# Auditory-Verbal Techniques and Hierarchies

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In Auditory-Verbal practice there is an expectation that young children with hearing loss can use technologically assisted hearing to learn to listen, to process verbal language and to speak. The goal is that children with hearing loss can grow up in regular learning and living environments that enable them to become independent, participating, and contributing citizens in mainstream society. The A-V philosophy supports the basic human right that children with all degrees of hearing loss deserve an opportunity to develop the ability to listen and to use verbal communication in their daily lives. Adapted from Auditory-Verbal International, (1991)

Goldberg & Flexer and (2001) presented an outcome survey of children raised in Auditory-Verbal programmes. Ninety-three percent of the respondents were severely or profoundly deaf.
The questions in the survey revealed the following:

1) Do you consider yourself part of the hearing world, the deaf world, or both?
   --- 76% consider themselves part of the hearing world
   --- 21% consider themselves part of both the hearing and the deaf world
   --- less than 1% were part of the deaf world
2) Nearly 90% had been fully mainstreamed in regular schools
3) 72% use the telephone
4) 94% went on to post-secondary education

**Individualised auditory-verbal sessions**

One of the principles of Auditory-Verbal Practice states that diagnostic therapy is individualised with parent participation[1]. By individualising therapy, therapists are able to adjust the program to account for differences in a child's and a parent's personality, their learning styles, their interests, the degree of handicap and current functioning level of the child. In therapy sessions, a favourable learning environment is created for the parent and child with good acoustics, few distractions from others and a child in the presence of positive role models. Toys in a therapy program should replicate real life activities in a home environment. When the parent and child return to their home and community, they have ample opportunity in a natural setting to practice the skills and activities that they learned in therapy sessions. It is beneficial for the therapist to make an occasional home visit so that each family's home environment and living style is considered in therapy planning. Activities that replicate a specific family's routine activities in the home and community will foster the use of incidental language throughout their day. Children learn best by a parent/caregiver integrating targets that are unrecognised by the child, into to the child's daily life. Examples include:

- String up a clothesline between two chairs. Wash and hang out the doll's clothes.
- Buy fruit at a market. Return to the therapy session. Cut up the fruit and offer it to other children.

[1] Auditory-Verbal International, (1991), *Guiding principles.* Auricle. Fall Vol.3. Alexandria, VI.

In the clinics in Taiwan there are situational therapy rooms: a bedroom, a living room and a kitchen to replicate those settings in the home. Parents are often nervous about children being in the kitchen. Parents learn that the kitchen has a wealth of listening, vocabulary and language learning opportunities when engaged in activities such as: making cookies, pudding, playdoh, toast with facial parts drawn with butter, cutting vegetables and sandwiches, making simple picture-drawn recipes. Many of these activities can be recreated in any therapy room!

**Location of sessions**

The auditory-verbal approach can be practised everywhere! Sessions can be held at the park, at the mass rapid transit station, at the local market or shopping centre or simply during a walk in the neighbourhood.

**Why parents participate**

It is through participation in therapy sessions that parents practice techniques and integrate targets into daily living. They obtain educational support, counselling, and guidance to enable them to become actively involved, thus developing a greater sense of confidence and control. Parents collaborate with the therapist in adapting play activities to their child's interests and abilities. They interpret the meaning of their child's communicative attempts. Parents serve as a communicating partner in responding to a variety of linguistic features such as answering questions and using pronouns. Parents help to model communication techniques such as: turn taking routines, postures to promote thinking and listening, pausing and responding. By participating, parents gain insight into the forthcoming stages of development of their child. As parents develop their skills in active and critical listening, they learn to see the constant interplay of targets. Any one event can incorporate targets in listening, speech, language, cognition and communication. Targets and specific examples are given to parents/caregivers and classroom teachers to co-ordinate efforts and to build upon listening basics. When parents learn how to integrate auditory-verbal techniques into everyday meaningful activities and experiences, their children have the best opportunity to develop a good listening and language outcome. Parents can become the professionals' greatest allies. To ignore their contribution is to compromise a child's future.

