to listen to other family members who are significant in her life.

Calling your baby's name is one way of doing this. It is important not to vary the name in any way at this stage so that, in time, when she hears her name, she will recognize it and respond to it. By having another person call baby's name, a discrimination task and an auditory identification task are being introduced into her listening. It is also an opportunity to reinforce her ability to localize sound and to understand that there is another person who will interact with her. This is a way of widening your baby's experience for listening, responding and interacting.

10. Cue into listening

This cue into listening strategy is used to focus your child's attention and alert her to sound. Cue your child into listening by pointing to your ear and saying animatedly, Listen or I heard that. Did you hear that? In this way, your child will start to focus on listening and start to understand where she is hearing sounds. With older children who are processing language through listening, saying Listen with or without

the accompanying gestures helps them concentrate and cue into listening. Another strategy for older children is to ask them to look at a specific item in front of them. This is an indication that they are to listen and that there will not be any visual cues.

11. Have auditory input first

If the auditory pathways are not stimulated in the first few years, the ability to develop them may be lost. This is why it is essential to commence sound stimulation at an early age. Your baby needs to start learning to listen the moment the hearing device is fitted. Hearing children learn language through hearing it, listening to it and imitating it. Your child can learn in the same way, providing she has an appropriate hearing device and an intensive auditory habilitation program that focuses on listening first and not vision.

The language input should be through listening first. When introducing something new, for example, a new toy, the associated sounds or phrase should be said many times BEFORE the toy is shown. If this is done animatedly, your baby's attention will be held. If the toy is shown first, your baby will focus on the visual object rather than the sounds. Once the toy is shown, the sounds can be repeated and other appropriate language can be added while the baby is playing with the toy.

12. Use listening alone

There are a number of strategies that can be used to hide the mouth when the speaker is talking. These strategies are used to focus your child on listening and not speech-reading. In this way, the input is through listening alone. Once your child starts to process language through listening, she will not seek visual cues, but until that time the following strategies can be used:

- Focused attention: Introduce an interesting toy, book, activity or game, to focus your child's attention so that she receives the language through listening alone without any visual cues.

- Strategic placement of toy, object or hand Hold a toy, object or hand in front of your mouth in a natural way to ensure your child receives auditory input alone. For example, hold a puppet in front of your mouth during play. A hand cue is a useful strategy, particularly in stimulus/response activities. It is important that the hand is used correctly so as not to mask the spoken message and prevent the optimal auditory signal from reaching your child.

Parents and therapists become adept at using a variety of natural ways to ensure the child receives the spoken message through listening alone.

13. Use acoustic highlighting

Acoustic highlighting involves making the key element of a sentence louder than the other words around it in the sentence, for example, There is the car, brm brm. This strategy is used more frequently in the early stages of the listening journey. As your child's listening skills develop, this strategy will be used less frequently. However, it is still very useful when introducing new vocabulary or a new language structure. For example, your child might be having difficulty with the pronoun he. Acoustic highlighting can make it easier to hear, for example, HE is going to the park. Once your child can hear and identify the word, it is important to say the sentence with natural rhythm and intonation.

14. Alert to sound source or localize sound

From the very beginning, this strategy is important because it alerts your baby to sound when she may not hear it for herself. The more this is done alongside developing listening skills, the sooner your baby will develop the ability to hear sounds from different directions. Turn your baby towards the source. Your baby will demonstrate that she can locate sounds by eye gazing; eye movement; pointing; turning her head, etc. Be alert to these clues, and reinforce this skill by confirming the sound

source and naming it. It is important to use every opportunity to make the association between a sound and what it represents, for example, Look up in the sky. Look up. There's the airplane.

15. Have one person speaking at a time

One person speaking at a time is the basis of spoken conversation. Obviously in the adult world, it does happen that people speak over each other. However, adults can cope with this and discriminate between different speakers' voices. For a young baby, listening to more than one speaker at a time is a more sophisticated skill. Your baby should receive input from one speaker at a time only so that the message is clear.

16. Use repetition

Most young children need to hear language repeated in a variety of contexts before they process, comprehend and use it. Repetition is a natural strategy to use at the very beginning of developing spoken language. Parents instinctively repeat information for their babies. Children with hearing impairment need even more repetition.

You may need to say a new word or phrase fifty or more times in meaningful situations and in different contexts before your baby comprehends it. Repeating the same sounds, words or phrases close to the microphone of the hearing device will make the message more accessible. It is important to vary the experiences so that the repetition does not become tiresome. For example, if you want your child to learn to listen to phrases associated with particular toys, say the phrases a number of times before she sees the toys. The first time particular toys are introduced, they could be hidden under boxes. The next time they could appear from behind cushions on the sofa. Another time they could appear from out of the wash basket. You can maintain your child's interest by repeating the language many times in different situations.

As your child becomes older, repetition can still be used as a technique if she does not understand or hear the speaker the first time. However, it is an older child's responsibility to listen and understand directions and instructions after hearing them once. If information is constantly repeated, your child may learn the bad habit of not listening or processing the first time something is said. When your child successfully processes after hearing something once only, reinforce this with praise. In this way, she learns not to expect repetition.

17. Use phrases and simple sentences

It is important to use phrases or short simple sentences in the beginning, then move on to complex sentences as your child's language develops. The basic language structure is a sentence and it is important that this be the input from adults rather than single words. For example, before your toddler takes the lid off a bottle say, take it off and not simply off. There is sometimes a tendency to reduce the input to single words in the mistaken belief that this will assist a child who is hearing impaired. Using a phrase or short simple sentence rather than single words will make the message more accessible because there is more acoustic information (suprasegmental features and co-articulation effects).

18. Use real names for objects

Your child needs to hear new words and phrases repeatedly before she internalizes them and starts to use them. It is easier for her to learn the correct name right from the beginning. Make sure you use real names of objects.

19. Encourage vocalization

Some children may require prompting to vocalize. The following strategies can be used to encourage vocalization.

Look at your child in an excited or eager way to signal it is her turn to talk. Use this in conjunction with the waiting strategy (where an adult waits in an eager or excited way to indicate

that a vocal response is required). Move a toy only after your child vocalizes. This is a great motivating strategy, and is particularly effective with pop up toys, hopping toys, etc. If these are not available, vocalization can usually be encouraged by simply holding a toy and expecting your child to vocalize before you move it. Model a response yourself and have another adult or sibling move the toy to show what is expected.

Another way to encourage vocalization is with your hand. Place your hand in a "gentle nurturing way" in front of your child's mouth. This indicates that it is her turn to speak. This strategy can be used in stimulus/response activities as a way to discover exactly what your child has heard. The hand can also be used as a prompt for turn taking and can set up an expectation in your child's mind that she is a participant in the conversation.

20. Capture your child's attention

Your child will learn best in meaningful situations and when her attention is focused. She will be more receptive to learning if you follow her lead and capture her attention.

It may be necessary to create situations to capture your child's attention. All children love anticipating what is coming next, so try capturing her interest with objects hidden or only partially visible. If playing with puppets, use funny voices when making them talk. Dressing in a funny way, having something of interest on the wall, collecting broken or unusual objects, or having something slip out of a book can all be effective in stimulating curiosity and capturing attention.

Do not feel that you have to provide expensive equipment or the latest commercial toys. Natural products and objects found around the house can be just as attractive to your child. It is the way the toys are introduced and used that will engage your child, and result in the most learning.

21. Use auditory stimulus/response activities

Auditory stimulus/response is a way of knowing exactly what sounds your baby can hear across the frequency range of speech. The following sounds are used:

- vowels /ar/ /ee/ /oo/,
- fricatives /s/ /sh/ and
- nasal sounds /m/.

Auditory stimulus/response can be started at a very early age. To do this, ask your child to hold an object to her ear and respond with an action when she has heard the sound, for example, putting rings on a hoop, dropping plastic animals into a bucket of water. Say the sounds using a clear voice close to the microphone of the device, ensuring that your child does not feel the breath stream.

In the beginning, your child will not be expected to repeat the sounds, only to respond with an action, to demonstrate that she has detected them. At a later stage, she will be expected to repeat the sounds, demonstrating that she is able to discriminate between them.

Vary the length of time between each sound stimulus so that your child does not get into a routine, anticipating when the sound will occur rather than listening to it and processing it. With a baby, you may need to help her hold the object to her ear and model the response.

If your child can respond reliably to a stimulus, it will assist in the testing of hearing and the fitting of hearing aids. It will also help when MAPping the speech processor of a cochlear implant. Auditory stimulus/response is also useful to quickly check that your child's device is working and to check listening at any time. If your child is not well, her listening may be affected and this can be quickly assessed by comparing her responses at that time to her typical responses.

At a later stage, use auditory stimulus/response activities to fine tune listening for more difficult contrasts such as place contrast (pa/ta/ka) and also to highlight specific speech sounds so that your child incorporates them into her repertoire of sounds produced.

As your child develops listening skills and expressive language, use the auditory stimulus/response activities to give listening practice at greater distances from the speaker.

22. Have two adults model the auditory stimulus/response activity

When beginning auditory stimulus/response, your child may not know what is expected of her and may be unable to detect sounds at this stage. Use two adults to model what is required - one to provide the stimulus and one to respond. The person saying the sound should not respond or your child will be confused about what is expected. The adult who responds should point to her ear and say with an animated voice, I heard that. When your child has a turn, the second adult should hold the ring or object up to the child's ear in the waiting and listening pose.

23. Make it fun

This is a very important strategy. Children love to have fun. Every learning experience should be enjoyable. When children are actively participating and enjoying themselves, the most learning will occur. Children have a sense of wonder about their world. They love anticipating, predicting and demonstrating. Your child will learn best if given the opportunity to explore her world in this way. When her imagination is captured, she will take part in and enjoy the learning experience.

24. Provide positive reinforcement

Always give praise to encourage the action or verbal response to be repeated. Your child may have waved in response to bye bye. She may have heard her name for the first time or uttered her first word spontaneously. She may have used a plural correctly or followed a three-element direction.

Rewards can be given in a variety of ways. An effective reward is verbal praise. It must be immediate and direct. Showing your child pleasure immediately after the action/response will encourage further responses. It is important that your child is in no doubt as to the action/response that is wanted again. Verbal rewards have to be expressed in language that she understands, for example, good listening after a specific listening task. For an older child, positive reinforcement can be given for her spoken language. I heard that /s/ on the end of cats. You said that really well.

It is better to praise the positive action or response than to continually point out what your child is NOT doing. You and the therapist need to be skilful in eliciting the targeted response through listening. By praising that response, your child will feel confident about practicing it and producing it again in conversation.

The verbal reward can be accompanied by a physical one, for example, a pat on the back. Rewards in the form of gifts should be limited. Children need to do things for self-motivation. They need to be pleased with themselves for a job well done. To over-use gifts as a reward is not preparing your child to live in the real world where self-motivation is usually the key to success.

25. Use pausing

This strategy is used to emphasize the language input. In the early stages, use a singsong voice and talk in phrases or short simple sentences. Pause between phrases/sentences to give your baby time to process before hearing it again. This strategy can also be used when your child has acquired some listening skills. It can be used to emphasize the key part of a more complex message or when introducing new vocabulary, a new concept or linguistic structure. It will give your child time to process and understand the new piece of information.

26. Use waiting

Waiting is a very useful strategy especially at the beginning of the language learning process. When you speak to your young baby, wait before you speak again, giving her time to respond vocally. As you wait, try using a slight turn of the head towards your child to emphasize that you are waiting for a response. This can be accompanied by a raised eyebrow, a smile or a comment such as mmm.

Together, these strategies lay the foundations for vocal turn taking. You speak, wait and listen and when your child responds, you respond with appropriate language. This is the basis of conversation and should be introduced at a very young age.

Sometimes parents of children with hearing impairment are anxious to feed in as much language as possible and forget to give their child time to respond. Certainly in the beginning, you do need to give a lot of language input, almost a running commentary on what is happening in your child's world. However, this has to be punctuated with waiting, so that your child can respond or she will never have the opportunity to learn to talk. Talking is as important as listening. Children need many opportunities to practice both, so they learn how to become competent communicators.

27. Model correct language

Modeling is one of the key natural strategies that you and other family members should use throughout the language learning process. Modeling simply means using the correct grammar and pronunciation when speaking to your child and repeating her utterances. It means speaking clearly at all times, giving the appropriate language in context.

Modeling can also be used when a new skill is being learned. A therapist may ask you to model a response, or you may do this with another family member. For example, if your child is having difficulty with following a direction, the therapist may have you model what has to be done. In this way, your child learns what is expected and so will be set up for success when it is her turn.

28. Promote speech development

You should model correct speech at all times for your child. As her expressive language develops from babbling to jargoning, to single and two-word utterances, her pronunciation of words will not be accurate. Speech is a developmental process and different phonemes emerge at different ages. This depends on your child gaining control, through practice, of her speech organs, for example, tongue and lips. (See Integrated Scales of Development and Sounds of Speech for the order of acquisition.)

As your child's motor speech skills improve, her approximations will gradually develop until words can be said correctly. To promote speech development, always give your child correct models to imitate. Use the Listen strategy to cue her into listening for the correct articulation before the word is repeated. Highlight specific sounds being omitted. Use auditory bombardment of specific sounds in games if your child is having difficulty. Incorporate emerging speech sounds in stimulus/response speech babble activities.

29. Expand and extend language

This strategy of expanding and extending language is used to foster the development of language. This is done by introducing language that is slightly more complex than your child's current expressive level.

In the early stages, phrases and short simple sentences should be used in a singsong voice. Gradually as your baby starts to babble, you and others should repeat the babble and add more so that she hears different combinations of phonemes. You should also comment about what your baby is doing. As your baby continues to use more babble, continue to use simple language to describe what she is doing but also use acoustic highlighting for key words. Once your baby has started to use jargon and the occasional word, expand the word into a phrase or sentence. For example, if your child points to a picture and says Ball, expand with Yes, that is a ball. You might also extend by adding, You have a ball. Where is your ball? It is a big ball. Remember to increase the complexity of the input as your child's language develops.

30. Extend vocabulary

Your child will not learn to listen from over-hearing conversation or by hearing information from the TV or radio. She will only learn new vocabulary and structures by direct input from you and other adults/siblings. There are many opportunities in all the daily routines to provide vocabulary input, for example, categories: furniture - table/chair/sofa, desk/dresser; quantities: pile/lots/bit/grain/slice/some; opposites: clean/dirty, big/small, up/down, inside/outside; gender: cow/bull, duck/drake, male/female. It is important to introduce new words so that your child's vocabulary increases at a constant rate. For example, if your child is able to use the word big, the opportunity is there to extend her knowledge by starting to

use synonyms such as large/huge/enormous, etc. Once your child is a competent reader and listener, she can acquire new vocabulary and structures on her own, but until that time, she will depend on you and the rest of the family.

31. Use rephrasing

Rephrasing can be used when your child indicates that she does not understand the language used. For example, you might say, Do you want the tiny bear? If your child does not respond, rephrase by saying, for example, The tiny bear is the little bear. Do you want the tiny bear?

32. Use questioning

Questioning is a common strategy used to check a child's understanding and encourage vocal responses.

In the early stages of language development, children understand and use simple wh questions such as What is that? and Where? They also use yes/no questions. Use the Where? question to promote the use of prepositions, for example, on, in, behind that can be incorporated into hiding games. The what is? question can be used to expand your child's vocabulary as she asks for the names of objects.

