

COMPASS Project:

Resources to make the most of early intervention using LENA technology



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COMPASS Project Content and Instructions

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PREFACE

This packet of resources was created by Sound Start Babies, a comprehensive early intervention program specialized in working with children with hearing loss and their families. The resources were designed as part of the COMPASS Project: Creating Outcomes to Maximize the Practical Application of Skills & Strategies. The COMPASS Project uses data provided by LENA recorders and software to drive intervention for families of children with hearing loss. We hope that this packet of resources will be helpful for agencies or programs that are looking for ways to use LENA with the families and children they serve. While these resources were created to address the unique needs of children with hearing loss and their families, they may be beneficial for children with a variety of other needs and diagnoses as well.

Please see below to read more about how these resources were used with LENA technology.

COMPASS Project Procedures:

- Families who participated in the COMPASS Project were given three LENA Digital Language Processors (DLPs), each of which has the ability to record up to 16 hours of language/environment data, and baseline recordings were completed. Baseline recordings were completed on 3 separate days and analyzed.
- Families were provided with an instructional session reviewing the baseline data about their child's overall language environment, including details about the 1) auditory environment; and 2) the number of adult words; 3) child vocalizations; and 4) conversational turns. Families were then provided with information regarding a specific auditory or spoken language strategy and were coached within early intervention sessions on how to implement the strategy into daily routines.
- Once the family and early intervention provider felt that the strategy was mastered, the family was given three more DLPs and another round of recordings was completed and reviewed with the family.
- These procedures were repeated over time as the family and practitioner cycled through all of the COMPASS Project resources.

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Auditory Environment

Your child's audio environment can have a butterfly effect on their development

What is a “Good Acoustic Environment?”

A good acoustic environment is one that allows for optimal listening conditions so that your child has the best access to your voice

Why is a Good Acoustic Environment Important?

Research indicates that background noise that adult listeners naturally tune out adversely affects listening and learning for young children, especially young children with hearing loss. There is something called a signal-to-noise ratio, which refers to the ratio between your spoken voice and the background noise. Hearing children need a signal-to-noise ratio of +16 decibels, but children with hearing loss require a ratio of +20 to +30 decibels!

Things You Can Do

Positioning

Make sure you are sitting close to your child so that she has the best access to your voice. Whenever possible, try and sit on the side of the “better” ear.

Limit Background Noise

Turn off things like the TV and radio that can make it harder for your child to hear. Keep your child away from household appliances that make noise, such as a dishwasher or washing machine.

Use of Amplification & “Listening Bubble”

One of the primary ways to control your child's auditory environment is full-time use of amplification. Remember to be close to the microphone when talking to your child. As you increase your distance, the more difficult it is for your child to hear you. It is better to sit close and use a normal speaking volume. Speaking loudly only distorts your voice.

Ambiente Auditivo

El audio de su hijo puede tener un efecto mariposa en su desarrollo

Que es un “Buen ambiente acustico?”

Un buen entorno acustico es uno que permite escuchar las condiciones optimas para que el nino tenga el mejor acceso a su voz.

Por que es un buen ambiente acustico importante?

Las investigaciones indicant que los ruisos de fondo de adultos naturalmente los oyentes no afectan negativamente a esuchar y aprender de sus hijos, especialmente los ninos pequenos con perdida de audicion. Hay una cosa que llama senal-a-ruido, que se refiere a la relacio entre la voz y el ruido de fondo, lose ninos necesitan una senal-a-ruido de +16 decibeles, pero los ninos con perdida de audicion requieren una proporcion de +20 to +30 decibels!

Cosas que puede hacer

Posicionamiento

Asegurese de que usted se siente cerca de su nino para que tenga el mejor acceso a su voz. Siempre que sea posible, intente sentarse en el lado “mejor” oido.

Limitar ruido de fondo

Desactivar cosas como la television y la radio, que pueden hacer mas dificil que su hijo escuche. Mantenga a su hijo alejado de los aparatos electrodomesticos que hacen ruido, tales como lava vajillas o lavadora.