Therapists may discourage a parent's participation because often it is easier for a therapist, (as an authority figure) to maintain control of a child without a parent in the room. However, it is not the number of teacher contact hours that develops a child's language! Or is it the number of hours sitting at a table doing "therapy". It is not the quantity or quality of toys! A foundation of language is developed through natural interactions about topics that are meaningful and interesting to a child. A parent's work is a child's play!

Most early language learners do not have sufficient language to access the set curriculum developed by boards of education. How can a child follow academic subjects when a child doesn't have the language to request needs, explain feelings and observations, to communicate and to learn? An individualised program, suited to the parent and child's needs, is created through ongoing assessment and teaching; as well as the teamwork of parents and therapist.

Parents are instructed in techniques to be the primary language facilitator for their child. Parent's active participation in therapy sessions can be reinforced by the therapist in the following ways:

- stating the goal to the parent before beginning an activity.
- modelling strategies clearly.

- beginning the activity then turning it over to the parent.
- providing encouraging feedback to parents.
- discussing how the parent would implement goals in other environments.

**Parent progress**

There are a variety of ways to assess and guide parents in their interactions with their child. Most methods involve interactional approaches such as in "Bromwich's Parent Behaviour Progression Form".[2] Parent behaviours during different stages of their infant or child's development are recorded as observed or reported during conversations. In Cole's book, she provides a checklist, "Caregivers: Communication-Promoting Behaviours." This lists desired observations during interactions between parent and child.[3] These forms can provide a framework for further discussion between a therapist and parent.

**Observe parent-child interaction**

Frequently therapists will benefit from asking parents to bring some materials and activities from home. Parents may then play with their child while the therapist observes. Some parents may prefer that the therapist watch through a one-way mirror if available or sessions may be videotaped for discussion later. To build on the parents' strengths, it is important that the therapist emphasises the effective content and techniques that the parents use. Then by modelling, the therapist can help the parents grow in skills and confidence. Many an anxious parent may succumb to the trap of continually testing their child. This often leads to parent-child conflict. It is suggested to leave the assessment to the therapist so parents can more readily follow their child's lead and develop a mutual trust in play.

**COMPONENTS OF AUDITORY-VERBAL THERAPY**

With the beginning listener emphasis should be on providing the individual with plenty of listening opportunities with few demands for speech production. With severe to profound congenital deafness, very young children (from one to two years) are best suited to receiving a cochlear implant, as they are quick to learn through hearing. There is good plasticity of the brain during these critical language learning years. It is common for toddlers and children to develop natural gestures during the first two years of life. Most children with hearing loss will not have developed another mode of communication if implanted early. Most of them live at home with their parents/caregivers in a setting conducive to developing natural language and thus these children are in an ideal position to benefit from Auditory-Verbal techniques. For the older, very visual learner, parents will need to help their child transition gradually from a visual to an auditory mode. By following the beginning stages in developing of listening skills in contrived and natural settings and by initially preceding and then confirming auditory input with situational cues, a child can begin to develop comprehension through listening. By building upon weekly listening, speech and language targets and by expanding on language learned through hearing, a child's confidence in listening will increase.

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[2] Bromwich, R. *Working with parents and infants,* Baltimore, MA: University Park Press. p.*341-359*

[3] Cole, E. (1992). *Listening and talking: A guide to promoting spoken language in young hearing impaired children.* Washington, DC: Alexander Graham Bell Association for the Deaf. p.48-50

Individualised diagnostic sessions are routinely held once weekly for one to one and a half hours. The following outline describes some essential components of a therapy session and factors to be considered in planning:

| SEGMENTS OF SESSIONS | FACTORS TO CONSIDER |
|---|---|
| **All components are to be integrated into daily natural, useful and meaningful play activities.** | |
| Hearing aid or CI function check | Child and parent participation |
| Development of listening skills | Aims and materials |
| Speech perception and production | Parent-child-therapist interaction |
| Language development | Integration of segments |
| Cognitive development | Unplanned learning and flexibility |
| Communication competence | Pace and motivation |
| Parent discussion and setting targets | Listening to the child and parent |

**AUDITORY-VERBAL TECHNIQUES**

The following are some of the techniques used in Auditory-Verbal education to enhance a child's listening, speech and language skills.