It is important that you do not continually ask questions that only require a one-word answer, for example, What is that? and yes/no questions. Questions such as What is that? should only be asked in context when an answer is really required. It should not be used to continually test your child.

As your child matures, you can use questions that are more complex so that she learns how to reason, express ideas, feelings and concepts and develop the skills of problem solving, predicting and understanding cause and effect, for example, Why? What do you think will happen? What might happen if? What should he do?, etc. (See Integrated scales of development for the hierarchy of the development of question forms.)

33. Use auditory close

This is the strategy of starting a sentence and waiting for your child to finish it, for example, Humpty Dumpty sat on the...; The moon shines at night and the sun shines in the... It is an informal way of assessing your child's linguistic skills, concepts and listening ability.

34. Use a natural voice

In the early stages of learning to listen, use a singsong voice and acoustic highlighting with your baby. As your child's listening skills develop, use a more natural voice with less acoustic highlighting. Your child needs to hear a natural tone, with appropriate stress, intonation, rate and rhythm if she is to develop natural sounding speech.

35. Give your child time to process

If your child does not follow a direction or respond verbally immediately, it is better to wait rather than jump in to rephrase or repeat the information. Often your child will have heard the message but needs time to process it. Repeat the information if there is no response after a short delay.

36. Give a direction once through listening

As your child develops more listening skills, establish the expectation that the message will be said once only. Your child will learn that it is her responsibility to listen and comprehend the first time something is said. Use the waiting strategy and give your child time to process the information. If your child does not respond after the message is said once, she needs to ask for the information to be repeated.

37. Use clarifying

When your child is older, one of the best ways to find out if she has understood the message is to ask What did you hear? This puts the responsibility on her to listen and comprehend the information. If she does not understand or if she has not heard the message, she should be taught the correct language to ask for clarification, for example, I didn't hear that; Pardon?; Say it again please; What did you say? Would you repeat that please? This strategy can highlight whether your child is having difficulty with the language or the concept.

Integrated scales of development

As well as observing, participating and learning, you will provide assistance to the therapist in many different ways. Some of these are described below.

Language enables us to comprehend and express ideas, thoughts, opinions and emotions.

In the language learning process, understanding the language heard, that is, receptive language, always precedes the development of expressive language. A young baby will turn when her mother calls her, or wave goodbye when asked, long before she can say her own name or say bye bye. As well as learning to understand and express language, the development of pragmatic skills is necessary in order to use language appropriately in different social contexts and for different purposes.

From birth to school age is a time of enormous development in a child's life. A baby grows from a totally dependent being into a competent communicator and an independent thinker and learner by the time she begins school.

The following tables are an integrated scale that outline typical stages of development in the areas of listening, receptive and expressive language, speech, cognition and social communication. They have been adapted from a number of sources:

- Cottage Acquisition Scales for Listening, Language and Speech
- Preschool Language Scale – 4 (PLS 4)
- The Bzoch-League Receptive-Expressive Emergent Language Scale Second Edition (REEL - 2)
- The Early Learning Accomplishment Profile Kit (E-LAP)
- The Learning Accomplishment Profile Revised Edition Kit (LAP-R)

- The Rosetti Infant-Toddler Language Scale
- St. Gabriel's Curriculum

(For full reference and description, see Scales of Development and Assessment Tools.)

A child with hearing impairment follows these stages of development. However, she will need greater exposure to spoken language from the earliest possible time. Language, speech, cognition and pragmatic skills should be developed concurrently through listening in a systematic program that follows the typical stages of development.

It is important to remember that the skills listed on the following pages are based on an average. There is a considerable range between the earliest and latest times children achieve the various milestones. Your child may not reach a milestone within the given timeframe, but this does not mean that they will not achieve it. These developmental scales are meant as a guide only. They have been included to assist in the provision of a program to suit the individual needs of a particular child.

0 to 3 months

Listening (Audition)	Receptive Language	Expressive Language	Speech	Cognition	Social Communication (Pragmatics)
<ul style="list-style-type: none"> • Auditory awareness • Responds to sound by smiling, head turning, stilling, startling • Responds to loud sounds • Recognizes mother's/caregiver's voice 	<ul style="list-style-type: none"> • Startles to sudden noises • Responds to speaker's face • Responds to talking by quietening or smiling • Quietens with familiar voice 	<ul style="list-style-type: none"> • Cries to express hunger and anger • Begins to vocalize to express pleasure • Occasionally vocalizes in response to voicelike sounds 	<ul style="list-style-type: none"> • Cries • Begins vocalizing other than crying, e.g. coos, gurgles 	<ul style="list-style-type: none"> • Awareness of familiar people/situations • Looks at objects/faces briefly • Anticipates certain events, e.g. being fed 	<ul style="list-style-type: none"> • Appears to listen to speaker • Has brief eye contact but by 3 months regularly looks directly at speaker's face, localizes speaker with eyes and starts to watch mouth rather than whole face • Smiles/coos in response, in particular to mother/caregiver

4 to 6 months

Listening (Audition)	Receptive Language	Expressive Language	Speech	Cognition	Social Communication (Pragmatics)
<ul style="list-style-type: none"> • Sound begins to have meaning • Listens more acutely • Starts to associate meaning to sound, e.g. responds to own name occasionally • Responds to changes in vocal inflections • Starts to localize source of voice with accuracy • Listens to own voice 	<ul style="list-style-type: none"> • Frequently localizes sound source with head or eye turn • Occasionally responds to own name • Discriminates between angry and friendly vocal tones, e.g. cries in response to an angry voice • Usually stops crying in response to voice 	<ul style="list-style-type: none"> • Vocalizes for needs and wants • Vocalizes in response to singing • Blows raspberries, coos, yells • Vocalizes in response to speech • Starts to use a variety of vocalizations to express pleasure and displeasure • Vocalizes when alone or with others 	<ul style="list-style-type: none"> • Laughs • Blows raspberries • Coos • Yells • Starts to change duration, pitch and intensity (prosodic features) • Uses vowel [a] as in car • Produces sounds with consonant features –fricition noises, nasal [m] • Plays at making sounds 	<ul style="list-style-type: none"> • Looks at objects and reaches for them • Starts to learn about cause and effect, e.g. plays with rattle • Recognizes familiar people • Brings objects to mouth 	<ul style="list-style-type: none"> • Maintains eye contact • Loves games such as round and round the garden • Produces different vocalizations for different reasons • Imitates facial expressions • Takes the initiative in vocalizing and engages adult in interaction • Starts to understand vocal turn taking, e.g. vocalizes in response to adult vocal input

7 to 9 months

Listening (Audition)	Receptive Language	Expressive Language	Speech	Cognition	Social Communication (Pragmatics)
<ul style="list-style-type: none"> • Localizes sound source with accuracy • Discriminates sub-prasegmental aspects of duration, pitch and intensity • Has longer attention span • Associates meaning to words • Discriminates vowel and syllable content 	<ul style="list-style-type: none"> • Appears to recognize names of family members in connected speech, even when person named is not in sight • Responds with appropriate arm gestures to such words as up, high, bye bye, etc. • Enjoys music or singing • Appears to listen to whole conversation between others • Regularly stops activity when name is called • Appears to recognize the names of a few common objects by localizing them when they are named • More regularly stops activity in response to “no” • Will sustain interest up to a minute while looking at pictures or books with adult 	<ul style="list-style-type: none"> • Repeats CV syllables in babble [pa pa] • Starts to respond with vocalizations when called by name • Plays more games, e.g. pat a cake, peek a boo, hand clapping, etc. and vocalizes during games • Appears to “sing” • Vocalizes to greet a familiar adult • Calls to get attention • Uses some gestures and language appropriately, e.g. shakes head for “no” • Vocalizes loudly 	<ul style="list-style-type: none"> • Babbles CV CV [pa pa] [ba ba] • Clicks tongue • Uses a “singsong” voice • Imitates patterns of intonation • Uses low central vowels most frequently [o] (hot) [æ] (bat) 	<ul style="list-style-type: none"> • Imitates physical action • Recognizes familiar objects • Places object in one hand and then the other • Holds one cube and takes another • Smiles at self in mirror • Loves hiding and finding games • Gives, points, shows • Pulls rings off peg 	<ul style="list-style-type: none"> • Begins to understand that communication is a two-way process • Shows a desire to interact with people • Becomes more lively to familiar people • Demonstrates anticipation of activities • Nods, waves and claps • Calls to get attention • Requests by reaching and pointing • Enjoys frolic play • Continues to develop turn taking skills • Begins book sharing by looking at pictures in a book with adult

10 to 12 months

Listening (Audition)	Receptive Language	Expressive Language	Speech	Cognition	Social Communication (Pragmatics)
<ul style="list-style-type: none"> • Associates meaning to more words • Monitors own voice and voices of others • Localizes sound from a distance • Discriminates speaker's voice from competing stimuli 	<ul style="list-style-type: none"> • Appears to enjoy listening to new words • Generally able to listen to speech without being distracted by other competing sounds • Occasionally gives toys and objects to adult on verbal request • Occasionally follows simple commands, e.g. Put that down. • Responds to music with body or hand movement in approximate time • Demonstrates understanding of verbal requests with appropriate head and body gestures • Shows increased attention to speech over prolonged periods of time 	<ul style="list-style-type: none"> • Uses jargon of 4 or more syllables - short sentence-like structures without true words • Starts to use varied jargon patterns with adult intonation patterns when playing alone • Initiates speech gesture games such as round and round the garden • Talks to toys/objects using longer verbal patterns • Frequently responds to songs or rhymes by vocalizing • Imitates action paired with sound • May use first words, e.g. bye bye, mama 	<ul style="list-style-type: none"> • Imitates sounds and number of syllables used by others • Uses suprasegmental features • Uses longer strings of repeated syllables • Vowels and consonants are systematically varied [ba di ba di] • Mostly uses plosives and nasals [p, b, d, m] 	<ul style="list-style-type: none"> • Resists when toy is taken away • Relates an action to an object, e.g. spoon with stirring, car with pushing • Responds to laughter by repeating action • Takes peg from peg board • Matches two identical objects • Attempts to build a two block tower 	<ul style="list-style-type: none"> • Starts to understand question and answer, e.g. shakes head appropriately for "no" • Understanding of interaction continues to develop • Understands greetings • Turn taking skills continue to develop • Vocalizes in response to mother's call • Indicates desire to change activities • Responds to laughter by repeating action • Begins directing others by tugging, pushing • Vocalizes with gesture to protest • Enjoys games and initiates them

13 to 15 months

Listening (Audition)	Receptive Language	Expressive Language	Speech	Cognition	Social Communication (Pragmatics)
<ul style="list-style-type: none"> • Identifies more words • Processes simple language • Auditory memory of one item at the end of a phrase/sentence • Discriminates between familiar phrases • Follows one step directions that are familiar 	<ul style="list-style-type: none"> • Understands more new words each week • Follows one step directions during play • Understands simple where questions, e.g. Where's daddy? • Recognizes and demonstrates understanding of many objects by pointing • Understands more familiar phrases • Begins to recognize names of various body parts, e.g. eyes, hands • Enjoys rhymes 	<ul style="list-style-type: none"> • Uses 7 or more words consistently • Uses voice and gesture to obtain desired object • Continues to use jargon with more true words developing • Incorporates pausing and intonation into jargon • Imitates new words spontaneously • Sings 	<ul style="list-style-type: none"> • Imitates alternated vowels • Approximates single words • Uses most vowels in vocal play • Uses more front consonants plosives [p, b, d], nasals [m, n] • Uses fricative [h] • Uses semivowel [w] 	<ul style="list-style-type: none"> • Sustains interest in desired object for two minutes and more • Places circle in shape board • Builds a tower with two cubes • Begins to make marks on paper with thick crayon • Imitates more actions, e.g. patting doll • Demonstrates functional use of objects • Removes lid of box to find hidden toy 	<ul style="list-style-type: none"> • Continues to develop eye contact with speaker for longer periods • Takes turns as expressive language develops • Plays fetching game • Involves others by showing things, e.g. shoes/clothing during play • Begins to understand "wh" questions

16 to 18 months

Listening (Audition)	Receptive Language	Expressive Language	Speech	Cognition	Social Communication (Pragmatics)
<ul style="list-style-type: none"> • Discriminates between more phrases • Identifies and associates more words to related objects, e.g. toys, body parts, food, clothing • Imitates words heard 	<ul style="list-style-type: none"> • Understands more simple questions • Begins to understand longer phrases with key word in middle of sentence • Develops category vocabulary • Identifies more body parts • Finds familiar object not in sight • Understands 50 or more words • Identifies some clothing items, toys and food 	<ul style="list-style-type: none"> • Jargon disappears • Increases vocabulary, 10 or more meaningful words • Decreases use of gesture – relies on talking to communicate • Imitates words heard • Asks for more 	<ul style="list-style-type: none"> • Increases single word approximations • Most vowels present • Still mainly producing front consonants [p, b, d, m, n, h, w] 	<ul style="list-style-type: none"> • Imitates circular scribble • Places 3 to 6 pegs in pegboard • Retrieves desired toy from behind an obstacle • Picks up small objects • Turns bottle upside down to obtain toy • Points to pictures in a book and begins to turn pages • Demonstrates object permanence 	<ul style="list-style-type: none"> • Requests object or help from adult by gesturing and vocalizing • Initiates vocal interaction • Prefers to be with familiar people • Shows caution with strangers • Imitates other children

19 to 24 months

Listening (Audition)	Receptive Language	Expressive Language	Speech	Cognition	Social Communication (Pragmatics)
<ul style="list-style-type: none"> • Auditory memory of 2 items • Discriminates songs • Comprehends a variety of phrases • Discriminates descriptive phrases • Follows a two step direction, e.g. Get your ball and throw it. • Identifies by category 	<ul style="list-style-type: none"> • Completes two requests with one object • Chooses two familiar objects • Comprehends action phrases • Points to a range of body parts, e.g. elbow, cheek • Begins to understand personal pronouns – my, mine, you • Recognizes new words daily • Increases comprehension - decodes simple syntax • By 24 months understands 250 - 300 words 	<ul style="list-style-type: none"> • Occasionally imitates 2 - 3 word phrases • Uses new words regularly • Increases expressive vocabulary to 30 words or more • Attempts “stories” – longer utterances in jargon to get message across • Begins to use own name when talking about self • Uses possessive pronouns – mine • May ask where questions Where car? • By 24 months may use 2 - 3 word phrases with nouns, some verbs and some adjectives 	<ul style="list-style-type: none"> • Approximates words • Substitutes /w/ for /r/ • Uses suprasegmental features • Most vowels and diphthongs present • Consonants [k, g, t, ng] emerging • Consonants [p, b, m, h, n, d] established – used in initial position in words • Consonants often omitted in medial and final position 	<ul style="list-style-type: none"> • Imitates symbolic play, e.g. household activities • Uses one object as symbol for another • Places triangle, circle, square in shape board • Imitates vertical strokes • Threads three beads • Begins to tear paper • Imitates ordering of nesting cups • Begins to categorize objects in play • Uses two toys together • Stacks blocks/builds tower • Completes simple pull out puzzle • Activates mechanical toy 	<ul style="list-style-type: none"> • Begins to develop more self confidence and is happy to be with other people • Initiates pretend play • Responds to requests from adults • Practices adult-like conversation about familiar themes • Uses words to interact • Requests information, e.g. What is this? • Develops turn taking in conversation