Usos de los sistemas de amplificacion

Una de las principales formas de controlar su entorno auditivo del ninos es de tiempo complete al uso de amplificacio. Recuerde que debe estar cerca del microfono cuando le habla a su hijo. A medida que se se incrementa la distancia, mas dificil es para el nino le escucha. Es mayor sentarse cerca y utilizar un volume normal de conversacion. Hablar en voz alta solo distorsiona su voz.

Auditory Bombardment

Providing numerous opportunities for your child to hear the target sound, word, or phrase. Auditory bombardment is all about your child's listening experience. Imitation is not a part of bombardment. Imagine you are trying to teach your child the word "juice". You would say something like, "I am going to pour the juice. Wow! This juice is very cold! Would you like more juice?"

What You Can Do

- Use the actual word rather than pronouns. Avoid "this" or "that" and use the item's name instead.
- Using too many new words or concepts during a conversation or activity can confuse your child. By sticking to a few key vocabulary words and using them naturally and repeatedly, you can facilitate language growth.
- Children often learn language through incidental listening. Think of the child who overhears her parent using a not-so-nice word on the phone and then repeats that same word the next time she's playing with her toy telephone. Because children with hearing loss don't always overhear, it's important we offer them "extra" opportunities to learn new words. Auditory bombardment allows for that.

Examples:

"It's time to feed the dog! The dog looks hungry. We have to get the dog food and put it in the bowl. OK. Now call the dog to come over to eat!"

"Let's push the blue car. That car has big wheels. I think the car will go fast. Ready to push the car?"

Research suggests children need to hear a new word 500 times before it becomes part of their expressive vocabulary.

Children thrive with routine and repetition. Research clearly indicates that repeated experience helps wire the child's brains. Why not offer your child repeated experience to hear new words?

How to Grow Your Child's Brain for Language & Literacy

It may seem overwhelming to think about increasing adult talk over all of your daily routines. Sometimes it can seem impossible to form a full sentence or thought on little or no sleep, after working a full day, or a multitude of other reasons. Book reading can be a go-to strategy to help increase the adult word count each day for anyone that spends time with your child. Do you remember a favorite book that was read to you as a child?

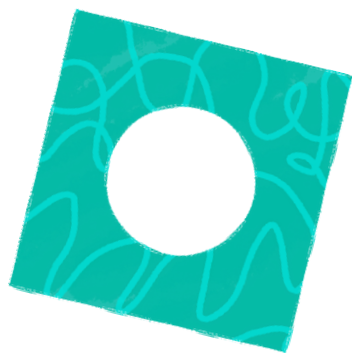
What is your favorite book to read to your child?

Why is book reading a good strategy to help my baby's brain grow?

- When we read books, we use words, pitches, and frequencies that are not as common in typical conversation.
- Our reading voices typically have a sing-song quality (like parentese) that is important for brain development.
- Book reading is an easier activity because the words are already on the page for you.
- Literacy skills begin to develop through audition at birth! (Flexer)
- While reading to your infant, toddler, or older child, you can incorporate and model various types of phrases: comments – “Look! I see a cow!” questions – “Do you think the boy is hungry?” directions – “Let’s turn the page.”

Reading also strengthens pre-linguistic skills!

- + Joint attention: pre-cursor for conversation
- + Book handling: hold book upright, turn pages
- + Anticipating events: reading books multiple times or books with repetitive phrases also allows children to join in!



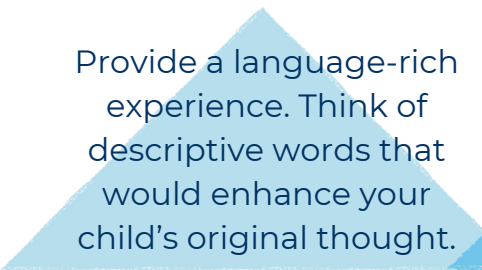
Examples:

Brown Bear: 160 words
Goodnight, Moon: 130 words
Chicka Chicka Boom Boom: 280 words
Pete the Cat (White Shoes): 267 words
Hooray for Fish!: 116 words

