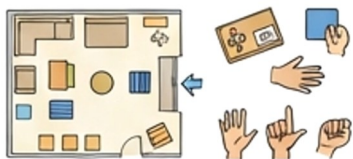




LPK Reading Literacy

Deaf & Hard of Hearing Assessment and Intervention Guide

For DHH Itinerant and Classroom Teachers



**Setting Up the
Assessment Space**



**The Core
Assessment**



**Action &
Intervention**

dcmp.org

Described and Captioned Media Program



A Bell Association for the
Deaf and Hard of Hearing



World Federation of the Deaf

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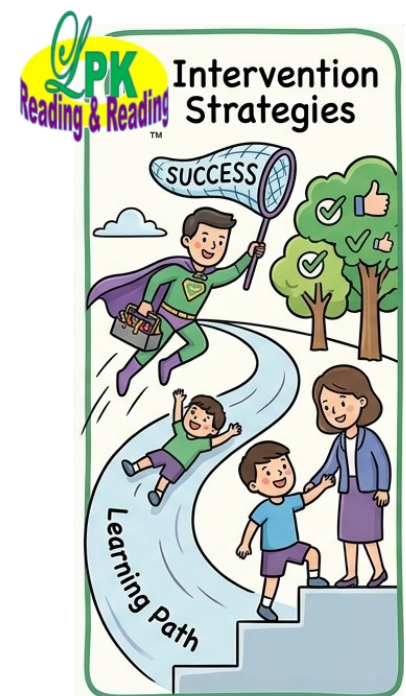
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The Deaf & Hard of Hearing (DHH)

Assessment and Intervention Guide

Part 1: Introduction



Welcome to the **Foundations for a Deaf & Hard of Hearing (DHH) Assessment and Intervention Guide**. Evaluating literacy skills in DHH learners requires moving beyond standard diagnostic frameworks designed for neurotypical, hearing populations. For students relying on American Sign Language (ASL), speechreading, assistive listening devices, or captions, reading instruction and assessment must adapt to reflect visual and multi-modal language acquisition pathways (Easterbrooks and Huston, 2007; Lederberg et al., 2013).

How to Use This Guide

This guide provides targeted assessment strategies and intervention tools designed around visual, orthographic, and sign-based pathways to literacy.

The DHH Literacy Paradigm Shift

Traditional literacy diagnostics rely heavily on auditory-phonological processing (phonemic awareness via spoken sound analysis). However, research demonstrates that DHH students access phonological structures differently—often using fingerspelling, visual-spatial representations, and orthographic patterns as bridges to text (Narr, 2006; Stone et al., 2015; Schick, 2026). Traditional phonics-heavy assessments frequently measure acoustic access rather than underlying language competence or reading capacity (Mayberry et al., 2011; Lederberg et al., 2019). Implementing visual, visual-spatial, and sign-based diagnostic alternatives ensures evaluations capture authentic conceptual knowledge and literacy progress (Antia et al., 2020).

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Part 1: Introduction



Setting Up the Assessment Environment

An accurate assessment depends on a controlled communication environment:

Minimize Visual Noise: Clear background clutter behind the evaluator to reduce visual fatigue and maintain visual focus (Marschark and Hauser, 2012).

Optimize Lighting: Ensure light sources face the evaluator/materials rather than shining behind them, avoiding shadows across the face or hands that interfere with speechreading or signing (Marschark and Hauser, 2012).

Establish a Communication Baseline: Determine the student's preferred visual modality (e.g., ASL, Signed English, Cued Speech, captioned text) prior to testing to avoid confounding linguistic access with cognitive task performance (Yoshinaga-Itano et al., 2024; Nicastri et al., 2021).

Target Audience & Scope

This booklet is designed as a practical, go-to resource for:

DHH Itinerant and Classroom Teachers looking for targeted, non-traditional ways to measure reading readiness.

Speech-Language Pathologists (SLPs) and Educational Audiologists collaborating on language development plans.

Special Education Coordinators who need to write meaningful, evidence-based IEP goals.

Parents and Guardians who want to understand how their child's unique language skills are being measured and supported.

Part 1: Introduction



- **Visual Story Sequence Test:** Uses sequential imagery and sign language to evaluate narrative comprehension without relying on spoken language.
- **Captioned Video Reading Comprehension:** Assesses real-time text processing and reading speed using dynamic captioned media.
- **Sign Language Vocabulary Recognition:** Evaluates receptive and expressive conceptual vocabulary mapped to printed English equivalents.
- **Speech-to-Text Literacy Assessment:** Measures a student's ability to navigate, track, and extract meaning from live-captioned or transcribed spoken content.
- **Phonological Awareness in Signers Test:** Examines orthographic and sub-lexical awareness using fingerspelling mappings rather than acoustic sound blending (Stone et al., 2015; Schick, 2026).

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Part 2 The Core Assessments

Assessment 1: The Visual Story Sequence Test (VSST)

- *What it is:* Assessing narrative comprehension using sequential images and sign language.
- *Implementation:* Step-by-step instructions for running the test without relying on spoken or written English.
- *Scoring & Interpretation:* Identifying gaps in chronological logic and narrative structure.

The **Visual Story Sequence Test (VSST)** is a highly specialized, non-verbal, and sign-supported literacy assessment designed specifically for Deaf and Hard of Hearing (DHH) students.

Traditional reading assessments often fail DHH signers because they rely on auditory working memory or spoken English phonology. The VSST bypasses these barriers to isolate and measure **narrative schema, cognitive sequencing, and sign language retelling skills**.

Below is a complete template, administration guide, and rubric to help you implement this test.

- **Target Age/Developmental Level:** Pre-K through 3rd Grade (or older students with suspected language delays/deprivation).
- **Time Required:** 10–15 minutes.
- **Materials Needed:** A set of 4–6 sequential, highly expressive cartoon/photo cards (with zero text) and a scoring sheet.