25 to 30 months

Listening (Audition)	Receptive Language	Expressive Language	Speech	Cognition	Social Communication (Pragmatics)
<ul style="list-style-type: none"> • Auditory memory of 2 items in different linguistic contexts • Listens to familiar songs on tape • Comprehends longer utterances • Listens from a distance 	<ul style="list-style-type: none"> • Begins to understand complex language • Comprehends more complex action phrases • Understands functions, e.g. What do we use for drinking? – points to up • Begins to understand size differences, e.g. big/little • Begins to understand prepositions, e.g. in, on, under • Receptive vocabulary increases • Begins to understand concept of quantity, e.g. one, all • Understands pronouns, e.g. he, she, they, we 	<ul style="list-style-type: none"> • Uses 2 - 3 word phrases more consistently • Uses some personal pronouns, e.g. me, you • Asks for help using two or more words, e.g. wash hands • Begins to name primary colors • Refers to self by pronoun me • Repeats 2 numbers counting • Answers “wh” questions, e.g. What’s that?, What’s ...doing?, Who? • Recites nursery rhymes and favorite songs • Understands and answers “can you”. • Uses negation, e.g. don’t, no 	<ul style="list-style-type: none"> • Loves experimenting with prosodic features • Begins to use stress correctly • Repeats words and phrases • Consonants [f, γ] emerging • Consonants, e.g. [m, p, b] used in final position • Word/phrases shortened – medial consonants often omitted • Tends to over pronounce words • Different pronunciation of the same word occurs frequently • Whispers 	<ul style="list-style-type: none"> • Continues symbolic play, e.g. talking on the phone • Completes actions, e.g. clap hands and high 5s • Uses toys appropriately • Performs related activities at play • Turns one page at a time • Imitates vertical, horizontal lines and circle • Matches identical picture to picture and shape to shape • Puts two parts of a whole together • Understands number concept of one and two 	<ul style="list-style-type: none"> • Enjoys talking, e.g. pretends to have a conversation on the phone • Completes actions, e.g. Give me five • Begins to develop parallel play with other children • Talks more in play • Shares toys • Asks for help using two or more words • Uses longer utterances

31 to 36 months

Listening (Audition)	Receptive Language	Expressive Language	Speech	Cognition	Social Communication (Pragmatics)
<ul style="list-style-type: none"> • Continues to expand auditory memory - 3 item auditory memory with different linguistic features • Sequences 2 pieces of information in order • Listens to stories on tape • Follows 2 - 3 directions 	<ul style="list-style-type: none"> • Understands most common verbs • Understands and responds to more complex language and commands • Carries out 2 - 3 verbal commands in one sentence • Understands several prepositions, e.g. in, on, under • Expands concept development • Identifies parts of an object • Understands time concept, e.g. today, yesterday, tomorrow • Understands What is missing?/Which one does not belong? 	<ul style="list-style-type: none"> • Knows gender vocabulary • Talks about what has drawn • Gives both first and last name when asked • Relates recent experiences • Converses in 3 - 4 word simple sentences • Begins using more complex language • Uses questions, e.g. who, what, where, why • Uses pronouns, e.g. he, she, they, we, you, me • Uses some plurals • Uses possessives • Uses more negatives, e.g. not, none, nobody • Begins to use and/ because • Names three or more colors 	<ul style="list-style-type: none"> • Makes some substitutions [f] for [th], [w] for [r] • Medial consonants still inconsistent • Final consonants inserted more regularly • Consonants [l, r, sh, s, n, z, ch] emerging • Vowels and diphthongs established • Omits some unstressed parts of speech • Pronunciation becomes more correct • Whispers frequently 	<ul style="list-style-type: none"> • Shares toys and takes turns more appropriately • Develops parallel play • Begins to develop interest in writing and drawing • Begins fantasy play • Matches six color cards • Sorts and categorizes, e.g. blocks and pegs • Names object when part of it is shown in a picture • Adds two missing body parts to a drawing • Shows interest in how and why things work • Completes 2 - 3 interlocking puzzle pieces • Imitates drawing a cross 	<ul style="list-style-type: none"> • Takes turns and shares • Recites rhymes • Acts out songs - sometimes changes endings • Engages in make-believe activities • Begins to ask permission of others • Expresses feeling • Initiates conversation for a variety of reasons, e.g. to obtain information, to request

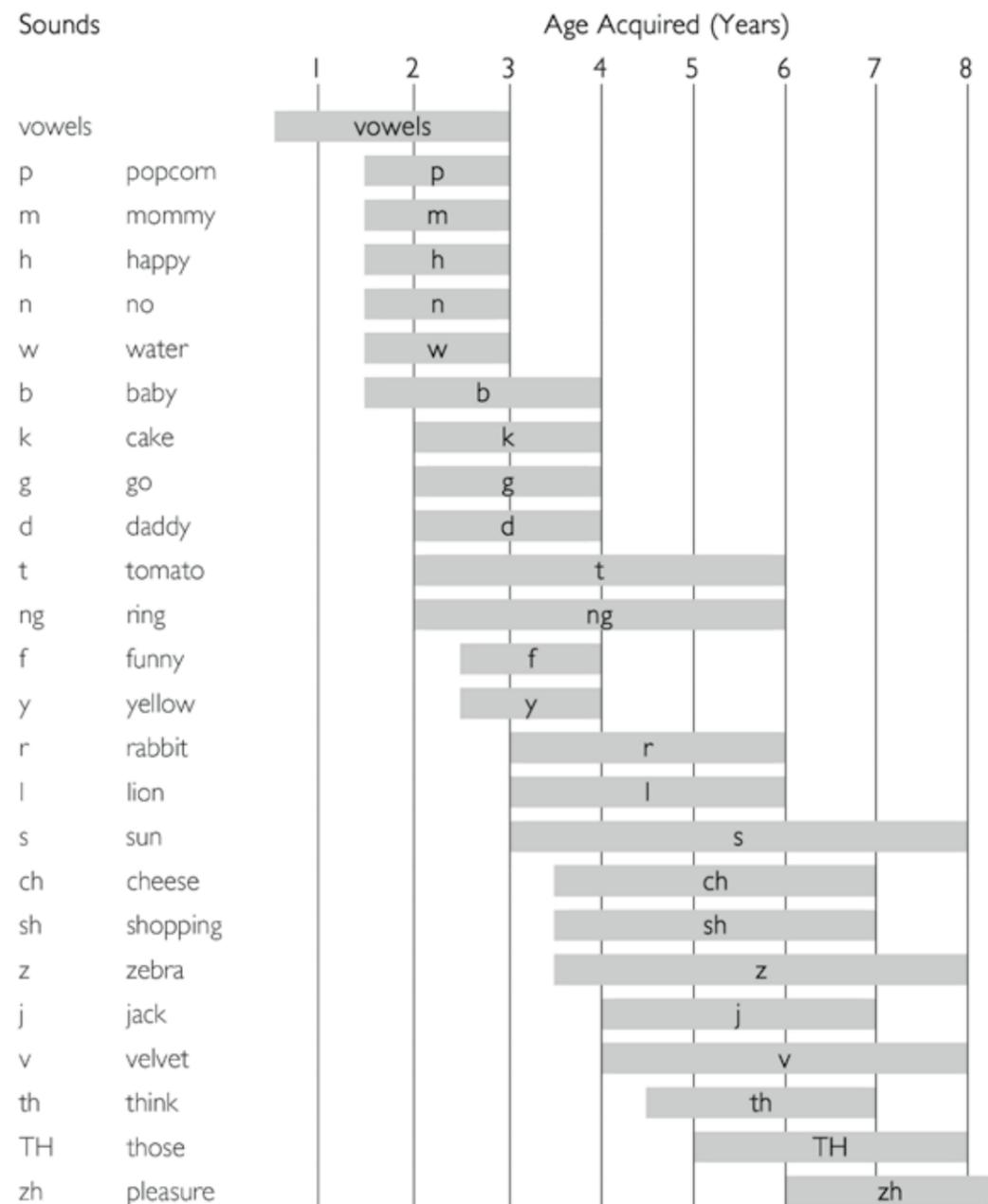
37 to 42 months

Listening (Audition)	Receptive Language	Expressive Language	Speech	Cognition	Social Communication (Pragmatics)
<ul style="list-style-type: none"> • Auditory memory increases to 5 items • Sequences 3 or more pieces of information in order • Retells a short story • Follows 3 directions • Processes complex sentence structures • Tracks a 6 word sentence 	<ul style="list-style-type: none"> • Can listen to a 10 -15 minute story • Comprehends an increasing level of complex language • Understands more difficult concepts, e.g. quality, texture, quantity • Understands concept of day/night, e.g. distinguishes day from night activities • Follows directions using concepts of empty/full, same different • Understands locational prepositions, e.g. next to • Begins to understand comparatives, e.g. I am taller than you. • Understands about 900 words 	<ul style="list-style-type: none"> • Holds conversations using many correct grammatical structures (plurals, possession, pronouns, prep, adj.) • Uses “when” and “how many” questions • Uses so/because • Relays a message • Describes what objects can be used for • Starts to answer “what if?” questions • Answers What is missing? • Identifies which one does not belong and answers Why? • Attempts to answer problem solving questions, e.g. What if? • Uses about 500 intelligible words 	<ul style="list-style-type: none"> • Uses some blends, e.g. [mp, pt, br, dr, gr, sm] • Consonants [j, v, th] emerging • Some substitutions still made, e.g. [gw] for [gr] in blends • Pronunciations of words more stable from one production to the next 	<ul style="list-style-type: none"> • Begins one-to-one correspondence • Follows directions using concepts, e.g. empty, full, same, different • Develops more difficult concepts, e.g. quality, quantity, texture • Compares objects • Begins simple problem solving • Develops imagination 	<ul style="list-style-type: none"> • Takes turns • Plays with other children more appropriately • Shows understanding of others’ feelings/needs • Interacts through simple conversation • Initiates conversation • Enjoys roleplays

43 to 48 months

Listening (Audition)	Receptive Language	Expressive Language	Speech	Cognition	Social Communication (Pragmatics)
<ul style="list-style-type: none"> • Processes longer and more complex language structures, e.g. Can you find something that lives in a tree, has feathers and a yellow crest? • Follows directions with more difficult concepts, e.g. Put the thick blue square behind the empty jug. • Re-tells longer stories in detail - 5 or more sentences • Tracks an 8 word sentence 	<ul style="list-style-type: none"> • Continues to expand vocabulary comprehension • Understands singular/plural • Understands difference between past/present/future • Answers final word analogies • Identifies objects missing from scene • Understands day/morning/ afternoon/night • Makes comparisons of speed/weight • Understands 1500 - 2000 words 	<ul style="list-style-type: none"> • Uses his/her/their • More consistent use of plurals – irregular and regular • Talks about pictures and story books • Uses more sophisticated imaginative play • Uses negatives and some modals, e.g. shouldn’t/ won’t/can’t • Uses comparisons • Makes inferences • Develops colloquial expressions • Uses How much? How? questions • Uses 800 - 1500 words • Uses more complex language structures • Spontaneous utterances are mostly grammatically correct 	<ul style="list-style-type: none"> • Reduces omissions and substitutions • Most consonants established • More blends emerging in initial and final position • Rate and rhythm normal • Uses appropriate loudness level • Uses appropriate intonation • For accompanying chart, see Sounds of Speech pg 43. 	<ul style="list-style-type: none"> • Draws simple objects • Understands time concepts, e.g. today/tomorrow/yesterday/morning/afternoon/night • Tells how many fingers and toes • Associates an object with an occupation, e.g. thermometer/doctor • Continues to develop imagination • Concentration increases • Copies simple picture line drawings • Matches patterns • Makes inferences 	<ul style="list-style-type: none"> • Increases confidence and self esteem • Requests made from others, e.g. shop/retail assistant • Uses intonation appropriately • Initiates conversation • Adapts to changes of topic • Uses language for different communicative intent, e.g. obtaining information, giving information, expressing needs/feelings, bargaining

Sounds of speech*



Acknowledgement

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* Typical average upper age limits of consonant production

Auditory habilitation - practice

The stages of listening

The stages of listening that a child progresses through are outlined below:



Sound awareness

Sound awareness is the first step in learning to listen. Your baby starts to detect sounds around her. She may respond to your voice or to loud sounds in the environment. Observing your baby's reaction (such as a smile or eye movement) is important to determine whether she is starting to detect sounds. This skill is the foundation of the learning to listen process.

Associating meaning to sound

In this stage, your child begins to associate a sound with its related object and/or starts to recognize familiar phrases. Sounds are now becoming meaningful.

The most auditorily available sounds are introduced, for example, the /ar/ for the airplane, the /bu bu bu/ for the boat or blow, blow blow for the mobile. Again, observing your baby's reaction is important to see if she is able to identify what she is hearing. For example, you may say, Blow blow, blow the mobile and blow the mobile over the cot every time you pass it. After many repetitions, your baby may look towards the mobile on hearing Blow blow. This means that she has started to associate meaning to sound.

Imitation and expansion

In this stage, your child imitates the language that is modeled. She continues to imitate even after she has started to produce words and phrases spontaneously.

Auditory comprehension

Auditory comprehension is the ability to process and recall the language that has been heard. It involves long- and short-term memory and more complex auditory skills such as sequencing and auditory association. Auditory comprehension must be developed if your child is to communicate effectively through spoken language.

Advanced listening skills

As your child's ability to comprehend language through listening increases and she is able to do more open set listening, more difficult listening activities can be incorporated. These are listening from a distance, listening in background noise, listening to a taped signal with and without background noise and holding a conversation on the telephone.

Listening levels

The following listening levels may be useful for providing feedback to your therapist. They provide a comprehensive checklist of the stages of listening that should be developed over the years prior to school.

Level I			Awareness of sound
✓	+	-	
			Responds to very low loud gross sounds, such as a drum, bell, or clacker presented within a 3-foot (1 meter) radius at ear level.
			Responds to music with a strong beat, such as a lively march.
			Responds to loud inside environmental sounds when attention is directed to the sound (blender, mixer, vacuum cleaner, TV, etc.).
			Responds to outside environmental sounds (car, airplane, fire engine, ambulance, police car, birds singing, etc.) when attention is directed to the sounds.
			Indicates when something is heard by pointing to the ear, nodding head, vocalizing or smiling.
			Shows an awareness of music, inside/outside meaningful environmental sounds or speech without attention being directed to the sound.
			Notifies the acoustic feedback produced when the earmold of the hearing aid is partially out.
			Indicates when the hearing aid or cochlear implant is not working.

Level II			Sound has meaning
✓	+	-	
			Responds to:
			Music by dancing, singing or clapping.
			Some simple speech sounds accompanied by gesture (Sh!, Bye-bye, No-no, or Come).
			Own name.
			Associates:
			A specific sound with an object in the environment (I hear that; that's Mother's car).
			A specific sound with a happening (That's Mother's car... Aha, Mother's home! Time to eat.)
			Learning to Listen to Sound with a toy, object or happening.

Level III			Early listening ↔ Talking loop
✓	+	-	
			Imitates gross body movements appropriate to his/her age level (pat-a-cake, peek-a-boo, follow the leader, Simon says, etc.).
			Responds to music by clapping, dancing, swaying or singing.
			Vocalization increases when hearing aid or cochlear implant is on.
			Imitates laughing, crying, coughing or yelling.
			Imitates mother's vocal play (call to each other with stimulating rhythmic and inflectional patterns).
			Tests the hearing aid or cochlear implant with voice when turned on.
			Practices additional vocal play incorporating the vowel sounds ah, oo and ee.
			Imitates mother's babble play, incorporating new inflectional/rhythmic patterns.
			Approximates new words or short phrase beginning with the babbled consonant practiced (mu, mu, mu; Mama, more; That's mine! More milk, etc.).
			Imitates new babble sounds appropriate to listening age.
			Calls back and forth in calling games, such as Hide and Seek, incorporating inflection patterns and vowel sounds.
			Approximates:
			Temporal pattern of a short phrase.
			Temporal plus inflectional pattern of a short phrase.
			Temporal, inflectional, stress, and articulation of a short phrase.
			Imitates whispering.