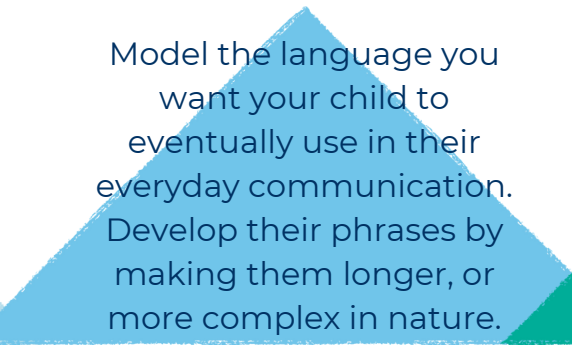
Expansion and Extension

Imagine your child's language is like the rungs of a ladder. When they speak, they are on their own level or rung of the climb. What can you say to help them climb higher? Expansion and extension involves listening to your child's language, repeating all or part of it, adding information, and raising it to the next level.

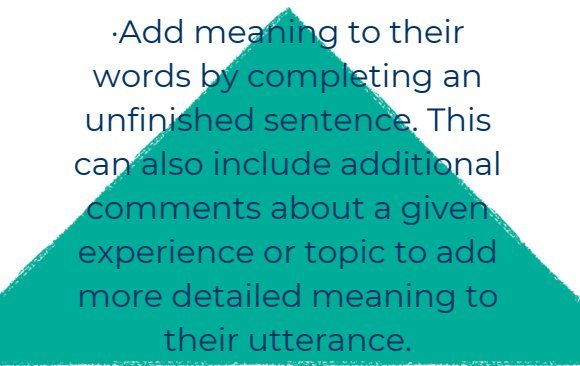
What You Can Do:



Provide a language-rich experience. Think of descriptive words that would enhance your child's original thought.



Model the language you want your child to eventually use in their everyday communication. Develop their phrases by making them longer, or more complex in nature.




·Add meaning to their words by completing an unfinished sentence. This can also include additional comments about a given experience or topic to add more detailed meaning to their utterance.

Examples:

Your child points to a balloon and says, "red". You might say "Red. That's right! A red balloon. This balloon is so big! I hope the balloon doesn't pop!"

It's time to go outside. Your child hands you their shoes and says "shoe on". You reply, "Put your shoes on. We need our shoes to play outside."



Children need to hear 30 million words to ensure their optimal growth.
- Hart & Risley (1995)

Ampliación y Extensión

Imagine que el lenguaje del niño como los peldaños de una escalera. Cuando hablan, están en su propio nivel o escalón de la ascensión. Qué les puede decir para ayudarles a subir más alto? Expansión y extensión implica escuchar el lenguaje del niño, repitiendo toda o parte, añadiendo información, y elevandolo hacia el siguiente nivel.

Lo Que Se Puede Hacer:

Proporcionar un lenguaje de gran experiencia. Piensa en palabras descriptivas que permitan mejorar su pensamiento original.

Modele el lenguaje que usted quiere que su hijo/ause en su comunicación diaria. Desarrollar sus frases haciendolas más largas, o más complejas.

· Añadir significado a sus palabras, completando una frase inacabada. La cual también incluirá comentarios adicionales acerca de una determinada experiencia o tema para añadir más detalles a su pronunciación.

Examples:

El niño señala a un globo y dice, "rojo".
Podría decir "Rojo. La respuesta es correcta.
Un globo rojo. Este globo es tan grande!
Espero que el globo no."

Es el momento de salir afuera. Su hijo le entrega sus zapatos y dice, "zapato." Su respuesta, "Ponte los zapatos. Necesitamos nuestros zapatos para jugar afuera.

Los niños necesitan escuchar 30 millones de palabras para asegurar su crecimiento óptimo.

- Hart & Risley (1995)

Follow Your Child's Lead

Remember when you were a kid playing “Follow the Leader”? The group gets in a line and the person in front, the “leader” performs actions that the rest of the group must follow. Everyone always wanted a turn to call the shots. Your child feels this way too! It is important to focus on topics that are relevant and important to your child as well. We call this “following the child’s lead”. Imagine: you’re on a team with your child, and they’re calling the plays.