1. **THE HAND CUE**

The HAND CUE is one of the most useful yet frequently misunderstood techniques used in auditory-verbal practice. Some individuals incorrectly equate the hand cue as the main feature of Auditory-Verbal education. It is only one of many A-V techniques used to develop a child's listening and spoken language. Questions arise: "What is the hand cue and why do we use it?" "Do we block the acoustic signal?" "Is it used in school?"

**"WHAT IS A HAND CUE?"**

It is a cue to listen! It is a cue to alert children to the fact that someone is talking to them and that they need to attend to listen. The speaker emphasises listening by shielding his or her mouth from the child's view. Care must be used not to cup the hand over the mouth, preventing acoustic information from fully reaching the child. A flat, slanted hand held slightly above the mouth encourages a child to listen rather than seek visual cues. When the caregiver or therapist places their hand in front of a child's mouth, that is a child's prompt to respond, either through imitation or spontaneous speech.

A hand cue is especially useful when talking to a visually oriented child with hearing loss who is searching for visual cues.

**"WHY IS A HAND CUE USED AND WHEN?"**

A hand cue is seldom necessary with young infants and babies or for children who are keen and effective listeners, as they tend not to search for visual cues and usually focus on toys and activities around them. However in most Auditory-Verbal programmes many children with hearing loss entering the clinics have not had the opportunity to

learn to listen. This is usually due to late and/or inappropriate amplification with hearing aids or teaching methods that have not emphasised auditory learning. Naturally, these children learn to substitute their sense of vision for their lack of listening development. Unless their sense of hearing is emphasised, these children continue to function as deaf. American Doreen Pollack, a pioneer in the auditory-verbal approach, made the following observations:

"I learned that one could not simply hang a hearing aid on children and expect them to develop hearing perceptions normally. Instead the children continued to act as if they were deaf. Sound was meaningless. When the children were encouraged to use lip-reading or signing, they continued to be visual learners and ignored sound.

I came to realise that one did not have to teach deaf children to look but instead one had to teach them to listen. A hearing aid gave more hearing, but listening had to be learned. I had to make sound an important and meaningful part of everything the children were experiencing."

If a child has a profound hearing impairment and has insufficient aided hearing to access the speech range to develop spoken language through hearing, his/her parents may chose cochlear implantation for their child. Once the cochlear implant is programmed, this child will be a beginning auditory learner and with effective auditory-verbal techniques will gradually transition from using only vision to developing his/her newfound hearing potential by learning to listen.

**"WHO USES THE HAND CUE?"**

Audiologists, speech language pathologists, or educators of the deaf, any professional who has developed the techniques of the Auditory-Verbal approach, may introduce the hand cue to the child's primary caregivers. It should not be used by school classroom teachers and friends but mainly by parents or other key caregivers in a child's environment. When acoustics are less favourable then a child with hearing impairment he/she will need to use visual cues and body language to supplement hearing, as does a typically hearing individual. Many speech/language pathologists have found the hand cue useful in highlighting listening in their cases of children with normal hearing.

**"CAN TECHNIQUES OTHER THAN THE HAND CUE BE USED TO EMPHASIZE HEARING?"**

Yes! Preferably the primary caregiver should sit beside the child, close to the better ear or the microphone of the cochlear implant. The closer they are to the child's ear the softer the voice to ensure the opportunity to hear the less salient speech sounds. Vowels are louder than consonants and often mask a child's hearing of the softer consonants. This is often evident in a child's speech when consonants are deleted or substituted. No hand cue is necessary with preferential seating unless the child is actively searching for visual cues.

