UNIT 16 WORKING WITH CHILDREN WITH HEARING IMPAIRMENT

Structure

16.1 INTRODUCTION

You have read the definition of hearing impairment and the early signs that can help you to identify hearing impairment at an early age in Unit 3 of Block 1. In this Unit, we will discuss what parents and early childhood educators in inclusive preschools and early primary classes can do to support the child's development during the early years.

Objectives

After reading this Unit, you will be able to:

- understand some common concerns of parents and provide appropriate information;
- know the aspects involved in providing language stimulation to the child;
- appreciate the importance of using amplification devices and know how to care for them;

- guide parents on some key aspects of providing language stimulation during the early years; and
- adapt preschool education activities to support the development of language.

16.2 SOME COMMON QUERIES OF PARENTS AND TEACHERS

As you know, language is a learnt activity. Babies acquire the language spoken around them. However, those who are born hearing impaired, or become hearing impaired at a very young age, do not get to hear the language being spoken by others around them. So while children with intact hearing learn to understand and speak language automatically, this does not happen in case of children with hearing impairment.

So, let us first address some of the question that parents and teachers may have while providing language inputs to the child.

1) **Can the child with hearing impairment learn oral language?**

A common impression in people's minds about persons with hearing impairment is that of using sign language. This leads to the wrong conclusion that they cannot learn to speak. The fact is by detecting hearing impairment at a young age and by fitting appropriate amplification devices such as cochlear implants or hearing aids and by providing language stimulation, the child can develop oral language. If needed, the child can be taught to communicate using sign language as well if the parents wish so or if it is more appropriate to the child. Later in life the child may prefer using both oral language and sign language for communication. Just as people with intact hearing use various languages like Hindi, Gujrathi, English etc. When children use oral language together with gestures and finger spelling, it is referred to as total communication.

2) **How many languages can be introduced to the child with hearing impairment at one time?**

For a child with hearing impairment, it is better to have consistent input of a single language. Once the child has acquired some basic skills in one language and starts communicating in that language, then the second language may be introduced. However, with suitable modern amplification devices, children have shown the ability to acquire two languages simultaneously on being exposed to these even at a young age.

3) **Which language should be taught to the child?**

This question is of great relevance in our country where different languages are spoken in different areas and people from diverse linguistic backgrounds have come together.

Ideally a child with hearing impairment should be enrolled in a school which follows the same language as the child's mother tongue. When the home and school language are same, it helps the child to

acquire language rapidly. However, in a multi-linguistic community, it will be difficult to find preschools, special schools or intervention centers in each of the languages being spoken in the community. Therefore, a viable option is that the language used as medium of instruction in the school should be spoken at home. This ensures that the child does not have to cope with learning two different languages – one at school and one at home.

4) **How long does the child take to acquire language to the same level as other hearing children of her age?**

Language teaching is an **ongoing process** in the case of a child with hearing impairment. The amount of time a child takes to pick up enough language will depend on the age of the child when intervention began, the degree of the child's hearing loss, use of appropriate hearing device, the child's cognitive abilities, and most importantly, the amount of language stimulation the child gets from the environment.

Studies have shown that if language stimulation with appropriate amplification devices, is started at around 6 months of age, by three years of age the child's language development would be like that of any other child with intact hearing. The later the language intervention begins, the greater is the time and effort required to enable the child acquire spoken language.

5) **Will the child outgrow hearing loss automatically as she grows up?**

Most of the children who have damage in the inner ear have a permanent hearing loss which cannot be outgrown. If hearing loss is due to a physical obstruction, such as a bead mistakenly inserted or excessive wax, it can be restored by getting it removed by an ENT Doctor. If it is due to some infection in the middle ear, it can be treated by use of antibiotics prescribed by a doctor and hearing can be restored. However, if the hearing loss is due to other issues, like meningitis, trauma or rubella, hearing loss will remain but use of amplification devices will help the child to hear.

6) **Can the child with hearing loss study in regular school and attain higher education in colleges?**

Under the Right to Education Act (2009), schools have to be inclusive and responsive to the needs of all children. Schools have to make accommodations, modifications and adaptations to respond to the needs of children with disabilities. A child with hearing impairment can study in a regular school. Special school placement is an intervention strategy and not mandatory. The decision to place a child in a special school has to be taken on the advice of a special educator, therapist and other members of the intervention team. There are also provisions for facilitating higher education. With early intervention and appropriate schooling, children with hearing impairment can achieve higher educational goals.

7) **Will using sign language interfere with the development of the ability to read and write?**

Sign language can serve as a valuable tool for teaching children to be proficient in reading and writing. The important point is that the child with hearing impairment should be able to communicate and access information. 'Educational Bilingualism' is an approach to the education of children with hearing impairment which uses both sign language and written/spoken language. Sign Language is a full and rich language with its own vocabulary and grammar. Total communication must be emphasized, which means that the child learns to use various ways of communication.

16.3 IMPACT OF HEARING IMPAIRMENT ON CHILD'S DEVELOPMENT

Let us now read in detail about impact of hearing impairment on development in various domains. Remember, our intention in describing the impact of hearing impairment on the development of the child is not to point out what the child cannot do; rather the intention is that once you understand what impact lack of language can have, you will understand the importance of early identification of hearing loss, fitting of amplification devices and providing language stimulation. This will help you to counsel parents and other teachers working with the child.

16.3.1 Impact on Language Development

Hearing is essential for the development of language and speech. Because of the conversation among family members which the infant hears and the language stimulation that she receives from the environment in the day-to-day situations, children with intact hearing go through the stages of language development without any particular effort. They progress from crying, cooing, babbling, single-word utterances, 2–3word utterances, to longer, and more complex sentences.

However, a child with hearing loss will not be able to experience these spontaneous learning opportunities that most of us take for granted. Because she cannot hear the speech of others and own sounds clearly, her speech and language development is affected. The first few years are extremely important for the child to acquire language. The age at which the hearing loss occurs is very important because it would affect the development of language and speech.

Some of the difficulties the child may experience in spoken language are the following:

- The child may have difficulty in producing speech sounds properly, that is, she may have difficulty in articulation. She may miss out on some speech sounds (consonants at the beginning or at the end of words are often omitted), add sounds to words that are not required or distort sounds and not pronounce them correctly.

- The child may not understand how loudly or softly the sound is produced. When we speak to each other, our tone and emphasis varies, depending on what we want to communicate. Stress on specific words gives a specific message. Children with hearing impairment, particularly those with acute hearing loss, are not able to perceive this difference in emphasis on words. So their speech sounds are usually loud, monotonous, and at times unpleasant; they may have unusual voice quality such as hoarseness, nasality and greater vocal effort. They may face difficulty with timing, pitch, breath, loudness control, intonation, and syllable stress which makes the speech of a child with hearing impairment difficult to understand.
- If the hearing loss is severe, the child may not develop any oral speech and language at all.
- Children with intact hearing are able to develop literacy skills as they have a big fund of language, speech, and information about the environment around them. Developing literacy skills may be a challenge for children with hearing impairment.

16.3.2 Impact on Cognitive Development

Language has a very important role in the development of thinking. Understanding concepts may become challenging with inadequate language development.

Language provides us a name for objects and people. This is the first step in forming concepts. If a child does not have language, she does not know that things have names. She is able to see the things around and gets visual inputs, but since she does not know their names, she has difficulty in understanding what others are saying, as well as in recalling what she has seen. Surely, many thoughts come up in her mind but she is not able to express herself using words. She may not have words for every day concepts like tree, house, water, milk since she does not have speech. Inability to hear fully means that the child's understanding of things and phenomena may be different or incomplete. This is likely to cause the child to fall behind in developing concepts unless she is helped to develop a suitable means of communication and provided stimulating experiences.

The child with hearing impairment has to be helped to detect, identify and comprehend (understand the meaning of) various environmental sounds and language. She has to be specifically taught the name, either in spoken language or sign language, for every object or person. These concepts need to be developed at an early stage. A hearing child also learns names of every person and object around her. But this takes place so automatically that we do not realize it.

