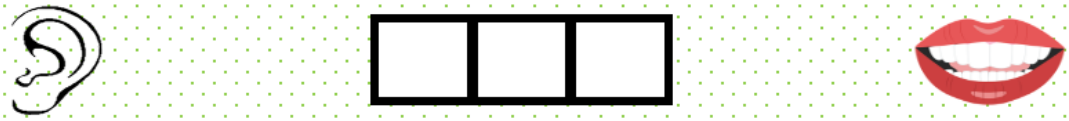


Teaching Phonemic Awareness in 2024:

A Guide for Educators

Jane Ashby, Meghan Martin, Marion McBride, Shira Naftel

Ellen O'Brien, Lucy Hart Paulson, Louisa Cook Moats

Teaching Phonemic Awareness in 2024:

A Guide for Educators

Jane Ashby, Ed.M., Ph.D.
Mount St. Joseph University

Meghan Martin, CCC-SLP, Ed.D.
Mount St. Joseph University

Marion McBride, M.Ed.
Barksdale Reading Institute

Shira Naftel, M.Ed.
Mount St. Joseph University

Ellen O'Brien, M.Div.
Fraser Academy

Lucy Hart Paulson, CCC-SLP, Ed.D.

Louisa Cook Moats, Ed.D.

Authors' Note
Many thanks to Esther Geva, Pam Kastner, Rebecca Miles, Antonio Fierro, Mercedes Davila for their insightful comments and contributions to previous versions of this guide. Michael Hunter and Linda Farrell provided key input on techniques and mastery. Special thanks to David Kilpatrick for his crucial comments and contributions to each version of this guide. Thanks to Eugene Greenfield for providing feedback on Section 2.5, *Responding to pronunciation differences due to dialect*. We also deeply appreciate other educators who suggested improvements to this guide since it was first posted on 6/11/22.

Please reference this guide as: Ashby, J., Martin, M., McBride, M., Naftel, S., O'Brien, E., Paulson, L. H., & Moats, L. C. (2024). *Teaching Phoneme Awareness in 2024: A Guide for Educators. https://drive.google.com/drive/folders/1tPwupou7EqctDO50XtfvMGxfJAx7xPk9?usp=share_link*

Welcome Educators,

We hope that you find this guide helpful in boosting your phonemic awareness instruction. This 2024 edition presents a more teacher-friendly organization, discusses the importance of teaching phoneme deletion, describes how to respond to dialect differences in pronunciation, and includes unified lesson routines for teaching blending, segmenting, and deletion. The guide uses what we currently know from scientific research, teacher experiences, and observations in clinical teaching settings to make suggestions about how to teach phonemic awareness in a few minutes each day. Adopting these practices will help K-1 students, English language learners, and older struggling readers develop the phonemic awareness skills that are fundamental for reading and spelling.

The authors of this document are educators and researchers who bring decades of experience in communicating developments in the science of reading, phonological awareness instruction, reading instruction, and assessment.

Notes about Terms and Resources

Forward slashes (/) indicate spoken sounds and quotation marks (“) indicate spoken words. Text in a green box is a direct quotation.

Phonological awareness refers to an awareness of sounds in spoken words (e.g., syllables, rhyming patterns, and phonemes). *Phoneme awareness* is a subset of phonological awareness and refers to the ability to identify and sequence the individual sounds in spoken words. For example, “cat” has three phonemes (/k/ /a/ /t/) and “shoe” has two (/sh/ /oo/). *Phonological processing* refers to the automatic mental processing of speech codes that occurs during speaking, listening, reading, and spelling.

This guide provides tips can enhance children’s learning when you use any systematic phoneme awareness curriculum. It is not in itself a curriculum. If you are looking for a curriculum that teaches easy concepts before more difficult concepts, here are four that we recommend.

For 4-year-olds: Phonemic Awareness in Young Children (Adams et al.,1998)
K and Grade 1: Road to the Code (Blachman et al., 2000)
K-1 Intensive: The Intensive Phonological Awareness Program (Schuele & Murphy, 2014)
Elementary, Secondary, and Adult Education: Equipped for Reading Success (Kilpatrick, 2016)

Two freely available and quick-to-administer phonological awareness assessments are:

- The Rosner *Test of Auditory Analysis Skills* (TAAS)
  https://drive.google.com/file/d/1uUEi_3Hmnoe-DcY8H3tQatyiw4cNEm63/view?usp=sharing

- The *Phonological Awareness Screening Test* (PAST) www.thepasttest.com

We recognize the care and enthusiasm that you bring to the classroom each day. Thank you for your commitment to continually refining and developing your teaching practices.

With appreciation and respect,

Jane, Meghan, Marion, Shira, Ellen, Lucy, and Louisa

Table of Contents Page

Section 1. Reading Research, Instructional Practice, and Phoneme Awareness

1.1 Is phonemic (phoneme) awareness part of your daily instruction?

When children receive effective phonemic awareness instruction in small daily doses, it improves their ability to read and spell words.[1]

We encourage educators to use classroom practices based on the extensive research evidence now available. Here is what that research shows.

- Both struggling readers and beginning readers have poor phoneme awareness due to underdeveloped, inefficient phonological processing.[2] When students do not process speech sounds precisely in their minds, they may not store spoken words with the level of detail needed for mapping letters to phonemes in reading and spelling. Having crisp, sound-by-sound memories of spoken words is not necessary for speaking, but phoneme awareness is necessary for learning to read and spell. Students who struggle with word recognition and phonics share weaknesses in phonological processing.[3] The discovery of this phonological-core deficit in struggling readers is one of the most powerful advances in reading science. It is simple to identify phonemic awareness skills, relatively easy to provide explicit instruction, and this instruction supports gains in reading and spelling.

- Based on more than 50 peer-reviewed papers, the National Reading Panel Report (2000) recommends that all children in K-1 should receive instruction in phonemic awareness in addition to phonics.[4] The evidence for the effectiveness of phonemic awareness and phonics instruction are described using two separate terms in two separate sections of the report. This is because the research indicates that these two aspects of instruction are distinct, and both are crucial for learning to read.

- Phonemic awareness activities strengthen and sharpen phonological processing and, therefore, are crucial for many students who are beginning to read as well as struggling readers. Phonemic awareness instruction helps readers accurately perceive and produce sound sequences in spoken words, which is necessary for learning the letter-sound patterns in phonics and for remembering decoded words.[5] Comparisons of present research indicate larger reading gains for students when lessons include phonemic awareness as well as phonics.[6] In addition to research evidence, we all have received feedback from teachers who see the value of phonemic awareness instruction first-hand in their students' reading and spelling.

Science is dynamic in nature, and different perspectives are continually developing. Individual researchers occasionally put forward new claims and ideas, which should then be tested scientifically and clinically. Teaching practice should shift in response to new evidence, but it should not shift in response to new ideas proposed without ample new evidence from rigorous studies. Recently, a few academics have proposed that struggling readers do not benefit from phonemic awareness instruction beyond blending and segmenting and that oral phonemic awareness activities should not be a universal component of reading instruction in K-1. Yet over 40 years of research demonstrates how appropriate, systematic, and primarily oral phonemic awareness instruction benefits learning to read. Until there is new data from peer-reviewed studies indicating more benefit from an alternative method, educational practice should continue to align with existing scientific research on reading.