1. Test Preparation: The Stimulus Cards

For this example, we will use a **4-step sequence** titled: “*The Lost Balloon.*” The cards must feature highly descriptive characters, clear cause-and-effect actions, and rich facial expressions.

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- **Card A:** A smiling child walks down the sidewalk holding a red balloon tied to a string.
- **Card B:** A sudden gust of wind blows (depicted by leaves swirling), and the string slips out of the child's hand.
- **Card C:** The child looks sad/crying, pointing up at the red balloon floating high up in the sky.
- **Card D:** A friendly bird flies by, snags the balloon's string in its beak, and looks down toward the child.

2. Administration Protocol

Conduct this assessment in a quiet, well-lit room free of visual distractions. Ensure you have established a comfortable, clear signing space.

- **Establish the Baseline:** 1 minute.

Sit directly opposite the student. Confirm they are comfortable using sign language (ASL or their preferred visual communication system).

- **Introduce the Task (No Clues):** 1 minute.

Mix up the 4 cards (A, B, C, D) and place them randomly on the table in front of the student.

ASL Prompt: *"Here are some pictures. They tell a story, but they are mixed up. Put them in order from first to last so the story makes sense."*

- **Observe and Record the Sequencing Phase:** 3 minutes.

Allow the student to manipulate the cards. Do not assist or correct them.

Note: Watch their eyes. Are they scanning? Do they hesitate? Record the exact card order they present to you (e.g., B-A-C-D).

- **Execute the Retelling Phase:** 3-5 minutes.

Once the student has arranged the cards (even if they are in the wrong order), point to the sequence.

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ASL Prompt: *"Beautiful. Now, use your signs to tell me this story. Start here [point to their first card] and tell me what is happening."*

3. Scoring & Diagnostic Rubric

The VSST uses a **dual-component rubric** to separate cognitive sequencing from linguistic expression.

Component 1: Cognitive Sequencing Score (0–4 points)

This measures structural logic, cause-and-effect recognition, and chronological awareness, independent of sign language mastery.

Score	Performance Criteria
4	Perfect Sequence: The student correctly orders all 4 cards (A □ B □ C □ D) without hesitation.
3	Minor Inversion: The student swaps two adjacent steps but maintains the overall logic (e.g., A □ B □ D □ C).
2	Partial Logic: The student correctly identifies the start and end (A and D) but scrambles the transition cards in the middle.
1	Fragmented: Only two cards are correctly linked; the rest show no logical flow.
0	No Logic: The cards are placed randomly with no understanding of chronological flow.

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Component 2: Sign Language Narrative Score (0–4 points)

This measures expressive language, vocabulary depth, use of space, and visual classifiers.

Score	Performance Criteria
4	Rich Narrative: Retells the story with a clear beginning, middle, and end. Uses rich facial expressions, spatial mapping (e.g., signing the balloon floating "up"), and descriptive classifiers (e.g., handshape mimicking the wind blowing or the bird flying).
3	Functional Retelling: Accurately describes what is happening in each card. Uses appropriate signs but relies on a rigid card-by-card description rather than a fluid narrative flow. Minor grammar or classifier errors.
2	Labeling Only: Points to the pictures and signs single vocabulary words (e.g., <i>BOY</i> , <i>BALLOON</i> , <i>WIND</i> , <i>CRY</i>) rather than forming complete sentences or conceptual links.
1	Emergent: Relies entirely on simple pointing, gesturing, or miming; shows very minimal or highly restricted sign vocabulary.
0	No Narrative: Unable to convey any story or meaning from the cards, even when prompted.

Diagnostic Insight: If a student scores a **4 on Sequencing** but a **1 on Narrative**, they possess strong cognitive processing and understanding of story schema, but require heavy expressive language intervention. Conversely, a **1 on Sequencing** but a **3 on Narrative** suggests a child who is highly expressive but struggles with chronological planning, temporal concepts, or working memory.

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Part 2 The Core Assessments

Video Scene & Caption Script

The table below maps what is happening visually on screen to the exact text appearing in the captions.

Octopus Camouflage Mastery: The Most Incredible Animal on Earth

<https://www.youtube.com/watch?v=Y7AJP4pGy-w>

The text has been cleaned of spoken-transcript stuttering, run-on sentences, and missing capitalization to make it perfectly clean, professional, and ready to be used as accurate reading captions. Only to be used for further accommodations.

Video Caption Script

Video Title: *Octopus Camouflage Mastery: The Most Incredible Animal on Earth*

Format: Episode 5

Timestamp	Corrected Caption Text (Corrected SPaG)
0:00 - 0:07	"Episode 5: Octopus Camouflage Mastery, the most incredible animal on Earth. Welcome back to Did You Know?"
0:07 - 0:15	"Amazing animal facts! Today, we are diving into the deep blue sea to explore one of nature's most fascinating creatures: the octopus."
0:15 - 0:22	"These intelligent and adaptable animals have captured the imagination of scientists and the public alike. Let's dive in."
0:22 - 0:29	"Octopuses are renowned for their incredible ability to change their appearance in a flash. They can mimic rocks, sea plants, and even other animals."
0:29 - 0:37	"This camouflage helps them avoid predators and sneak up on prey. But how do they do it?"
0:37 - 0:45	"Octopuses have specialized cells called chromatophores that contain pigments of different colors."
0:45 - 0:53	"By controlling these cells, they can alter their skin tone and pattern to match their surroundings. Octopuses are not only masters of disguise, they are also incredibly
0:53 - 1:02	"Studies have shown that they can solve puzzles, open jars, and even use tools. Some species have even been observed playing with objects."

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Part 2 The Core Assessments

Assessment 2: Captioned Video Reading Comprehension (CVRC) (Screen-Text Tracking)

- *What it is:* Evaluating reading comprehension when text is paired with dynamic, real-time visual media.
- *Implementation:* Choosing the right video-to-text speed and text-density for different grade levels.
- *Scoring & Interpretation:* Distinguishing between visual distraction and genuine reading comprehension.