Level IV			Discrimination
✓	+	-	
			Responds to the presence or absence (on or off) of the following sounds (first inside, then outside):
			Clackers, noisemakers.
			Music
			Inside environmental sounds.
			Outside environmental sounds.
			Speech.
			Discriminates:
			Loud and quiet sounds in above areas.
			High and low aspects of sound in above areas.
			Fast and slow sounds.

Level IV			Discrimination (continued)
✓	+	-	
			A continuous or an abrupt sound.
			Angry or cheerful voice and responds appropriately.
			Daddy's and Mommy's voice.
			A man's, woman's or child's voice.
			Two gross sounds; later, 3 gross sounds (drum, bell whistle).
			Imitates the vowel sounds ah and oo; later, ah, oo, and ee.
			Imitates the consonant and vowel sounds associated with trucks, cars, fire engines, planes, boats, motorcycles, etc.
			Recognizes own name from the most different family name on the basis of the number of syllables, vowel and consonant differences.
			Detects the primary signal from other quiet background noise.
			Imitates a few familiar commands with natural gestures (close your eyes, don't touch it).
			Discriminates familiar words on the basis of syllable length (1 vs 3 syllables, 1 vs 2 vs 3 syllables).
			Familiar words on the basis of vowel and consonant differences (hat, shoe, coat), with the same number of syllables.
			Imitates a 2- to 3-word sequence.
			Imitates phrases on the basis of rhythmic structure and known words ("up the slide", "in the car", "to the store").
			Imitates various short familiar sentence patterns (exclamatory, statement, or question on the basis of inflectional and rhythmic patterns).
			Between words containing different vowels but the same initial or final consonant (bat, boat, bee).
			Imitates a 3- to 4-word sequence.
			Discriminates similar phrases or sentences (a big blue truck, a little black car).
			Among rhyming words (shoe, blue, two).
			Important but minor differences in sentences (in/on, the/a, he/she).
			Between classes of consonants in syllables (sha, ma, ta vs. see, knee, bee).
			Within classes of consonants (pa, ta, or ka) (bu, du, gu).
			Remembers and approximates sentences of 7-10 words.

Level V			Localization skills
✓	+	-	
			Locates a sound presented at ear level within a 3-foot (1 meter) radius in front or on either side, but not behind.
			Locates a sound presented at ear level within a 3-foot (1 meter) radius behind them.
			Understands and verifies gross, environmental, music, or speech sounds within 6 feet (2 meters), then 9 feet (3 meters), 12 feet (4 meters), and finally, within the same room in all directions.
			Understands sounds that come from a specific location or direction from another room.
			Understands sounds with a specific location or direction outside.

Level VI			Distance and directional listening
✓	+	-	
			Shows awareness of gross sounds in all directions at 3 feet (1 meter), 6 feet (2 meters) and 9 feet (3 meters).
			Discriminates between gross sounds in all directions in increasing 3-foot (1 meter) intervals.
			Discriminates other aspects of sound (high or low, loud or quiet, fast or slow, etc.), in all directions at increasing 3-foot (1 meter) intervals.
			Responds to own name from increasing distances in all directions.
			Responds to a few short, familiar commands at increasing distances in all directions on the basis of rhythmic structure and inflectional patterns.
			Discriminates among familiar words of varying syllable lengths at increasing distances.
			Discriminates familiar vocabulary on the basis of vowel and consonant differences (hat, coat, shoe) in all directions at increasing distances.

Level VII			Listening in Background Noise
✓	+	-	
			Recognizes the following with increasing distances in all directions with added background noise:
			Own name.
			Familiar words (closed set → open set).
			Short, familiar, descriptive phrases.
			Short, familiar, descriptive sentences.
			Follows familiar, simple one-step commands.
			Follows more complicated 2-step and 3-step commands with background noise (go outside; bring me the paper).

Level VIII			Auditory memory and sequencing
✓	+	-	
			Short-term memory:
			Approximates 2- or 3-word phrase by echolalia (I want one).
			Chooses correct picture names from choice of 2, then 3, then 4, then more (where is the doggie?).
			Selects 2 pictures or objects named correctly, but not necessarily in order.
			Selects 2 pictures/objects named correctly, in correct sequence.
			Tells which object/picture of 3 is missing.
			Selects 3 pictures/objects correctly out of a choice of 5 or 6 in sequence.
			Imitates a 4-word sequence (echolalia)
			Repeats random numbers out of sequence (1, 4, 3, 2).
			Imitates nonsense syllables.
			Selects 4 or 5 cards' names out of a choice of 8 or 9.
			Approximates a 6- or 7-word sequence by:
			Breaking it into 2 natural phrases and repeating each one after a model.
			Approximating the whole phrase.
			Long-term memory span:
			Knows own first name, then last name.
			Knows names of other family members, including pets.
			Uses 2- or 3-word patterned sequence spontaneously.

Level VIII			Auditory memory and sequencing (continued)
✓	+	-	
			Knows names of the following important people, places and things:
			Family.
			Parts of the body.
			Clothes.
			Foods.
			Toys.
			Other things used.
			Rooms of the house.
			Basic furniture at home.
			Names of feelings (happy, sad, sick, tired, hungry, I like it, I don't like it, I love it, etc.).
			Common descriptive adjective phrases (It's pretty! Oh, icky! That's nice).
			Present progressive, tense of common verbs for the things she/he does (is, am sleeping, eating, playing, working, etc.).
			Generates own 2-word sequence.
			Knows and supplies key words in favorite nursery rhymes or other repetitive children's stories.
			Rote counts 1, 2... then 1, 2, 3... etc., always adding new numbers.
			Generates own 3- or 4-word telegraphic language phrases or sentence.
			Sings the Alphabet Song.
			Sings Happy Birthday.
			Sings seasonal songs or poems.
			Generates 3-, 4-, or 5-word sequence (may not use adult syntax).
			Tells age, address and/or telephone number.
			Knows mother's father's and siblings' names, siblings' ages and names of parents' occupations.
			Describes past events with fair degree of accuracy and sequence.

Acknowledgement

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Babies babble

Parents and professionals work in partnership, giving each other feedback on the baby's progress. Since parents are with their babies most of the time at this young age, they will naturally provide the key language input. The nature and quality of that input is critical. The one-to-one interaction between parent and baby is the focus of this chapter.

The journey begins

The journey begins from diagnosis and fitting of appropriate hearing aids. Depending on the degree of hearing loss, your baby may be a candidate for a cochlear implant. Whether your baby has hearing aids and/or a cochlear implant, the principles and strategies are the same. From the very beginning, your baby should wear her hearing aids and/or cochlear implant every waking hour for maximum sound stimulation.

It can be a challenging time for you when your baby learns how to reach up and take off the hearing aids and/or cochlear implant. If you consistently put the devices back on immediately, your baby will learn that she must keep them on. Place a toy or food in baby's hand to distract her while you put the devices on. Another strategy is to engage your baby with interesting activities and talk to her while she plays.

As your baby becomes more interested in her surroundings, she will focus on her toys and be less likely to remove the hearing devices. Also, as she learns to listen, she will not want to remove them, as they increasingly become her link to the world of sound.

If your baby continues to take out the devices, check that her ears are clear of wax and infection and see your audiologist to ensure that your baby is aided and/or MAPped appropriately.

Parentbaby bond

The natural bond between you and your baby should not be interrupted by a diagnosis of hearing impairment. All the things you do naturally such as establishing eye contact, beginning turn taking and using 'motherese' (a singsong voice) should continue. Learning to listen can begin as soon as the devices are fitted. It is a time to hold your baby close and speak in a normal voice into the microphone of the hearing aid and/or cochlear implant.

Using a singsong voice, highlights the suprasegmental cues of pitch, duration and intensity, making speech sounds more audible. Your baby will respond by looking at your face. This is the beginning of eye contact, which is an important step in establishing communication. Talk to your baby about immediate things in her environment and alert her to the sounds around her. She may respond by cooing and gurgling. After constant input, your baby should quieten when you speak and start to look more intently at faces.

There are many opportunities at home to use the strategies of speaking close to the microphone, establishing eye contact and using a singsong voice. Nappy/diaper changing, for example, is an ideal time as it is one of the most frequent things you do with your baby. Talk about what is happening. Give correct language in phrases and use real names for objects and parts of the body.

Babies love to hear singing and will laugh and gurgle, especially when songs are accompanied by actions. Songs and rhymes are an excellent way to encourage interaction and enhance the bond between you and your baby. They also promote the development of the suprasegmental features of speech such as pitch, duration and intensity.

A quiet environment

It is very important in the beginning stages of listening to provide a quiet environment. The ideal listening condition means no background noise such as TV, radio or other loud household sounds such as the washing machine and dishwasher. Having carpets and curtains in rooms where parent/baby interaction occurs can help to diminish reverberation.

Having a quiet environment and speaking close to the microphone will make spoken language more audible to your baby.

Sound awareness

After your baby has been fitted with hearing aids and/or a cochlear implant, everyone involved should start to observe her reaction to sound. She may startle at sudden noises, quieten when you begin speaking to her or look towards the sound. She will learn to tune into your voice first. Call her by name and she will learn to respond. Do not vary the way you say it, as she needs to hear it over and over again before she will respond to it. Always call her for a reason and praise her when she does turn or vocalize. Once your baby has responded to your voice consistently, ask other family members to call her so she learns to respond to different voices.

You can alert your baby to a variety of environmental sounds so that she begins to learn that sounds have associations and meaning. To do this, turn her towards the sound source, point to the ear, say Listen and then name the sound. For example, with an airplane, turn baby to the sound source and label it. Say Listen, I can hear an airplane. It's up in the sky. Look at the airplane. Can you hear the airplane? This is an important strategy to develop the skill of localizing sound.

Vocal turn taking

As your baby begins to hear her own voice, she experiments with her vocalizations. It is a good time to develop vocal turn taking. Listen to her vocalizations, wait for her to finish, repeat the sounds and add some new ones with appropriate language. Repeat this often so that turn taking is built up.

Performatives

Performatives are sounds that are associated with familiar things in a baby's life. They are used because they cover the speech sounds of a language and lay the foundations for learning to listen for speech and language development. (See Learning to Listen Sounds.)

Always present the sound in association with the name of the toy, for example, the bus goes bu bu bu, the clown says ha ha ha, the fan goes round and round. Say the sound before your baby sees the toy. Once your baby sees the toy, repeat the sounds while she plays with it. Use the waiting strategy after saying the sound so that your baby has the opportunity to imitate it. Use incidental language but remember the primary focus is on modeling the performatives. In the early stages, use sounds that contrast in duration to help your baby learn to discriminate and set her up for success. For example, the cow goes mooooo, mooooo versus the duck goes quack quack. Gradually, after many repetitions, your baby will make the association with the toy.

Take every opportunity to use these sounds with your baby. Repetition is the key. Use pictures, books, toys, animals and real objects to reinforce the sounds and associated language. For example, use the appropriate sounds and language when playing with a toy bus and when a bus is seen on the road.

Learning these sound associations is fun for the baby and will have more meaning if practiced in her day-to-day world.

It is important to observe baby to establish if she is associating the performative with the object. Use the waiting strategy to give her time to show that she is identifying the sound

by reaching for the appropriate object or turning to it. If she does this, it means that she is starting to associate meaning with sound. At this stage, she may also start to use the appropriate sound spontaneously.

Once your baby identifies a performative, the next step is to learn to identify the name of the object without the prompt of the performative. Say the word in a sentence and at first use the strategy of acoustic highlighting, for example, Where's your bus? Give your baby time to respond. If she does not understand, repeat the sentence with the performative to assist the child, for example, Where's your bus that goes bu bu bu?

As your baby becomes more alert, she understands more of her world. She may understand a familiar greeting, for example, bye bye, and may be using her voice more to vocalize for needs and wants. She has increasing auditory awareness, eye contact and early turn taking skills. She is interested in people, voices and toys. It is essential to continue to encourage listening development so that your baby learns that sounds have meaning.

Simple phrases

As well as using performatives, introduce simple phrases that are part of the natural language used with babies in their daily routines and play. For example, brush brush brush your hair; up up up we go; open the door, open it up; pour pour pour it out; take it off. These phrases incorporate a number of vocabulary groups such as nouns, verbs and pronouns. Learning to identify, understand and use these phrases is an important step in language development.

Observe your baby to see if she is starting to understand some familiar phrases. She may reach up to take off her hat when she hears the appropriate phrase. Use the waiting strategy to give her time to respond with the action or to respond vocally. This is the beginning of following simple instructions through listening. Remember to accept your baby's vocal response and then model the correct phrase.

Repeat the phrases many times in different contexts. A baby with hearing impairment needs to hear new words and phrases over and over again before she begins to understand them.

Around your baby's first birthday, her vocalizations begin to change from babble to jargon. This means that she continues to babble repeated vowels and consonants but adds some single words. These are approximations of words and are often not expressed in clear speech. You as parents usually understand the words and model the correct pronunciation. It is important to continue speaking in simple sentences, not single words. As your baby's understanding develops, be aware of using expanded language. Your baby needs to hear correct, clear models in meaningful situations. Use the waiting strategy to give your baby time to respond and encourage communication attempts. As your baby identifies more words and phrases through listening alone, start to use a more natural voice with less motherese.

Auditory stimulus/response

As part of your baby's listening skill development, a structured auditory stimulus/response activity is introduced to ensure that she can detect a range of sounds. To develop listening and speaking skills, it is important to know exactly what sounds your baby can hear. Because she can now reach for and grasp objects, she can be taught to hold an object to her ear and put it in a container when she hears a sound. Your baby has to learn to wait, and only place the object AFTER she hears the sound. In the initial stages, you and the therapist will need to model the response to teach your baby what to do. You can also take turns giving the sound stimulus as this develops your baby's ability to localize sound. To maintain baby's interest, use a variety of toys for this activity, for example, plastic toys in water, pop up toys, vehicles down a ramp.

The Ling 6 sounds are used for the stimulus (/oo/ /ee/ /ar/ /m/ /sh/ /s/). They cover the speech range from low to high frequency. If your baby can detect all these sounds, she has the potential to hear most of the sounds of a language.

The next step is for your baby to put the object in the container herself when she hears the stimulus. When learning this activity, your baby may keep vocalizing. She needs to learn to be quiet while waiting to hear the sound. This can also be modeled. The mother can vocalize and the therapist can say Sh Mommy. Listen!

Remember to say these sounds with varying lengths of silence between each one. This is so your baby learns to listen and give accurate responses and does not get into the habit of responding to a regular rhythm rather than listening for the sound.

This activity is not only essential for detecting and then identifying speech sounds but also for checking the function of the hearing aids and/or cochlear implant. Your baby will also have to perform this activity in hearing tests and for MAPping speech processors. Being able to respond reliably is important.

In chapter two, Toddlers Talk, you will see a toddler progress from just detecting the sounds to actually repeating them. Encourage your toddler to do this as it indicates exactly what she is hearing.