1.2 Why is phonological awareness important?
Phonological awareness includes phonemic awareness, which is a crucial foundation for reading and spelling development.

Phonological awareness also includes larger units of speech (syllable awareness and rhyming). Phonemic awareness involves the ability to identify the individual sounds and sound sequences in spoken words.[7] Most children who will struggle with learning to read have underdeveloped phonemic awareness when they enter school. Phonemic awareness instruction helps children strengthen their ability to mentally process the sounds in spoken words. A precise awareness of speech sounds helps students to read and spell words independently by sounding them out.

> The skill of blending is needed to decode unfamiliar words. . . Being able to segment and blend onsets and rimes in words helps children read unfamiliar words by analogy to known words. Phonemic segmentation helps children to read and spell words because it helps them identify and separate the phonemes that are bonded to graphemes when a word's written form is retained in memory. (NRP, 2000)

Phonemic awareness instruction fortifies and specifies speech processing. Identifying phonemes may require instruction because (1) the phonemes in spoken words overlap or blend together making it hard to notice the individual sounds, (2) the features of phonemes can be similar, which can make them confusable and difficult to distinguish (e.g., /k/ and /g/; /ch/ and /tr/), and (3) many children enter school without the understanding that spoken words are composed of sequences of speech sounds. Students who identify sounds in spoken words easily can learn the phonics skills that support accurate decoding and spelling, which, in turn, supports memory for written words.

> Effects of phonological awareness instruction on reading lasted well beyond the end of training. Phonological awareness instruction produced positive effects on both word reading and pseudoword reading, indicating that it helps children decode novel words as well as remember how to read familiar words. (NRP, 2000)

Early in first grade, children should be able to read and spell basic words (e.g., *it, so, fit, pen*). Children who cannot do this are struggling to learn foundational letter-sound correspondences. Learning letter sounds can be difficult when the perception of sounds in spoken words is unclear or inaccurate. Older struggling readers may perform poorly on one or more of these basic tasks: rhyming, repeating a short vowel sound, blending three sounds to make a word (/f/ / ĭ / /t/ - "fit"), and separating the first sound in a three-sound word ("met" - /m/ /ĕt/). Students who read and spell isolated words inaccurately benefit from explicit instruction in phonological awareness to improve their perception of speech sounds. Blending and segmenting speech sounds is helpful for emerging and struggling readers. Strengthening this ability leads to improvements in decoding and spelling.

Developing phonemic awareness is critical for reading in English because it strengthens phonological processes in the mind that assist with:

- understanding of the alphabetic principle (sound/symbol correspondences);
- mapping sounds onto letters to decode and spell words;
- building the automatic phonemic processing involved in orthographic mapping, which enables faster word recognition each time a student sees the same word;
- sharpening awareness of word pronunciation for vocabulary learning (lip balm vs. lip bum);
- facilitating reading accuracy (The room was quieter vs. The room was quitter).

Section 2. Teaching Phonemic Awareness

2.1 One instructional routine for blending and segmenting

An instructional routine helps to structure teacher and student interactions in predictable ways. Knowing what to expect during each lesson can reduce anxiety, limit the need for repeating instructions, and increase student responding. Using instructional routines boosts engagement during learning.[8]

Effective learning routines include think time to provide space for all children to process the question or task and think of their answer. Teachers can explicitly cue think time with a hand signal (pointing to their forehead) and then cue simultaneous responding with a different gesture.

Some phonemic awareness curriculums use one routine to practice blending and another to practice segmenting, but this is not necessary for most students. You can provide twice the practice with blending and segmenting if students blend and segment every phonemic awareness item.

Blending and Segmenting (using fingers in K and beyond)

(1) Teacher: "Say *sat*." Students repeat the word.
(2) Teacher: "Say it slowly, stretching out one finger for each sound." Students pronounce the word slowly as they extend a finger from their fist for each sound (/ss-aa-t/).
(3) Teacher: "Sounds." Students repeat the sequence of sounds on the fingers (/s/ /a/ /t/).
(4) Teacher: "Blend." Students blend the sounds to say the word ("sat").

Tips:

1) Speak the word as it is normally spoken in General American English (GAE). Displaying a picture of the word provides additional support for ELLs and pre-schoolers.
2) Students should echo the word. Students who speak with a dialect may respond with an alternate pronunciation and teachers should accept that as correct (Section 2.5).
3) Fingers stretch out from left to right from the student's view. The hand can be palm up or palm down during finger extension to achieve a left-to-right unfolding.
4) Move to step 3 above once you see that students have the correct sounds. If not, do error correction (Section 2.4)

Blending and Segmenting (using Chips in Grade 1 and beyond)

(1) Teacher: "Say *sat*." Students repeat the word.
(2) Teacher: "Stretch it." Students say the word slowly as they place one chip down for each phoneme (/ss-aa-t/).
(3) Teacher: "Sounds." Students touch each chip as they say its sound (/s/ /a/ /t/).
(4) Teacher: "Blend." Students blend the sounds together to say the word ("sat").
(5) Teacher: "Back home." Students return their chips to the pile to prepare for the next item.

Gradual Release of Responsibility

To demonstrate a new phonological awareness task, use *I do, we do, you do*.

- *I do*: The teacher models the task fully, playing both the teacher and student roles above. Use tokens or fingers to model the task (see Section 3.3). When modeling the task with fingers, the teacher's fingers should unfold left-to-right *in the students' view*.
- *We do*: the teacher and class perform the task together with a different word.
- *You do*: the students perform several items on their own. During the "you do" portion, it is important to pronounce the word clearly as it is normally spoken. Allow the students to do their work, then provide error correction and scaffolding as needed.

Students who struggle may need several practices in the "We do" section. The educator can think about how to gradually fade the scaffolding during the “We do.” At first, the “We do” will involve the students and teacher doing all of the steps together. Then the “We do” with the next example can involve the students and teacher doing the first steps together with the students doing the final step independently. If that's successful, then students can move to “You do” in the last two steps of the routine. By attending to each step and noting where the student struggles, the educator can provide more support for learning new skills before releasing students to full “You do” practice.

2.2 One routine for blending, segmenting, and phoneme deletion

Phoneme Deletion (Section 3.3 describes how to use chips in Grade 1 and beyond)

(1) Teacher: “Say flip.” Students repeat the word.
(2) Teacher: “Stretch it.” Students say the word slowly as they place one chip down for each phoneme (/ff-ll-ii-p/).
(3) Teacher: “Point and sound.” Students touch each chip and say its sound (/f/ /l/ /i/ /p/).
(4) Teacher: “Good. Blend it.” Students blend the sounds together to say the word “flip”.
(5) Teacher: “Good.” Now, what would flip be without the /f/ ?”
(6) Teacher: “Touch the chip that moves out.”
Student moves out the first token.
(7) Teacher: “Yes! Which sounds are left?” Students touch each chip and say its sound (/l/ /i/ /p/).
(8) Teacher: “Good. Blend it.” Students say the new word (“lip”).