The therapist or teacher can suggest that the older child turn away to emphasise listening. This helps the child attend to the listening task and to concentrate on what is heard.

**"WHEN DO YOU STOP USING A HAND CUE?"**

When a child has a very natural listening interaction, a hand cue is seldom necessary. However it is useful to continue using auditory techniques to gain a higher level of auditory learning such as listening in noise, talking on the telephone and overhearing conversations. Many an adult with hearing loss seeks further therapy to practise and

enhance their auditory skills. The greater the skills in listening the greater the ability to monitor one's voice and speech quality. This explains why effective auditory-verbal listeners usually have natural sounding speech.

## 2. ACOUSTIC HIGHLIGHTING

The earliest form of acoustic highlighting used is called "Motherese" or "Parentese." It is speech used by parents/caregivers in talking with young children to make speech more audible to help them in learning language. Research by Dr. Patricia Kuhl indicates that parentese is universal and plays a vital role in helping infants analyse speech. The use of early highlighting is an auditory technique that is extended in communicating with the beginning hearing aid or cochlear implant user to increase the audibility of language. As a child learns to listen, **the aim is to progress towards a more normal, less highlighted mode of communication.**

**Examples of acoustic highlighting are as follows:**

| **MORE AUDIBLE** (for a beginning child) | progressing to | **LESS HIGHLIGHTING** (for a child who is listening well) |
|---|---|---|
| No background noise | | Increased background noise |
| 6" from hearing aid or C.I. | | Increased distance from hearing aid or C.I. |
| Simpler language with shorter phrases | | Complex sentences |
| Greater acoustic contrast (vowel variation, rhythm and syllable contrast) | | Less varied acoustic contrast (minimal pairs, similar rhythm) |
| Emphasis on key words | | No emphasis on key words |
| Emphasis on words not accentuated, (prepositions, articles, verb tenses, pronouns) | | No emphasis |
| Word position in sentence: End of sentence | Middle | Beginning |

| | |
|---|---|
| Closed set | Open set |
| Slightly slower rate | Normal rate |
| Increased pitch variation and rhythm (sing what you say) | Normal rhythm |
| Clearer enunciation (use of "clear" speech) | Less clear and/or unfamiliar voice |
| Increased repetition | No repetition |



However, having reached the goal of less highlighting, it must be remembered that there are many noisy acoustic environments where acoustic highlighting may continue to be necessary just as it is with those who have normal hearing.

### 3. AUDITORY FEEDBACK

When children imitate or use spontaneous speech, they match their voice production with the speech patterns of others thus monitoring their own speech production. Besides this direct auditory feedback, children receive indirect feedback from the listener's reactions to their vocalisations and speech, which further reinforces the quality of their production. In auditory directions, asking children to imitate what they heard, discourages guessing as it serves to verify what the children heard before attempting the task.

### 4. PAUSING AND WAITING

Children with hearing impairment may take longer to process auditory information, so the technique of pausing and waiting with anticipation encourages a child to listen and follow through with a task rather than waiting for the speaker to repeat.

When a child has developed some spoken language through hearing and is not attending well to auditory input he/she may respond to auditory input with "What?" or may sit there with a blank expression on his/her face. To emphasise listening, pause and then ask, "What did you hear?" This technique helps the child how develop clarification skills. You may discover that they have heard you and will respond appropriately or they will clarify by telling how much of the input they grasped.

### 5. NATURAL SEQUENTIAL DEVELOPMENT

In order to ensure success each child needs to progress through a hierarchy of listening, speech, language, cognitive and communication skills, much like a typical child. The Auditory-Verbal therapist develops targets based on a hierarchical model, (from most audible to least audible) and on normal stages of development in these areas. Input

is provided primarily through audition. Only too often a child and his family experience failure because targets are too difficult and do not follow a natural sequential order. In developing speech through hearing, a developmental program is used. Initially, variations in vowel content and suprasegmentals offer good acoustic contrast aiding in speech perception. (See Appendix A-Suggestions for Highlighting Beginning Vocabulary). Speech babble is used to develop speech perception. As speech perception improves, there is a reciprocal benefit in speech production, Ling, D. (1987). Just as we repeat syllables in learning new words or a new language, so do we encourage the use of syllabic babble to heighten the auditory perception and production of speech sounds. Once a child produces targeted syllables, these phonemes must be reinforced in spoken language. Language targets follow a hierarchy of normal development but also of available acoustic cues.