What You Can Do to Make it Happen:

- + Watch what your baby or toddler is attending to and start a conversation about that item or action.
- + Mimic laughter, vocalizations, and actions that your child produces.
- + Comment and model what your baby might be thinking.
- + Incorporate vocal play into activities that your child is already showing interest in.
- + Remember to “OWL”: Observe, wait, & listen. (The Hanen Program, It Takes Two to Talk, 2004) Observe your child’s interests in the moment. Wait to provide them the opportunity to vocalize. Listen to your child’s message.

Examples:

- + You and your child are engaged in a game of block building when you notice he wanders off to play with a ball. Rather than calling him back to blocks, use this as an opportunity to engage in conversation about what he is interested in: the ball. “Oh, you see the ball! Let’s bounce the ball. Roll the ball into the blocks.”
- + Your child touches the grass. You say, “The grass is tickly!”

Siga el Niño

Recuerdas cuando eras niño y jugabas “Sigue el líder?” El grupo se pone en una línea y la persona de adelante, el “líder” realiza acciones que el resto del grupo debe seguir. Todos siempre querían una vuelta a la última palabra. El niño se siente de esta manera también! Es importante concentrarse en los temas que son relevantes e importantes para su niño. Esto es lo que llamamos “seguir el líder del niño”. Imagínate: usted se encuentra en un equipo con su hijo, y llaman a los juegos.

Lo que se puede hacer para que suceda:

- + Observa lo que el bebé o el niño está intentando hacer y inicie una conversación sobre este tema o acción.
- + Imitar risas, vocalizaciones, y las acciones que el niño produce.
- + Comenta y modela lo que el bebé podría estar pensando.
- + Incorporar al juego vocal actividades que su hijo ya está mostrando interés en.
- + Recuerda “OWL.” Observar, esperar, escuchar. (El programa Hanen, se necesitan dos para hablar, 2004) Observar el interés del niño en el momento. Espere a dale la oportunidad a vocalizar. Escuche el mensaje de su niño.

Ejemplos:

- + Usted y su hijo están en un juego de bloques cuando usted nota que se desvía a jugar con una pelota. En vez de llamarlo de nuevo a los bloques, utilizar esto como una oportunidad para participar en la conversación sobre en lo que el está interesado: la pelota: Oh, ve la pelota! hagamos rebotar la pelota. Rodar la bola en los bloques.
- + Su hijo toca la hierba. Usted debe decir, “La hierba es conquillsa.”

Mirror Play

From birth, babies display a special interest in exploring human faces. Learning to attend to a speaker's face marks a key early communication milestone and serves as a foundation for subsequent social communication skills, such as maintaining eye contact and imitating facial expressions. Your baby's preferred pastime of studying faces also provides him/her with visual input about how speech sounds are produced. Expand upon your baby's opportunities to observe how you make sounds, and give your child a chance to take notice of his/her own mouth movements by introducing a mirror into your daily play routines. Mirror play supports your child's speech development within the context of an enjoyable & motivating activity.

What Sounds Should I Model?

Mirror play not only gives your baby the opportunity to watch your mouth as you speak, but also allows your child to observe his/her own oral movements. Take advantage of this visual feedback by modeling sounds that are produced with clear movement of the lips. For example, model vowel sounds such as "oo" and "oh," with rounded lips or "ah" with an open mouth. Practice the consonant sounds "p," "b," "m," and "w," which are early developing sounds that are made with lip movements.

Activity Examples:

+ Babble with your child. For new talkers, model individual vowel sounds such as "ah," (prolonging the sound with clear opening of your mouth) or strings of repeated vowels (e.g. "oh-oh-oh"). If your child already produces vowel sounds, introduce consonant sounds into your vocal play. For example, model "mmmm," prolonging the sound to give your child time to both listen and take notice of your lip closure. Model combinations of consonant and vowel sounds, such as "pop, pop, pop" or "wow." Always remember to pause after modeling a sound to give your child an opportunity to imitate.

+ Pair sounds with objects/actions that you incorporate into mirror play. For example, model "beep, beep" and include a toy car in your play. As you drive the car along the mirror, model, "up, up, up."