Gradual Release of Responsibility

To demonstrate a new phonological awareness task, use I do, we do, you do (Section 2.1).

2.3 An example sequence for phonemic awareness instruction

Practice one concept in a lesson orally to develop automaticity (review, 1 minute daily). Practice another concept until students reach mastery (new, 4 minutes daily).

	Teacher	Student
First sound awareness	“SAY,“ “SIT,” “SUN”	/s/
First sound segmentation	“SEED”	/s/ /ēd/
Final sound awareness	“MAT” “BIT” “LATE”	/t/
Final sound segmentation	“PAT”	/pa/ /t/
Segmenting 3 sound words (CVC)	“PIG”	/p/ /ĭ/ /g/
Blending initial clusters	/S/ and “TOP”	“stop”
Segmenting 4 sound words (CCVC)	“FLICK”	/f/ /l/ /ĭ/ /k/
Deleting part of initial blends	“SPIN without the /S/”	“pin”
Blending final clusters	“PASS plus /T/”	“past”
Deleting part of final blends	“FIELD without the /D/”	“feel”
Deleting the 2nd sound in initial blends	“SKIP without the /K/”	“sip”
Deleting the 2nd to last sound in final blends	“BEST without the /S/”	“bet”

2.4 Getting to the right answer: Error correction

If you do your PA teaching with the whole class and hear some incorrect responses, simply state the correct response and ask students to repeat it. When you are with small groups or individual students, then you can respond to incorrect answers by saying. “Let’s try again.” Simply repeat the initial word and ask all students to echo. After the echo, students should say the word slowly, stretching it out to feel and hear each sound.

To clarify confusable sounds, teachers can focus student attention on how they are producing the sounds. For example, a teacher might demonstrate that we produce the sound /m/ with lips together and produce the sound /n/ with the tongue up and lips open. The child can watch the teacher produce each of those sounds, then notice this production difference in their own mouth movements. A personal mirror may be necessary at times to help some children verify how the tongue, lips, and teeth work to form a specific sound.

Below is some teacher language that you could use to respond when a student makes an error segmenting consonant clusters (/pl/, /sw/, etc.). When a student responds incorrectly in a small-group setting, these examples can help guide the student to the correct response. Begin with Error Correction 1. If that does not result in the correct answer, then move to the next routine that provides more scaffolding. If Error Correction 3 does not yield the correct answer, then model the correct process with that word, provide the answer, then move on to the next item. The examples below use chips as manipulatives (see Section 3.3 and the final page of this guide).

An Example Error

Teacher: “Say spot.” Student repeats.
Teacher: “Mark out its sounds.” Student places three chips down and sounds /sh/ /o/ /t/.

Error Correction 1

If the student segmented the wrong word (shot). This provides the least scaffolding.

Teacher: “Almost! The word is spot. Say spot slowly and stretch out the sounds.”
Student: ss-p-o-t.
Teacher: “Good. Chips?”
Student lays out a chip for each sound.
Teacher: “Good. Point and sound.”
Student: /s/ /p/ /o/ /t/ as he points to each chip.
Teacher: “Correct. Blend?” The student says spot.

Error Correction 2

If the student had a correct number of chips, but incorrect sounds (stop). This provides more scaffolding.

Teacher: “Almost. The word is spot. Echo?”
Student: spot.
Teacher: “Watch my lips as I say the word spot. You say it. What are your lips doing”?
Student says the word slowly and feels for the lip movement of the second sound.
Teacher: “What are your lips doing to make this sound?” (Teacher points to the second chip)
Student describes.
Teacher: “Good. The sound is?”
Student says the sound.
Teacher: “Good. Point and sound.”
Student says each sound as he points to each chip.
Teacher: Correct. Blend?” The student says the word.

Error Correction 3

If the student had the wrong number of chips down (3 instead of 4). This provides the most scaffolding.

Teacher: "Almost, let's try again. The word is spot. Echo?"
Student repeats correctly.
Teacher: "I hear 4 sounds. How many chips do you have down?"
Student corrects the number of chips.
Teacher: "Good, now say spot and feel what your lips (or tongue) are doing to make each sound. Point to each chip as you say each sound." Teacher points above as student points at the tokens.
Student says each sound while pointing to each chip.
Teacher: "What sound is this one?" Teacher points to the second chip. Student says the sound.
Teacher: "Correct. Point and sound."
Student says each sound as he points to each chip.
Teacher: "Good. Blend it." The student says the word.

2.5 Responding to pronunciation differences due to dialect

General American English (GAE) is usually the dialect of school and literacy. Teachers should ensure that their pronunciation in the phonemic awareness lesson is consistent with the school dialect (GAE). The pronunciations of spoken words can vary among the different dialects of English. For example, speakers of southern dialect might pronounce some vowels differently. Students who speak African-American English (AAE) use a dialect in which some consonant pronunciations are more likely to differ from GAE. Speakers of either dialect might drop final consonant sounds.

Intuitively, teachers who hear a dialect difference may want to correct that pronunciation of the word to make it align with the GAE pronunciation. Because a student's dialect is their home language, their primary language, and the language they are loved in, it is important to respect that language and accept the dialect pronunciation as a valid alternative.[9] Correcting a dialect-based pronunciation can devalue the student's home dialect and discourage students from engaging in the phonemic awareness activity.

Example routine for pronunciation differences. AAE dialect speakers often reduce consonant digraphs to a single consonant with similar voicing, saying /f/ instead of the unvoiced /th/. If the teacher says "bath" and the student repeats "baf," the teacher should accept that dialect pronunciation and have the student segment the sounds in that pronunciation. The student would then segment the final sound as /f/, which the teacher would recognize as one correct response and then ask another student if they have a different correct response (/th/). At another time, the teacher might draw the class's attention to the spelling and GAE pronunciation of the word "math," providing everyone with a review of /th/ as a sound that is made with the tongue between the teeth. By addressing dialect-based pronunciation differences in a respectful way, students are more likely to feel included and participate in the learning activity.[10] When students are segmenting the phonemes in a word as they pronounce them, they are learning to identify sound sequences and building their phonological analysis skills.

2.6 The importance of knowing your speech sounds

It is a good idea for educators to check their pronunciation of all speech sounds/phonemes in order to articulate them accurately when modeling phonemic awareness tasks for students. This helpful video demonstrates how teachers should pronounce each phoneme. https://youtu.be/wBuA589kfMg?si=FSG7uRikyjPEkSMQ. You can practice pronouncing each phoneme/sound in isolation, using a handheld mirror to confirm your mouth movements. Practicing sound pronunciation with a knowledgeable partner is a great way to refine your skills.

As you grow your expertise, learning more about the articulatory features of phonemes can help you understand which sounds are confusable and why. For example, when you understand that /ē/ and /ĩ/ are produced with similar mouth movements, you understand why some students struggle to distinguish between these sounds. Learning the unique features of some phonemes can help students clarify phoneme-based confusions that impact their reading and spelling (see page 28 for a quick guide to phoneme pronunciation).

Section 3. Answers to Your Questions about Teaching Phonemic Awareness

3.1 What phonemic awareness skills should be taught?

The developmental sequence involves the awareness of larger units of language, including syllables and rhyming, which develop before the awareness of phonemes.