In developing a listening function, there is a constant interplay of targets in listening, speech, language, communication and cognition in all interactions throughout a child's day, with any variety of targets incorporated into any one event. Weekly targets are given to parents/caregivers and classroom teachers to co-ordinate efforts and to build upon listening basics. When parents integrate Auditory-Verbal techniques and targets into everyday, meaningful activities and experiences then their children have the best opportunity to develop good listening and language outcomes. Only once children have developed language can they then access school curricula.

**LEARNING TO LISTEN**

Guidance in creating a listening, learning environment is pertinent to the beginning stages, regardless of age. Suggestions include some of the following:

- Enhance the acoustic environment by being close to the microphone of a child's cochlear implant or the hearing aid of the better ear. Encourage listening by sitting beside a child, (not across), and focusing on objects in front of parent and child.
- Be aware of and minimise background noises especially the noise of an air conditioner, television, fridge or radio.
- This student is a BEGINNER. Assist a child by making speech more audible using parentese; that is, spoken language that is rich in suprasegmental qualities, repetitive in nature, initially focusing on low and mid-frequency vowel content, and in the context of short, meaningful two-to-three-word phrases.
- Throughout the day cue a child to "listen" while pointing to your ear to alert a child to attend to auditory input and meaningful environmental sounds. Observe a child's listening and responding behaviours such as cessation of movement, eye contact to an object or person, imitation of a sound or a response indicating listening through body posture.
- Follow a child's interest level in age and stage appropriate activities and experiences with specific targets integrated.
- Reinforce the expectation that with Auditory-Verbal techniques a child will learn to listen

**THE ONGOING ASSESSMENT FORM**

The following form presents hierarchies in the areas of audition, language, speech, cognition and communication although it is by no means complete. It serves as a quick evaluation form, as a diagnostic tool to help in setting ongoing targets and as a means to discuss progress with parents.

# AUDITORY-VERBAL ONGOING ASSESSMENT FORM



| Name: | DOB: | Date started A.V.: |
|---|---|---|
| Hearing loss: | Hearing aid model or implant: | |

Key: Beginning ⊥ Inconsistent + Consistent ✓ Expressive Use ✓ (Cross out check)

## AUDITION

**Ling 6 Sound Test**: detection & identification m__ u__ a__ i__ sh__ s__ silence__
distance (12 cm. 50 cm. 1 m. 2 m.): m___ u___ a___ i___ sh___ s___

**words in phrases**: 1. vowels + syllables differ ___ 3. rhyming words ___
2. same consonant, vowels differ ___ 4. final consonants only differ ___

**auditory memory**: 1 __ 2 __ 3 __ 4 __ 5 __ items

**identification of consonants by**: manner ___
voicing___
place___

**songs & rhymes** ___

**auditory attention to extended conversations & stories** ___

**selection by description**: **closed set** - stage 1. sound-word repeated ___ 2. identify by key words ___
3. include objects with similar characteristics ___ 4. begin levels 1 & 2 in open set

**open set** - stage 1. sound-word repeated ___ 2. identify by key words ___
3. complex description ___ 4. identify by questioning___

**taped instructions and stories**____ **listening in noise** ___ **group conversations** ___

## LANGUAGE

dates:

**Vocabulary** (1st year only): comprehension ___ wds ___ wds ___ wds ___ wds
spontaneous use ___ wds ___ wds ___ wds ___ wds