Auditory memory – item selection

Selecting one item from a closed set is the beginning of the development of auditory memory. In the initial stages, the word is placed at the end of a sentence. For example, Let us put away the cat. The next step is to place the word in the middle of the sentence. For example, The cat wants to go home. Make sure your baby has processed a word or performative at the end of the sentence before progressing to putting the word in the middle of the sentence. At first, the word can be acoustically highlighted for emphasis but this should gradually be decreased to a normal voice.

At home, there are many opportunities for developing auditory memory in a fun way. The animals can be put to bed, the vehicles can be put in the garage and the toys can be posted in brightly colored boxes.

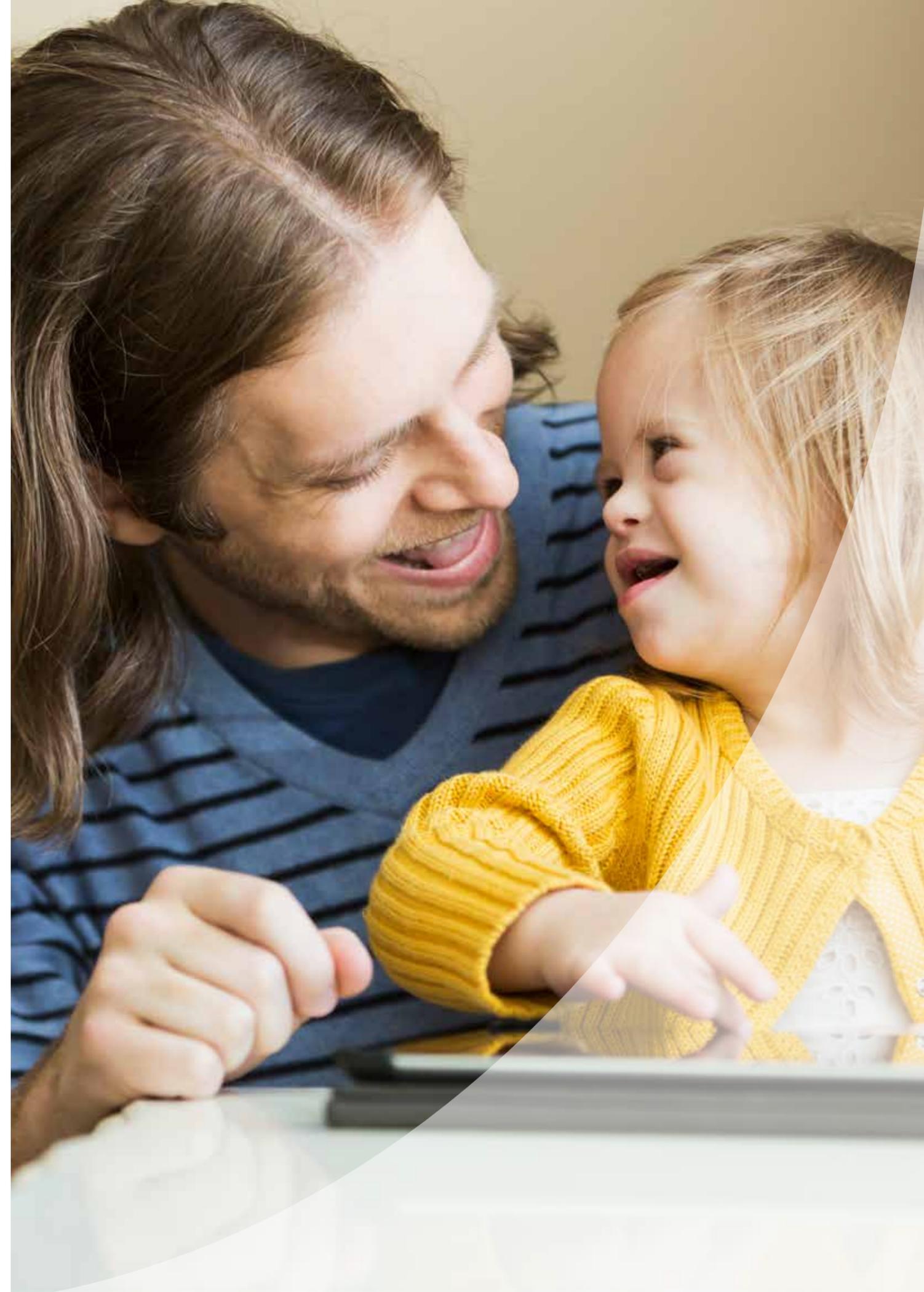
The development of auditory memory will be further outlined in Toddlers Talk.

As your baby matures, her cognitive processes will also develop. She loves participating in activities and begins to imitate routines such as washing her doll. Her play demonstrates the functional use of objects. Her concentration and attention span are increasing. Her vocalizations may include some alternated syllables and some imitated words. She may also copy varied intonation patterns. She is becoming aware of directing conversation at others and her vocal turn taking is developing. She is processing simple language through listening. For example, she may identify some words and familiar phrases, begin to follow simple directions and have an auditory memory of one item or more.

As your baby begins to vocalize with intent, you should respond by expanding language, introducing new vocabulary and modeling correct grammatical structures.

You play a key role in this remarkable period of your baby's development.

The listening journey has begun.





Extension ideas for babies

The extension ideas show you how your baby's language can be expanded and how you can guide your baby through the various steps according to the Integrated scales of development.

Activities

1. Making a drink
2. Book share
3. Reinforcing performatives
4. Fruit salad

Extension ideas for babies

1. Making a drink

Strategies

- Be close to the microphone when speaking.
- Use listening first.
- Use a singsong voice.
- Use repetition.
- Wait for baby to respond.
- Have a quiet environment.
- Capture baby's attention.
- Follow baby's eye gaze.
- Observe baby's response to sound.

Skills and concepts

The skills and concepts apply to the stage your baby has reached.

- Establishing sound awareness.
- Developing association of meaning to sound.
- Developing understanding of real names of objects.
- Developing understanding of action verbs.
- Developing vocalizations.
- Localizing sound by head turning.
- Grasping, reaching and holding.
- Beginning turn taking.
- Developing eye contact.
- Developing joint attention.

Core language (adult input)

This is the language that is repeated many times to help your baby access the particular sounds, words or sentences she is learning at her stage of listening development. As your child learns to listen she will not need to hear as many repetitions of the new language.

- Mmm I'm thirsty.
- I want a drink.
- Open the door. Open it. Open the door.
- Shut the door. Push it. Push it. Push it shut.
- Yummy water yumyummy.
- Take the lid off. Take it off.
- Turn it around. Round and round. Round and round.
- Pour the water. Pour pour the water. Pour the water.

Extended language (adult input)

Use extended language in addition to the core language. This provides an enriched language environment for your baby.

- Open the cupboard. Open the door.
- Mommy wants a drink. I'm thirsty.
- Daddy do you want a drink? Daddy wants a drink. He's thirsty too.
- Get the cups.
- Open/shut the door.
- Where is the water?
- Oh oh the water's cold.
- It's in the fridge. The water's in the fridge.
- Take out the water.
- Pour the water into the glass.
- Wipe it up, wipe, wipe, wipe.
- Oh! Oh! I spilt it.

Related activities

These are suggestions for using the core and extended language in a variety of daily routines and activities.

- Making/getting any drink/food.
- Getting food out of the fridge/cupboard.

What else?

.....

.....

.....

What next...

- Encourage longer attention span.
- Introduce new vocabulary for different drinks.

What else?

.....

.....

.....

2. Book share

Strategies

- Be close to the microphone when speaking.
- Use listening first.
- Use a singsong voice.
- Use repetition.
- Wait for baby to respond.
- Have a quiet environment.
- Capture baby's attention.
- Follow baby's eye gaze.
- Observe baby's response to sound.

Skills and concepts

The skills and concepts apply to the stage your baby has reached.

- Developing joint attention.
- Establishing sound awareness.
- Associating meaning with sound.

Core language (adult input)

- Turn the page. Turn it over. Turn it.
- Open the book. Open it up. Open it.
- Close the book.
- Close it up. Close it up.
- Look at the...
- The goes (Performatives), e.g. The pigeon goes coo coo coo. Look at the pigeon it goes coo coo coo.
- Look at the clown. He goes ha ha ha / ha ha ha. He's rolling, roll roll roll.

Extended language (adult input)

- Here's a lovely book. Let's have a look.
- Oh look it's all about...
- Let's see what's on the next page.
- What a beautiful...
- Look! What's up there? It's a pigeon. It's gray. It goes coo coo. It's flying.
- Look at the goat. The goat is eating the grass. He's hungry.
- Look at the funny clown. He's funny. He's laughing. What's he doing? He's rolling over.

Related activities

- Sharing photos, magazines, a variety of books.
- Singing songs and doing actions about pictures in the book.

What else?

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What next...

- Encourage vocalizations.
- Develop vocal turn taking by repeating baby's vocalizations.

What else?

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3. Reinforcing performatives

Strategies

- Use listening first.
- Use repetition.
- Use acoustic highlighting.
- Use listen cue.
- Be close to the microphone when speaking.
- Make it fun.
- Have a quiet environment.
- Follow baby's eye gaze.
- Observe baby's response to sound.

Skills and concepts

The skills and concepts apply to the stage your baby has reached.

- Associating meaning with sound.
- Developing vocabulary of objects and performatives.
- Developing turn taking

Core language (adult input)

- Here's the bird. It goes tweet tweet.
- Listen. Here's the bus. It goes bu bu bu...
- I can hear the car. It goes brm brm brm...
- Yum yum yum it's lunchtime.
- Here's your lunch, yum yum yum.
- Here's the cat. Meow meow meow says the cat.
- Here's the clown, pop up pop up pop up.

Extended language (adult input)

- Look at the birds. They're flying, tweet tweet tweet.
- Vehicles, e.g. look at the bright red fire engine, ee-or. It's going fast. It's going to put a fire out, ee-or, ee-or.
- Here's the bus. It's a bus. Look at all the people/men/children in the bus.
- Listen, there's Daddy's car. Toot toot. I heard the horn. Daddy's coming. Here's the car, brm brm.
- Farm animals, e.g. Here's the cow. It lives on the farm, moo moo. It eats grass, yum yum. The cow gives us milk, moo moo.

Related activities

- Give baby as many experiences as you can with the Learning to Listen Sounds:
- Birds in garden
- Mobiles/cell phones

What else?

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What next...

- Select one object with the sound repeated at the end of the sentence, e.g. Where's the cat that says meow meow? (closed set)
- Select one object with only one sound at the end of the sentence, e.g. Where's the goat that says maa? (closed set)

What else?

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4. Fruit salad

Strategies

- Use listening first.
- Model correct language.
- Use expanded language.
- Use listen cue.
- Use another adult/sibling as a model.
- Capture baby's attention.
- Use acoustic highlighting.
- Be close to the microphone when speaking.
- Observe baby's response to sound.

Skills and concepts

The skills and concepts apply to the stage your baby has reached.

- Developing understanding of functions.
- Understanding vocabulary related to parts of an object, e.g. skin, seeds.
- Understanding simple phrases.
- Beginning to follow a simple direction.

Core language (adult input)

- I have a banana.
- Do you like bananas?
- I like bananas, yum yum.
- It's a big/little banana.
- Peel the skin off. Peel it off. Peel it off.
- I have a knife.
- Cut cut cut, cut with the knife.
- Cut the banana.
- Smell the banana mmmmm.

Extended language (adult input)

- I have a strawberry/kiwi fruit/pineapple.
- Look at the seeds.
- Look at the skin. It feels furry/smooth/rough.
- What do I need to cut with?
- I need a knife. A knife will cut the banana.
- I need a bowl.
- Let's cut up all the fruit. Slice the kiwifruit.
- Slice it.
- Put all the fruit in the bowl.
- The skin's yucky. Don't you like that?
- Oh you don't want to smell it.
- We don't eat the skin. The skin goes in the trash/rubbish bin.
- It tastes yummy/nice/delicious/yucky.

Related activities at home

Give baby as many experiences as you can with the Learning to Listen Sounds:

- Having a tea party.
- Making a sandwich/popcorn.

What else?

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What next...

- Label all parts of objects that baby is interested in.
- Talk about the functions of many different objects.

What else?

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Learning to listen sounds*

Sound	Toy
a(r)	airplane
ch ch ch oo	train
pop pop	bubbles, popping toys
bu, bu	bus
beep/brm brm	car
brr	truck
pu, pu, pu	boat
tick tock	clock
ow/ouch	fall down, cut
oowar oowar	ambulance
hee, hee	monkey
ha, ha, ha	clown, laughter
go	running
ho, ho, ho	Santa Claus
ya hoo!	cowboy
whee	slide
wa wa wa	baby doll
hi!	mirror
meow	cat
bow wow, woof woof	dog
moo	cow
neigh	horse
baa	sheep
oink	pig
quack	duck
hoo hoo	owl
hop, hop	rabbit
whistle	bird
cock-a-doodle	rooster
caw, caw	crow
round and around	windmill, top, wheels
mmm	food/any good thing
dig dig dig	toy shovel
s	snake
sh	sleeping games
la	rocking the baby
up, up, up	any up activity
gr- gr-	Bear

Acknowledgement

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Toddlers talk

Listen Learn and Talk. It continues the listening and language journey, exploring the toddler's spoken language development from 16 to 30 months.

It is an important time for you as parents, as you are the key language provider for your toddler. Your toddler is understanding more and more language and you must give expanded language input and clear, correct models through listening. It is the time to listen to your toddler, talk to her and give her many varied experiences. Remember, as the toddler is still learning to listen, it is important to have a quiet environment.

Playtime

Playing with your toddler can be one of the best ways to provide meaningful spoken language. Most learning will occur when your toddler is interested in the activity. At this age, your toddler's attention span is increasing and she is able to sustain interest for longer periods.

This is the time to comment on what she is doing and saying. If she does not have the language for what she wants to say, model the phrases or simple sentences. Repeat the language many times so she learns to listen and associate the activity with the phrase and later begins to use approximations of the phrase meaningfully. For example, when having a tea party repeat the action phrase Pour out the tea many times as other family members or all the dolls have a cup of tea. Incorporate the word pour into other phrases in a variety of situations such as pouring milk at breakfast, pouring water into the bath or when cooking. In this way the toddler not only learns to listen to the word but also learns to generalize it in other contexts.

The toddler needs to hear the same language structures over and over in different contexts so she can process the information. As she develops, these frequent words and phrases will become part of her first expressive communication attempts.

Remember to always extend your toddler's vocabulary. Once she is understanding and using a particular word or phrase, it is time to introduce a new one. For example, if she knows big introduce huge/enormous; if she knows It goes round and round introduce It's spinning.

There are many opportunities at home to develop this skill, for example, when playing with battery or mechanically operated toys, building up and knocking down towers, adding coloring to a cooking mixture, planting a garden.

Use playtime to maximize your toddler's language learning experiences and to develop cognitive skills. It can lead to a world of fantasy and imagination. Your toddler is at the stage of exploring her world. She is eager to learn. Don't miss a single opportunity.

Auditory memory – simple directions

As your toddler's auditory comprehension of language develops, she will understand more simple directions. At this stage, she will follow only one direction at a time but as she matures she should be able to process more than one. In the third chapter there are examples of children following more complex directions.

Following directions can be incorporated into many play situations and into daily routines. For example, the animals can be given a drink, the dolls can be put in various rooms of the house, the vehicles can be put in the garage, items of clothing can be fetched, food can be taken from the refrigerator. Your toddler will show that she is comprehending in a variety of situations; for example, she might go to the bathroom when she hears It's bath time, or will get the cat's bowl when she sees the cat and hears It's time to feed the cat. This is a transition to open set listening.