Language also supports thinking and understanding. It helps us to remember things and events, to reason out, to plan, and to think about situations. When the language is limited, the range and flexibility of these mental processes are also likely to be affected. Hearing impairment restricts the child's ability to move about, and limits her control over the surroundings. So the child's

range and variety of experiences gets limited, which are the chief sources of learning.

This discussion should not make you think that children with hearing impairment are born with lower cognitive abilities as compared to others. It is the lack of language which affects their cognitive development. If language stimulation is provided in time, their cognitive development will be at par with that of other children of their age. Children with hearing impairment have been found to be at par in many cognitive domains such as visual-spatial relations and bodily-kinesthetic intelligences, and with intervention they are able to read and write at their age and grade level.

16.3.3 Impact on Social Development

Lack of language can cause difficulty in forming social relationships as the child will have difficulty in sharing ideas and feelings, and expressing herself. She may not be able to follow the conversation, understand when people crack jokes, or know what is going to happen in the near future. The child may start to get excluded from the activities of the household since the family members do not expect the child to understand them. She may start feeling that no one cares and her self-confidence may decrease.

At school, while children with hearing impairment may be physically present in the classroom along with their peers, they may be unable to communicate or interact with them. They may not be able to comprehend the rules of the games children play or understand what the teacher explains. So they may not get effectively integrated into the class, even though they are sitting in the same class.

After reading this Section on impact of hearing impairment on the child's development, it is clear that fostering language development is the key area of concern for the child. For this, it is essential to make the necessary efforts for fostering the language development of the child. Hearing impairment does not automatically lead to inability to speak. Children with hearing impairment can learn to communicate effectively with others using spoken language, if early intervention is provided. The child can be taught sign language as well. Our focus in the rest of the Unit is on supporting the development of oral language**.**

Check Your Progress Exercise 1

1) State whether following statements are correct or incorrect.

   a) For a child with hearing impairment, it is better to introduce atleast two languages consistently. ( )
   b) Hearing is essential for the development of language and speech. ( )
   c) If the hearing loss is severe, the child may not develop any oral speech and language at all. ( )
   d) Children with hearing impairment cannot learn to communicate effectively with others. ( )

16.4 EARLY INTERVENTION AND EARLY CHILDHOOD EDUCATION

The earlier the intervention is provided to help the child to learn to speak, the better is the possibility that the child will learn spoken language.

Early intervention has two aspects:

i) Helping the child use her residual hearing through amplification devices
i) Providing language stimulation. This involves:
   a) teaching the child to 'listen', and
   b) developing her/his language and speech.

Let us read about these in detail. Amplification devices have been discussed in Sub-section 16.4.1 and providing language stimulation in Sections 16.5 and 16.6

16.4.1 Use of Amplification Devices

Almost all children with hearing impairment, except perhaps in rare cases, possess some degree of residual hearing. This residual hearing can be made use of by proper amplification devices such as a hearing aid or a cochlear implant. Before we read about these let us clarify two misconceptions which people have:

1) **Some people think that hearing impairment can be 'cured' by using a hearing aid or cochlear implant. This is not true.** Hearing impairment is not a 'disease' to be cured. Hearing impairment is a disorder in the auditory pathway of the ear which can be restored or compensated to some extent by using a hearing aid or a cochlear implant.

   These devices do not correct hearing loss in the way glasses correct vision. They amplify sound to varying degrees. Amplification means 'to increase the volume of sound, to make sound louder'. So with amplification devices, the person hears the sound louder than she would without it. However, the user still does not hear the way a hearing person hears.

2) **Some people think that constant use of hearing aids will increase the hearing loss. This is not true.**

   Constant use of hearing aids is essential for understanding speech and language of others. Appropriate and proper fitting of hearing aids and ear moulds is essential for acquiring language through listening. With advanced sound processing and noise-reduction technology, today's hearing aids are ready for whatever listening situation a child finds herself in – like going to a busy restaurant, a market place or simply watching television at home.

Hearing Aid and its Functions

A hearing aid is a device designed to improve hearing by making sound audible to a person with hearing loss. There are several types of hearing aids available and the technology is constantly changing. However, the basic mechanism of the hearing aids remains the same.

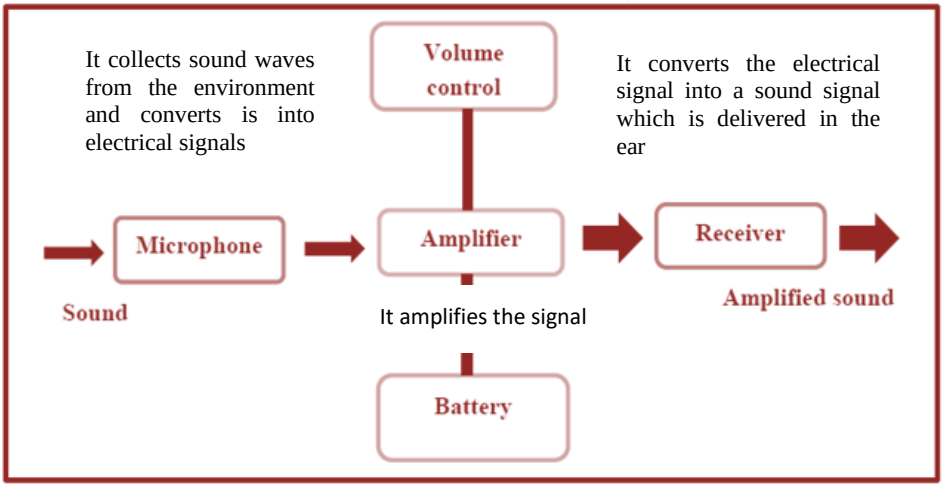

Fig. 1: Basic parts of a Hearing Aid and its Function

To understand the basic function, a block diagram and the picture of the hearing aid are given below. The function of each of the parts is given later in tabular form.

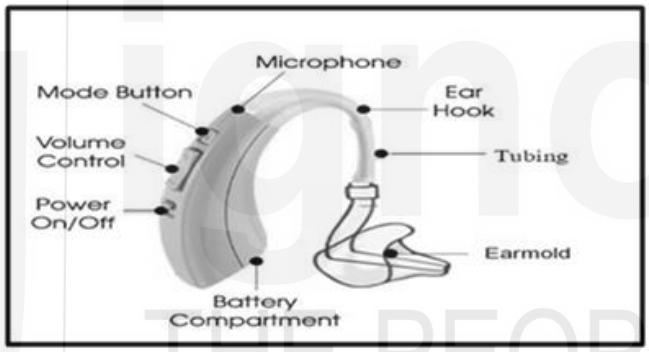

Fig. 2: Block diagram of the Functioning of a Hearing Aid

Table 1: Functions of the Parts of a Hearing Aid

Sr. No.	Name of the Component	Function
1	**Microphone**	The hearing aid has a microphone that picks up sound waves and converts them into electrical signals and sends them to the amplifier.
2	**Amplifier**	This amplifies the sound. This means it increases the loudness of sound.
3	**Ear Hook**	This holds the hearing aid in its place behind the ear.
4	**Tubing**	The hearing aids have a plastic tubing that on one end fits to the ear hook and, at the other end, to the ear mould. It transmits the electrical signal from the amplifier into the ear mould. The length of this tubing is adjustable.
5	**Volume control**	Some hearing aids have manual volume controls which can be turned to increase or decrease the audibility of sound.
6	**On-off Switch**	It is a switch to turn on or switch off the hearing aid.
7	**Battery Compartment**	The battery compartment is located close to the on/off switch and is a place to insert the cells to supply power to the device.
8	**Ear Mould**	This is a mould made of acrylic which fits tightly inside the ear canal and concha bowl (cup like depression) of the ear. The ear mould is specifically made as per the shape of a person's ear so as to provide the best fit to the user. It contains the receiver which converts the electrical signal into a sound signal and delivers the amplified sound into the ear canal.