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**nouns**: sound-word ___ subject nouns ___ object nouns ___ parts of objects ___
by description___ plural nouns, irregular ___ regular___

**verbs**: directives ___ present progressive ___ future ___ past tense ___ conditional ___

**pronouns**: mine ___ I ___ you ___ he ___/or she ___ they ___ him ___
her ___ them ___ his ___ hers ___ theirs ____ we ___ us___
it ___ our ___ yours ___ myself ___ who/whom ___

**prepositions**: up ___ down ___ in or on ___ under ___ behind ___ beside ___
in front ___ in/on ___ cont. with concept list ___

**adjectives and adverbs**: beginning list ___ concept list ___

**negatives**: no ___ not ___ don't ___ isn't ___ can't ___ didn't ___ wasn't ___

**conjunctions**: and ___ not the ___ either-or ___ only ___ everything but ___
neither-nor ___ because ___ so ___ if ___ before ___ after ___

**articles**: a ___ the ___

**questions**: What's that? ___ What's he doing? ___ What's it for? ___
What happened? ___ How many? ___ What colour? ___ Where? ___
What's missing? ___ Who is it? ___ Why? ___ When? ___ How? ___

**auxiliary questions**: do ___ are ___ is ___ can ___ does ___

**examples of spoken language** (bracket missing parts of speech) i.e., Daddy('s) car no (won't) go.

date _____

date _____

**SPEECH**

**voice quality** (low 1- 5): ___ speech intelligibility (1-5): in context ___ out of context ___

**suprasegmentals**: duration: long ___ short ___ varied ___
intensity: loud ___ soft ___ varied ___
frequency: high___ low ___ varied ___

**vowels**: u___ a___ o___ æ ___ - i ___ ʌ ___ ɑ __ ɛ ___ - ʊ ___ **e** ___ ɝ ___ ɔ ___ ɪ ___

**vowels alternated**: u-a ___ a-u ___ - i-a ___ e-i ___

**diphthongs**: (ow) aʊ ___ (eye) aɪ ___ (aye) eɪ ___ (oy) ɔɪ ___

**consonants**: level 1 - p ___ b ___ m ___ h ___ w ___ level 2 - t ___ d ___ n ___

f ___ v ___ (sh) ʃ ___ ʒ ___ r ___ (y) j ___ level 3 - k ___ g ___

l ___ (ng) ŋ ___ s ___ z ___ (th) θ ___ (th) ð ___

**unreleased plosives** _____

**affricates**: (ch) ʧ ___

(dg) ʤ ___

Adapted from Ling, D. (2002). Speech and the hearing impaired child: Theory and Practice. 2nd Edition. Washington, DC: Alexander Graham Bell Association for the Deaf.

**blends**: word initial – sequential _____ coformulated _____ complex blends _____
word final – continuant-continuant ___ continuant-stop ___ stop-continuant___ stop-stop ___

**COGNITION**

**sorting**: identical objects ___ categories ___ by function, shape, colour, number, texture, content

**go togethers**: real objects ___ cards or puzzles___ colours: red ___ blue ___ green ___ yellow ___

**rote counting:** 1-10 ___ **number concepts:** 1-3 ___ 4-6 ___ 7-10 ___ 11-20 ___ no. after___ no. before___ no. in-between ___ count by twos, threes ___ addition by one ___ by twos ___ subtraction by one___ create equal sets___ number stories ___

**shapes**: circle ___ square ___ star ___ triangle ___ rectangle ___

**textures**: soft ___ rough ___ continue concept list ___

**comparisons**: same___ different ___ doesn't belong ___ how alike ___ categorise and give reasons why ___

**sequencing**: shapes ___ colours ___ patterns ___ 2-4 pt. story ___ events ___ tell story __ multiple endings__

**identity of an object ___ opposites ___ analogies ___ inferences ___ synonyms ___**

**double meanings ___ simple jokes ___ riddles ___ idioms ___**

**COMMUNICATION**

**has appropriate eye contact** ___

**practises turn taking** ___ **uses courtesy language**: e.g., bye, I'm sorry, excuse me ___

**initiates interactions** ___ **uses questioning** ___

**initiates conversational topics** ___

**repair strategies**: asks for repetition ___ **uses appropriate topic transitions** ___
verifies partial information ___ **shares conversational control** ___
asks for clarification ___ **provides clarification** ___

