

Maine's Process for Kindergarten Readiness for Children who are Deaf/Hard of Hearing

In an effort to support the language and literacy development of children who are deaf and hard of hearing in the state of Maine, early interventionists and educators will use evidenced-based practices to provide assessment and interventions to support the unique needs of the child and family. This process includes screening the child's language and social development at regular intervals, and continual check-in with the family regarding their choice of modality for the child's communication. If language delays are detected or the child is not making progress in their communication modality, a team of specialists will provide more detailed assessments to identify next steps for intervention. It is important to note that performance on this screening will not disqualify a child from receiving necessary services to support developmental, educational, and linguistic growth.

1. Screening Process

All children who are deaf or hard of hearing will be screened at 6 month intervals, from birth through their entry into Kindergarten, using the following tools:

Birth to 3 years:

A. SKI-HI Language Development Scale

The SKI-HI Language Development Scale is a parent observation scale listing the receptive and expressive language skills of children ages birth to five. It is designed to assist Early Interventionists and teachers in determining a child's present level of function and ensuring chronological age language progression in both spoken and signed language. It is specifically designed for children who are deaf or hard of hearing.

B. MacArthur Bates Communicative Development Inventory

This is a parent-informed measure that examines a child's use and understanding of language. Parents are reliable reporters of their child's language abilities, and this is a quick and easy tool to gain information related to a child's language growth.

C. Auditory to Visual Communication Continuum

This continuum should be used by the educational team to guide discussion and to best support the family's chosen mode of communication for their child. It is a way to plan for long term goals and ensure the team is determining which supports are needed for successful communication upon entering Kindergarten.

3 years to Kindergarten Entry:

A. Ski Hi Language Development Scale

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B. Pragmatics Checklist

This checklist measures growth in pragmatics in the following areas: stating needs, giving commands, expressing feelings, interacting with others, wanting an explanation and sharing knowledge and imaginations. The checklist measures the skills as not present, using no words/preverbal, using 1-3 words, and using more complex language. This tool is used to measure skills in spoken English and American Sign Language, when appropriate.

C. Auditory to Visual Communication Continuum

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2. Assessment of Skills

Results from the screening will be compared to the child's chronological age to determine whether or not a delay is present. If the child's screening results demonstrate at least a 3 month gap between chronological age and current level of functioning, the IFSP/IEP team will discuss whether further evaluation is warranted to determine which areas may require additional support to close this gap. It is the role of the provider to counsel the family regarding all factors which might impact current level of performance. This might include age of diagnosis, length of exposure to language, use of hearing technology, other diagnoses, and other mitigating factors. While these factors have a valid place in the consideration of a child's language development and IFSP/IEP needs, they cannot be used to excuse a delay in the child's language. Instead, providers will be expected to work with the family and the rest of the child's team to determine how best to support the child's language growth and academic success, in light of the child's unique profile.

3. Further Assessment

If the screening tools flag an area of concern in any given area, further evaluation by a specialist may be recommended by the IFSP/IEP team. The suggested tools for evaluation, detailed below, are standardized and allow the evaluator to compare the child's performance to his or her same-age hearing peers.

Evaluations have been selected by providers on the Kindergarten Readiness Task Force with expertise in the areas of American Sign Language, Listening and Spoken Language, Bilingual/Bimodal communication, and evaluating students who are Deaf/Hard of Hearing with additional needs. A description of each of these evaluations is provided below. Evaluators have the flexibility to choose which evaluations to use for each child they evaluate, and can choose from evaluations on this list and/or other evaluations not mentioned here. For children who use Bilingual/Bimodal communication, evaluators are encouraged to choose evaluations from both the ASL and LSL lists to ensure full evaluation of the child's communication skills.

Listening and Spoken Language Evaluations:

Expressive and Receptive Language

A. Preschool Language Scale- 5 (PLS-5)

The PLS-5 is a normed and standardized assessment that examines a child's expressive and receptive language. This assessment allows the evaluator to compare the child's performance to their hearing peers. This assessment was selected due to the manipulatives and pictures used to assess the child's language.

- B. Clinical Evaluation of Language Fundamentals- Preschool (3rd edition) (CELF-P)**
The CELF-P is a normed, standardized assessment used to examine language abilities and communication skills for students ages 3-6 years old. This assessment examines production and comprehension of language, understanding of vocabulary, word and sentence. Be cautious when using this assessment for children who use American Sign Language. There may not be a 1:1 translation from English to ASL. This will affect the validity of the test scores.