Phonological awareness programs that follow the typical sequence of skills teach basic concepts before more advanced concepts. A typical sequence would be (1) syllables, (2) initial phonemes, (3) final phonemes, and (4) all phonemes in CVC words followed by CCVC and CVCC words. Teaching syllable awareness may be helpful during the first weeks of kindergarten and Grade 1. As soon as possible, teachers should begin instruction by focusing on individual phonemes ("hat": /h/ /ăt/, then /h/ /ă / /t/). Phoneme awareness in early kindergarten is the most important single predictor of reading skill at the end of Grade 1.[11]

Must rhyming be mastered before instruction moves to individual phonemes?
No, and here's why. The tasks associated with rhyming, while serving as "red flags" or indicators of potential reading problems, are only moderately associated with early reading and spelling. Learning to be better at them is not necessarily going to lead to proficiency in reading and spelling. It is phoneme awareness—specifically, the ability to say the individual phonemes in words, to pull them apart, and to put them together—that enables kids to read and spell in an alphabetic writing system like English. That is what instruction should focus on, especially from kindergarten onward.[12]

A note about scripted phonological awareness programs. Educators who are new to teaching phonological awareness may be using a scripted program that provides detailed lessons and language for instruction. This is a good start, and it may work well for some typically developing learners. It is fun for students to learn how to play with sounds, however scripted PA curriculums typically have one drawback that interferes with some students' learning; they practice several different PA skills in one lesson. This allows children at different skill levels to participate, but children who struggle to develop their phoneme skills may not receive enough practice opportunities to build their skills. By observing which children are confident in their answers and which children are looking around to see what others are doing, teachers can identify students who need further practice. If learning phonemic awareness falters with a scripted curriculum, the student usually learns quite well in a more carefully sequenced approach that focuses on teaching one new concept until it is mastered (see curriculum suggestions on page 1). Children who are at risk for reading problems and those who need help with their reading will require a systematic, multimodal approach. Most children can develop phonological awareness readily when instruction proceeds from larger speech units (syllables) to smaller units (phonemes). Each concept should be taught for accuracy first and then practiced for automaticity. See Section 3.3 for tips on delivering multimodal, phonemic awareness instruction.

Blending and segmenting are foundational phonological awareness tasks for both emergent and struggling readers. Students who can segment two-syllable words into each syllable are ready to focus on the first sounds in spoken words. Some children can do this quite easily at the start of kindergarten, but others may not have learned this skill yet. Learning to identify and segment the initial consonant sound from the rest of a one-syllable word can help children who have difficulty with rhyming words. For students who can already rhyme, first-sound activities can provide them with an on-ramp to phonemic awareness by providing practice pulling the first sound away from the rest of the spoken word.

3.2 How should phonological awareness be taught?
Research demonstrates that phonological awareness is relatively easy to teach, and most children make progress with just a few minutes of daily instruction at the start of the literacy lesson.

Phonological awareness instruction can begin as early as age 3. Rhyming and syllable awareness, which are phonological skills, develop by age 4 in many children. In preschool, young children should be exposed to lots of word play like clapping or tapping syllables in words, playing with words that rhyme, and grouping words by their first sound. Word-play activities can be included in everyday routines. For example, during an opening circle, a teacher can clap or tap the syllables in the children's names (Sam – an – tha; Jay – den) or create a rhyme with their names (Gam – an – tha; Shay – den). Themed vocabulary words can be grouped to begin with the same first sound (carrots, cauliflower, cucumber in one group and beans, broccoli, and banana in another). These activities draw attention to the sounds in words in addition to word meaning. By the time children leave PreK, they should be able to identify words that begin with the same first sound.

By the beginning of kindergarten, most children can rhyme words and identify words that have the same first sound. However, children with underdeveloped phonological awareness may not yet understand that words are made up of a sequence of speech sounds. Focusing on syllables in words is a concrete approach to help them develop this understanding. An example for this level of instruction is to take a picture of a cup and a picture of a cake to represent the word "cupcake." In the first lesson, children can learn to segment two parts of a compound word ("cupcake") by moving the cards apart as they say each part. The next lessons will practice segmentation with two-syllable words that are not compounds ("mon-key"). This is an excellent time to teach lesson routines, such as each student listening carefully to the spoken word and then echoing that word aloud.

Instruction that builds awareness of smaller units (or phonemes) should begin by focusing on the first phoneme in words. In early kindergarten, teachers may have children group words that begin with the first sound with the goal of having children identify that first sound in a variety of words. When teaching first sound blending and segmentation, begin with sounds that can be stretched when pronounced combined with a vowel (e.g., /m/ - /e/; /s/ - /ay/). Continuant sounds in the first position, such as /s/, /m/, and /f/, can be stretched out easily whereas stop consonant sounds, such as /p/, /b/, /t/, /d/, /k/, and /g/, are more difficult to extend. Some children find it more difficult to segment and blend stop consonant sounds when they are first learning this skill. Once the student can accurately blend continuant sounds into simple syllables, then phonemic awareness activities can use words with any of the speech sounds in English that the child can articulate.

Begin instruction with a focus on the first sound in 3-phoneme words (*mat*, *mop)* then move to building awareness of the last sound in 3-phoneme words (*pot, wet*). When children can accurately identify first and last sounds in words, they are ready for instruction that focuses on the middle sound. The goal for the end of kindergarten is for children to be able to accurately segment and blend all the phonemes in CVC words.

In Grade 1, teachers can determine each child's phoneme awareness skill for segmenting and blending CVC words. Once students can segment three-sound words, they can learn how to segment and blend more complex single syllable CCVC words with initial blends (e.g., *stop, drum, black*), then words with final blends (e.g., *fast, hand, lamp*). See the example sequence in Section 2.3.

This sequence of instructional steps follows the developmental phases established by decades of research from the early preschool years through the onset of learning to read and spell words in the early elementary grades. With appropriate instruction, children are capable of developing PA skills earlier than what the current standards expect. Importantly, instructional routines should be quick and efficient. Small group phonemic awareness activities can take less than 5 minutes in kindergarten and about 5 minutes in Grade 1 and beyond.

The next PA skills that typically develop are higher-level manipulation skills such as deletion and substitution. Students' well-developed PA skills facilitate phonics and spelling skills. And reciprocally, reading and spelling skills aid in completing higher-level PA manipulation tasks.

Students who struggle with reading in Grade 2 and beyond should be assessed with a phonological awareness assessment such as the Rosner Test of Auditory Analysis Skills or the Phonological Awareness Screening Test (PAST).[13] They should receive daily phonemic awareness instruction in a sequenced program that is multi-modal. Multi-modality instruction integrates visual, auditory, and articulatory pathways simultaneously to support learning (Section 3.3 describes how to use tokens in multi-modal instruction). Students who do not advance their phonemic awareness skills with these programs may require a more intensive approach to strengthen phonological processing.

Each phonemic awareness lesson should first review the previously taught concept, then focus on teaching the next sound position in the sequence. For example, if adding an initial sound to three-sound words (/s/ + *pin* becomes "spin"; /p/ + *lane* becomes "plane") is the new skill, then start the lesson by reviewing three-sound segmentation orally. A two-part lesson plan that includes a review and one new skill allows students to move forward in the phoneme awareness sequence while reviewing the previously taught concept until they demonstrate at least 90% accuracy two days in a row. An example instructional routine for teaching a new phonemic awareness skill appears in Section 2.1.