**maintains topic**: 1 turn ___ 2 turns ___ 3 turns ___ **extends conversation** ___

NOTES:

**AUDITORY MEMORY DEVELOPMENT**

The items underlined indicate examples of the items a child needs to identify to understand the directions or information.

*Develop ability to follow a **one-item memory** task:

1. containing repetition of sound-word association in phrases, e.g." The ball goes bounce, bounce, bounce."
2. in single repetition of a sound-word association, e.g." Where's the cat that goes meow?"
3. in single objects representing nouns, verbs, adjectives and common phrases with varied suprasegmentals and vowel content, e.g. "Pick the flower" vs. "Wash, wash, wash your hands" vs. "Mmm, that's good."
4. in single objects varying in vowel content and syllables, e.g. "Where's the spoon?" vs. apple vs. ice cream cone.
5. with word presented at end of sentence, e.g. "Please get the bananas."
6. with word presented in middle or at beginning of sentence to prepare for two item memory, e.g. "Please put the bananas on the table," while the speaker is pointing to the table.

Develop the ability to respond **to two-item memory** phrases:

1. two nouns, e.g. "Get your shoes and your hat."
2. noun and verb, e.g. "The baby is sleeping."
3. verb and object, e.g. "Wash the car."
4. two verbs, e.g. "Jump and sit down."
5. adjective and noun, e.g. "Go get your blue shirt."
6. number and noun, e.g. "I want three candies."

Develop the ability to process a **three-item memory** task:

1. three nouns, e.g. "Don't forget your running shoes, your coat and your books."
2. two nouns and a verb, e.g. "The boy and the dog are running."
3. noun, and two verbs, e.g. "Daddy is washing and then having supper."
4. noun, preposition and object, e.g. "Put your umbrella under your chair."
5. two nouns and a conjunction, e.g., "You can have either an apple or a banana."
6. two adjectives and a noun, e.g., "Make a big, brown tail."
7. Pronoun, verb and object, e.g., "She is cutting the bread."

**Develop auditory memory tasks of four-to-five items:**

1. four nouns, e.g. "When we're shopping, we need bread, ice cream, fruit, and crackers."
2. nouns, preposition and object, e.g. "Put your shovel and your bike behind the house."
3. noun, conjunction, preposition and object, e.g., "Get some popcorn or some chips and put them beside the TV."
4. two noun-verb phrases, e.g., "The boy is swinging and the girls are sliding."
5. add a descriptive phrase, e.g., "See the lady wearing the blue dress in front of the store?"
6. add a time factor, e.g., "After you do your homework for one hour, you can watch TV." "Before you wash your hands , you need to clean your black shoes."

The above memory tasks can be practised in real life but also in contrived play by using toys for role-playing. Try to integrate memory tasks into daily living rather than making them task oriented.

**SELECTION BY DESCRIPTION**

A child begins to listen to longer information by identifying known vocabulary by its description in a closed set (where a choice of objects is visible to the child). Begin after the child has about a two-item memory.

1. where a known word or object representing a sound-word is used repeatedly, e.g. "It flies, up, up, up in the sky, it goes ah….ah, you ride in it." "What is it?" Use a choice of four objects of different categories and all known vocabulary. For example, a shoe, a ball, a car and a dog.
2. identify an object by attending to a single repetition of familiar key words in the description, e.g., "It has four legs, it swims in the water, it hops and it is green. What is it? All characteristics in the choice of objects should vary.
3. include some objects that have a few similar characteristics, e.g., a bird and an airplane both fly; a fish and a frog both swim in the water.
4. *begin open set descriptions beginning with steps 1 and 2 above.