+ Play a game of peek-a-boo. Position yourself behind your child as you both face the mirror. Cover your eyes, while leaving your mouth uncovered to give your child an opportunity to watch your mouth as you say, "boo!"

Parentese

What is Parentese?

Also known as “motherese”, parentese refers to the way that adults typically talk to young babies. It consists of shorter phrases, a sing-song voice with higher pitch, and repetition. The use of parentese is especially helpful for children with hearing loss because it is easier to detect different/varied melodies and pitches. Parentese can also be referred to as “acoustic highlighting” because the parent’s voice emphasizes key words.

Babies babble more in response to parentese than general adult inflection we use with each other.

In using parentese, vocalizations consist of varied duration, intonation, & intensity...



Duration: length of a word or sound ex: “Baaaah” vs. “Bah”



Intonation: varied pitch patterns
Ex: “up, up, up” vs. “dooooown”



Intensity: volume

“Baby Talk” is not Parentese

It is important to note the difference between parentese and “baby talk”. The goal is model appropriate vocabulary and sentence structure for your child while delivering it in an interesting manner. Avoid “baby talk” which uses nonsense words or incorrect endings such as “cuppy” for “cup”. During infancy babies’ brains are already working to map the auditory information they are receiving to use as they get older. Providing them with accurate language models in an acoustically salient manner helps them to develop social-emotional, cognitive, and language skills.

Think About It

+ How can I use parentese throughout the day?

+ What was one activity/routine where I was able to use parentese this week?

Parentese

Que es parentese?

Tambien se conoce como “motherese”, los padres se refieren a la forma en que los adultos sueien hablar de los bebes. Se compone de una mas corta frase, un cancion con tono mas alto y la repeticion. El uso de los parentese es especialmente util para los ninos con perdida auditiva porque es mas facil de detectar diferentes y variadaes melodias y tonos. Parentese tambien puede ser referido como el “acustico destacado” porque la voz de los padres destaca palabras clave.

Los bebes balbucean mas en respuesta a los padres de inflexion general de adultos que utilizamos unos con otros.

El la utilizacion parentese, la vocalizacion consiste en duracion variada, entonacion, & intensidad...



Duracion: longitud de una palabra o sonido ex: “bahhh” vs. “bah”



Entonacio: modelos de tono variados Ex: “arriba, arriba, arriba” vs. “abaaaaajo”



Intensida: volume

parentese vs. “habla de bebe”

Es importante tomar nota de la diferencia entre parentese y el “habla de bebe”. El objective es de modelar el vocabulario aducado y la estructura de la oracion para su hijo mientras lo entrega de una forma interesante. Evile el “habla con bebe” la cual utiliza no palabras adecuadas y finales no adecuados como “cuppy o vacaito” para vaso. Durante la infancia el cerebro de los bebes ya estan trabajando para asignar la informacion que ellos estan recibiendo ha usar meintras crecen. Dandoles un modelo de lenguaje apropiando en una manera mas destacada y les ayudara a desarrollar emocion-social, cognitivas, y las aptitudes del idioma.

Algo para reflexionar...

+ ¿Como se puede usar parentese durante el día?

+ ¿Durante cual actividad o rutina yo ponía usar parentese esta semana?



Sabotage

How to Create Opportunities for Your Child To Talk

So often, we don't realize that we give our child everything they need before they even say a word.

There are many opportunities throughout the day to do something “wrong” – whether it is giving your child a container they can't open, putting on mismatched shoes, or keeping an item out of reach – these are all chances for your child to communicate what needs to be fixed! With practice, this can be incorporated into daily routines naturally. Then, as they point and make sounds to communicate, model words they can use such as help, uh-oh, not working or longer phrases such as “Can you open my yogurt?”.

Try This!



Give a toy without batteries in it.



Provide crayons that are broken.



Use the wrong shirt or pants to during dressing routines.



Name an animal incorrectly or pair it with the wrong sound.