Segmentation and deletion activities always begin with a spoken word. For each item, the teacher says the word and the students repeat it or echo. After the teacher hears the repetition of the word, then they describe what change the students should make. For example, "Say bat. Now say it again without the /b/." Then the students think about how to make this change and produce the answer "at." When students are learning a new phonemic awareness task, they can use blank tokens to track the sounds they are segmenting. Most children learn new phonemic awareness tasks better when they use tokens to represent each sound than when instruction is simply oral (see Section 3.3). Once students understand the task and can perform it accurately with tokens, then they can practice without tokens to develop automaticity. Each item should end with students blending the sounds to produce the word as it would normally be spoken. Activities will differ somewhat depending on whether the goal is accuracy (for the new task) or automaticity (for the review items).

Focusing student attention on how sounds are produced

- Avoid segmenting the word for students. Instead, repeat it normally, then ask them to echo, then say the word slowly and stretch it out.
- To focus on a particular speech sound, the teacher can ask students to notice how they produce that sound with their mouth. For example, "What is working, your tongue or your lips?"
- A teacher may draw student attention to how the sounds feel in their mouth as they are produced. For example, "When you say */b/,* do your lips start together or apart"? To help students identify voicing, a teacher can ask the students to say voiced and unvoiced pairs (e.g., /p/ and /b/) with a hand on their throat to detect the vibration that occurs during the production of voiced phonemes (see page 28).

3.3 What are tokens and how can I use them when teaching phoneme awareness?

Tokens are small items (blank chips, blocks, or tiles) that students touch and move as they say the phonemes. Tokens provide multimodal practice that engages visual, auditory, and kinesthetic systems to help students manipulate sound sequences in a phonological task.

In any grade, tokens are handy for demonstrating phonological awareness tasks to students. At each level, *students first use manipulatives to work toward accuracy*. Then, in later lessons, they build automaticity with oral-only practice before moving on to the next step.

Students can use tokens to help them remember sounds. For example, a kindergartener might use two small blocks or chips to segment the first sound in a word. First, he repeats the word "map," pushing one square up under a picture of a map when he says /m/ and pushing another up when he says /ap/. In later lessons when he is able to fully segment words into phonemes, he would push up three chips as he segments each sound /m/ /a/ /p/, and then blends those sounds to say "map." When students reach mastery with a skill, tokens can be removed or faded and replaced with oral practice for automaticity.

Many students use tokens in multimodal practice that supports more accurate sound sequencing. In Grade 1 and beyond, students can use different color chips to represent consonant and vowel sounds (see the final page in this guide). Consonant sounds (green chips) are obstructed by the lips, teeth, and tongue and are *closed* or constricted sounds. Vowels (orange chips) are *open* or unobstructed sounds that are the essential part of any syllable. Calling children's attention to how consonants and vowel phonemes are produced can be helpful. For example, students can feel the vowel by placing their hand under their chin and feeling their jaw drop as they say the vowel sound in a word. Using two colors of tokens also makes it easy for teachers to check if words with 3 to 6 sounds are segmented correctly. For struggling readers, tokens are a vital part of the multi-modal instruction that helps them retain and sequence sounds during phoneme awareness tasks.

Simple tokens can be beneficial for teaching phonemic awareness in several ways

- They support the identification of sounds and keep sound sequences available in working memory during the activity.
- They allow students to learn phoneme tasks using several modalities (listening, feeling the sounds as they are produced, moving the tokens, and seeing the tokens).
- Teachers and students do not need to consider word spellings. For example, two tokens can be used for words like "shoe" without worrying that the two phonemes in "shoe" are represented by four letters.

- Students with dialect differences can continue to develop phonemic awareness in their home dialect while they learn more about GAE.

3.4 Should phonological awareness instruction begin with larger units, such as syllables?
The research does not provide a clear answer at this time.

In practice, many K – 1 students cannot perform phonemic awareness tasks when they are first presented. Syllable-level skills typically develop earlier in preschool. Syllable-level tasks can pave the way for phonemic awareness activities by introducing instructional routines and providing students with practice attending to the larger sound structure of words. The goal is to learn these foundation skills as quickly as possible before moving on to first-sound awareness. Once students can segment the first sound in words, then the instruction moves to awareness of the final consonant, followed by an awareness of all phonemes in simple, 3-sound words.

3.5 Do first-sound activities have a role in early phonemic awareness instruction?
Yes, activities that help children focus on the first sound in spoken words play an important role in early phonemic awareness instruction.

Using the term *first sound* instead of *onset* provides a more accurate description of this beginning phase of phonemic awareness development, which involves the ability to identify the very first consonant sound in spoken CVC words (*map*). When English words begin with two or more consonant sounds, all those sounds form the onset. The onset in a word is only the same as the first sound when the word begins with a single consonant. Words beginning with a vowel sound do not have any onset. For these reasons, it is more accurate to use "first sound" or "initial sound" instead of the term onset. "First sound" is also student-friendly language.

Segmenting the first sound from CVC words that begin with a single consonant ("lip" - /l/ /ĭp/ or "fan" - /f/ /ăn/), can help emergent readers and struggling readers in two ways:

- When developing phoneme awareness with sequenced instruction, first-sound segmentation activities provide a first step for identifying other individual phonemes in spoken words. The first sound in a word is usually easier for listeners and speakers to detect than the word's final sound or the internal sounds.

- Children who cannot yet identify rhyming words in spoken language can do so more easily once they can accurately segment the first sound in spoken words. Word rhyming seems easy, but it involves segmenting the initial consonant or consonants from the rime (the vowel and any consonant(s) that follow in a single-syllable word) and then substituting a different initial consonant sound. Two words ("lane" – "rain") rhyme because the /l/ of the first word can be substituted with the /r/ to form the second word. Once children can recognize word pairs that rhyme, then they can choose which word rhymes with a simple word like *fun* among several options ("sun," "fin," and "man"). Using pictures for the choices reduces the burden on working memory and, thus, may improve phonological awareness performance. Next, they can practice producing rhymes.

Two points to remember when planning first-sound segmentation activities.

1. Phonemes represented with consonant digraphs/trigraphs, such as /sh/ in the word *ship*, are appropriate to use in first sound segmentation activities. Consonant digraphs (sh, ch, th, ph)

spell a single speech sound. For example, the word *ship* has three phonemes as does the word *sip*.

2. Avoid words beginning with consonant blends because blends are harder to segment than words beginning with a single consonant. For example, words such as *block* or *snake* should be avoided at this point in the instructional sequence.

3.6 How do I know when to move on in the phonemic awareness sequence?
Keep track of accuracy. High accuracy (90%) indicates mastery of a skill or concept.

Struggling readers will build phonemic awareness skills more effectively when they are introduced and practiced with manipulatives at first. When a student is at 90% correct for at least two consecutive lessons using tokens, they have developed accuracy. Then they are ready to practice orally (without any tokens). When they reach 90% correct on oral-only tasks for two consecutive lessons, then they are ready to learn the next new PA skill.