Dressing

The strategy of giving choices to your toddler helps with developing independence and is a way to introduce either/or questions and structures. When dressing, playing or reading a book, your toddler's interest is more likely to be maintained if she has chosen what she wants.

Stacking the dishwasher

A simple activity such as Stacking the dishwasher can incorporate a variety of language structures and introduce new vocabulary that your toddler needs to hear at this stage. Many other daily routines offer similar opportunities for language learning. Remember to make the most of every opportunity throughout the day.

Takes the opportunity to:

- name items of cookware and cutlery (nouns), for example, Bowl, plate, cup, knife, fork, spoon
- talk about the place where objects go in the dishwasher (prepositional phrase), for example, The bowl goes on top.
- describe the objects (adjectives), for example, The knife is sharp.
- talk about the objects that cannot go into the dishwasher (negatives), for example, The saucepan doesn't go in.
- give a direction (auditory comprehension), for example, Shut the door.

Watering the plants

As your toddler matures, her jargon will become more interspersed with single and two-word utterances. She will also imitate phrases. She is tuned into listening and processing language through listening. You need to expand your toddler's comprehension of vocabulary and language structures. You need to continue to develop auditory memory and encourage your toddler to talk. Use the strategies of modeling and expanding. Use the waiting strategy to give your toddler time to process the more complex language she is hearing. Give her time to talk. Model the correct pronunciation of words and acoustically highlight the specific speech sounds to be developed.

Auditory stimulus/response

This is an important skill to be developed. Speech babble can now be incorporated into the stimulus/response activity to practice specific speech sounds.

Listening at a distance

As listening skills develop, a toddler can learn the skill of listening at a distance. The distance from the speaker to the toddler can be gradually increased. However, remember that any new language should still be reinforced in a quiet environment.

Auditory memory – itemselection

As your toddler's auditory comprehension of language develops, auditory memory can be expanded. This can be done by increasing the number of directions to be followed or the number of items to be selected.

Once your toddler can process single words in item selection, move on to processing two words. Remember that your toddler's expressive ability will not be at the level of her understanding. She will not be able to repeat the whole sentence at this stage but will respond with the appropriate actions. Start with a closed set with only three or four toys and increase the number in the set as your toddler's auditory memory develops.

There are a number of combinations and word classes that can be incorporated into item selection activities.

Noun plus noun	Find the car and the bus. Get a knife and a spoon.
Adjective plus noun	I want the big spoon. Where's the mommy dinosaur?
Noun and prepositional phrase	Put baby in the bed.
Noun and verb	Make the fish swim. Cut the apple.
Noun and possessive pronoun	Where are my socks?

Developing auditory memory can be very easily incorporated into play situations, book share and daily routines.

Book share

A love of books will introduce your toddler to a world of imagination and a world outside her immediate environment. Toddlers love to hear favorite stories over and over again and will often sit for a long time listening to, and participating in retelling, a story. They will join in and use repetitive phrases.

The listening skill of 'auditory closure' can be introduced, beginning with your toddler's favorite part of the story, for example, I'll huff and I'll puff and I'll blow your house... Waiting for your toddler to complete a sentence in this way is a useful strategy to practice listening and to check comprehension.

Use book sharing to introduce new vocabulary, new language structures and the skills of sequencing and predicting. Use a variety of questions to see if your toddler has understood certain parts of the story. Be wary of falling into the trap of just asking What's that? This can be answered with one word and therefore does not extend your toddler's language or thinking skills. It is better to use more open-ended questions such as What happened? Where? What do you think will happen? If your toddler does not offer any solution, model with another adult or sibling so she can hear a variety of possibilities and learn how to answer this type of question. This lays the foundation for critical thinking skills.

Commenting is a good strategy to use. By saying I think Peter Pan saw Captain Hook on the pirate ship, there is an expectation that your toddler will comment on the observation. Also use comments such as mm, oh oh, oh dear, and wow to encourage your toddler to make her own contributions. This provides the opportunity to further expand language. Start sentences with look at and tell me. This is another useful strategy as it invites your toddler to offer her own ideas, which can then be expanded.





Extension ideas for toddlers

The extension ideas show you how language can be expanded and how you can guide your toddler through the various steps according to the Integrated scales of development.

Activities

1. Eating breakfast
2. Stacking the dishwasher
3. Making muffins
4. Making a Father's day card

1. Eating breakfast

Strategies

- Model correct language.
- Use expanded language.
- Use repetition.
- Introduce new vocabulary.
- Give the toddler time to respond.
- Encourage turn taking.

Skills and concepts

The skills and concepts apply to the stage your toddler has reached.

- Developing understanding of description.
- Following one direction, e.g. Where are your cheeks?
- Developing concepts, e.g. on/off, empty/full, hot/cold/warm.
- Understanding a range of body parts.
- Jargoning decreases.
- More single words emerging.

Core language (adult input)

This is the language that is repeated many times to help your toddler access the particular sounds, words or sentences she is learning at her stage of listening development. As your child learns to listen she will not need to hear as many repetitions of the new language.

- Time for breakfast.
- Here's your porridge/oatmeal/yogurt.
- Get your spoon.
- Here's your spoon.
- Open your mouth. Here comes the porridge/oatmeal/yogurt.
- Here's some more porridge/oatmeal. Have some more.
- There's no more porridge/oatmeal. It's all gone.
- The bowl's empty/full.
- Do you want a drink? Here's your water. Have a drink. Drink it up.
- It's yummy water/oatmeal/yogurt.

Extended language (adult input)

The extended language should be used in addition to the core language. This provides for an enriched language environment for your toddler.

- I'm hungry. Are you hungry?
- It's time for breakfast now.
- What do you want for breakfast/lunch /morning snack?
- Would you like?.../Do you want... or....?
- I like.../ I don't like.
- You like oatmeal.
- The porridge/oatmeal/yogurt is warm and lumpy/cool and creamy.
- It tastes sweet/delicious/yucky/horrible.
- Where's the spoon?
- No, not the teaspoon. It's too little. I want the big spoon.
- Oh! Oh! You split the milk. Wipe it up with the cloth.
- Wipe your mouth.
- The serviette holder/bowl/glass is nearly empty. It's not full any more.

Related activities

These are suggestions for using the core and extended language in a variety of daily routines and activities.

- Meal times - dinner, lunch, morning snack, afternoon snack.
- Having a picnic/birthday party/celebrations.

What else?

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What next...

This shows the progression to the next few steps of the Integrated Scales of Development in the four areas of listening, language, speech and cognition.

These ideas are only suggestions. You may use different language that is familiar and relevant to your own family situation.

- Use adjectives, e.g. size, shape, color.
- Expand language of quantity, e.g. not much, that's enough, that's too much, that's nearly empty.

What else?

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2. Stacking the dishwasher

Strategies

- Encourage joint attention.
- Introduce new vocabulary.
- Model correct language.
- Use expanded language.
- Have a quiet environment.
- Use repetition.

Skills and concepts

- Developing categorization.
- Developing concepts of open/close, top/bottom.
- Following one direction using preposition "in", e.g. Put the spoon in the dishwasher.
- Developing cause and effect.
- Learning new vocabulary, e.g. jet, dishwasher.

Core language (adult input)

- Open/shut the door.
- Where's the big/little/blue bowl/plate/cup/spoon?
- Here's the big/little/blue bowl/plate/cup/spoon.
- Put the bowl/cup/spoon/plate in the dishwasher.
- Where's your cup?
- Oh, it's on the bench/table.
- Here it is. Put it in. Put it in the dishwasher.
- Put it on the top/bottom shelf.
- Turn it around.

Extended language (adult input)

- Here are all the spoons/forks/knives.
- Put them in the dishwasher.
- Here's your bowl and cup.
- Put daddy's mug in. Turn it upside down.
- The plates are very dirty.
- The dishwasher will make them clean.
- Where's the detergent?
- Shake the powder and tip it in.
- The dishwasher is full.
- Let's turn the dishwasher on.
- Can you hear it? It's noisy.
- Everything will be clean soon.

Related activities

- Washing toys.
- Putting clothes away.

What else?

What next...

- Use the language of description, e.g. a plastic cup, the bowl with the rabbit on it.
- Develop language of categorization, e.g. dishes go in the dishwasher/clothes go in the washing machine/knives, forks, spoons belong together.

What else?

3. Making muffins

Strategies

- Model correct language.
- Use expanded language.
- Have a quiet environment.
- Use listening alone.
- Use repetition.
- Capture the child's attention.
- Make it fun.

Skills and concepts

- Following two directions.
- Developing question forms.
- Beginning sequencing.
- Beginning understanding of quantity language.

Core language (adult input)

- Let's make muffins.
- We need a bowl and spoon. Where's the spoon?
- What else do we need?
- Open the muffin mix.
- Shake the muffin mix into the bowl. Shake, shake.
- What do we need next? What do we do now?
- How much water do we need?
- Stir the mixture round and round.
- Turn the oven on.
- Be careful it's hot.
- Put some mixture into the muffin tins.
- That's enough.
- Use the big spoon.
- It's too big.
- Let's put the tray in the oven.
- In you go muffins.
- Now it's clean up time.

Extended language (adult input)

- These muffins are delicious.
- I love muffins.
- Do you like muffins?
- I like chocolate muffins.
- They're my favorite.
- Which ones are your favorite?
- Open the packet and tip in the mixture.
- Tip it all in the bowl. Make sure the packet is empty. Mix it up.
- Stir it with a big spoon.
- Make sure you mix it all up.
- Now what do we need?
- A cup of water and an egg. Who wants to break the egg?
- Uh oh. There is egg shell in the mixture. I'll have to get it out.
- You're mixing it very well.
- Now put a little mixture on a spoon.
- Put it into the muffin tins. Just a little bit. We don't want them to be too big.
- I'll put them in the oven.
- Be careful, don't burn yourself.

Related activities

- Any cooking activity, e.g. making jelly/porridge/oatmeal/sandwiches/cutting vegetables/icing biscuits.
- Any activity that has several steps in sequence, e.g. getting dressed/brushing teeth/making a bed/putting toys away/cleaning up/simple stories/simple sequence activity with toys.

What else?

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What next...

- Auditory memory of 2 items in different linguistic contexts including prepositions and pronouns. e.g. she is on the bed. Put the bowl in the sink.
- Auditory memory of 3 items.

What else?

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4. Making a father's day card

Strategies

- Use auditory bombardment.
- Model correct language.
- Use expanded language.
- Use normal rate and rhythm.
- Wait for the toddler to process new information.
- Give time to respond.

Skills and concepts

- Developing number concepts.
- Developing colors as adjectives.
- Following two directions.
- Developing shape names.
- Understanding prepositions, e.g. at the top, in the middle.
- Answering "wh" questions, e.g. What's that? Where's the...?What's that for?
- Understanding concepts of size, e.g. big and little.
- Using two words together.

Core language (adult input)

- We're making a card for daddy.
- Get the paints and paintbrush.
- Fold the card and cut it.
- Cut the card out. Cut it carefully.
- Let's paint a snake.
- A green snake.
- No, that's not green, that's blue.
- Where's the green?
- That's right. That's green.
- Paint the snake.
- I'm cutting out a heart.
- Where will we stick it?
- Get the paste/glue.
- Paste it on, paste, paste/Glue it on, glue, glue.
- Stick, stick stick it on.
- We have two hearts – one, two.
- One at the top and one in the middle.
- Color the hearts red.
- Where's the red?

Extended language (adult input)

- Here's some different colored cardboard and cellophane.
- What color would you like?
- Oh pink, you want pink. That's a pretty color. I think that's my favorite.
- Is that your favorite color?
- I'll fold it in half, and then you can cut it.
- I'm folding it carefully. Do you want to cut it?
- Cut it out, be careful, the scissors are sharp.
- What will we do first?
- What would you like to do?
- I'm cutting out a big heart. Daddy will like that.
- Oh you've drawn a house. There are no windows or doors on the house. It needs some windows and doors.
- Paint the door red and the windows blue.
- Let's make a garden around the house.
- Daddy will love this card.

Related activities

- Any craft activity, e.g. painting, drawing, cutting, pasting, stamping.
- Making a garden/park/beach scene.

What else?

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What next...

- Develop ideas of sequencing.
- Develop prepositions of place, e.g. in the middle, next to.

What else?

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Children chatter

Listen Learn and Talk follows the development of the child from 31 months up to the time they start school. It is a time when children consolidate their receptive and expressive language skills.

They move from speaking in two words and simple sentences, to expressing themselves using complex grammatical structures. They begin to use past and future tense and use a variety of question forms. They learn how to retell stories, describe objects, people and scenes and hold conversations. Their speech becomes clearer. They become little chatter-boxes.

Children's listening skills also develop. They move from listening in a quiet environment to listening in background noise. Their auditory memory develops from following two directions to following multi-element instructions. They can gain information from a taped signal and from the television and can learn to talk on the telephone. They are more aware of the world outside their immediate environment.

Expanding language

Your child is developing her receptive and expressive language. You need to extend her language input so she hears a variety of grammatical structures. You should be constantly expanding your child's language through meaningful interaction and encouraging her to progress from using simple to complex sentences.

Little helpers

Most language learning occurs when children are engaged in meaningful interaction.

Providing children with varied activities and experiences can create wonderful learning opportunities. Children of this age love to help their parents around the house. Let them help, involve them as much as possible and capitalize

on the opportunity to develop their listening and spoken language skills. Give them the language for what they are doing, for example, when washing up, stacking the dishwasher, making lunch, getting a drink and cooking. Give them their own dustpan and brush for sweeping and a spade for digging. Let them help with bed making, dusting and gardening. They may not do it very well but these activities provide a wonderful opportunity for expanding language.

Playtime

Through role play, children begin to develop their imagination. They love to play with dolls, puppets and action figures. These can present opportunities for creative play, developing thinking skills and practicing language. Role playing in different scenarios can help your child develop pragmatic skills that are essential if she is to communicate effectively.

Playtime also provides many opportunities to further develop listening skills and extend concepts and language.

Be aware of extending your child's vocabulary at all times, for example, use synonyms such as sofa, couch or settee. Use category names such as 'musical instruments' for violins, trumpets and drums.

Speech

By three years of age children's speech patterns are fairly well established. However, they will need practice listening to and using specific speech sounds in words and phrases. As their listening skills are refined, the clarity of their speech should improve. There are a number of strategies that you can use to help your child learn to listen to specific speech sounds.

Auditory bombardment

This is repeated auditory exposure to a particular sound that a child has difficulty producing, for example, /f/. A fun way to do this would be sharing the story of The Three Little Pigs, saying over and over again, I'll huff and I'll puff, huff huff huff, puff puff puff and I'll blow your house down. Another way would be making a collage with leaves. As your child cuts and pastes the leaves, the word leaf can be repeated in a phrase or simple sentence many times.

Speech babble

As much as possible speech sounds should be introduced through play with toys and their associated sounds. However it may be necessary to target particular sounds. A quick and effective way to provide the necessary repetition is through 'speech babble'.

Speech babble is also an excellent way to fine tune listening to help your child discriminate voicing and place contrasts, for example, /pee pee pee/ /bee bee bee/ /tee tee tee/ /kee kee kee/. Games with rhyming words are another way to fine tune listening and provide speech practice.

Provide lots of opportunities for adult input and for the child to produce the sound in phrases and in sentences.

Acoustic highlighting

This is an excellent technique to highlight specific speech sounds at the beginning and end, and before middle, of words.