Care and maintenance of the hearing aids and ear mould

Checking the hearing aids and the ear moulds every day helps to know if there is a problem. There is no point if the child continues to wear the hearing aid but does not hear well. Following are some tips for the care of the hearing aid:

- Use a listening stethoscope to check whether the sound is clear and not weak or scratchy.
- Use a battery tester to know the strength of the battery. Remember to keep some spare batteries.
- Batteries are toxic and hence should be handled carefully.
- Use a soft dry cloth to remove dust and wax from the surface of the mould. The ear moulds should be detached from hearing aids and washed with mild soap solution periodically. An air blower can be used to dry them. Once dry, they should be attached again.
- Hearing aids should be placed in the dry kits provided with the hearing aids. This helps to eliminate moisture from the hearing aids and will lengthen their life by avoiding rust.
- If you hear a squeal or a whistling sound, check if the ear mould is inserted properly in the child's ears. If the sound persists, it could be because the ear mould is small and needs to be replaced or that there is too much ear wax in the ear canal.

Remember children outgrow ear moulds as they grow, hence ear moulds should be replaced periodically for maximum benefit from hearing aids and for hygiene.

Cochlear Implants

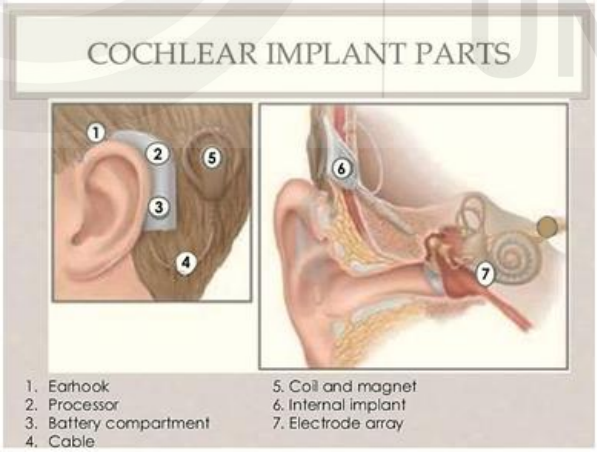

Fig. 3: Parts of a Cochlear Implant

External components

Ear-hook, Sound Processor, Battery compartment, Cable, Coil and Magnet

Internal components

Receiver/ Stimulator, Array of electrodes, these are the parts which are surgically implanted.

Working of a Cochlear Implant

1) The sound processor of the cochlear implant captures the sound and converts it into digital code. The sound processor has a battery which powers the entire mechanism.
2) The sound processor transmits the digitally-coded sound through the coil which is placed on the head externally.
3) The cochlear implant converts the digitally-coded sound into electrical impulses and sends them along the electrode which is surgically placed in the cochlea.
4) The implant's electrodes stimulate the auditory nerve, which then sends the impulses to the brain where they are interpreted as sound.

Care in handling cochlear implant

The following Cochlear Implant supplies should be kept at school:

1) Spare headpiece and cable
2) Replacement microphone
3) Spare batteries
4) Alcohol swabs
5) Audiologist's name and phone number from the implant center
6) Educator's guide from the Cochlear Implant Manufacturer.

Handling of Cochlear Implants

- Ask an expert like an Audiologist to help you learn the functioning of a cochlear implant and its dos and don'ts
- Ensure that you check twice a day that the implant is working
- Meet with parents to explain parts of the implant and troubleshooting techniques
- Avoid dropping or banging the processor
- Avoid extreme temperature variations i.e., below 32 degrees and above 115 degrees
- Prevent static electrical charge by keeping it away from plastic equipments
- Avoid exposure to moisture
- Have the child wear a large t-shirt over the processor during messy art activities
- Encourage the child to wear a headband during any physical activity that results in sweating
- Place the processor in a zip-lock bag if it is at risk for getting sprinkled with water
- Encourage the child to wear a hooded jacket when it is raining
- Have the child wear protective headgear during contact sports.

Although we have discussed hearing aids and cochlear implants, their functioning, care and maintenance in this Section, the teacher should be in touch with parents and doctors for information on how to manage the implant, the precautions to be taken as well as keeping the child at ease.

Check Your Progress Exercise 2

1) What are the two aspects of Early intervention?

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2) Give functions for the following components of a hearing aid.

a) Microphone:

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b) Tubing:

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c) Amplifier:

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d) Ear mould:

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3) How does a cochlear implant Work?

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16.5 PROVIDING LANGUAGE STIMULATION DURING EARLY YEARS: WHAT PARENTS CAN DO

As explained earlier, helping the child to learn to speak involves two aspects:

a) developing listening skills and

b) helping the child to communicate using language and speech.

You know the first four years are very critical for acquiring language. Therefore, once the child has been fitted with the hearing aid, the next step is to provide language stimulation to the child. Just as children with intact hearing acquire language by hearing others speak, so do children with hearing impairment. If parents talk to the child, spend time interacting with her and talk with each other when they are around the child, the child will begin to understand speech and develop language. Language is learnt best in meaningful situations and in real life contexts. Some children may need auditory-verbal training by a trained therapist who specifically trains the child to hear and speak. But the point is that there is a lot that parents can do and this is the focus of this Section now.

1) Once the child has been fitted with the hearing aid, she has to be taught to listen. The child with intact hearing uses her hearing ability from the first day. But the child with hearing impairment has been living in an almost soundless world. When she is fitted with a hearing aid, she hear sounds but these make no meaning for her – all seems like noise. This can be overwhelming for the child and she may refuse to wear the hearing aid. So the child has to be helped to associate sounds with meaning.

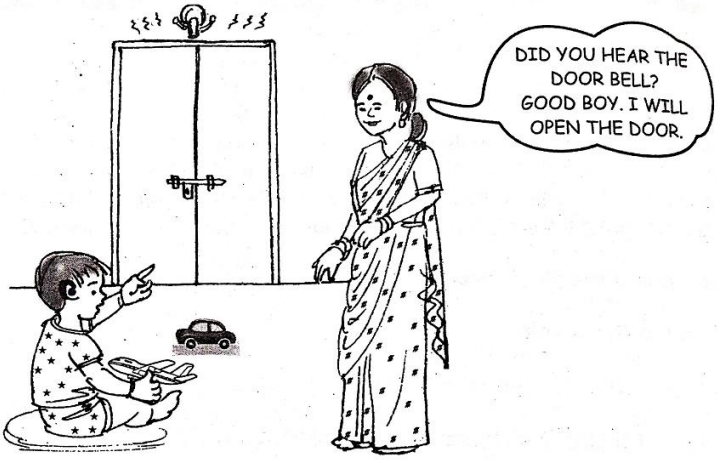
2) First and foremost, always call the child by her name. This will help her to recognize it. Gradually, she understands that others have names too. Look at the child and speak to her. If she is not facing you, she would fail to understand you.

3) In the beginning, you need to encourage the child to simply detect a sound, i.e., to realize that a sound has been produced. She has to differentiate between the presence and the absence of sound. Present a sound suddenly after a period of relatively quiet moments and make an action along with it, so that child's attention is drawn to the sound. Here are some examples of activities:

   - Hide behind the chair or a curtain, say "*peek-a-boo*" and immediately come out and show yourself to the child. That's how she will hear you, and she will associate that every time you say "*peek-a-boo*", you come out from a hiding place. Then you reverse the roles – help the child to hide and, just as you find her, you say "*peek-a-boo*".

   - Whenever an environmental sound is heard, such as a door bell, telephone ring, or whistle of the pressure cooker, show your response to the sound by pointing to your ear. Your gesture will

attract the child's attention and also show the child what she has to pay attention to. Next time when the sound is heard again, ask the child to point to her ears.



Build on the child's growing awareness of sounds. Help him to associate the sound with the source, as well as to understand what it signifies.