3.7 Should educators teach phoneme deletion and substitution?
Yes, it is important to teach these tasks to struggling readers in Grade 2 and beyond if they cannot perform these tasks. Such tasks help students develop the automatic phonological processes involved in storing written words in memory to build instant word recognition.

Not all students will need explicit instruction with phoneme manipulation tasks. When we teach K-1 readers phonemic awareness, the goal is to improve their ability to blend and segment sounds in single-syllable words to help with learning sound-letter mappings. Typical readers usually build fully adequate phonemic skills simply by reading and spelling. Their phonemic processing becomes developed enough that they perform well on phoneme manipulation tasks like deletion and substitution once they are strong decoders.

Struggling readers with phonological processing weaknesses usually do not develop adequate phoneme processing simply by reading and spelling. If a student can segment and blend words with three phonemes but they repeatedly sound out words that appear frequently in text, this could indicate that they are not storing new words for faster recognition later. Teachers find that struggling readers who have mastered blending and segmenting can develop more automatic phoneme processing by practicing phoneme manipulation tasks, such as deletion (e.g., say “fit,” say it again without the /f/).

Struggling readers benefit from deletion instruction once they can blend and segment. Deletion and substitution tasks strengthen and speed the fast phoneme sequencing skills involved in orthographic mapping. Orthographic mapping is the automatic process that binds the sounds and the letter sequence together in memory so that a word can be recognized faster the next time it is seen. After decoding a word, readers use effortless and fast phoneme sequencing in order to orthographically map the word to store it in memory.[14]

Deletion tasks help build automatic phoneme sequencing skills in the following way. In order to find the new word that results from deleting the /l/ from “play,” students will segment the four phonemes, isolate the one that needs to be removed, splice it out of the phoneme sequence, and blend together the sounds that are left (“pay”). At first, students use manipulatives to perform each part of the multi-step deletion process deliberately, which might take a few seconds. Once they are accurate, they practice deleting the first sound in initial blends in oral-only tasks until they can respond within 1-2 seconds. To do that, they rely on automatic phoneme sequencing that is

effortless and fast. In this way, practicing phoneme deletion helps struggling readers develop the ability to automatically process phoneme sequences, which is a fundamental part of orthographic mapping and building instant word recognition.

Research studies that used phoneme deletion and substitution activities for intervention with struggling readers[15] yielded substantially higher word-reading results than studies that relied primarily on phonemic segmentation activities.[16] Phonemic awareness activities that include phoneme manipulation can be an important part of a code-based lesson because they help build the automatic phoneme sequencing skills that matter for orthographic mapping.

One phoneme substitution that adolescent struggling readers enjoy is sound chaining. Sound chaining is a challenging activity that works well once students have mastered blending, segmentation, and deletion tasks. Sound chains involve a series of phoneme substitutions. Students begin with one word, then substitute one sound in that word to make a new word. Start sound chains with simple spoken words after they can confidently delete phonemes in the position of the substitution. Begin by practicing chains that change out the first sound using tokens. When the student becomes accurate without any tokens, practice chains that change out the final sound (first with tokens until mastered, then orally until automatic). Next, practice chains that change out sounds in either position.

3.8 Who needs to be taught phoneme awareness?
Emergent readers, English language learners, and struggling readers of all ages benefit from phonemic awareness instruction.

Emergent readers enter school knowing that words have meaning. Phonological awareness instruction focuses their attention on the sounds that make up spoken words. Some children pick up phonemic awareness easily in group instruction with a little practice. However, some children need more carefully designed instruction in order to learn phoneme identification and segmentation.

Students may need a sequenced approach to develop phonemic awareness if they have less preschool experience, lower language skills, a history of chronic ear infections, a family history of poor reading, or attention issues. These conditions can also impact phonemic awareness in English language learners. There is no evidence that being multi-lingual, having low intelligence, or experiencing trauma or poverty should restrict the development of phonemic awareness when appropriate, explicit instruction is provided.

Underdeveloped phonemic awareness reflects phonological processing problems that can hinder reading development by making it difficult to learn phonics, sound out words, remember written words, and spell words phonetically. For example, a second grader who reads *fog* for “frog” is not producing the second sound in the beginning consonant blend /fr/. One who writes *jup* for “jump” is not perceiving the first sound in the final consonant blend /mp/. These sound combinations can be difficult for some students to notice until phonemic awareness instruction explicitly focuses their attention on the interior sound in spoken consonant blends.

Diagnostic assessments of phonemic awareness skills, spelling, and word reading indicate whether older students in Grades 2 and up need phonemic awareness instruction. Teacher-friendly phonological awareness assessments, such as Rosner’s *Test of Auditory Analysis Skills* (TAAS) or the *Phonological Awareness Screening Test* (PAST),[17] indicate where student performance falls in the skill sequence.

3.9 Do English Language learners (ELLs) benefit from phonological awareness instruction?
Yes. Phonemic awareness is a necessary skill for all students, including multilingual students who are learning English.[18]

Teaching phonological awareness to English language learners (ELLs) builds a foundation for learning to decode and helps identify those who may be at risk for reading struggles.[19] Providing phonological awareness instruction to English learners will support their word reading skills. Word reading skills, in turn, allow ELLs to further expand their knowledge of English vocabulary and syntax through reading.

Phonemic awareness instruction benefits ELLs who are just beginning to read as well as those who already read in their first language and are learning to read in English. As with native English speakers, ELLs who will struggle with developing reading skills can be identified early based on weak phonological processing skills and poor alphabet knowledge.[20]

Most students who struggle with phonemic awareness in their first language will also struggle with it in the other languages that they are learning.[21] This reciprocity suggests that teachers can be somewhat flexible in assessing phonological awareness for English language learners. Although it may be best to assess the phonological awareness skills in the first language, that is not always possible. If necessary, useful information about where to begin phonemic awareness instruction in English can be obtained from a phonological awareness assessment that is conducted in English. If the assessment is given in English, the teacher should model the task several times to make the goal clear in case the student does not understand the verbal directions.

Phonological awareness instruction can be implemented with English learners in general education classrooms and in bilingual classrooms. In a general education setting, teachers can plan small group activities based on student performance on informal phonemic awareness assessments, such as the TAAS or the PAST. In a bilingual setting, phonemic awareness instruction can alternate between the languages of instruction. This provides students with practice blending and segmenting in both languages.

> Research in many languages demonstrates that phonemic awareness development in one language transfers to other known languages. (Farrall, 2012, p. 53)

When teaching phonemic awareness, educators should model each activity using manipulatives or dashes on a whiteboard. This allows the student to have something concrete to "see" and manipulate, which provides additional memory support. Irrespective of their first language, students benefit from phonemic awareness instruction that uses blank tokens to build mastery of new skills and ample oral practice to build automaticity.

Educators can tailor phonological awareness activities by examining performance on criterion-referenced assessments (e.g., TAAS, PAST) and the student's written work. Assessments indicate oral phonological awareness skills whereas written work indicates how phonemic awareness skills are transferring to spelling. For example, ELLs who have learned how to delete the first sound in an initial consonant blend (e.g., "stop" → "top") may need more practice to build automaticity with segmenting blends in order to begin spelling words with initial blends correctly. Once their written work demonstrates an accurate perception of phonemes at that position, then the student is ready to learn the next phonemic awareness skill.