Self-Talk

Imagine you have a house guest from another country who does not know much about the daily life of Americans. They are intrigued by every action and ask you to describe and explain what you are doing as you do it. Self-talk is very much like this. It refers to narrating what you are doing so your child hear the language of the activity you are doing together. Self-talk typically begins with “I”.



What You Can Do:

- + When engaging in self-talk, avoid using pronouns such as, “it”, “that”, and “this”. Provide the child with the specific vocabulary you want them to learn.
- + Describe your actions. Think of it as a play-by-play description of the process you are carrying out. Everything has a process.



“The quantity of talk and interactions that parents have with their child, predicts a child’s IQ & vocabulary size more so than any other variable, including parents’ education and socio-economic status.”
— Drs. Betty Hart & Todd R. Risley



Examples:

- “I’m stacking the blocks up higher and higher. I hope the blocks don’t fall! I’m going to add another block.”
- “It’s time to cook dinner. I need to cut the vegetables. Let’s wash them first. Wow! I cut a big piece, now I will cut a little piece.”
- “Let’s go for a walk. I need to find my shoes. Hmm...where are they? I found them! Now I need a jacket. I think it’s cold out. Ok, my jacket is on. Put your jacket on. Your jacket is on. We are ready to go outside.”

Habla Propia

Imagine que tiene un invitado de otra ciudad, que no sabe mucho sobre la vida cotidiana de los estadounidenses. Están intrigados por cada acción y le pedirá que describa y explique lo que están haciendo mientras lo hace. Habla propia es muy similar. Se refiere a narrar lo que están haciendo para que el niño escuche el idioma de la actividad que están haciendo juntos. La conversación comienza con "I".



Lo que se puede hacer:

+ Al participar en la conversación, evitar el uso de pronombres, "eso" y "este" proveer al niño con el vocabulario específico que usted desea que aprenda.

+ Describir su acción. Esta es como un proceso de jugada a jugada que está llevando a cabo. Todo tiene un proceso.



“La cantidad de hablar y las interacciones que los padres tienen con sus hijos, predice un cociente intelectual de niños & vocabulario tamaño más y entonces cualquier otra variable, incluyendo educación de los padres y las situación socio-económica.”

— Drs. Betty Hart & Todd R. Risley

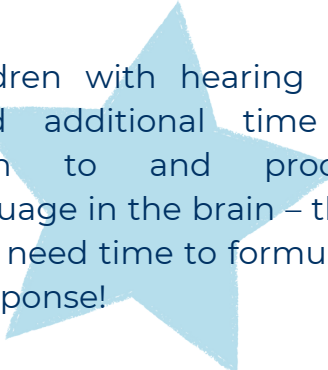


Examples:


- “Estoy juntando los bloques altos y más altos. Espero que los bloques no caigan. Voy a añadir otro bloque.”
- “Es hora de cocinar la cena. Tengo que cortar las verduras. Vamos a lavarlos primero. Wow! Yo corte un trozo grande, pero ahora voy a cortar un pedazo pequeño.”
- “Vamos a dar un paseo. Necesito encontrar mis zapatos. Hummmm...¿dónde están? Los he encontrado! Ahora necesito una chaqueta. Creo que está frío afuera. Ok, ya tengo mi chaqueta puesta. Ponte tu la chaqueta. Tu chaqueta está puesta. Estamos listos para ir fuera..”

Wait Time & Expectant Look


Creating opportunities for listening, talking, & turn-taking



Children with hearing loss need additional time to listen to and process language in the brain – then they need time to formulate a response!



From the moment you realize your child has a hearing loss, you begin implementing strategies to ensure they have the optimal listening and language environment. Often, caregivers are working hard to increase the amount of words their child hears each day. As your child gets older and begins developing more spoken language (vocalizations, approximations, or true words) it is important to give them the additional time they need to process what they have heard and articulate a response. Providing a longer pause not only allows more processing time, but also highlights social and conversational cues that your child will use for the rest of their lives. We can communicate “your turn” without actually saying the words by pausing, making eye contact, and raising our eyebrows. This demonstrates that we are ready and waiting for our partner’s response. Continuing the exchange is a natural reinforcement that each speaker is taking his or her appropriate turn.