4) Talk with the child about the variety of objects around her many times during the day, as well as about the things happening in the environment. So whether you are chopping vegetables, folding clothes, or going to the market to buy a few things, talk to the child and encourage her to respond. To encourage the association of an object with its name, you may introduce an activity in which the child identifies the object from among a small group of objects. So place 5-6 objects in front of the child, and ask her to pick up the object as you say its name. Later, you may reverse the activity. Ask the child to call out the name of an object and you pick it up.

5) Regular daily living activities such as eating, dressing, going for a walk and getting ready to sleep, provide many opportunities to expose the child to commonly used words and phrases. The concepts related to bathing, lunch or dinner and the related vocabulary are best learnt when the process is actually going on and the child is having her meal. When you use sentences and phrases such as "It is time to sleep", "Good Morning" "Wake up" "Today Rohit will eat a banana" it helps the child to develop the concepts and the vocabulary. You have to consciously use these activities for the purpose of developing the child's listening abilities and speech.

6) Usually, our actions accompany our speech. When talking to a child with hearing impairment, you need to specifically focus on associating actions with speech. For example, while giving the child a bath, you say, "Where is the soap?" Then follow up the question with picking up the soap and saying, "Here is the soap". The adult has to talk with the child in the context of the situation or activity and provide the language input. If the child tries to say something but is unable to, or says only a word, speak out the sentence for her. All vocabulary should be introduced in sentences, not in single words.

7) As the child gets exposed to talk and conversations, the child begins to recognize that when people speak, the sounds made by them are meaningful and require response.

8) Introduce sounds associated with certain objects/animals, e.g. dog – bhow-bhow; cat – meow; phone – tring. Such activities help the child to know the name of object (phone) or animal (dog) and also the sound associated with each (tring-tring and bhow-bhow).You can use pictures or toys for this activity. Use complete sentences/ statements when introducing the sound associated with an object/ animal. For example, lay out 2-3 pictures in front of the child and ask, "Where is the dog that says bhow-bhow?" If the child cannot point to the dog, you point to the dog's picture.

9) Narrate stories to the child using picture books or puppets, just as you would do with a hearing child. After narration, ask her questions such as, "where is the cat?" and encourage her to point to the characters. For an older child, you can ask her to arrange the picture cards of the story in a sequence. This will tell you whether she followed the story or not.

Draw the child's attention to environmental sounds

Keep the following points in mind when interacting with the child.

- **Before doing any activity or talking to the child, get her attention:** Establish eye contact while talking to the child. Let her know that a sound is about to be presented or you are going to say something, and she needs to concentrate and pay attention to it. You can point to your ear and tell her to listen. This will be a signal for her.

- **Make listening fun:** When children are actively participating and enjoying the most, learning will occur. So do not make the listening activities and learning of language into a task. Keep the fun element. Remember not to expect too much from a young child.

- **Present auditory input first:** When presenting any sound, do not show the object or source of sound visually. Expect the child to listen before gaining the 'reward' of seeing the source of the stimulus. Say the sound two to three times before showing the object, and then continue saying the sound and talking about the object. For example, say the sound 'Beep-Beep' two-three times and then show the toy car and say, *"Beep-beep, this is a car." Then extend your sentences by describing the car such as: "Beep-beep, this is a red car"; "Beep-beep, the car moves fast."*

- **Select a quiet listening space:** The hearing aid picks up all the sounds and amplifies those sounds. Background noise needs to be minimized to make it a good listening environment. This is very important initially. At the same time, the ability to listen in the midst of noise is also important! The development of this ability, however, is focused upon in later stages, when the child is older.

- **Provide acoustic highlighting:** This means making the key element of the sentence louder than the other words in the sentence. For example, "PAPA has come." This approach is useful in early stages of listening.

- **Use natural voice:** Speak naturally with normal pace of speech and pronunciation. Never speak loudly. The child's hearing aid is doing the job of amplifying the sound. When you speak loudly, the naturalness in speech is lost. Also, the hearing aid will make your loud sound, too loud and uncomfortable for the child. Avoid getting too close to the child and do not use exaggerations like jaw dropping.

- **Model correct language:** Use correct grammar and pronunciation when speaking with the child, so that she learns the correct usage. Use short and simple sentences. Avoid using single words.

- **Use rephrasing:** If the child could not understand what you said, you may say the same thing in a different way. For example, suppose you had asked, *"Where is Mohit sitting?"* If the child didn't understand the question, then you may again ask, *"Is Mohit sitting on the chair?"* Whenever possible, help the child with words she is looking for, so that she can repeat them to you correctly.

- **Allow some time for responding:** It is important to give the child time to think about what she has heard and to respond.
- **Provide positive reinforcement:** To begin with, the child may not be able to pronounce words correctly. Even so, reward the child for effort or response in the right direction.
- **Avoid abrupt change of topic:** The child with hearing impairment often depends on environmental clues to understand the conversation. Therefore, do not abruptly change the topic of conversation as it can be confusing. For example, if you are talking about vehicles, do not switch over to another topic, such as market, or going to the zoo, without informing the child. Tell the child, *"This topic is over. Now we will talk about the market."*
- **Do not encourage parroting (repeating without meaning)**: Help the child understand the meaning of what she is saying.
- **Encourage the child to use question forms:** Keep asking questions, and answer them if the child does not answer. For example, *"How does the balloon look? Oh! It is a big and round balloon"; "What colour is it? It's a blue balloon!"*
- **Provide opportunities for repeated practice through a variety of experiences:** Remember that children with hearing impairment need a lot of practice to understand new concepts. So do not rush through the teaching process.
- **Provide individual attention:** The child would need special attention at home, and in the school. Children with hearing impairment perform at different levels, due to the differences in their residual hearing and language development.
- **Provide multi-sensory stimulation:** Do not rely only on spoken language to help the child develop concepts and acquire language. In addition to explaining through use of words (oral and aural method), use teaching-learning materials, real objects, educational aids and ask the child to do activities. This provides visual input and tactile input and so the child uses multiple senses to learn, along with listening. When you simply explain or talk, the child may not understand a number of things. But if teaching aids are used and children actually handle objects and carry out activities, then the visual impact and the process of handling the materials makes concepts clear to them.

16.6 CREATING CONDUCIVE ENVIRONMENT IN THE PRESCHOOL

Interacting with a child with hearing impairment becomes easy if you believe in the capacities of children and know some specific strategies to create a conducive teaching-learning environment.

In this Section, we will describe how you can use the typical activities of an early childhood education curriculum to support the language and

communication abilities of the child with hearing impairment. Activities such as poem, storytelling, art and craft activities, early literacy activities are an integral part of the regular Early Childhood Care and Education (ECCE) curriculum and with some conscious efforts, these can be used to enhance the listening and language abilities of children with hearing impairment in inclusive pre-school programmes.

Let us see how we can creatively carry out these activities on the basis of universal design for learning (UDL). UDL is described briefly in Block 2, Unit 9. UDL helps all children with diverse learning needs learn together in the same class.

16.6.1 Rhymes, Songs and Poems

Rhymes and poems are full of actions and expressions. Children enjoy them and they help the child to develop a sense of rhythm, identify rhyming sounds, develop vocabulary and enhance imagination.

Typically, the teacher recites the poem with actions line by line and children repeat the words and imitate actions. Children with normal hearing, sensitivity gradually learn the poem and begin to recite by themselves. But children with hearing impairment may fail to do so as they cannot hear the rhythm and words. In technical language, rhythm, intonation (rising and falling of voice), duration i.e., length of utterances are referred to as suprasegmental aspects of speech. These aspects help in making speech intelligible (understandable) to the listener. Since children with hearing impairment miss out on the suprasegmental aspects, their speech is unclear and monotonous, lacking rhythm.

Keeping in view the need for developing suprasegmental aspects of speech, let us see how a rhyme can be taught in an inclusive preschool. This will not only benefit the child with hearing impairment but all other children as well.