**EXAMPLES OF BEGINNING LANGUAGE TARGETS DEVELOPED CONCURRENTLY WITH LISTENING, SPEECH, COGNITION & COMMUNICATION**

- pronoun development, ("I, you, your, mine")
- comprehension and use of prepositions ("in" or "on") vs. ("under" or "behind") in games, in cooking and eating activities, in creating crafts

Once a child develops phrases, record examples of child's language and bracket the missing words so that these can be targeted and reinforced in future play activities and routines. For example, "I walk(ed) (to) the store (with) Mummy." "Daddy('s) car no (won't) go!"

**SPEECH DEVELOPMENT**

In developing speech through hearing, a developmental rather than remedial program is used. Speech babble is used to develop speech perception. As speech perception improves there is a reciprocal benefit in speech production, Ling, D. (1997). Just as we repeat syllables in learning new words or a new language, so do we encourage the use of syllabic babble to heighten the auditory perception and production of speech sounds. Segments of therapy will involve practise in identifying early emerging phonemes such as vowels [a], [u], [o] and [i] and consonants [b], [m], (sh) and whispered [p] and [h]. Initially do not combine [u] with [m] as these will sound too similar to the beginning listener. The young child can practise phoneme perception by playing with objects with the above phonemes as associated sounds, (see Appendix A) and the older child can listen to identify them by their phonetic equivalents. When phonemes are identified, encourage production in syllabic babble and once achieved, phonemes should be transferred into phonology. Suggestions to develop intelligible speech include the following:

- listen carefully to a child's speech to analyse speech errors rather than lip-reading him/her.
- in all speech techniques attempt to elicit a phoneme through hearing first. If a visual or tactile cue is used, once the child produces the sound, have him/her say it repeatedly using hearing only for auditory feedback to occur.
- when phonemes are missing, distorted or substituted, soften voice, get close to the implant or hearing aids and acoustically highlight the defective phoneme in syllabic babble. Once well produced in syllabic babble, transfer to phonology.
- continue to improve the suprasegmental qualities of speech. To aid in intelligibility emphasise rhythm in word groupings to create short phrases. For example, "My sister…went to school…on the school bus."

- as a child progresses, use less acoustic highlighting with goal of more normal speech reception and production.

## APPENDIX A
## SUGGESTIONS FOR HIGHLIGHTING BEGINNING VOCABULARY

### Vehicles

boat - p-p-p (unvoiced) car - b-r-r-r (truck)
airplane - a-a-a train - oo-oo-oo bus - bu-bu-bu

### Animal sounds

cow - moo
cat - meow
pig - oink
bird - chirp
owl - hhoo
dog - bow-wow
lamb - ba-a-a
frog - hop-hop-hop
duck - quack-quack
lion - rroar-rroar
horse - neigh
fish - swish
chicken - cluck
monkey - ee-ee-ee
bear - grr-grr

### Action Words

push-push it down
mmm- smell the flower
wake-up
pop-pop the bubbles
sh-h go to sleep
sit down
wash-wash your hands
have a drink
blow-blow the feather
walk-walk-walk
bounce-bounce the ball
go-up-up-up (stairs and lift me up)
it goes round and round
cut-cut....cut the banana
brush your hair, teeth
jump, jump, jump

### Adjectives

that's hot
it's all gone
it's dirty
it's soft
it's broken
it's wet
it's sticky

### Nouns

the watch goes tic-toc
hi baby
I'm Mummy, Daddy
that's my shoe
slide-up, up, up wee-e
that's my eye, nose, mouth
look at the fish
the clown says ha ha ha
Santa says ho ho ho

### Pronouns

that's mine
give it to me

### Common Phrases

bye-bye
look at that
it's too heavy
ow, it's sore
I want a _____
no-no-no, don't touch
uh-oh it fell down
that's pretty
m-m-m that's good
what a mess
that's funny
stop it
brr that's cold
help me
I want more
pick it up
wait a minute

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