The Captioned Video Reading Comprehension (CVRC) Test

At this developmental stage, DHH students transition from reading basic, slow-paced captions to processing fast-moving, academic text on screens. This test measures a student's ability to read, track, and comprehend real-time captioning under controlled conditions without relying on auditory input.

- **Target Group: Grades 6–8 (Ages 11–14)**
- **Time Required: 15 minutes**

Testing Condition: Muted Video (This isolates the visual reading pathway. If a student uses residual hearing or assistive listening tech, note it on the score sheet, but muting is the standard for isolating caption-reading comprehension).

1. Test Preparation: The Video Stimulus

You will need a short, engaging informational video. For this test, we use a 129-second educational clip about marine biology.

Video Subject: Octopus Camouflage Mastery: The Most Incredible Animal on Earth

- **Video Length:** 129 seconds
- **Caption Speed:** Approximately 130 words per minute (WPM)—the standard pace for middle school media.

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1:02 - 1:10	"Their complex nervous system allows them to learn and adapt to new situations. It is no wonder they are considered one of the most intelligent invertebrates on Earth."
1:10 - 1:18	"Octopuses have eight flexible arms covered in suction cups. These arms are incredibly versatile, allowing them to grasp, manipulate, and even taste their environment."
1:18 - 1:25	"Each arm is controlled by its own nerve bundle, giving octopuses incredible
1:25 - 1:32	"Did you know that octopuses can regenerate their arms if they are lost? This ability is a testament to their incredible adaptability."
1:32 - 1:41	"When faced with danger, octopuses have a variety of defense mechanisms."
1:41 - 1:48	"One of the most famous is their ability to release a cloud of ink. This ink can disorient predators and provide cover for the octopus to escape."
1:48 - 1:55	"Another defense mechanism is camouflage. Octopuses can change their appearance to blend in with their surroundings, making it difficult for predators to spot them."
1:55 - 2:02	"And that is just a glimpse into the amazing world of octopuses."
2:02 - 2:09	"These incredible creatures are a testament to the diversity and complexity of life on Earth."
2:09 - End	"Join us next time for more fascinating animal facts!"

2. Test Administration Steps

Follow these steps to ensure the student understands the task parameters and is comfortable with the technology.

Check the Technology Baseline: 2 mins.

Set the video player to display high-contrast, standard closed captions (sans-serif white text on a translucent black background). Ensure the screen is at eye level and free of glare.

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Part 2 The Core Assessments

Instruct the Student: 1 min.

Explain that they will watch a video with the sound off.

ASL/Signed Prompt: *"You are going to watch a short, quiet video about an octopus. Do not worry about the sound. Your job is to read the captions at the bottom to learn about the octopus. Afterward, I will ask you some questions."*

Run the Video (First Pass): 2 mins.

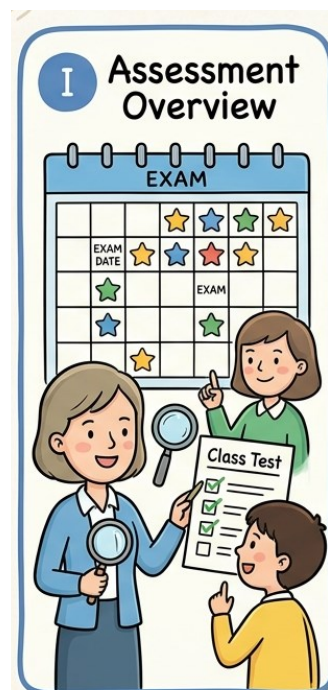
Play the **129-second video** without stopping. Do not sign or interrupt during playback. Observe the student's eyes—are they tracking the captions, or are they solely focused on the background visual action?

Optional Second Pass (Accommodation): 2 mins.

Note: Standard testing permits only one viewing. However, if the student's IEP allows for repeated media presentation, play the video a second time.

Administer the Comprehension Questions: 8 mins.

Provide the printed question sheet to the student, or sign the questions to them if they require a signed translation of the test questions.



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Part 2 The Core Assessments

3. Student Assessment Worksheet

Provide these questions to the student immediately after viewing the muted video.

Cut, paste and recreate if needed.

Part A: Literal Recall (Directly from Captions)

1. What are chromatophores?
 - A) Suction cups on the octopus's arms.
 - B) Tiny bones that help the octopus squeeze through rocks.
 - C) Specialized cells containing color pigments.
 - D) Sharp, beak-like mouths used to catch prey.
2. According to the captions, what amazing physical recovery are octopuses capable of if they lose an arm?

Write your answer: _____

Part B: Inferential Comprehension (Caption + Visual Integration)

3. The video shows and discusses the octopus changing its appearance "in a flash." Based on the captions, name two natural objects in their environment that they mimic to hide from predators:

- 1.
 - 2.
4. The captions note that octopuses can solve puzzles, open jars, and play with objects. Explain how having a "complex nervous system" and arms controlled by their "own nerve bundles" helps them adapt to new situations.

Write your answer: _____

Part C: Vocabulary in Context

5. Read this caption from the video: *"Each arm is controlled by its own nerve bundle, giving octopuses incredible dexterity."* Based on how they use their arms to grasp and manipulate objects, what does the word "dexterity" mean?

- A) Deep-sea camouflage
- B) Skill and ease in using one's hands/limbs
- C) The physical strength to crush things
- D) A natural sense of taste

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Part 2 The Core Assessments

3. Student Assessment Worksheet

[Scoring, Performance Rubric, and Answer Key](#)

To score the test, assign 2 points per question (Total: 10 points).

