

SPIRE 4E and the Deaf or Hard of Hearing Learner

SPIRE 4E instruction can be effectively adapted for students who are deaf or hard of hearing (DHH) by emphasizing visually accessible, multimodal supports that strengthen the core components of Structured Literacy. Research consistently shows that DHH students benefit from explicit, systematic instruction in phonological awareness, phonics, vocabulary, fluency, and comprehension, even when delivered through visual or kinesthetic pathways rather than auditory ones.

Phonics lessons will need to be deeply rooted in visual support, including hand shapes, fingerspelling, symbols, and kinesthetic cues to represent phonemes. Dictation can be taught by presenting fingerspelled letters and having the students write the corresponding grapheme. Embedding these cues within SPIRE Up's blending, spelling, and word-analysis routines helps make sound-symbol relationships accessible while preserving the program's systematic progression.

A challenge presented for DHH learners within phonics lessons comes when such students are introduced to graphemes that represent multiple phonemes (i.e. "s" representing the sounds /s/ and /z/, etc.). Carline Yale's instruction of Northampton Symbols provides a visual designation that emphasizes the primary and secondary variations of sounds which can help DHH learners navigate this challenge. To learn more about this approach, consider reading *Formation and Development of Elementary English Sounds* by Caroline Yale, or *Oral and Written Communication Disorders: Identification & Multisensory Teaching* by Maureen K. Martin.

Explicit vocabulary and language instruction should be prioritized, as DHH learners often enter school with reduced access to incidental language and require direct teaching of morphology, syntax, and academic vocabulary. Students should have increased opportunities to use this vocabulary knowledge in explicit lessons on grammar and sentence structure.

Comprehension instruction should leverage visual scaffolds, structured dialogue, fingerspelling, and repeated reading to build background knowledge and language structures. Evidence supports the use of intensified, language-rich, highly interactive literacy instruction to accommodate wide variability in language profiles among DHH students. This can occur through ample use of visual supports, picture cues, diagrams, and graphic organizers when introducing topics and facilitating student understanding of text structure and story elements. The visual support cards from SPIRE Foundations: Sounds Sensible can be used for this purpose.

Finally, teachers are encouraged to capitalize on the expertise of speech-language pathologists, audiologists, and reading specialists in their buildings or school districts, who can provide further support in making necessary adjustments to instruction.

SPIRE Steps with Accommodations for DHH Learners

SPIRE Step	DHH Modifications / Accommodations
Step 1 – Phonogram Cards	<ul style="list-style-type: none"> • Pair each phonogram with Visual Phonics or cued speech • Present phonograms with print, mouth shape, and hand cue simultaneously • Keep phonogram cards visible for reference throughout the lesson
Step 2 – Phonological Awareness	<ul style="list-style-type: none"> • Emphasize visual and kinesthetic phonological awareness (hand cues, tapping, sound boxes) • Replace purely auditory tasks with mouth movement, placement, and vibration cues • Limit task variety to reduce cognitive and linguistic load
Step 3 – Word Building	<ul style="list-style-type: none"> • Use manipulatives with explicit grapheme–phoneme mapping • Allow additional processing time for visual scanning and word construction • Model word building using print tracking alongside sign or visual support
Step 4 – Decoding and Sentence Reading	<ul style="list-style-type: none"> • Teach decoding routines with visual models and anchor charts • Allow silent decoding prior to supported oral or signed responses • Use consistent visual marking (boxing, underlining, linking)
Step 5 – Prereading	<ul style="list-style-type: none"> • Preteach vocabulary using images, signs, and clear student-friendly explanations • Explicitly build background knowledge using visual supports • Connect story events to students' real-life experiences

SPIRE Step	DHH Modifications / Accommodations
Step 6 – Reading and Reading Comprehension	<ul style="list-style-type: none"> • Chunk sentences visually to support syntax and comprehension • Allow comprehension responses through sign, pointing, or writing • Emphasize meaning and structure over oral reading accuracy
Step 7 – Sound Dictation	<ul style="list-style-type: none"> • Replace auditory dictation with visual or signed models • Present sounds using hand cues, mouth movements, or printed references • Use slow, predictable pacing
Step 8 – Prespelling	<ul style="list-style-type: none"> • Use visual phoneme–grapheme mapping and color coding • Model phoneme analysis spatially and visually • Explain spelling logic explicitly instead of relying on hearing sounds
Step 9 – Spelling	<ul style="list-style-type: none"> • Allow spelling with manipulatives before written production • Pair each grapheme with Visual Phonics or cueing systems • Emphasize orthographic patterns rather than auditory recall
Step 10 – Sentence Dictation	<ul style="list-style-type: none"> • Display the full sentence visually before writing • Break sentences into clearly marked word units • Support proofreading through visual comparison, not oral rereading