Vocabulary

A. Expressive Vocabulary Test- 4 (EVT-3)

The EVT-4 is a norm-based, standardized assessment to examine expressive language skills; specifically, the child's single-word vocabulary. For this test, the child is shown a picture and asked to identify it. This assessment is most commonly paired with the Peabody Picture Vocabulary Test (PPVT). It is commonly used for children who are deaf or hard of hearing because of the minimal directions needed to explain the assessment and the simplicity of the task (i.e., does not rely on comprehension). The evaluator should be aware that for some items within this assessment, a single ASL sign does not exist.

Note: A similar option for assessing single-word expressive language is the Expressive One Word Picture Vocabulary Test- 4 (EOWPVT-4).

B. Peabody Picture Vocabulary Test (PPVT)

The PPVT is one of the most widely used tests for children who are deaf or hard of hearing. This is a normed and standardized test that gives the evaluator the ability to compare the student to their hearing peers. This test assesses receptive vocabulary, or words the child understands. The child is shown four pictures and asked to identify the word said (or signed) by the evaluator. Evaluator should be cautious when interpreting the results of this test if assessing a child using American Sign Language. Sign iconicity and/or lack of 1:1 correspondence for some signs to English may render these test scores invalid.

Note: A similar option for assessing single-word receptive language is the Receptive One Word Picture Vocabulary Test (ROWPVT).

Speech

A. Goldman Fristoe Test of Articulation-3 (GFTA)

The Goldman Fristoe is a standardized assessment that provides information regarding how children produce sounds within words. Using a picture-naming task, the child is given the opportunity to produce every sound (in English) in every position of a word (beginning, middle and ending). Using story retell, this test also examines how the child produces sounds when they are within sentences, in order to examine co-articulation. This test would be appropriate for a child that is using spoken English and has a spoken vocabulary equivalent to *at least* a 3 year old. The child must be able to imitate words if the vocabulary presented is unknown.

Auditory Skill Development

In order to support a Listening and Spoken Language outcome, auditory development must be monitored closely in combination with appropriate audiological management. The following are suggested sources for monitoring auditory development.

A. Cochlear Integrated Scales of Development

The Integrated Scales of Development supports the monitoring and tracking of the child's development from birth to 48 months in the areas of: Listening, Receptive Language, Expressive Language, Speech, Cognition, and Pragmatics. The tables have been adapted from a number of sources, and the stages in each area of development are marked as emerging skills or achieved skills. Each area of development can be monitored by chronological age as well as hearing age to ensure appropriate progress is being monitored.

B. Auditory Learning Guide

The Auditory Learning Guide follows a hierarchy across different areas necessary for listening skills. The guide includes five areas, or levels, listed across the top of the page, and each level has one or more steps. It is a chart which visually shows how several areas of auditory development occur concurrently like they do with hearing children, and is used to guide interventions.

C. Auditory Skills Checklist (Cincinnati Children's Hospital Medical Center)

The Auditory Skills Checklist is an evaluation tool designed to assess and track a child's auditory capabilities over time. The ASC is a 35-item checklist used by the managing audiologist or therapist, and it relies on a combination of the family's observations of their child's auditory and language skills along with the observations of the managing clinician during therapy/audiology sessions. Based on observed patterns of auditory skill development, items on the ASC follow a continuum starting with detection, then progress to discrimination, identification, and comprehension. Questions probe a wide range of skill levels, including basic skills such as wearing amplification and showing awareness of environmental sounds.

D. Auditory Skills Checklist

The Auditory Skills Checklist is a simplified summary of auditory skills, broken into 10 levels, each with 4 skills and examples. It is a useful way to track progress on auditory development as a part of early intervention over time.

American Sign Language (ASL) Evaluations

Expressive and Receptive Language

A. CALIFORNIA ASL Development Observation Record

The CALIFORNIA ASL Development Observation Record was developed by the Early Childhood Department at the California School for the Deaf in Fremont, California. This tool assesses three areas of development: communicative intent, ASL comprehension, and ASL production. Skills can be measured for ages ranging from 3 months to 6 years of age.

Expressive Language

A. VCSL-The Standardized Visual Communication and Sign Language Checklist, Simms, Baker and Clark, 2013

The VCSL Checklist is a standardized instrument used to assess the achievement of linguistic milestones in American Sign Language. Normative data is based on children ages birth to 5 who have been exposed to ASL since birth. The purpose of the checklist

is to locate a proximal zone of development in ASL by identifying a child's basal and ceiling items. Each line item is scored Emerging, Inconsistent Use, or Mastered.