Scoring Answer Key

1. C (Specialized cells containing color pigments) — *2 points*
2. They can regenerate their arms — *2 points*
3. Rocks and sea plants (either order; accept "other animals" as well) — *2 points*
4. Accept logical variations stating: It gives them incredible physical control (dexterity), allows them to learn, use tools, or control each arm independently. — *2 points*
5. B (Skill and ease in using one's limbs) — *2 points*

Score	Reading Profile	Instructional Next Steps
9 - 10	Independent	The student tracks captions well at 130 WPM. Introduce more complex academic texts/videos with higher vocabulary
7 - 8	Instructional	Good comprehension, but may miss details. Pre-teach complex context vocabulary (e.g., <i>chromatophores</i> , <i>dexterity</i>) before viewing, or pause the clip to check on key terms.
0 - 6	Emergent / Frustrated	The student struggles to keep up with the reading pace. Slow the playback speed to 0.85x or practice using static printed caption strips alongside the video

Tech Tip: If a student scores poorly because their eyes are glued to the moving fish rather than the text, practice the "Caption Highlight" strategy: use software that dynamically highlights the words in yellow as they are spoken, drawing the student's eyes back down to the text.

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Part 2 The Core Assessments

Assessment 3: Speech-to-Text Literacy Assessment

- *What it is:* Measuring a student's ability to follow written language as it is converted in real time from spoken words.
- *Implementation:* Setting up assistive technology and assessing tracking skills.
- *Scoring & Interpretation:* Identifying speed thresholds and comprehension gaps in live-assistive settings.

The **Speech-to-Text Literacy Assessment (STT-LA)** is designed for Deaf and Hard of Hearing (DHH) students who utilize real-time speech-to-text assistive technologies (such as CART, automatic speech recognition apps, or live captioning systems) in the classroom.

While traditional literacy assessments evaluate static reading, the STT-LA measures a dynamic skill: **real-time literacy tracking**. It determines how effectively a student can read, process, and comprehend live-flowing text as it is spoken by a teacher or peer.

- **Target Age/Developmental Level:** Grades 3 and up (Ages 8+).
- **Time Required:** 15 minutes.

Materials Needed: A speech-to-text software/device (e.g., Otter.ai, Ava, MS Translator, or a simulated live-captioning screen), a pre-written spoken script, and a student comprehension worksheet.

1. Implementation & Technology Setup

To ensure the assessment measures reading tracking rather than technical lag, follow these strict setup guidelines:

Step A: Aligning the Assistive Technology

- **Hardware:** Place the screen displaying the real-time text at the student's comfortable eye level, adjacent to the speaker or whiteboard to minimize head-turning fatigue.
- **Software Tuning:** Set the font to a clear, high-contrast, sans-serif typeface (minimum 24pt font size for easy tracking). Ensure there is a 1-to-2-second buffer delay at most.

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Part 2 The Core Assessments

Acoustics: Ensure the teacher/speaker uses a high-quality external microphone to prevent transcription errors that could confuse the student's reading comprehension.

Step B: The Live Tracking Observation

While speaking the text, the assessor must closely watch the student's visual tracking behaviors and log them on the scoring sheet. **Note:**

- *Eye gaze:* Is the student's eye movement synchronized with the text generation?
- *Lag recovery:* When the text jumps as a chunk, does the student show signs of visual disorientation?
- *Fatigue:* Does the student stop reading or look away after extended blocks of live-flowing text?

2. Assessment Protocol: The "Speed-Burst" Script

The assessor reads the following script out loud at a natural, controlled pace. Do not sign. The student must rely entirely on the speech-to-text output appearing on their screen.

Instruction to Student: *"I am going to speak into this microphone, and my words will appear on your screen as text. Please read the words as they appear. When I am finished, I will ask you a few questions about what you read."*

[Assess at Normal Pace — Approx. 110 WPM]

"Every spring, millions of monarch butterflies travel thousands of miles. They fly from Canada all the way to warm forests in Mexico. This incredible journey is called migration. Because they are so small, scientists wonder how they survive the strong winds."

[Assess at Fast/Academic Pace — Approx. 140 WPM]

"To track their movements, researchers carefully stick tiny, lightweight stickers onto the butterflies' wings. When people find these marked monarchs, they report the location online. This community data helps us map their flight paths and protect their fragile habitats."

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3. Student Comprehension Worksheet

Administer these questions immediately after the speech-to-text stream stops.

1. **According to the live text, where do the monarch butterflies travel to spend the winter?** (Literal Recall)

o *Answer:* Mexico.

o **What specific word did the text use to describe this "incredible journey"?** (Vocabulary/Recall)

o *Answer:* Migration.

o **What do researchers stick onto the butterflies' wings to track them?** (Literal Recall - Fast Pace)

o *Answer:* Tiny, lightweight stickers.

o **How does finding a marked butterfly help scientists protect them?** (Inferential Comprehension - Fast Pace)

Answer: It helps map their flight paths and protect their fragile habitats.

4. Scoring & Interpretation Guide

The scoring system evaluates both **speed thresholds** (how fast a student can read rolling text) and **comprehension gaps** (identifying where the student dropped off due to speed).

Component 1: Speed Threshold Rating

Evaluate the student's eye tracking and comprehension based on the transition from the normal pace (110 WPM) to the fast/academic pace (140 WPM).

- **Optimal Speed (140+ WPM):** Student tracked both sections flawlessly and answered all questions correctly. They are highly proficient with live-assistive technology in fast-paced lectures.

- **Functional Speed (110–120 WPM):** Student successfully comprehended the first half, but showed signs of tracking fatigue, eye-lag, or skipped questions in the second (faster) half.

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- **Emergent Speed (<100 WPM):** Student was visually overwhelmed. They frequently lost their place, looked away from the screen, or could only answer the first question.