Initiate

Provide a model word, sound, or phrase related to a current toy or activity.

Wait

Count to 10 in your head & give your child an expectant look (Think “your turn” - don’t say it!).

Celebrate

Reward your child’s vocalization by giving the desired object, or repeating the fun activity!

Why Talk?

How does talking to my baby from birth help their brain develop?

Establish joint attention



One of the best ways to exercise your baby's brain is to teach them how to share attention with another person toward an event, activity or object. This will help them when developing conversational skills in the future such as initiation, turn taking, and topic focus. You can establish joint attention by using objects that capture their attention, following their lead, and using clear signals when changing an activity.

The Critical Window



Auditory input must begin at an early age to take advantage of the critical window of opportunity that exists from birth to three years of age. Children learn language through listening to it, processing it, and then imitating it as they get older. Essentially, what you put in as an infant and toddler, will come out expressively as your baby develops.

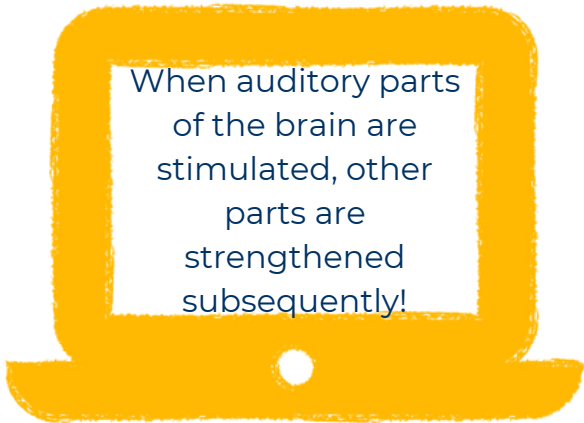
Brain Volume: Did You Know?



At birth, the brain has completed 25% of its development. At one year old, brain volume jumps to 70%. This means from birth to 12 months, 45% is developed. **MAKE IT COUNT!**

Talking Time vs. TV Time

Did you know that a baby's brain can tell the difference between an actual person speaking to her and a person on a TV? Even when the TV image is speaking directly to the child, their brain does not get the same great information it gets from a person who is sitting with them talking. Real face-to-face time is always better than any TV program.



When auditory parts of the brain are stimulated, other parts are strengthened subsequently!

Por que hablar?

? Como hablar con mi bebe desde su nacimiento ayuda a desarrollar se cerebro?

Establecer atencion conjunta



Una de las mejores maneras de ejercer el cerebro de su bebe es ensenandole como compartiratencion con otra persona hacia un evento, actividad o objeto. Esto le ayudara a desarrollar las habilidades de conversacio en el future como por ejemplo la iniciacion, tomar turnos, y enfocarse en el tema. Puede establecer que atencion conjunta al usar objetos que capturen su atencio, al seguir su guia y usar senales claras al camiar de actividad.

La ventana critica



Entrada Auditiva debe empezar una edad temprana oara aprovechar la oportunidad critica que existe desde el nacimiento hasta los tres anos de edad. Los ninos aprenden el lenguaje a traves de escucharlo, procesamiento, y al imitarlo durante su crecimiento. Basicamente, lo que se pone como un bebe y nino. Esencialmente lo que pones en un infant, saldra expresamente durante el desarrollo del bebe.

Cerebro Volumen: Sabia usted?



En el momento del nacimiento, el cerebro ha completado 25% de su desarrollo. A la edad de uno, el cerebro volume salta al 70%, Esto significa desde su nacimiento hasta los doce meses, el 45% se ha desarrollado...HAS QUE CUENTE

Tiempo de conversacion vs. tiempo de TV

Sabia usted que el cerebro de un bebe pude saber la diferencia entre una persona real que hablaba con ella y una persona en un televisor? A un cuando la imagen de la TV esta hablando directamente al nino, su cerebro no recibe la misma informacion que se obtiene de una persona que se sienta con ellos hablando. "Tiempo de cara" siempre es mayor que cualquier programa de television.

En primer lugar, las partes del cerebro auditivo van a trabajar otras partes del cerebro se ven afectados y reforzado posteriormente!