Does teaching phonemic awareness to English language learners differ from teaching children whose first language is English? Yes and no. English language learners benefit from phonological awareness assessment and instruction. However, they may struggle with some aspects of phonemic awareness more than their native-English-speaking peers. Whereas native English speakers are learning to become aware of sounds that they are already speaking every day, English learners may not be as familiar with the sounds they are learning to segment. When children enter school without many face-to-face interactions with a proficient English speaker, they tend to rely on the phonological system from their first language (L1) when reading and spelling in English. To better support English learners, it is helpful to know which other languages the student speaks in order to identify which sounds in English are not present in the student's home language(s). Supplemental phonemic awareness activities that focus on sounds that are not present in the student's first language are key to support ELLs as they learn to read in English.[22]

> Instructionally, it is important for teachers to informally determine some of the phonological similarities and differences between English and the first language to ensure that instruction is placed on the sounds that do not exist in the first language. (Cárdenas-Hagan, 2018, p. 56-57)

There may be several phonological differences between a student's first language (L1) and English, and these differences pose specific challenges to developing phonemic awareness.

- The number of speech sounds can differ between spoken languages; Spanish has five vowel sounds whereas English has more than 14 vowel sounds. Because there is one vowel sound for each vowel letter in Spanish, mapping vowel letters to vowel sounds is more consistent in Spanish than in English. As English has more complex letter-sound correspondences than most other languages, many ELLs will require explicit decoding instruction and additional practice to master the letter-to-sound mappings that are the foundation of learning to read and spell in English.

- Phonemic awareness tasks conducted in English will be easier when they contain sounds that occur both in English and in the student's native language. Phonemic awareness activities that include sounds that do not exist in the student's native language can be especially challenging for ELLs. Therefore, most ELLs will need more instructional time and support with phonemic awareness activities that include these less familiar sounds. For example, students whose L1 is French, Spanish, or a Chinese language, will not be familiar with the English unvoiced /th/ (as in *think*) and will probably need focused practice to develop its pronunciation. Likewise, students whose L1 is Arabic will benefit from practice with /p/ and /v/. Students who primarily speak Korean or Japanese will benefit from additional practice with spoken words containing /r/ and /l/. Students who speak Spanish or French will benefit from lots of practice distinguishing /ĭ/ and /ē/.

  To identify sounds that are not in English but are in the students' other languages, please see https://www.asha.org/practice/multicultural/phono/. Speech-language pathologists can be an excellent resource for introducing a student's native language and its sound patterns.

- In some cases, the student's first language (L1) may share sounds with English but those sounds only occur in certain locations in the L1. In Spanish, for example, the consonants /p/, /b/, /t/, /k/, and /g/ appear initially and medially but not in the final position. Therefore,

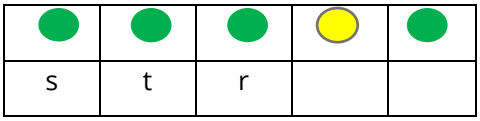
English learners may need focused instruction to build automaticity with sounds that occur in different locations in English than in their native language.

- Constraints on which sounds can appear in a spoken syllable might differ between the L1 and English. In English, consonant clusters (*st, sp, sl, sm, sn,* etc.) within a syllable are more frequent than in other languages. For example, consonant clusters within a syllable are rare in Spanish. Spanish phonology places a vowel before the "s," which pulls it away from its neighboring consonant, and forms a separate syllable. *Escuela*, pronounced /es/ /kwe/ /lə/ is the Spanish word for *school* (/skūl/). In English the /sk/ occurs in one syllable in the word *school* whereas in Spanish *escuela* separates the /s/ and /k/ into different syllables. Spanish-speaking ELLs who are relying on the phonological structure of their first language may insert a short e before the /s/ in English words to separate the consonant cluster as it would be in Spanish, saying /es/ /top/ instead of /stop/.

Phonological differences between the L1 and English might make phonemic awareness, decoding, and spelling activities more difficult for ELLs than for native English speakers.

Educators may notice that some English language learners continue to struggle with (1) consonant clusters, (2) sounds in English that are not in their L1, or (3) vowel discrimination. These students may benefit from adding in letters for the challenging sounds as a further scaffold for phonemic awareness. The example below illustrates how letters could be included at first in a phonemic awareness task for an older, struggling reader. Once a student can segment the sounds when viewing the letters, then segmentation can be practiced with just tokens until mastery is achieved. Using tokens without letters keeps students' attention on the sound sequence to strengthen underlying phonological processes. Oral-only practice without tokens will develop students' automaticity with phoneme sequencing, which is important for orthographic mapping (see more about orthographic mapping in 3.7).

"stripe"



Teachers who understand the inconsistencies in letter-sound relationships between English and the L1 can anticipate when more practice will be beneficial. For example, in Spanish the letters *h, j, v, x, y,* and *z* represent different sounds than they do in English. In Korean, the same letter makes the sound /g/ when a vowel comes after it and /k/ when a consonant comes after it.[23]

Whatever the setting, systematic phonemic awareness instruction will benefit English learners' spoken and written communication skills. Phonological awareness assessments help identify ELLs at risk for reading struggles and indicate where instruction should begin. Providing instruction to fortify phonemic awareness supports reading acquisition in English and, thereby, propels the development of English language skills.

Section 4. Questions about Teaching Phonemic Awareness and Letters

4.1 What do I teach first, letter names or phonological awareness?

Letter identification and phonemic awareness are important for learning to read and write, and both should be part of early literacy lessons.

Phonemic awareness and letter knowledge both support learning to read and spell. These skills intertwine but each contributes separately to overall literacy.

In preschool, young children are beginning to learn about the letters of the alphabet, and they are learning how to play with syllables and sounds in words. Early in kindergarten, many emergent readers are still learning to recognize their letters and to play with syllables and identify beginning sounds in spoken words.

Effective teaching provides instruction in letter names and phonological awareness as two parallel strands of the language arts block. Letter instruction that includes learning the letter name, its most common sound, and how to write it are important preparation for later reading and writing development.[24] For phonemic awareness, students can use tokens to represent sounds, allowing phonemic awareness practice to continue even when phonics skills are inconsistent.

When teaching small groups, consider grouping students based on their phonemic awareness skill level. Some students can learn their letters but have difficulty noticing individual phonemes and their sequences in spoken words. Other students have more difficulty learning their letters than perceiving phonemes in spoken words. There are students who learn both their letters and phonemic awareness easily and those who won't learn either easily. This last group of students will need explicit, sequential, and multi-modality instruction that allows them to see, touch, produce, and hear speech sounds as they segment them.