Component 2: Comprehension Gaps & Instructional Actions

Observed Error	Root Cause	Targeted Intervention
Missed questions only from the second half of the text.	The student hit a speed ceiling. The scrolling text moved faster than their decoding rate.	Action: Train the student to use STT software with customizable scroll speeds or auto-pause features. Practice with pre-recorded, slower-paced video captioning.
Incorrect answers due to auto-correction typos (e.g., "monarchs" transcribed as "monks").	Inability to apply context clues to fix technical spelling anomalies in real time.	Action: Play "Fix the Typo" games. Intentionally introduce minor transcription errors into a text and have the student use surrounding context to deduce the real word.
Excellent comprehension but reports high physical/visual fatigue.	Poor screen placement or lack of visual break strategies.	Action: Adjust the physical environment. Position the STT screen slightly lower than eye level to reduce neck strain, and teach "gaze-shifting" pauses during natural spoken pauses.

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Part 2 The Core Assessments

Assessment 4: Sign Language Vocabulary Recognition

- *What it is:* Pinpointing knowledge of key academic and everyday words directly through sign.
- *Implementation:* Administering sign-concept matching and vocabulary-depth tasks.
- *Scoring & Interpretation:* Mapping vocabulary strengths to guide reading material selection.

The Sign Language Vocabulary Recognition (SLVR) Test is a diagnostic tool designed to evaluate a Deaf and Hard of Hearing (DHH) student's semantic database.

Traditional vocabulary tests often require a student to read a word and match it to a picture, which conflates decoding skills with actual vocabulary knowledge. The SLVR isolates language comprehension by directly measuring a student's conceptual understanding of both **everyday concepts** and **academic terminology** directly through sign language.

Sign Language Vocabulary Recognition (SLVR) Test

- **Target Age/Developmental Level:** Kindergarten through 5th Grade (Ages 5–11).
- **Time Required:** 15–20 minutes.

Materials Needed: A quiet room with good lighting, a scoring profile sheet, and a set of custom picture plates (each plate showing a choice of 4 images).

1. Test Structure & Administration Protocol

The SLVR test is split into two progressive sections to evaluate both breadth (matching a sign to a concept) and depth (explaining or categorizing a sign).

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Part 2 The Core Assessments

Section A: Sign-Concept Matching (Vocabulary Breadth)

This section determines if the student has a baseline mental connection between a manual sign and its real-world visual concept.

- **Task:** The teacher produces a target sign. The student is shown a picture plate containing four distinct images and must point to the image that matches the signed concept.

Example Item (Academic Level):

- **Teacher signs:** METAMORPHOSIS (using the ASL sign for *change/transform* combined with a finger-fluttering motion indicating a caterpillar changing to a butterfly).
- **Visual Plate Options:**
 - ✦ *Image 1:* A plant absorbing sunlight (Photosynthesis).
 - ✦ *Image 2:* A caterpillar transforming into a butterfly (**Correct Match**).
 - ✦ *Image 3:* Water evaporating into a cloud.
 - ✦ *Image 4:* A magnet attracting iron filings.

ASL Prompt: "Look at my sign: [Signs METAMORPHOSIS]. Look at these four pictures. Point to the picture that matches my sign."

Section B: Vocabulary-Depth Task (Semantic Mapping)

This section evaluates how deeply the student understands a sign beyond simple recognition. It assesses their ability to categorize, define features, or identify synonyms/antonyms in sign.

- **Task:** The teacher signs a target word and asks the student to explain its characteristics, associate it with other signs, or use it in a descriptive sentence.

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Part 2 The Core Assessments

Example Item (Everyday Level):

- **Teacher signs:** HABITAT.
- **ASL Prompt:** *"Tell me or show me in sign: What does HABITAT mean? Where do we find it? Can you give me two examples of a animal's HABITAT?"*

Scoring Criteria for Depth:

- ✦ *No credit (0 pts):* Student shrugs or signs something unrelated (e.g., *HABIT* or *RABBIT*).
- ✦ *Partial credit (1 pt):* Student gives a simple association (e.g., signs *HOME* or *FOREST*).
- ✦ *Full credit (2 pts):* Student explains the concept thoroughly (e.g., signs *"A place where animals live naturally, like a fish in the ocean or a camel in the desert"*).

2. Scoring & Reading Material Selection Map

Rather than simply generating a percentage score, the SLVR maps a student's performance directly to a **guided reading profile**. This ensures that classroom books and reading materials match their current conceptual language base.

To calculate the profile, combine the scores from Section A (1 point per correct match, max 10 points) and Section B (up to 2 points per depth explanation, max 10 points) for a **total of 20 points**.

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Part 2 The Core Assessments

Vocabulary-to-Reading Mapping Matrix

Total Score	Vocabulary Profile	Reading Material Selection Guide
17 - 20	Conceptual / Expanded	Independent Reading: The student has a rich semantic map. They can easily handle grade-level chapter books and informational texts with complex academic vocabulary. They do not need simplified texts; instead, focus on decoding and
11 - 16	Functional / Transitional	Supported Reading: The student understands concrete vocabulary but struggles with abstract academic terms (e.g., <i>metamorphosis</i> , <i>hypothesis</i>). <i>Selection:</i> Choose books with rich contextual illustrations. Pre-teach 3–5 key concept signs before starting a new text, and build graphic organizers (semantic maps) to link new words to known signs.
0 - 10	Emergent / Restricted	Highly Visual & Repetitive Reading: The student relies heavily on basic everyday signs and lacks academic concepts. They are at risk for reading frustration. <i>Selection:</i> Select books with high picture-to-text ratios (e.g., decodable books, interactive modeled books). Focus heavily on visual bilingual matching (Sign □ Image □ Print) to anchor basic vocabulary words before introducing sentence structure.

Implementation Tip: Keep a "Semantic Wall" in the classroom. When students learn a new vocabulary word, post the printed word, a picture representing the concept, and a graphic breakdown of the sign's parameters (Handshape, Location, and Movement) to help solidify the connection between print and sign.

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Part 2 The Core Assessments

Assessment 5: Phonological Awareness in Signers Test (PAST)

- *What it is:* Measuring how DHH students understand letter-sound and word-structure relationships through fingerspelling and visual handshapes.
- *Implementation:* Visual rhyming, fingerspelling manipulation, and handshape categorizing exercises.
- *Scoring & Interpretation:* Using visual phonics to support early decoding skills.