General tips

i) Recite the poem in a lively manner with good intonation and actions.

ii) Use aids to support the understanding of the poem, such as a puppet or a picture cards.

iii) Ask children to repeat the poem with rhythm and actions.

Specific Tips to Support the Child with Hearing Impairment

i) The child’s hearing aid must be on.

ii) Keep the child close to, and preferably right in front of the teacher who is reciting the poem so that the child can see the teacher’s face clearly.

iii) The classroom should be well-lighted and noise free. This will facilitate listening and speech/lip reading.

iv) If there are two teachers in the class, only one teacher should recite the poem at a time, in order to avoid auditory confusion. Voice of the teacher should be clear and loud enough to be heard (exaggerated lip movements and screaming should be avoided).

v) If action poem demands actions like turning around or bending, then the teachers should first say the relevant line and then do the action.

Specific Strategies to Enhance Auditory Skills

i) While reciting the poem, take one student each day as a partner who, along with you, will lead the group by doing actions and reciting the poem. Make sure you are at the child's ear level, so that the child can hear you. This strategy gives a clear listening opportunity to each child; children feel good and important with such attention, which increases their confidence; they look forward to getting the chance of becoming the teacher's partner, which makes the activity more enjoyable.

ii) While reciting the poem, say the important words of the poem in slightly louder voice.

For example:

Old Mc Donald had a farm e-i-e-i-o

And on his farm he had some……. *(Take a Pause)* **DOGS** *(Say it louder)*

e-i-e-i-o

(Continue with same intensity with which you began the poem)

As you know, this strategy of uttering important word louder is called **acoustic highlighting**. This makes children more attentive and the activity becomes fun-filled. If you do this by covering your lips, it increases auditory alertness, because now the child cannot see the movement of the lips to guess what the word may be and has to completely depend on the sense of hearing.

iii) Recite the whole poem by covering your lips and without actions and ask the child to identify the poem. Children love challenges; these small challenges increase their confidence and prepare children to take bigger challenges.

iv) Sometimes you can say initial words of a line and ask the child to complete the line.

For example:

Teacher will say: **Wheels on the bus goes….** *(Take a pause, point out one child and ask the child to complete the line)*

Child will say: **round and round**

This strategy of saying half line of the poem and asking child to complete it is called as **auditory closure strategy**. When you do this activity by covering your lips, it will increase auditory alertness and make it fun for all children.

16.6.2 Story Telling

In an ECCE classroom story telling is done in various ways such as:

- Narration using puppets or picture cards
- Reading out stories from books/charts
- Using audio-visual modes like videos etc.

General tips and specific tips for storytelling are the same as written under 'Poem'

Specific Strategies for Inclusive Classrooms:

1) **Narration with puppets or picture cards or through dramatization:** When the story is told using toys or puppets or it is dramatized, then this makes the story interesting, as children get visual inputs along with auditory inputs. Children with hearing impairment may miss out the auditory information, so the following specific strategies can help them:

   - Name each character of the story as you introduce the toy or puppet or the actor and ask children to repeat the name. This will be helpful for fixation of words.
   - Change the voice (varying the pitch and intensity) for each character in a way that your voice defines their characteristic. For example: In a lion and mouse story, the lion's voice has to be louder, low-pitched, and commanding while the mouse's voice should be softer, high-pitched, and pleading.
   - After narrating the story, the teacher can say the dialogues of different characters by covering her lips and ask the children to identify the character based on her voice. This helps in developing auditory discrimination (that is, identifying difference between two voices).
   - While narrating the story, always check whether the child is able to hear and is understanding the story (auditory comprehension) by asking questions such as: Who must have come? Where he must have gone? What did he do? What do you think will happen next?

     Such questions keep the children alert and also help to develop comprehension of question forms, besides getting an opportunity to think, reason and express feelings spontaneously.
   - As a variation to storytelling change the climax of the story.

     For example: In the story of the thirsty crow, instead of pebbles, the teacher can say the crow thought of an idea and used a straw for drinking water.

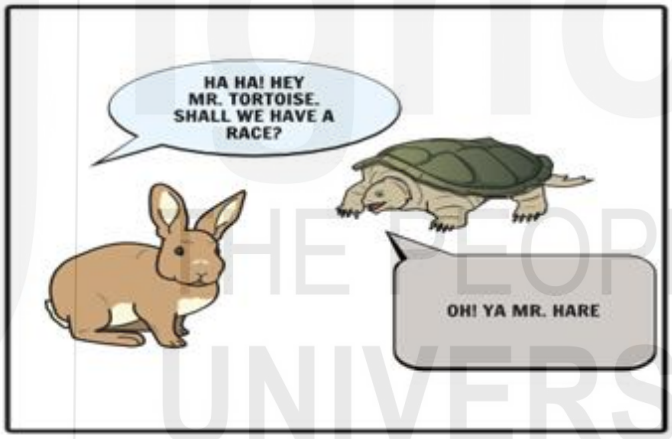
While using picture cards for narrating the story:

- Hold the card besides your face while narrating the story. This will help the child with hearing impairment to relate the picture to what is being spoken. Do not cover your face with the card.
- Select pictures which are clear and to the point. Too much of background may distract children's attention.

For example: Hare and Tortoise	
	
	

- Use of speech balloons, where dialogues for each character are written, will help children understand who said what and to whom.

For example:



2) **Reading out the story from books/charts:**
   - Do not hold book in front of your face or lower your head while reading a story. This will obstruct your voice, the child will not be able to see the movement of your lips and will not be able to speech read. Instead, take help of the assistant teacher. One of you can hold the book and the other can read.
   - Use voice variation while reading with appropriate speed, loudness, pause and intonation.
   - Avoid long stories as children may lose interest and concentration.
   - Ask questions and interact with children so that they remain attentive.

3) **Watching story videos:**
   - Watching videos of stories helps in understanding the story, especially for children with hearing impairment, since the visual input supports what the child hears.
   - Avoid talking while children are viewing the videos.

- If there is a need to check whether children are comprehending the story, stop the video and then ask the questions. However, do not make frequent interruptions as this might break the flow of story.
- If lights are switched off for watching videos, do not forget to switch them on if you are discussing something in between. This is because the child with hearing impairment is relying on speech reading along with hearing. The child will not be able to speech read if lights are off.

4) **Dramatization of story:**

Keep the following points in mind to help the child with hearing impairment benefit from dramatization:

- Names of the characters may be written on strips and pinned to the children's dresses.
- Mask of characters, if used, may be hung using strings around the neck, instead of putting them on the face. Putting mask on the face will obstruct speech reading.
- Encourage children to say dialogues of characters. This helps to develop spoken language, besides helping them understand the difference between direct and indirect speech.

16.6.3 Conducting Water Play/Sand Play/Block Play/Art and Craft

1) Involve children in getting material from home for doing the activity. This way the teacher can develop vocabulary and question forms of 'who brought what'.
2) Besides making children familiar with names of items (nouns) used in the activities, the teacher can also teach action verbs related to the activity: like 'spread the butter', or 'tie the balloon', 'pour the water' or 'fit the block'. Adverbs like 'quickly', 'neatly' and adjectives like 'big loaf', 'long string' can be demonstrated while undertaking the activities and taught in meaningful situations and context. The teacher can also use the activity to expose the children to the 'tense' changes: for example, using questions like "What should we pour" (future tense), "What are you pouring"? (present continuous tense), "What did we pour?" (past tense).
3) Give clear and step-by-step instructions during the activity and ensure the child can see you and is attentive.
4) Repeat instructions for the activity, if you feel the child with hearing impairment needs more language repetition.
5) Demonstration of the activity before asking the children to do by themselves, helps the child with hearing impairment.
6) New words/phrases and sentence forms introduced during these activities must be used in other contexts so as to help the child develop the concept.

