

Auditory Processing (Ga)

Phonological Processing



Phonological processing refers to the ability to perceive, process, and manipulate the sound structure of spoken language.

- **Phonemic awareness:** Identifying and manipulating individual speech sounds (phonemes) in words.
- **Phonological awareness:** Identifying and manipulating larger sound units like syllables and rhymes.
- **Phonological memory:** Storing phonological information in working/short-term memory.
- **Phonological retrieval:** Rapidly accessing phonological codes from long-term memory.

May experience difficulties learning to read, spell, and recognize words, trouble rhyming or identifying words that start with the same sound, an inability to break words into individual sounds, struggles with manipulating sounds, poor phonological memory for verbal information, and slow, laboured progress in connecting sounds to letters.

STRATEGY CATEGORY	DESCRIPTION
Phonemic Awareness Instruction	● Explicitly teach students to identify, segment, blend, and manipulate individual speech sounds (phonemes) in words through activities like: ○ Rhyming ○ Alliteration ○ Syllable blending/segmenting ○ Phoneme isolation, blending, segmenting ● LiPS Program for Reading, Spelling and Speech ● School-Based Phonological Awareness intervention lessons ● When segmenting words into syllables or phonemes, move an object such as a block or poker chip for each syllable or phoneme heard or said.
Phonics Instruction	● Systematically teach students the relationships between letters (graphemes) and speech sounds (phonemes) through: ○ Explicit phonics lessons ○ Word study activities ○ Reading decodable texts
Multisensory Instruction	● Engage multiple modalities (visual, auditory, kinesthetic, tactile) when teaching phonological skills through activities like: ○ Finger tapping for sounds ○ Tracing letters in sand ○ Using letter tiles or blocks ● FM Systems ● Hearing Screen
Fluency Practice	● Provide opportunities for repeated reading of texts at the student’s instructional level to build automaticity.
Mnemonic Strategies	● Teach how to use memory aids like rhymes, acronyms, or visualization to remember phonics patterns.
Explicit Modeling	● Demonstrate and think aloud as you segment, blend, and manipulate sounds in words. ● When segmenting words into syllables or phonemes, move an object such as a block or poker chip for each syllable or phoneme heard or said.

SKILL AREA	IMPACT OF PHONOLOGICAL PROCESSING DEFICITS	EVIDENCE-BASED INTERVENTIONS
READING	- Extremely difficult to develop phonemic awareness and phonics skills, which are critical foundational skills for learning to read words accurately and fluently. - Struggle to connect sounds to letters, decode unfamiliar words, and may have very poor word reading abilities. - Difficulty learning sound-letter correspondences and decoding words. - Weaknesses in phonological memory can also impair reading comprehension of longer passages.	- Explicit phonics instruction directly teaches letter-sound relationships like Orton-Gillingham and LiPS (Lindamood Phoneme Sequencing Program for Reading, Spelling and Speech) - Phonological awareness training provides practice in skills like rhyming, segmenting, and manipulating sounds. Programs like Road to the Code and LiPS - Combining visual, auditory, kinesthetic, and tactile cues to teach phonics and reading skills. Orton-Gillingham and LiPS utilize this approach. - Repeated reading interventions build fluency through rereading passages multiple times. - Using activities that directly target phonological memory and processing skills that underlie reading. For example Rode to the Code, verbal memory tasks, auditory discrimination exercises, and phonological storage and retrieval practice, programs like Earobics that target auditory discrimination and auditory memory. - When teaching sight vocabulary, teach the student to recognize root words and morphemes and teach the student to recognize words via contextual clues
WRITING	- Spelling requires storing sound representations of words in phonological memory and then retrieving those representations to map sounds to letters. - Often make many phonetic spelling errors and have very poor spelling skills. - Writing fluency and overall writing quality is impacted by struggles with basic word-level skills.	- Structured literacy programs like Orton-Gillingham, and LiPS provide explicit, multisensory instruction in phonics, spelling, and writing to systematically develop phonological skills. - Teach segmenting and encoding words using their knowledge of sound-symbol relationships. - Combining phonological awareness, phonics rules, and spelling strategies. Programs like All About Spelling and Words Their Way - Providing direct instruction and practice in constructing more complex, sophisticated sentences which can improve writing quality.
MATH	- Not as directly impacted as reading/writing, research shows phonological skills are linked to some math abilities. - Difficulties with phonological memory can make it hard to learn and retrieve basic math facts from memory. - Solving complex math word problems requires holding spoken information in phonological memory while manipulating the language.	- Explicit math fact instruction, teaches strategies to improve math fact retrieval. - Schema-based math instruction helps students recognize patterns in word problems to reduce language demands. - Math fluency practice builds automaticity with basic skills. - Multisensory math techniques use manipulatives and other modalities to reinforce concepts.

Benefits of providing evidence-based interventions

		
Academic Success	Skill Development	Lifelong Implications
Phonological skills are the foundation for learning to read, spell, and write. Reading and writing abilities impact performance across all subject areas, from math word problems to comprehending texts in social studies and science. Unaddressed phonological deficits can lead to ever-widening academic gaps and failure to meet grade-level standards.	Phonological processing taps into language skills like phonemic awareness that are malleable, especially in the early years. With proper intervention, these skills can be developed and remediated. Building phonological skills helps unlock the alphabetic principle and provides the basis for decoding, spelling, vocabulary development, and more.	Reading, writing, and language skills are essential for independence and self-sufficiency throughout life. Poor literacy abilities significantly impact future academic and vocational options without interventions. Remediating phonological deficits can open doors and create more opportunities for success in secondary education, careers, and life.