The Phonological Awareness in Signers Test (PAST) is a specialized diagnostic tool designed for Deaf and Hard of Hearing (DHH) students who communicate primarily through sign language (such as ASL).

While traditional phonological awareness tests rely on the auditory perception of spoken sounds, the PAST measures visual phonology—how a student recognizes, breaks down, and manipulates the visual building blocks of language: handshapes, fingerspelling, and manual movements.

- **Target Age/Developmental Level:** Kindergarten through 3rd Grade.
- **Time Required:** 15 minutes.
- **Materials Needed:** A quiet room with good lighting, a scoring sheet, and visual picture cards (no text on the cards).

1. Test Structure & Administration Protocol

The test is divided into three core subtests. Administer them in order, ensuring you establish a clear signing space.

Subtest A: Visual Rhyming (Handshape & Movement Matching)

This subtest measures the student's ability to recognize patterns in signs that share similar visual parameters (analogous to spoken rhyming).

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Part 2 The Core Assessments

Task: The teacher signs a target word, then presents two option cards. The student must select the card whose sign "rhymes" (shares the same handshape, location, or movement).

Example Item:

Teacher signs: CANDY (index finger twisting at the cheek).

- Option 1: APPLE (index finger knuckle twisting at the cheek — Correct Match: Shares location and movement).
- Option 2: WATER (W-handshape tapping the chin).

ASL Prompt: *"Look at my sign: CANDY. Now look at these two signs: APPLE or WATER. Which one looks or feels like CANDY?"*

Subtest B: Fingerspelling Manipulation (Visual Segmenting & Blending)

This subtest measures the student's ability to manipulate individual letters within fingerspelled words (analogous to phoneme deletion and substitution in spoken language).

Task 1 (Deletion): The student must delete a letter from a fingerspelled word and identify the new word.

- Teacher signs: fingerspells P-L-A-Y.
- ASL Prompt: *"Take away the 'P'. What word is left?"*

Correct Answer: Fingerspells or signs L-A-Y.

Task 2 (Substitution): The student must swap the beginning or ending letter of a fingerspelled word.

- Teacher signs: fingerspells C-A-T.
- ASL Prompt: *"Change the 'C' to a 'B'. What is the new word?"*

Correct Answer: Fingerspells or signs B-A-T.

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Part 2 The Core Assessments

Subtest C: Handshape Categorization (Visual Phoneme Classification)

This subtest measures the student's awareness of the handshapes used to construct signs (analogous to identifying the beginning consonant sound of a spoken word).

Task: The teacher signs three different words. The student must identify the "odd one out"—the sign that does not share the same handshape configuration.

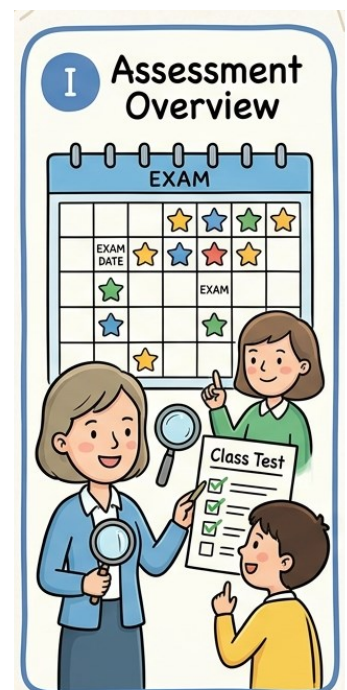
Example Item:

- **Teacher signs:** FAMILY (starts with "F" handshapes), CAT (uses "F" handshape pinching near cheek), and BALL (uses open "5" or claw "C" handshapes).
- **ASL Prompt:** "I will show you three signs: FAMILY, CAT, BALL. Two use the same handshape. One is different. Which one is different?"

Correct Answer: BALL (does not use the "F" handshape).

2. Scoring & Interpretation Guide

Assign 1 point for each correct answer across the subtests. Use the following rubric to interpret the results and guide your visual phonics interventions.



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Part 2 The Core Assessments

Total Score	Skill Level	Diagnostic Interpretation & Instructional Next Steps
12 - 15	Advanced / Independent	Strong Visual Coding: The student has an excellent grasp of visual phonological structures. They are ready to heavily link fingerspelling directly to printed English decoding. Transition them to complex phonics mapping and reading independent texts.
8 - 11	Developing / Instructional	Emerging Metalinguistic Awareness: The student understands basic patterns but struggles when manipulating letters mentally. <i>Intervention:</i> Use Visual Phonics hand cues paired with print, and practice explicit fingerspelling-to-print word ladders (e.g., changing M-A-T to S-A-T with physical letter tiles).
0 - 7	Emergent / At-Risk	Limited Phonological Mapping: The student is struggling to recognize the internal structural components of signs and fingerspelling. <i>Intervention:</i> Focus heavily on See-Sign-Spell routines. Play handshape matching games using physical objects, and use high-contrast color coding on letter tiles during fingerspelling practice.

Why This Matters: Research shows that fluent, rapid fingerspelling acts as a linguistic bridge for DHH readers. When a student performs well on the PAST, they are using spatial-visual memory to map manual movements directly to printed English words—bypassing the need to "hear" the letters altogether.

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Part 3: Assessment to Intervention

Creating the DHH Literacy Profile

Translating assessment data into meaningful instructional support begins with establishing a comprehensive Deaf & Hard of Hearing (DHH) Literacy Profile. Rather than relying on a single composite score, this profile synthesizes performance across visual, orthographic, and signed language domains. Evaluators document a student's preferred communication modalities, expressive and receptive sign vocabulary, fingerspelling fluency, captioned text tracking speed, and speechreading reliance. Mapping these multidimensional inputs alongside environmental factors—such as optimal seating, lighting requirements, and visual noise thresholds—the literacy profile provides a clear baseline. This diagnostic snapshot allows educators to pinpoint whether a reading breakdown stems from language access, visual processing, or decoding mechanics.