16.6.4 Field Trips/Visit

1) Be more alert on field trips since the child may not hear traffic sounds and also there could be other distractions.
2) Encourage parents to volunteer during field trips. This will also help parents know what experiences children are gaining and, based on these, they can initiate conversation at home.
3) Introduce children to the various things they will see outside and tell them information related to these. This will build their vocabulary.
4) Demonstrate how we speak and communicate differently in different places and point out that the vocabulary used is also different. For example, in a shop vs. in a temple.
5) Click photographs of what children saw during the trip. This can also be given to parents and in this way parents can use these to talk about the experience with the child at home.

16.6.5 Fostering Early Literacy Skills

Early literacy includes activities which help to develop in the children an understanding of what it means to read and write, and to develop skills for the same. Early literacy skills are said to be the roots of reading success; it is never too early to plant the seed!

You would have noticed that children prepare to read long before they enter school. In fact, early literacy skills begin to develop right from birth. A child's positive early experiences (for example, pretending to read a newspaper/book, skimming through picture books), also known as literacy behaviours, lay the foundation for success in learning to read.

The key components of early literacy curriculum are:

i) Developing Oral language
ii) Understanding Alphabetic code (also known as phonics)
iii) Developing Print awareness and Early Reading
iv) Early Writing.

Various skills support the development of these components such as perceptual skills, conceptual skills and cognitive skills of recall, recognition and reasoning. Many of the activities carried out in a typical preschool help in the development of these skills and components and are appropriate for children with hearing impairment as well. Some of these activities have been described further.

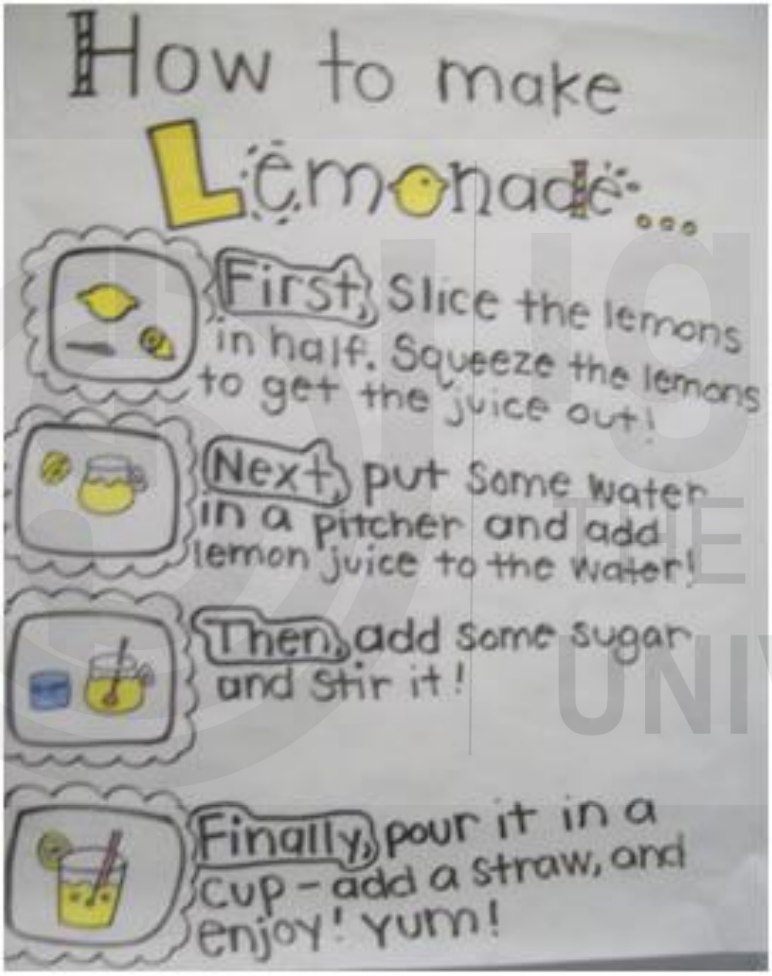
Children with hearing impairment may additionally need auditory training for developing phonic skills and specialized early intervention programme for developing reading and writing.

1) **Activities for fostering reading**

i) Experiential learning activities could be used for early literacy exposure. So after an activity, say after making a paper boat or making lemonade in the class, it can be followed by writing down the steps of the activity on a chart.

Vocabulary cards depicting key words can also be prepared. The children will not be able to read all that is written but they will gain the understanding of the connection between speech, actions and written words. The children speak out the steps in order and the teacher writes what they say.

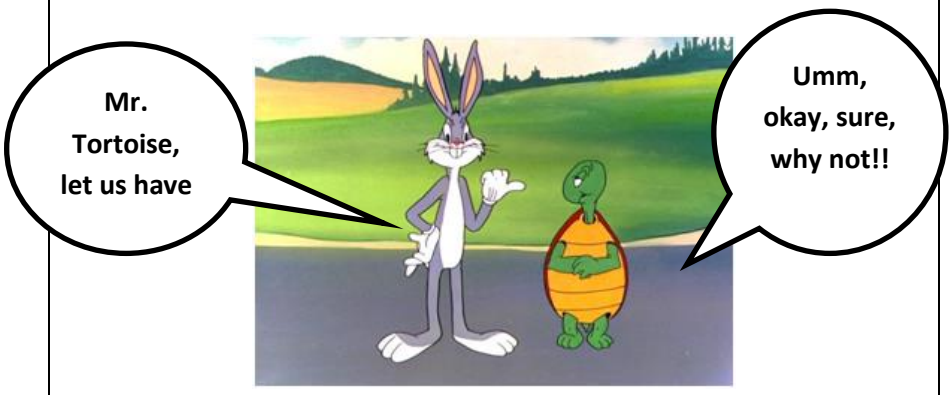
Similarly, concepts related to the market or shopping are best learnt when the child is at the market place. In the process of shopping the following words and concepts can be introduced to the child: shop, buy, pay, bag, money, purse and names of items being bought. Later when the child is back at home or school, a role play activity can be planned, with the child playing the role of the customer and the parent being the shopkeeper and the words and the concepts that were introduced to the child at the market place can be recalled and revisited by writing them on the board or chart paper.



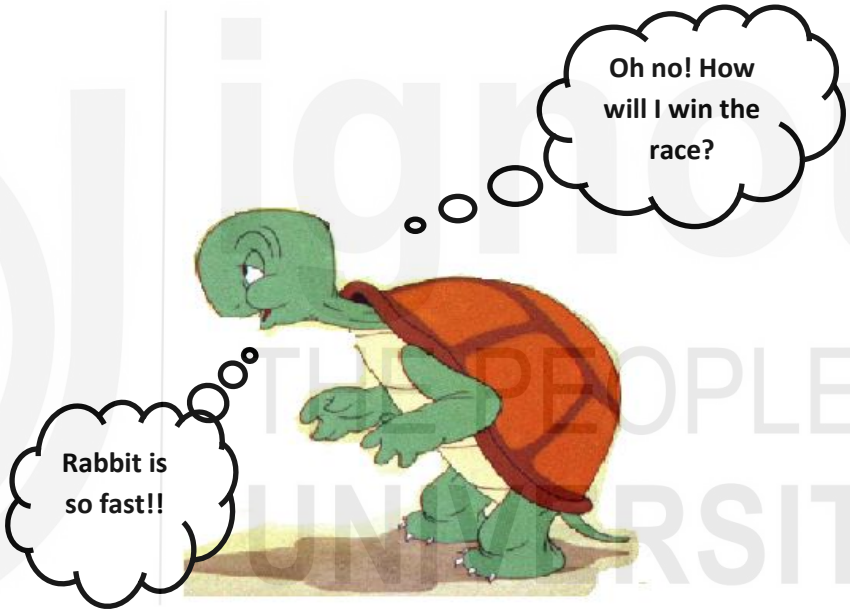
Have a chart of making lemonade or making a paper boat

iii) Use of print in class such as labeling objects, putting up sentence strips, use of think clouds and speech balloons in picture cards and story cards will enhance their literacy skills.