Receptive Language

A. ASL-RST-American Sign Language Receptive Skills Test, Northern Sign Research, Inc.

The ASL-RST measures children's receptive ASL skills, and their understanding of ASL grammar in phrases and sentences. It was developed for children between the ages of 3 and 13 years. The grammatical structures measured within the completed test are Number/Distribution, Negation, Noun-Verb Distinction, Spatial Verbs (Location), Spatial Verbs (Action), Size and Shape Specifiers, Handling Classifiers, Role Shift, and Conditionals. Standard scores of 85-115 are considered in the average range.

Bilingual/Bimodal Evaluation

When assessing a child that is using both American Sign Language and Spoken English, it is important to determine the child's primary language. Things to consider are: Which language is used primarily at home? Which language is used at school? Which language was introduced first? What ages were the languages introduced? Which language is primarily used by the parents?

The evaluator may find that the language competency is either equivalent, or the child may be skilled in one language over the other. The evaluator should consider using assessments to examine all aspects of language in the child's primary language first. Language delays and disorders should be determined using the child's primary language.

Assessments in the child's secondary language should also be administered. This will provide information related to the child's language learning in the second language. Differences between the two languages should be considered as there may be interference from the first language. For example, if the child's primary language is American Sign Language, a language that does not have articles (e.g. a, an, the) or grammatical morphemes (e.g. -ing, -ed), the child's omission of these aspects in spoken English should NOT be considered a language disorder. This is considered to be interference from the child's first language. If a language delay/disorder exists, it will be present in **both** languages.

When a child who is deaf or hard of hearing is demonstrating delays in spoken English, the providers should work closely with the audiologist to ensure the child has adequate auditory access to spoken language (See: Audiological Review). Remember, adequate auditory access does not mean a child's brain is processing the speech signal. Auditory processing assessments (e.g. Test of Auditory Processing Skills) can be used to examine auditory memory and auditory processing.

4. Audiological Review

An audiological review must be completed for children who utilize hearing technology to support their communication outcomes and who do not meet language milestones, as identified through the screening process. This review consists of several components, as outlined below. Please note, the collection of this information may be a collaboration between the audiologist and other members of the child's educational team. At minimum, the managing audiologist will be asked to obtain the aided SII scores, the results of the Ling 6 (HL) Test, speech perception testing, and

the Functional Listening Evaluation, if warranted. The educational audiologist may be able to support the collection of some of this data as well.

A. Aided Speech Intelligibility Index (SII) Scores

Aided SII scores, obtained using aided real ear measures, provide a measure of a child's aided auditory access across the frequency range. The SII is a calculation of the total percentage of speech information that is audible at the given presentation level. The SII is typically calculated by ear, and at multiple input levels (soft, average, and loud speech). Research has shown a positive relationship between SII scores (80 or better for average speech) and later language outcomes for children who use listening and spoken language. SII scores below 80 for average speech inputs may indicate that more supports are needed to ensure full access to language and communication.

B. Ling 6 (HL) Test

The Ling 6 (HL) Test provides an aided audiogram based on the child's responses to recorded Ling sounds. This test has normative values, providing audiologists with a general guideline for where a child should be accessing each Ling sound according to their hearing levels. The benefit of this information is two-fold; it provides a functional aided audiogram which details how a child makes use of their appropriately-fit hearing technology, and it serves as a counseling tool for families and the educational team regarding what a child may be expected to hear.

C. Age-appropriate speech perception testing

Much like the Ling 6 (HL) Test, aided speech perception testing is an important tool to determine how spoken language is functionally accessed by the child when personal hearing technology is used. While not technically a measure of speech perception, speech awareness and speech reception threshold testing are early measures of a child's access to spoken language. Later, speech perception testing is expanded to include closed- or open-set tasks such as the Early Speech Perception (ESP) test, Word Intelligibility by Picture Identification (WIPI) test, the Northwestern University Children's Perception of Speech (NU-CHIPS), the Phonetically Balanced Kindergarten (PBK) word lists, the CNC word lists, the Hearing in Noise Test (HINT), and the Baby Bios. Stimuli are chosen based on the child's listening and developmental age.