As children mature, they can learn to self-correct their speech.

You will need to monitor your child's speech until they can self-correct. This is best done through listening.

By the time your child is ready for school, most of the speech sounds should be well established. This will only happen if the auditory habilitation program focuses on targeting sounds through listening.



Auditory memory

The previous two chapters showed how babies and toddlers develop auditory memory. They moved from processing one item to two items in a closed set and began open set listening.

Children's auditory memory can be extended to three or more items in different linguistic contexts in a closed set.

The following examples of three item auditory memory are in closed set activities:

- Three nouns - Get your hairbrush, shampoo and towel (before having a shower).
- Two adjectives and a noun - the fluffy white dog (chosen from a selection of animals with different characteristics, for example, a fluffy white cat, a fluffy black dog, a sleek black cat, etc.).

- Two nouns and a verb - The stingray and the dolphin are swimming.
- Noun, preposition and noun - The doll is behind the couch.
- Noun, conjunction and noun - Put the truck and the car on the road.
- Noun, negative and noun - Put the truck not the car on the road.

From this stage, the child progresses to four and five items in a closed set.

Increasing the Difficulty of Closed Set Tasks

familiar vocabulary	→	less familiar vocabulary
quiet environment	→	noisier environment
small number of items in the set	→	larger number of items in the set
prompts	→	fewer prompts to no prompts
auditory highlighting of key words	→	normal stress and intonation patterns
give direction more than once if child requests clarification	→	give directions once only
one item to be processed	→	five items to be processed
simple sentence structures	→	complex sentence structures
live voice	→	taped voice

Once your child can follow two directions or select two items in a closed set, she can be expected to follow one familiar direction or select one familiar item in an open set situation. She can process one very familiar direction or select one very familiar item when involved in a routine activity. For example, when cooking, ask your child for a very familiar toy so it is unexpected and out of context. The same

progression for the development of closed set listening can be followed for the development of open set listening (see above table).

Auditory processing skills such as auditory memory are necessary for children preparing for preschool and school. Processing complex language, following multi element directions and recalling details are a part of everyday school life.

Games can be a fun way to develop these skills, for example, board/card/word games which can be played in the car, while waiting for the doctor/audiologist, or while waiting to be served in a restaurant.

Here are some examples:

I Spy

Alphabet games

I went shopping and I bought...

I'm thinking of something that...

Rhyming games

Category games

Guess Who/What am I?

Which one is different?

Which one doesn't belong and Why?

Auditory sequencing

Auditory sequencing is an important skill to be developed. It is necessary for children to be able to retell stories, jokes and riddles, follow sequential directions and at a later stage, such as at school, recall information and recount events they have heard. This skill can be developed in nursery rhymes, songs, games and stories.

Children love to listen to their favorite story many times and will start to retell it to their parents and other family members. Encourage your child to take the part of different characters. This gives her the opportunity to use different pitch, voice quality and intensity. This further develops her control of the suprasegmentals of speech. It allows her to express emotions, such as anger, disappointment, surprise, fear or happiness.

Help your child progress from listening to many repetitions to listening to a story once only, then to retelling it in sequence including as many details as possible. To do this, use puppets, pictures or toys to tell a story. Ask questions to help your child retell it in the correct sequence. Move on to having your child retell the story by herself without the prompt of questions but still with the aid of the puppets, pictures or toys. Extend to open set listening without any prompt or props and also increase the length of the story to retell.

Experiences outside the home

Excellent language learning opportunities are available outside the home. These include visiting the park, library, different kinds of shops; taking a bus, train, boat or car ride; going fishing, to the museum or beach.

Making "experience books" of these outings is a great way to introduce and expand language. They provide a vehicle for using a variety of tenses and new vocabulary and can be used to develop sequencing skills. The books can be illustrated with simple drawings, pictures, photos and memorabilia. Be sure to involve your child in making the experience book. At a later date it can be used to encourage reading, as children love to read about themselves and their experiences. It can be an effective tool to stimulate conversation.

Advanced listening skills

A child's listening skills are also developing during this time. In the beginning of the learning to listen journey, a quiet environment is the ideal situation to develop skills of detection, discrimination, identification and comprehension. This should be extended to listening from a distance, listening in background noise, listening to tapes and talking on the telephone.

Listening in noise

In the early stages of learning to listen it is essential to have a quiet environment. However, children need to develop the skill of listening in background noise in preparation for preschool and school. Provide lots of experiences to help your child learn to listen in noise. To set her up for success, the language should be familiar and there should be a limited number of choices. A radio or television can be used for the background noise. To extend your child's skills, gradually increase the volume and move to open set listening.

Talking on the telephone

Holding a conversation on the telephone is possible for some children with hearing impairment. This skill is not commenced until the child is able to have an open set conversation without any visual cues.

When developing the skill of talking on the telephone, begin with a known speaker and use a closed set of three or more familiar questions or statements varying in length. Introduce a variety of greetings and closing comments. Increase the number of sentences in the set. Move from closed to open set by introducing an unexpected question or comment. Gradually this can be built up until your child can converse with a number of different family members.

Conversation

The child has experienced many years of intensive listening and spoken language input. She is a communicating child. She is a good listener and her speech is becoming clearer. Her concepts of shape, size, texture, quantity and color are all developing. These need to be reinforced for entry into school. She is developing her conversational skills in a variety of contexts and can predict what will happen. She is overhearing information from the television and is able to listen in background noise.

She can play creatively and use her imagination. She is a listening, thinking and talking child.

This part of the listening journey is over. A new journey is beginning.



Extension ideas for children

The extension ideas show you how language can be expanded and how you can guide your child through the various steps according to the Integrated scales of development.

Activities

1. Developing auditory memory
2. In the garden
3. Guess who? game
4. Taped Story

1. Developing auditory memory

Strategies

- Use repetition of new language.
- Use expanded language.
- Use listening first.
- Model with adult.
- Give instruction once through listening.
- Wait for child to respond.
- Set your child up for success.

Skills/concepts and language

The skills and concepts apply to the stage your child has reached.

- Developing three-item auditory memory – closed set: e.g. get your cap, shoes and jacket.
- Selecting objects by description, e.g. give me the one that goes on the water.
- Understanding new concepts, e.g. wide/narrow.
- Understanding new vocabulary.

Core language (adult input)

This is the language that is repeated many times to help your child access the particular sounds, words or sentences she is learning at her stage of listening development. As your child learns to listen she will not need to hear as many repetitions of the new language.

- I have a big yellow truck/very old car/little yellow truck/red racing car/very old train.
- Look at the wide/narrow road.
- The cars go on the road.
- Be careful, drive carefully. Don't go too fast.
- Put the big yellow truck on the wide road.
- Put the big red car on the narrow road.
- Which one goes on the road and is fast?

Related activities

These are suggestions for using the core and extended language in a variety of daily routines and activities.

- Using any activity around the home but ensuring that you have a variety of objects that your child is familiar with in different colors/sizes/categories.
- Sorting the laundry, e.g. give me daddy's red sweatpants and his red tee-shirt; put the socks and the tee-shirts in the basket/on the cupboard/in the washing machine.

What else?

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Extended language (adult input)

The extended language should be used in addition to the core language. This provides for an enriched language environment for your child.

- This is a very wide road.
- It's like a freeway/motorway. It's like the road we go on to Uncle...s house. See the lanes. It's got four lanes. You can go faster on the freeway/motorway but you mustn't go too fast.
- Look at the narrow road. You have to be careful on the narrow road.
- Turn the car around. You have to stay on the left hand side of the road.
- Watch out for the road workers. They're fixing the road. See the man holding the sign. It says stop, so we have to wait until he says go. We don't want to have an accident.
- The big yellow truck is digging a hole. See how the driver picks up the dirt. Then he tips the dirt into the back of the tip truck.

What next...

This shows the progression to the next few steps of the Integrated Scales of Development in the four areas of listening, language, speech and cognition.

These ideas are only suggestions. You may use different language that is familiar and relevant to your own family situation.

- Establish three item auditory memory – closed set:
 - negation, e.g. I want the.... and the... not the...
 - a variety of prepositions in/on/under/next/to/behind/between.
 - pronouns, e.g. you, they, we.
 - verb phrases, e.g. the boy/he is riding his bike up the hill.
 - function words/phrases, e.g. I need something that you can mow the lawn with and something you can dig with. These should be selected in the correct sequence.
- Develop advanced listening skills – closed set:
 - following simple instructions in the garden/at the supermarket with background noise.
 - following familiar songs on tapes.

What else?

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2. In the garden

Strategies

- Use repetition of new language.
- Use expanded language.
- Introduce new vocabulary.
- Allow the time to process and respond.
- Model correct pronunciation.
- Use auditory close.

Skills/concepts and language

- Making comparisons.
- Beginning plurals.
- Expanding vocabulary.
- Using "wh" questions, e.g. who, what, where.
- Using more consonants.
- Expanding concept of categorization.

Core language (adult input)

- Look at the pretty flowers.
- These are yellow and those are pink.
- This flower has a stem.
- These are leaves growing on the stem.
- Not all the flowers are open.
- These are open but these are closed.
- They're not open yet.
- They're buds.

Extended language (adult input)

- Flowers and bushes grow. They have roots.
- Some plants can grow in pots and some in the ground.
- The buds will open out later and become beautiful flowers.
- Be careful when you pick the flowers. Don't break the stems.
- Flowers need water and sunlight so they can grow.
- They have died because the earth is too dry. What a pity.
- We'll have to water the garden everyday, so the plants don't die.
- Let's pick some of the pink flowers, and put them in a vase.
- These are flowers and they are on a bush.
- This one is a bush. A bush is like a small tree.
- Let's pick a bunch of flowers.
- Take them inside and put them in a vase.
- Fill the vase up with water first.

Related activities

- Talking about small parts of the whole object, e.g. clock (hands and face), kettle (spout and handle), TV (remote, screen, picture, switch).
- Planting seeds/seedlings.

What else?

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What next...

- Develop four-item auditory memory in a closed set.
- Develop concept of "what's missing" from parts of objects.

What else?

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3. Guess Who? (game)

Strategies

- Expand language.
- Model correct pronunciation of words.
- Model correct language, e.g. question forms.
- Use language of clarification.
- Model pragmatic skills of opening /closing a topic.
- Allow time to process more difficult listening and concepts.
- Monitor correct use of complex language.

Skills/concepts and language

- Using correct question and answer.
- Developing negatives.
- Developing descriptions.
- Making inferences.
- Developing thinking skills.

Core language (adult input)

- Who will go first?
- You have to shuffle the cards first.
- Then you have to select a card.
- You select one first and then I will.
- OK I think I will have this one.
- Don't look. That's cheating.
- Do you know the rules?
- You have to describe a person.
- Is your person a man or a woman?
- Does your person have a moustache/red hair?
- Yes, he/she does/doesn't.
- Is your person wearing gloves/a silly hat?
- Yes he/she is/isn't.
- That means I have to put down all the pictures of the women/men with red hair.
- The person who ends up with... wins the game.
- It's your turn next.

Extended language (adult input)

- Who do you think should go first, the eldest or the youngest?
- I'm going first because I'm the eldest. Is that OK with you?
- Can you explain the rules to...
- I think this is a great game.
- I like this game, I'm sure I can beat you.
- Select a card and put it in the slot at the front of the board.
- Oh that wasn't a good question. I've only put down two pictures. I'll have to think next time.
- I'm sorry I didn't understand you. Can you say that again please/can you repeat that, as I didn't hear you properly?
- I'm just wondering what I might ask you next. I'm trying to trick you/I'm trying to make it difficult.
- Do you think there are any people in the world with long crinkly purple hair? Maybe Mommy's hairdresser could give her long crinkly purple hair.
- Could you describe someone who lives on another planet?
- I can't describe this one, as it is so peculiar.

Related activities

- Playing board games, e.g. Ludo, Snakes and Ladders, Chinese Checkers, Draughts, Trivial Pursuit, Connect Four.
- Playing bingo, barrier and matrix games.

What else?

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What next...

- Develop complex open set listening.
- Develop listening in noise.

What else?

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4. Taped story

Strategies

- Use prompts.
- Ask questions.
- Rewind tape to listen again.
- Use clarification, e.g. What did you hear?
- Use a short simple story.

Skills/concepts and language

- Retelling a story with a live voice.
- Listening to a taped story with questions as prompts.
- Answering three questions about a taped story.

Core language (adult input)

- Put the tape in.
- Push the play button.
- Listen to the entire story first.
- Then listen to the questions.
- Answer each question.
- Rewind the tape if you want to listen to the story again.
- Are you ready?

Extended language (adult input)

- Make sure the tape recorder is plugged in.
- Put the tape in and press the play button.
- We'll listen to the story and all the questions first and then go back and listen to the story again.
- If you don't hear part of the story or you do not understand, tell me and we can rewind the tape and listen to it again.

Related activities

- Listening to other information on the tape, e.g.:
 - Procedures.
 - Following directions.
 - Questions.

What else?

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What next...

- Answer more questions about a taped story.
- Retell a story without questions as prompts.

What else?

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Appendix Auditory habilitation

Scales of development and assessment tools

The following scales of development and assessment tools have been categorized by auditory perception, language, speech, play and basic concepts. They have been provided as a reference. A brief description accompanies each scale or test.

Auditory perception (listening)

Estabrooks, W. 1998, Auditory-Verbal Ages and Stages of Development in (Levels I – VIII) in Cochlear Implants for Kids, AG Bell, Washington DC, U.S.A.

This checklist outlines the development of listening from sound awareness to auditory comprehension including discrimination, identification, localization, auditory memory and sequencing, listening from a distance and listening in noise.

Tuohy, J., Brown, J. and Mercer-Mosely, C., 2001, St. Gabriel's Curriculum for the Development of Audition, Language, Speech, Cognition, Trustees of the Christian Brothers, St. Gabriel's School for Hearing Impaired Children, Sydney, NSW, Australia.

This contains a hierarchical order for the development of auditory awareness and auditory memory progressing from closed set to open set. The curriculum also includes sections on the development of language, speech and cognition.

Wilkes, E.M. 1999, Cottage Acquisition Scales for Listening, Language and Speech. Simple Sentence Level, Sunshine Cottage School for Deaf Children, Texas, U.S.A.

This developmental checklist is for assessment and diagnostic planning for therapy. The listening section progresses from sound awareness to comprehension of paragraphs including phonetic listening skills. This instrument also includes listening, speech and cognition in an integrated approach.

Language

Bzoch, K. and League, R. 1991, The Bzoch-League Receptive-Expressive Emergent Language Test (REEL-2), 2nd ed. Pro-Ed, Austin, Texas, U.S.A.

This scale designed for infants and toddlers up to 3 years, measures and analyzes emergent language for intervention planning. Results are obtained from a parent interview and are given in terms of an Expressive Language Age, a Receptive Language Age and a Combined Language Age.

Carrow-Woolfolk, E. 1999, Test for Auditory Comprehension of Language (TACL-3), 3rd ed. Pro-ed, Austin, Texas, U.S.A.

This test is comprised of three subtests and measures comprehension of vocabulary, grammatical morphemes and elaborated phrases and sentences used by children from 3 to 9 years 11 months. The child has to select a picture from a choice of three to correspond to a word, phrase or sentence spoken by the examiner. Test scores are converted into standard scores, percentile ranks and age equivalents.

Dunn, L.M. and Dunn, L.M. 1997, Peabody Picture Vocabulary Test-(PPVT Forms 111A and 111B), 3rd ed. American Guidance Service, Circle Pines, MN, U.S.A.