Speech Balloon



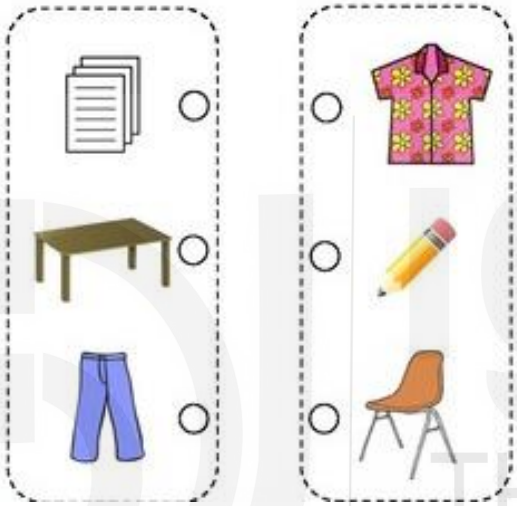
Thinking Cloud



iii) Counting Frame for eye movements left to right and top to bottom.

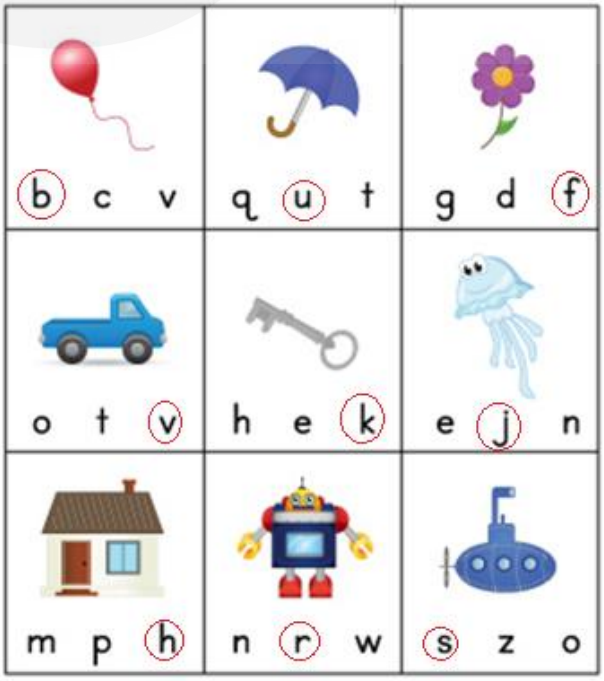
iv) Worksheet for visual discrimination skills (perceptual skills)

iv) Worksheet for conceptual skills



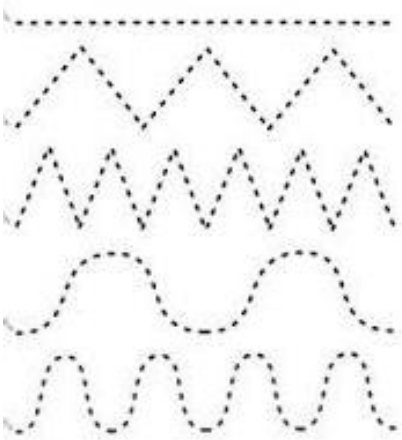
Match the related objects

iv) Phonic auditory games: Write the letter which has the same sound as the object

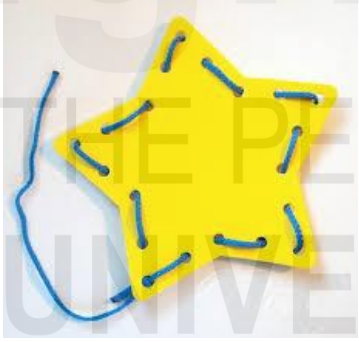


2) **Activities for fostering writing skills**

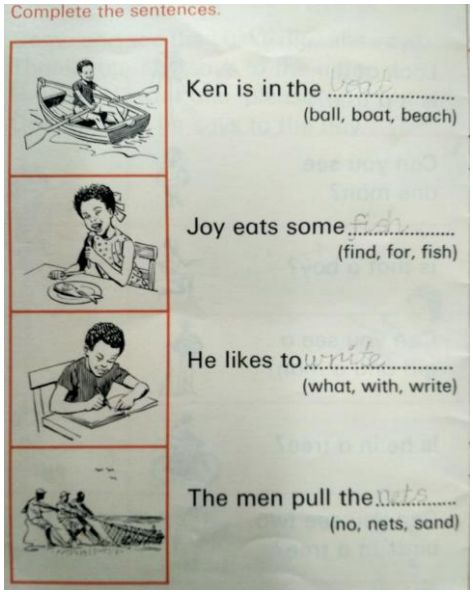
i) Activities and Worksheet for fine muscle development

Activity	Worksheet
Playing with clay 	Follow the dots with pencil: 

ii) Activities for eye hand coordination. Putting a thread through holes punched in a shape



iii) Guided writing



Check Your Progress Exercise 3

1) What points should be kept in mind when interacting with a child with hearing impairment?

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……

2) Give some specific tips to support a child with hearing impairment on how the following can be taught in an inclusive preschool.

a) Rhyme

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……

b) While using picture cards for narrating the story

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c) Dramatization of story

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16.7 SUGGESTIONS FOR ADAPTATIONS IN THE CLASSROOM

16.7.1 Adapting Classroom Structure and Seating Arrangement

- Keep the child's seat in front so that she can listen to you better and also speech/ lip read.
- Do not talk with your back to children as the child will not be able to speech read.
- Choose a room with good lighting where faces are visible, particularly the teacher's face.
- Rooms with windows directly behind the teacher are not good as they will leave the teacher as a silhouette.
- If seated in rows, let the child turn around to see the faces of other children who are speaking. Seat children in a semi-circle. So that the child can look at everyone.
- In case of a child with hearing impairment, there may be special emergencies. For example, while playing she may fall on ears – which could cause the acrylic ear mould to injure the ears. Do not panic.

Give the child first aid. Inform the child's parents so that they can take her to a doctor, and assist them in doing so.

16.7.2 Creating a Conducive Learning Environment

- Ensure that the child is attentive. Attention of the child is an important prerequisite for teaching concepts. This is the first requirement irrespective of the mode of communication that you and your child may choose to use.
- Listen to the child patiently. Try to understand the child and do not make assumptions about what that child can or cannot do.Focus on what the child can do, rather than on what she cannot do.
- Do not give any special treatment to the child and also do not neglect her. Treat the child as you treat other children.
- Expect the child to meet the same standards of behaviour, promptness and courtesy as other hearing classmates. Do not let her use hearing loss as an excuse for something undesirable.
- When speaking to a child with hearing impairment, talk directly to her, not to her parents or friends. This applies even if the child is using an interpreter.
- Extend common courtesies to children with hearing impairment as you would to anyone else. Do not make children feel ashamed to make friends.
- Make the activities as much like a play activity as possible.
- Any activity done with a child with hearing impairment has a focus on developing communication and language skills.
- Give the instructions slowly and clearly in your chosen mode of communication i.e., oral or manual communication.
- Use nature as a source of learning.
- Use multisensory approach for teaching basic concepts. This means along with oral communication, using visual materials like picture cards, objects, toys, diagrams, key vocabulary, diagrams, written instructions, using the sense of touch and smell in teaching by giving children the opportunity to feel and hold objects.
- Use subtitled videos wherever possible, so that the spoken text is visible in written form.
- More attention needs to be given to the child when on outings or on the road, as s/he may not be able to sense the dangers.
- Discuss the special abilities and interests of all the children, including the child with hearing impairment in the class.
- Keep in touch with the speech therapist, which the child may be visiting for training. It will help you as a teacher to plan the education program more effectively.

16.7.3 Encouraging the Child to Speak

- Ask the child questions and expect answers from her.
- Give the child time to respond. Help the child if she is not sure. Provide words to the child only when she does not seem to have them.
- Involve child in all oral activities like singing rhymes, narrating stories, drama, prayer, and music activities.
- If she uses phrases or an incomplete sentence, you say the complete sentence.
- Whenever she attempts new words or phrases, praise and encourage her.
- Occasionally, remind the child of her speech mistakes. However, do not interrupt the ongoing communication with constant corrections.