Sample IEP Goals

To drive targeted progress, Individualized Education Program (IEP) goals for DHH students must move beyond standard phonics targets and explicitly integrate visual and sign-based pathways. Goals should measure specific literacy milestones using appropriate access tools:

- ⇒ **Fingerspelling Phonology:** "Given a set of 10 target vocabulary words, the student will use fingerspelling-to-print mapping to accurately decode and identify the printed text equivalent with 80% accuracy across 4 consecutive trials."
- ⇒ **Captioned Reading Comprehension:** "When viewing a 3-minute instructional video with captions at grade level, the student will answer 4 out of 5 literal and inferential comprehension questions using their preferred communication modality."
- ⇒ **Visual Sequence Narrative Structure:** "Using a visual story-sequence model, the student will independently arrange 5 plot points in chronological order and retell the narrative summary in sign language, achieving 85% accuracy."

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Part 3: Assessment to Intervention

- ⇒ **Sign Vocabulary Acquisition:** "The student will recognize and match 20 new academic sign-vocabulary terms to their written English definitions across content-area assessments with 80% accuracy."

Classroom Intervention Toolkit

The classroom intervention toolkit equips educators with daily, actionable strategies designed to bridge visual language access with print literacy. Core tools include dual-language visual word walls that pair printed English words with corresponding sign graphics, fingerspelling handshapes, and pictorial representations. Interactive captioned media stations allow students to pause, rewind, and highlight dynamic text alongside visual content, reinforcing sight-word recognition and reading speed.

Additionally, teachers leverage tactile fingerspelling cards, visual story mapping templates, and speech-to-text live-captioning software during direct instruction.

Embedding these multi-modal tools directly into daily routines, educators create an accessible, language-rich environment that strengthens reading confidence and academic independence.

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Appendix A Student Assessment Scoring Sheets

1. The Visual Story Sequence Test (VSST) Score Sheet

• Student Name: _____ Date: _____

• Assessor Name: _____ Grade/Age: _____

Stimulus Story Used: _____

Part A: Cognitive Sequencing Phase

Place the cards randomly. Record the student's final card arrangement below.

• Target Sequence: A ☐ B ☐ C ☐ D

• Student's Sequence: __ ☐ __ ☐ __ ☐ __

Skill Evaluated	Score (0–4)	Key Observations
Cognitive Sequencing (4 = Perfect, 3 = Minor swap, 2 = Mid scramble, 1 = Scrambled, 0 = Random)	_____	☐ Scans cards systematically ☐ Hesitates / changes mind frequently ☐ Relies on trial-and-error placement

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Appendix A Student Assessment Scoring Sheets

Part B: Sign Language Narrative Phase

Prompt the student to retell the story in their preferred sign language system.

Metric	Score (0–2)	Rubric / Criteria
Narrative Structure	_____	2: Has clear beginning, middle, and end. 1: Disjointed details; misses chronological flow. 0: No narrative structure.
Classifiers & Space	_____	2: Uses spatial mapping and vivid size/shape classifiers. 1: Signs are static; minimal use of signing space. 0: No classifier use.
Facial Grammar	_____	2: Non-manual markers show emotion (e.g., crying face). 1: Neutral expressions; lacks linguistic facial grammar. 0: Flat affect.

VSST Narrative Total Score: _____ / 6 points

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Appendix A Student Assessment Scoring Sheets

2. Phonological Awareness in Signers Test (PAST) Score Sheet

Student Name: _____ Date: _____

Subtest A: Visual Rhyming (Handshape & Location Match)

Score: 1 point for a correct match, 0 points for incorrect.

Item	Target Sign	Option 1 (Match)	Option 2 (Distractor)	Score (0/1)	Notes/Self-Corrections
1	CANDY	APPLE	WATER	_____	
2	UNDER	TOY	CHAIR	_____	
3	FLOWER	HOME	LIGHT	_____	

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Appendix A Student Assessment Scoring Sheets

Subtest B: Fingerspelling Manipulation

Score: 1 point for a correct manipulation.

Item	Spelled Target	Prompt	Correct Answer	Score (0/1)	Notes
1	P-L-A-Y	Delete "P"	L-A-Y	_____	
2	C-A-T	Change "C" to "B"	B-A-T	_____	
3	B-O-A-T	Delete "T"	B-O-A	_____	

Subtest C: Handshape Categorization (Odd One Out)

Score: 1 point for identifying the different handshape.

Item	Sign Group	Correct Odd One Out	Score (0/1)	Handshape Used
1	FAMILY / CAT / BALL	BALL (Uses open 5/C instead of F)	_____	
2	WATER / MILK / WINE	MILK (Uses S-handshape instead of W)	_____	

PAST Total Score: _____ / 8 points

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Appendix A Student Assessment Scoring Sheets

3. Speech-to-Text Literacy Assessment (STT-LA) Score Sheet

Student Name: _____ Date: _____

STT Tool/App Used: _____ Screen Size/Setup: _____

Part A: Visual Tracking Observation Checklist

Check all behaviors observed during live-scrolling text:

- ☐ Eyes systematically track scrolling text in real time.
- ☐ Easily adjusts eye gaze when text shifts or line-breaks.
- ☐ Displays visual fatigue (blinking, looking away, rubbing eyes).
- ☐ Successfully self-corrects after transcription typos appear on screen.