This test measures a child's understanding of individual words (receptive vocabulary). It is designed for children from 2 years 6 months to 18 years. Raw test scores are converted

into standard scores, percentile ranks and age equivalents.

Edwards, S., Fletcher, P., Garman, M., Hughes, A., Letts, C. and Sinka, I. 1997, *The Reynell Development Language Scales III (RDLS111)*, 3rd ed. NFER-NELSON London, U.K.

This test assesses receptive and expressive language using real objects rather than pictures for the child to interact with. It is designed for children aged from 15 months to 7 years. The comprehension scale comprises sections such as agents and actions, attributes, locative relations, vocabulary and complex grammar, and inferencing, etc. The expressive scale comprises sections such as verb phrases, auxiliaries, clausal elements, inflections, etc.

Fenson, L., Dale, P.S., Reznik, J.S, Thal, D., Bates, E., Hartung, J.P., Pethick, S. and Reilly, J.S. 1993, *The McArthur Communicative Inventories: User's Guide and Technical Manual - Words and Gestures 8 to 16 Months. Words and Sentences*, Paul H. Brookes Baltimore, MD, U.S.A.

The words and gestures inventory is for parents to complete about their child's ability to understand and/or use words and gestures. It includes vocabulary categories (animals, toys, clothing, action words, etc.) and also asks about the child's gestures, games, routines, actions and objects, imitation skills and pretend play. The words and sentences inventory is to record the child's use of words in categories such as body parts, furniture and rooms, games and routines, etc. It also has a section on sentences and grammar. This examines the child's use of nouns and verbs, word endings and simple sentences.

Gardner, M.F. 2000, *Expressive One Word Picture Vocabulary Test*, 3rd ed. Academic Therapy Publications, Novato, CA, U.S.A.

This test examines a child's receptive vocabulary. It is designed for students from 2 to 18 years.

Gardner, M.F. 2000, *Receptive One Word Picture Vocabulary Test*, 3rd ed. Academic Therapy Publications, Novato, CA, U.S.A.

This test examines a child's receptive vocabulary. It is designed for students from 2 to 18 years.

Glover, M.E., Preminger, J.L. and Sanford, A.R. 1995, *The Early Learning Accomplishment Profile Kit (E-LAP)*, Kaplan Press, Lewisville, NC, U.S.A.

This is a criterion-referenced tool for young children from birth to 36 months. The book provides guidance in programming for infants, young children and children with special needs. The kit provides developmental data for gross motor, fine motor, cognitive, language, self-help, and social/emotional skill areas; learning activity cards; and IFSP forms for individualized planning. It also specifies the materials, procedures and criteria for each item to be assessed.

Moog, J. and Kozac, V. 1983, *Teacher Assessment of Grammatical Structures (TAGS)*, Central Institute for the Deaf, St Louis, MO, U.S.A.

This assessment consists of rating forms to be completed by the therapist regarding hearing impaired children's understanding and use of grammatical structures in sentences of at least four words that contain a subject and a verb. The grammatical categories are noun modifiers, pronouns, prepositions, adverbs, verbs and questions.

Rossetti, Louis Ph.D. 1990, *The Rossetti Infant-Toddler Language Scale*, LinguSystems Inc, Moline, Illinois, U.S.A.

This criterion-referenced instrument assesses preverbal communication skills and verbal areas of gesture, pragmatics, play, interaction and attachment, language comprehension and language expression for children from birth to 3 years old. Behaviors are observed by therapists or caregivers.

Sanford, A.R. and Zelman, J.G. 1995, *Learning Accomplishment Profile. Revised Kit (LAP-R)*, Kaplan Press, Lewisville, NC, U.S.A.

This criterion referenced tool follows on from the E-LAP. It is a guide for individualizing educational programming for the age range

36-72 months. The book enables the teacher to identify appropriate learning objectives for each child and measures individual progress in the areas of cognition, language and personal-social. It specifies the materials, procedures and criteria for each item to be assessed.

Tuohy, J., Brown, J. and Mercer-Mosely, C. 2001, *St. Gabriel's Curriculum for the Development of Audition, Language, Speech, Cognition*, Trustees of the Christian Brothers, St. Gabriel's School for Hearing Impaired Children, Sydney, NSW, Australia.

This provides a developmental sequence for the structure of English from birth to 6 years. It outlines the receptive and expressive skills in three monthly intervals from birth to 12 months and then in six monthly intervals to 6 years. Grammatical structures are included. This curriculum also includes sections on the development of cognition, speech and audition.

Wiig, E.H., Secord, W. and Semel, E. 1993, *CELF-Preschool - Clinical Evaluation of Language Fundamentals - Preschool, Examiner's Manual*, The Psychological Corporation, San Antonio, Texas, U.S.A.

This test assesses receptive and expressive language deficits in children aged from 3 years to 6 years 11 months. Norm referenced scores are provided for six monthly age intervals. Expressive subtests include tests of word structure, referential word knowledge and sentence recall. Receptive subtests assess understanding of basic concepts, linguistic concepts and sentence structures.

Wilkes, E.M. 1999, *Cottage Acquisition Scales for Listening, Language & Speech (CASLLS)*, Sunshine Cottage School for Deaf Children, San Antonio, Texas, U.S.A.

This developmental checklist is for assessment and diagnostic planning for therapy. The language section includes steps from pre-verbal through to complex sentences including pragmatic development. This instrument also includes listening, speech and cognition in an integrated approach.

Zimmerman, I.L., Steiner, V.G., and Pond, R.E. 2002, *Preschool Language Scale-4, (PLS-4)*,

The Psychological Corporation, San Antonio, Texas, U.S.A.

This is a standardized test of auditory comprehension and expressive communication for infants and toddlers. The auditory comprehension subscale assesses basic vocabulary, concepts and grammatical markers in preschoolers and higher-level abilities such as complex sentences, making comparisons and inferences, etc. in older children. The expressive communication subscale asks preschoolers to name objects, use concepts that describe objects, express quantity, use grammatical markers, etc. For older children it includes word segmentation, completing analogies, telling a short story in sequence, etc. This test also includes an articulation screener and a language sample checklist.

Speech

Goldman, R. and Fristoe, M. 2002, *Goldman-Fristoe: Test of Articulation 2*, AGS Publishing, Circle Pines, MN, U.S.A.

This test provides information about a child's articulation ability by sampling both spontaneous and imitative speech production of students from 2 to 18 years. Pictures and verbal cues are used to elicit single word answers that demonstrate common speech sounds. It measures articulation of speech sounds, determines the types of misarticulation and compares individual performance to national, gender differentiated norms.

Ling, D. Ph.D. 1991, *The Phonetic-Phonologic Speech Evaluation Record: A Manual*, Alexander Graham Bell Association for the Deaf, U.S.A.

This test evaluates the segmental and nonsegmental aspects of speech at both the phonetic and phonologic levels. Phonetic level responses are obtained through imitation. Phonologic level responses are obtained from spontaneous language samples.

Paden, E. Ph.D., and Brown, C. M.S. 1992, *Identifying Early Phonological Needs in Children with Hearing Impairment*, AG Bell, Washington DC, U.S.A.

This standardized test assesses how young children with hearing impairment spontaneously use first-level phonological patterns. It numerically rates whether the child's patterns are missing, emerging or mastered.

Tuohy, J., Brown, J. and Mercer-Mosely, C. 2001, St. Gabriel's Curriculum for the Development of Audition, Language, Speech, Cognition, Trustees of the Christian Brothers, St. Gabriel's School for Hearing Impaired Children, Sydney, NSW, Australia.

This outlines the development of early speech, the development of auditory feedback skills, and an order for the acquisition of vowels, diphthongs and consonants. It provides a developmental checklist of phonological processes. The curriculum also includes sections on the development of cognition, language and audition.

Wilkes, E.M. 1999, Cottage Acquisition Scales for Listening, Language & Speech. Simple Sentence Level, Sunshine Cottage School for Deaf Children, Texas, U.S.A.

This developmental checklist is for assessment and diagnostic planning for therapy. The speech section tracks objectives from the renowned motor speech program of Dr. Daniel Ling (both phonetic and phonologic) and also links these objectives to phonetic listening development. This instrument also includes listening, language, and cognition in an integrated approach.

Williams Hodson, B. 1983, The Assessment of Phonological Processes, College-Hill Press, Inc, U.S.A.

This test uses pictures to elicit single words. Its method of analysis of the productions highlights deficient patterns of speech and provides a starting point for a phonological approach to remediation.

Play

Lowe, M. and Costello, A. 1988, Symbolic Play Test Second Edition, NFER-NELSON London, UK.

This test is based on a developmental study of representational play in infants 12 months to 36 months. It evaluates children's spontaneous non-verbal play skills in a structured situation. Objects are presented in a standard manner and left to the child's free use. The purpose is to assess if the child has developed concepts and symbolism, which precede and develop alongside receptive and expressive verbal language. Criterion referenced age scores are available.

Basic concepts

Boehm, A.E. 1986, Boehm Test of Basic Concepts-Revised (BOEHM-R), The Psychological Corporation, San Antonio, Texas, U.S.A.

This test is administered to kindergarten students and tests basic concepts of comparison, direction, position, quantity and time.

Bracken, B. 1998, Bracken Basic Concept Scale-Revised (BBCS-R), The Psychological Corporation, San Antonio, Texas, U.S.A.

This measures basic concept acquisition and receptive language skills of children aged from 2 years, 6 months to 8 years. It includes several conceptual categories – colors, letters, numbers, counting, sizes, comparisons, shapes, direction/position, self/social awareness, texture/materials, quantity, and time/sequence.

Glossary

Acoustic highlighting:

Emphasizing the key element of a sentence more than the other words around it.

Acoustic:

Pertaining to the sense of hearing; pertaining to the science of audible sounds.

Alveolar:

A speech sound formed by the action of the tongue against the upper teeth, for example, [t, d, s, z, l, n].

Articulation:

The production of speech sounds by movement of the tongue, lips and jaw.

Auditory bombardment:

The technique of targeting a particular sound through repetition and acoustic highlighting.

Babbling:

A stage in the development of speech in babies - it follows the limited vocalizations of a baby's first few months. During the babbling stage, the baby produces a variety of sounds in consonant vowel combinations, which increase in complexity.

Bilabial:

A speech sound formed by the action of both lips, for example, [p, b, m]

Closed set listening:

Processing language through listening with the aid of prompts. Closed set listening tasks are used in the initial stages of learning to listen. There are a limited number of objects from which to choose to assist the listener to successfully identify, comprehend and recall the language.

Co-articulation:

The effect one sound has on the production of another sound adjacent to it.

Competing stimuli:

Any background sounds or noises that tend to mask the speech signal making it more difficult to hear what is being said. Listening with competing stimuli is a more difficult listening task to be achieved.

CV syllable:

A syllable containing a consonant and a vowel, for example, [pa].

CVC syllable:

A syllable containing a consonant, a vowel and a consonant, for example, [pat].

Decibel (dB):

The standard unit for measuring the intensity of a sound.

Diphthong:

A vowel glide in which the tongue begins in the position of one vowel and moves towards another vowel, for example, the diphthong [ai] in the word high - the tongue starts in the position of [a] and moves towards the [i].

Echolalia:

An infant's repetition of sounds made by others, a normal occurrence in childhood development.

Frequency:

The rate of vibration (cycles per second) of molecules when a sound is produced is the frequency of that sound. It is measured in Hertz (Hz). As the cycles per second increase, that is, as the frequency increases, the sound is perceived as being higher.

Fricative:

A speech sound which has audible, turbulent breath flow, for example, [f, th, s, sh].

Incidental language:

The language used in addition to the core language associated with an activity, game or daily routine.

Inflections:

Changes in the pitch or tone of the voice.

Intensity:

The measured quantity (loudness) of a sound expressed in decibels.

Intonation:

The melody or tune of the voice in speaking.

Jargoning:

The stage that follows babbling in the development of speech and language - the vocalizations of the child start to have identifiable intonation patterns and recognizable words.

Localization:

The ability to locate the direction of a sound.

M L U:

Mean Length of Utterance is the average number of morphemes used by a speaker - this is mainly used to describe a child's development in producing longer utterances.

MAPping:

The tuning of the cochlear implant to achieve a range of sounds, which are audible to the wearer.

Medial consonants:

Consonants in the middle position in a word, for example, the /t/ in little.

Modality:

A sensory channel such as hearing, vision or touch.

Morpheme:

The smallest unit of meaning in a language - a word or part of a word, for example, unladylike has morphemes 'un', 'lady' and 'like'.

Motherese:

The special way that mothers/caregivers talk to small children - sometimes described as a singsong voice.

Nasal:

A speech sound in which the voice escapes through the nasal passage, not through the mouth, for example, [m, n].

Object permanence:

The understanding that objects are real and don't cease to exist when they can't be seen.

One-to-one correspondence:

Being able to count a number of objects - not simply rote counting.

Open set listening:

The ability to process language through listening alone without prompts, for example, story retelling - open set listening tasks are for experienced listeners.

Performatives:

Sounds used by adults in conjunction with the name of an item, for example, the moo of the cow, the bu bu of the boat. These sounds may be the child's first words.

Phoneme:

The smallest sound in a language that carries meaning, for example, [s, t, e, u, etc.].

Pitch:

The quality of a sound judged by a listener to be lower or higher.

Place contrasts:

Sounds which are produced in the same way but differ because of the place they are produced in the mouth, for example, [p] and [k] are both plosives but [p] is produced at the front of the mouth and [k] is produced at the back.

Plosive:

A speech sound produced with a sharp burst of air, for example, [p, b, t, d, k, g].

Pragmatics:

A set of rules which governs the use of language in social contexts.

Prosody:

The tune and rhythm of speaking - features include pitch, duration and intensity.

Role-plays:

Play acting a character in a particular scenario.

Segmentals:

Consonants, vowels and diphthongs.

Stimulus/response:

An activity in which the stimulus is a sound or sounds delivered by an adult to another person listening - the response can be an action, for example, putting a peg in a board or a verbal repetition of the sound(s). This establishes what the listener is able to hear.

Stress:

A greater degree of loudness of a syllable in a word, for example, reduce, or of word(s) in a sentence, for example, That hat is not yours.

Suprasegmentals:

Features of speech such as intensity, duration and pitch.

Syntax:

The rules of sentence construction in the grammar of a language.

Tracking:

Repeating reliably every element of a message.

Vocalizations:

Sounds produced by babies in the early stages of developing speech and language.

Voicing/voiceless pair:

Two sounds which are produced in the same manner and in the same place in the mouth but one is voiced and the other is unvoiced, for example, [s,z] - [s] is unvoiced and [z] is voiced: [t,d] - where [t] is unvoiced and [d] is voiced. Some other examples are [f,v]; [p,b]; [k,g]; [ch,j].

Hear now. And always

Cochlear is dedicated to helping people with moderate to profound hearing loss experience a world full of hearing. As the global leader in implantable hearing solutions, we have provided more than 650,000 devices and helped people of all ages to hear and connect with life's opportunities.

We aim to give people the best lifelong hearing experience and access to next generation technologies. We collaborate with leading clinical, research and support networks to advance hearing science and improve care.

That's why more people choose Cochlear than any other hearing implant company.

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Please seek advice from your health professional about treatments for hearing loss. Outcomes may vary, and your health professional will advise you about the factors which could affect your outcome. Always follow the directions for use. Not all products are available in all countries. Please contact your local Cochlear representative for product information.

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