16.7.4 Helping the Child and Her Classmates Adjust to Each Other

- Be observant about the behaviour of the other children towards the child. They might tease or ignore her/him.
- The child should not be made conscious about using a hearing aid or about not being able to hear properly.
- Help the other children to learn ways to understand the child's gestures and speech.
- Conduct activities to help other children learn to communicate without using speech. This will help them to develop sensitivity towards the difficulties experienced by the child with hearing impairment.
- Plan activities where the other children can interact closely with the child, for example, decorating a bulletin board together.

Check Your Progress Exercise 4

1) Mention 5 suggestions each for the below mentioned for adaptations in the classroom.

   a) Adapting classroom structure and seating arrangement

      ……

      ……

      ……

   b) Creating a conducive learning environment

      ……

      ……

      ……

   c) Encouraging the child to speak

      ……

      ……

      ……

d) Helping the child and her classmates adjust to each other

……

……

……

16.8 SUMMING UP

As you know, language is a learnt activity. Babies acquire the language spoken around them however, those who are born with hearing impairment, or become hearing impaired at a very young age, do not get to hear the language being spoken by others around them.

- By detecting hearing impairment at a young age and by fitting appropriate amplification devices such as cochlear implants or hearing aids and by providing language stimulation, the child can develop oral language.
- Hearing is essential for the development of language and speech. Children with hearing impairment can learn to communicate effectively with others using spoken language, if early intervention is provided. The child can be taught sign language as well.
- The two aspects of Early intervention are – helping the child use her residual hearing through amplification devices and providing language stimulation.
- Parents can provide opportunities to expose the child to regular daily living activities such as eating, dressing, going for a walk and getting ready to sleep.
- Rhymes, songs and poems; water play/sand play/block play/art and craft; and field trips/visit can be conducted in the preschool. Classroom structure and seating arrangement can be adapted by keeping the child's seat in front so that she can listen better and also speech/ lip read.
- Listening to the child patiently and focusing on what the child can do, rather than on what she cannot do helps in creating a conducive learning environment.

16.9 ANSWERS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress Exercise 1

1) State whether following statements are correct or incorrect.

   a) Incorrect. For a child with hearing impairment, it is better to have consistent input of a single language. Once the child has acquired some basic skills in one language and starts communicating in that language, then the second language may be introduced.

   b) Correct

   c) Correct

d) Incorrect. Children with hearing impairment can learn to communicate effectively with others using spoken language, if early intervention is provided.

Check Your Progress Exercise 2

1) The two aspects of Early intervention are:

   i) Helping the child use her residual hearing through amplification devices

   ii) Providing language stimulation. This involves:

   - Teaching the child to 'listen', and
   - Developing his/her language and speech.

2) Functions of the components of a hearing aid.

   a) Microphone: The hearing aid has a microphone that picks up sound waves and converts them into electrical signals and sends them to the amplifier.

   b) Tubing: A plastic tube in the hearing aid that transmits the electrical signal from the amplifier into the ear mould.

   c) Amplifier: This increases the loudness of sound.

   d) Ear mould: This is a mould made of acrylic which fits tightly inside the ear canal and concha bowl of the ear. It contains the receiver which converts the electrical signal into a sound signal and delivers the amplified sound into the ear canal.

3) Below mentioned describes how a cochlear implant works.

   i) The sound processor of the cochlear implant captures and converts the sound into digital code. It has a battery which powers the entire mechanism.

   ii) The sound processor transmits the digitally-coded sound through the coil which is placed on the head externally.

   iii) The cochlear implant converts the digitally-coded sound into electrical impulses and sends them along the electrode which is surgically placed in the cochlea.

   iv) The implant's electrodes stimulate the auditory nerve, which then sends the impulses to the brain where they are interpreted as sound.

Check Your Progress Exercise 3

1) Following points should be kept in mind when interacting with a child with hearing impairment:

   - Before doing any activity or talking to the child, get her attention.
   - Present auditory input first
   - Select a quiet listening space
   - Use natural voice
   - Model correct language
   - Use rephrasing

- Allow some time for responding
- Provide multi-sensory stimulation

Refer Section 16 for more details.

2) a) Rhyme

- The child's hearing aid must be on.
- Keep the child close to the teacher who is reciting the poem so that the child can see the teacher's face clearly.
- The classroom should be well-lighted and noise free. If there are two teachers in the class, only one teacher should recite the poem at a time. Voice of the teacher should be clear and loud enough to be heard
- If action poem demands actions like turning around or bending, then the teachers should first say the relevant line and then do the action.

b) While using picture cards for narrating the story

- Hold the card besides your face while narrating the story. Do not cover your face with the card.
- Select pictures which are clear and to the point. Too much of background may distract children's attention.
- Use of speech balloons, where dialogues for each character are written, will help children understand who said what and to whom.

c) Dramatization of story

- Names of the characters may be written on strips and pinned to the children's dresses.
- Mask of characters, may be hung using strings around the neck, instead of putting them on the face.
- Encourage children to say dialogues of characters. This helps to develop spoken language, besides helping them understand the difference between direct and indirect speech.

Check Your Progress Exercise 4

1) Mention 4 suggestions each for the below mentioned for adaptations in the classroom.

a) Adapting classroom structure and seating arrangement

- Keep the child's seat in front so that she can listen to you better and also speech/ lip read.
- Do not talk with your back to children Choose a room with good lighting where faces are visible, particularly the teacher's face
- If seated in rows, let the child turn around to see the faces of other children who are speaking
- Seat children in a semi-circle.

b) Creating a conducive learning environment

- Ensure that the child is attentive. Attention of the child is an important prerequisite for teaching concepts. This is the first requirement irrespective of the mode of communication that you and your child may choose to use.
- Listen to the child patiently. Try to understand the child and do not make assumptions about what that child can or cannot do. Focus on what the child can do, rather than on what she cannot do.
- Do not give any special treatment to the child and also do not neglect her. Treat the child as you treat other children.
- Expect the child to meet the same standards of behaviour, promptness and courtesy as other hearing classmates. Do not let her use hearing loss as an excuse for something undesirable.

c) Encouraging the child to speak

- Ask the child questions and expect answers from her.
- Give the child time to respond. Help the child if she is not sure. Provide words to the child only when she does not seem to have them.
- Involve child in all oral activities like singing rhymes, narrating stories, drama, prayer, and music activities.
- If she uses phrases or an incomplete sentence, you say the complete sentence.

d) Helping the child and her classmates adjust to each other

- The child should not made conscious about using a hearing aid or about not being able to hear properly.
- Help the other children to learn ways to understand the child's gestures, and speech.
- Conduct activities to help other children learn to communicate without using speech. This will help them to develop sensitivity towards the difficulties experienced by the child with hearing impairment.
- Plan activities where the other children can interact closely with the child, for example, decorating a bulletin board together.

FURTHER READINGS FOR BLOCK

The following are some books that you will find useful for further reading of topics discussed in Block 3.

1) Bailey, M. &Wolery, M. (1992). *Teaching Infants and Preschoolers with Disabilities*. New York: Macmillan.

2) Brue, A. W., Wilmshurst, L. (2016). *Essentials of Intellectual Disability Assessment and Identification*. Germany: Wiley.

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6) Kochhar, C. A., West, L., Taymans, J. M. (1996). *Handbook for Successful Inclusion.* Aspen Publishers.

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10) Sacks, S. Z. & Wolffe, K. E. (ed.) (2006). *Teaching Social Skills to Students with Visual Impairments – From Theory to Practice.* USA: AFB Press.

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12) Stanton, M. (2012). *Understanding Cerebral Palsy – A Guide for Parents and Professionals*. Jessica Kingsley Publishers: USA.

13) Werner, D. (1987). *Disabled village children: a guide for community health workers, rehabilitation workers, and families*. United States: Hesperian Foundation.

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