D. Validation Measures

Validation measures, such as parent questionnaires, provide insight on a number of areas, including the child's functional auditory skills, reported device wear time, and the family's comfort with technology. Research suggests that full-time daily use (ten hours or more) of hearing technology supports improved spoken language outcomes. These validation measures will help the team to determine whether progress is being made toward full-time hearing technology use.

a. LittIEARS

This auditory questionnaire is designed to screen the auditory development of children who use cochlear implants or hearing aids. It covers auditory development in the first 2 years after a CI or HA fitting (up to 2 years of listening age). This questionnaire has 35 questions assessing auditory behaviors across a variety of "real-world" listening environments.

b. PEACH - The Parents' Evaluation of Aural/Oral Performance of Children

This questionnaire is generally used once a child "ages out" of the LittIEARS. Thirteen scenarios are provided, and parents are asked to assess their child's performance in each of these areas over the course of a week. Scenarios include listening in quiet and in background noise, and hearing technology usage.

E. Functional Listening Evaluation (as developmentally appropriate)

The Functional Listening Evaluation can be used to determine a child's access to spoken language in a more natural environment, such as in their classroom. Parameters that can be manipulated include the level of background noise in the environment, distance from the evaluator, type of stimuli used, and use of remote microphone technology. This information adds an additional piece of information in terms of a child's ability to access spoken language in a noisy environment, as well as whether the use of remote microphone technology might improve that access.

5. Evaluations for children who are Deaf with Additional Needs

A. Verbal Behavior Milestones Assessment and Placement Program (VB-MAPP)

The Verbal Behavior Milestones Assessment and Placement Program (VB-MAPP) is an assessment and skills-tracking system used to assess the language, learning, and social skills of children with autism or other developmental disabilities. A strong focus of the VB-MAPP is language and social interaction, which are the predominant areas of weakness in children with autism.

The VB-MAPP is most commonly used to assess individuals with autism and other developmental disabilities, but can also be used for children who demonstrate delays in language development. It is intended to be used by individuals who have training in Applied Behavior Analysis (ABA) and is primarily used by behavior analysts, speech-language pathologists, school psychologists, and special educators to assess strengths and weaknesses in skills and behaviors that might impede language and social development. The results of this assessment help to prioritize intervention needs, provide feedback to parents and other professionals, guide curriculum planning, and track skill acquisition.

The VB-MAPP set contains an individual scoring protocol and users guide. The main components of the VB-MAPP are:

- Milestones Assessment: Focuses on 170 milestones that serve as the foundation of language, learning and social development.
- Barriers Assessment: Focuses on barriers that may impede the acquisition of new skills.
- Transition Assessment: Serves as a guide for planning the child's educational needs.
- Task Analysis and Skills Tracking: A checklist of skills that support the developmental milestones and can be used for daily curriculum activities and skill tracking.
- The Users Guide provides the scoring criteria, examples, tips for the tester, and an overview of Skinner's analysis of verbal behavior. Included are placement and Individualized Education Program goals to establish intervention and curriculum priorities that are measurable, meaningful and manageable.

The Milestones Assessment is broken down into three levels:

- Level 1 (0-18 Months)
- Level 2 (18-30 Months)
- Level 3 (30-48 Months)

B. Communication Matrix

The communication matrix is an assessment tool designed to pinpoint exactly how an individual is communicating and to provide a framework for determining logical communication goals. It allows you to think through how to communicate most efficiently and effectively to the various constituents.

It was designed primarily for speech-language pathologists and educators to use to document the expressive communication skills of children who have severe or multiple disabilities, including children with sensory, motor and cognitive impairments. It uses a concise format that is designed for rapid administration by persons familiar with the assessment.

6. Strategies when assessing children who are deaf or hard of hearing

1. The examination room should have minimal to no competing noise. For example, fans, classroom noise, outside noise (e.g. cars) will compete with the speech signal.
2. The evaluator should not have their back to a window, to avoid being backlit. Likewise, a sunny window directly facing the evaluator may create a glare on the face, making speech reading and looking at the face for visual cues difficult.
3. Increasing fatigue throughout the day is commonly seen in children who are deaf/hard of hearing. This is due to the strain of attending visually and auditorily in the classroom. Assessment of the child should take place in the morning, when the child is less likely to be fatigued.
4. When an interpreter, translator, or transliterator is needed, the evaluator should ensure they are familiar with the testing items and the concepts being evaluated. When available, a Certified Deaf Interpreter (CDI) should be present to facilitate language during the evaluation, and observe the child's responses to support the validity of the evaluation. Most standardized assessments were not normed for children using American Sign Language. As with any language difference, the interpretation is not always a 1:1 correspondence. It is also important to note that for some items, the iconicity of American Sign Language may lead the child to identify the correct answer, potentially inflating the scores. There may also be some items that do not have a 1:1 match between the sign and English word. This may make some test items more challenging for children relying on American Sign Language.