Part B: Comprehension & Speed Assessment

Passage Phase	Comprehension Question	Score (0/2)	Tracking Observations
Normal Pace (~110 WPM)	Q1: (Literal: e.g., Where do butterflies go?)	_____	☐ Relaxed tracking ☐ Minor lag/gaze shifts ☐ Completely lost place
Normal Pace (~110 WPM)	Q2: (Vocabulary: e.g., Meaning of "migration")	_____	☐ Relaxed tracking ☐ Minor lag/gaze shifts ☐ Completely lost place
Fast Pace (~140 WPM)	Q3: (Literal: e.g., What is stuck to wings?)	_____	☐ Rushed tracking ☐ Significant eye lag ☐ Gave up reading screen
Fast Pace (~140 WPM)	Q4: (Inferential: e.g., How does this map help?)	_____	☐ Rushed tracking ☐ Significant eye lag ☐ Gave up reading screen

STT-LA Comprehension Score: _____ / 8 points

Estimated Speed Ceiling: ☐ Below 110 WPM | ☐ 110–130 WPM | ☐ 140+ WPM

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Appendix B: Recommended Tech Tools & Software

1. Real-Time Speech-to-Text & Captioning Tools

Used for administering the Speech-to-Text Literacy Assessment (STT-LA) and evaluating real-time text tracking skills.

- **Otter.ai / Microsoft Translator:** Highly accurate, AI-powered real-time transcription tools. Educators can speak into a microphone, and the software generates high-contrast, rolling text on a student's tablet or laptop, allowing teachers to measure tracking speed and lag-recovery.
- **Ava (Captioning App):** Designed specifically for accessibility, Ava provides real-time, color-coded speaker identification captions. It is highly useful for assessing how well a student tracks conversational flow and multi-speaker classroom discussions.
- **WebCaptioner / Caption.Ed:** Browser-based captioning tools that allow teachers to easily customize font style, text size, and contrast—essential for setting up the exact display parameters required during diagnostic testing.

2. Digital Media & Custom Closed-Captioning platforms

Used for finding, editing, and executing the Captioned Video Reading Comprehension (CVRC) Test.

- **The Described and Captioned Media Program (DCMP):** A free, federally funded library of accessible educational videos. It features high-quality, human-verified captions and custom caption-building interfaces where teachers can adjust display sizes or build comprehension tests directly into the media player.
- **Amara.org / CapCut:** Free subtitle-editing tools. If a teacher finds a high-quality video online that lacks accurate closed captions, they can easily import it here to create, edit, and hardcode perfectly timed, SPaG-accurate open captions for testing.
- **Edpuzzle:** A platform that allows teachers to take any captioned educational video (from YouTube, Khan Academy, etc.), embed custom comprehension questions at specific timestamps, and track individual student answers and video-watching analytics.

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Appendix B: Recommended Tech Tools & Software

3. Visual Phonics & Sign Literacy Software

Used to support diagnostic findings from the Phonological Awareness in Signers Test (PAST) and the Sign Language Vocabulary Recognition (SLVR) Test.

- **Fingerspelling Our Way to Reading (FOWR):** An evidence-based software and curriculum program designed to teach and assess phonological awareness through fingerspelling. It helps young signers build a bridge between the visual handshapes of fingerspelling and printed English words.
- **ASL CORE & VL2 (Visual Language and Visual Learning Center):** Created by Gallaudet University, VL2 offers interactive storybook apps and visual dictionaries. These tools allow educators to observe and evaluate how students translate signed academic concepts into written literacy.
- **Kahoot! / Gimkit (with Visual Customization):** By uploading custom graphics of specific handshapes (such as the "F" or "W" handshapes) or short sign videos, teachers can turn the SLVR and PAST into gamified, interactive diagnostic quizzes to quickly map classroom vocabulary strengths.

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Appendix C: Glossary of Terms

Visual Phonics

A multi-sensory system that uses hand gestures and written symbols to represent the physical production of speech sounds. It provides DHH students with a concrete, visual tool to "sound out" and decode printed words without relying on auditory perception.

Visual Phonology

The study of the structural linguistic units of a signed language. Instead of sound-based phonemes, visual phonology focuses on how the brain processes the physical parameters of a sign: **Handshape, Location, Movement, and Orientation**.

Fingerspelling-to-Print Mapping

The cognitive process of connecting manual, letter-by-letter fingerspelling directly to written English text. This acts as a primary, sound-free linguistic bridge for decoding print and building early reading fluency.

Closed Captioning (CC)

The visual display of spoken dialogue, environmental sounds, and sound effects as text on a screen. In DHH literacy, CC is a critical tool for assessing real-time reading comprehension and text-tracking skills.

Open Captions

Captions that are permanently burned or "hardcoded" directly into a video file and cannot be turned off. This is the preferred visual format for classroom literacy assessments because it prevents technological errors or caption misalignment.

Receptive Sign Vocabulary

The library of signed words, concepts, and academic terms that a student can visually understand when produced by someone else, serving as the foundational semantic database for reading comprehension.

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Appendix C: Glossary of Terms

Speech-to-Text (STT) Transcription

Assistive technology (such as CART or automated software) that instantly translates spoken words into real-time written text on a screen.

Cued Speech

A visual communication system that uses eight handshapes in four positions near the mouth to represent spoken phonemes. It is designed to make spoken language visually accessible and easy to speechread.

Bimodal-Bilingualism

A linguistic framework where a student uses a visual, signed language (such as ASL) alongside a spoken or written language (such as English) to develop comprehensive literacy skills.

Language Deprivation

A developmental delay that occurs when a DHH child lacks early, consistent access to a naturally acquired first language (spoken or signed) during their critical early years, which severely impacts future reading and writing outcomes.

Conclusion

Accurate literacy evaluation for Deaf and Hard of Hearing students requires abandoning a one-size-fits-all model in favor of visual, visual-spatial, and multi-modal diagnostic approaches. By evaluating language through sign recognition, fingerspelling phonology, captioned media, and visual narrative tracking, educators and specialists gain a true picture of a student's academic potential.

When assessment environment, primary language modality, and visual access tools align, IEP teams can construct targeted interventions that foster authentic literacy, student autonomy, and long-term academic success.

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