4.2 Should phonemic awareness instruction use letters?

Teaching phonemic awareness separately from phonics fits conclusions from converging research, including the NRP studies, that phonemic awareness and phonics are both necessary for children to become confident readers.[25] Comparisons of reading gains indicate that emergent readers and struggling readers who receive phonemic awareness instruction *in addition* to phonics instruction make more reading progress than children who receive phonics instruction alone.[26]

Teaching phonemic awareness separately from decoding and spelling seems to provide the best environment for drawing attention to the individual speech sounds and their sequence in spoken words. In contrast, using all letters to teach phonemic awareness essentially transforms the task into a spelling activity that may not be accessible for struggling readers who know fewer letter sounds. Also struggling readers may need focused phonemic awareness instruction to strengthen their phonological processing. Using tokens (blank tiles, chips, or blocks) makes phonemic awareness instruction more accessible to more students, helping them to grow phonemic awareness skills that will support learning phonics and automatic orthographic mapping.

Teaching phoneme awareness usually begins without letters to help children focus on the phoneme sequences in spoken words during tasks that build their ability to identify, segment, delete, and blend those sounds. Using tokens helps children remember the sounds that they are working with, even if they don't know how the sounds are spelled. Teachers observe that using tokens rather than letters is also effective for readers in Grade 2 and beyond who struggle with reading and spelling. Phonemic awareness activities that use chips can direct student attention to the phonemes while avoiding the complexity of letter identities and letter-sound mappings. This may be especially helpful for older struggling readers. Drawing attention to the sound sequences in spoken words is necessary for some children to clarify their perception of speech sounds and strengthen their phonological analysis skills. Once students can easily segment spoken words with initial blends (e.g., "f-l-o-p"), teachers often see a decrease in misreadings like "fop" or "flip."

There are several reasons why many teachers use tokens rather than letters in phonemic awareness instruction. When phonemic awareness instruction begins, using tokens allows phonemic awareness instruction to proceed even if students know few letter-sound correspondences. Managing letter tile supplies for every student every day can be time consuming. Tokens can be used flexibly; students can use one vowel and four consonant chips to practice phonemic awareness with hundreds of words. Using tokens also allows teachers to group students by phonemic awareness skill rather than differences in letter-sound knowledge. Remember, phonemic awareness instruction should be efficient, lasting only a few minutes each day.

When deciding whether to use letters to teach phonemic awareness, educators may want to consider the following.

- *When teaching phonemic awareness with letters, each practice word must be spellable by all children in the group.* Avoid spoken words with letter patterns that have yet to be learned.
- Some spoken words will be difficult for novice readers to represent with letters. For example, the same long A sound is spelled with different letters in "cake," "paid," "may," "steak," "hey," and "weigh."
- If using letters in a phonemic-awareness-style task, teachers must decide whether the child who segments "paid" into /p/ /a/ /d/ and chooses the letters *p-a-d* has given a correct answer or an incorrect answer, when the goal of the activity is to build phonemic awareness.
- When letters are used in phonemic-awareness-style tasks, letter identification errors and letter reversals can interfere with learning the phonemic awareness task.
- If letters are always used during phonemic awareness instruction, then phonemic awareness instruction becomes indistinguishable from spelling regular words.
- One of the main reasons to begin phonemic awareness instruction is to facilitate learning for students who are struggling with learning phonics and spelling words as they sound. Such students are likely to know fewer letter-sound correspondences, so using letters instead of tokens in phonemic awareness tasks can limit the number of items for practice.
- Using letters can confuse the interpretation of student errors. If a student responds incorrectly to a phonemic task using letters, it is difficult to know whether the error is due to poor phonemic awareness or inadequate letter-sound knowledge.

On the other hand, some teachers find that using a few letter tiles as needed can help some students discriminate between phonologically confusable vowels or consonants.

Why do some experts recommend teaching PA with letters? A deep dive into the research

The NRP supplemental analysis reported that the effect size for the impact of phonemic awareness on reading growth was about twice as large when PA instruction occurred "with letters" as compared to when PA instruction occurred "without letters."[27] The conclusion seems straightforward at first, if somewhat limited by the inclusion of only K – 1 students in regular classrooms. Yet experts disagree on the interpretation of this NRP conclusion, perhaps due to the ambiguity of the word *with*. Some educators interpret the NRP's conclusion as indicating that phonemic awareness should be taught using letter tiles instead of tokens. In contrast, the authors of this guide disagree with that interpretation. Based on the examples of eight "with letters" studies described in the NRP report, we maintain that the NRP's conclusion speaks to the importance of connecting speech sounds to letters *in addition* to conducting phonemic awareness instruction orally.

The ambiguity of the word *with* is apparent in the two following definitions. According to dictionary.com, the first definition of *with* is "Accompanied by . . . e.g., *I will go with you*." If this wasthe NRP's intended meaning, it would indicate that oral PA instruction that was supplemented by

instruction that connected speech sounds and letters was more effective than oral PA instruction without such accompanying instruction. Another definition of *with* is "of means or instrument . . . e.g., to *cut with a knife*." If this was the NRP report's intended meaning, it would indicate that letters should be the instrument used to teach PA instead of tokens.

Fortunately, the full NRP report clarified that they intended the supplemental definition of w*ith* by describing eight examples of the "with letters" studies. These descriptions of "with letters" studies noted that the oral activities were supplemented at some point by including one or more letters. Most of the studies classified as teaching PA "with letters" did *not* use letters instead of tokens to teach phonemic awareness. PA instruction in most of the "with letters" studies began with oral activities. After some number of lessons, oral activities continued and were followed by some items where the student could choose to place one or more letter tiles instead of a blank token.

Therefore, the accurate interpretation of the NRP supplemental analysis on teaching PA "with letters" is as follows. *Instruction that included core oral activities and some items with letters was more effective for typical readers in K-1 than phonemic awareness instruction that never included any letters.* It is not too surprising that oral phonemic awareness activities followed by activities that included some letters would help reading more than oral PA instruction that is not supplemented with letters.

Few peer-reviewed studies have directly tested whether phonemic awareness lessons that use letters only are more effective than lessons that use oral activities only. One study found that kindergartners who were taught phonemic awareness either with letters only or blank tiles only learned how to segment sounds in a similar number of lessons. Also, students in the two conditions performed similarly when segmenting untaught sounds.[28] Several studies indicate that using letter activities in addition to oral activities is very effective for children in pre-school and kindergarten.[29] However, there is no present evidence that phonemic awareness instruction should be conducted with letters instead of tokens. Oral activities play a primary role in phonemic awareness instruction.

Recent meta-analyses of teaching PA have done nothing to change these conclusions. Most of the studies included in recent meta-analyses compared PA instruction that was oral-only with PA instruction that was oral and some instruction that included letters. That may be because PA instruction typically has a strong oral component as one of its defining features. In fact, the discovery that building awareness of speech sounds orally can improve reading may be one of the most important psychological discoveries of the 20th century. Therefore, the authors of this guide affirm that oral PA instruction should be part of a daily dose of reading instruction that explicitly teaches the alphabetic principle, phonics, spelling regular words, oral reading, comprehension, and vocabulary.

Teacher takeaway: In K-1, PA instruction that includes oral routines and some items that have a sprinkling of letters supports growth in word reading more than PA instruction that includes no letters on any items. There is no evidence that using letters instead of tokens in your PA instruction leads to better reading gains. There are four decades of evidence indicating that phonemic awareness is a necessary foundational skill in learning to read and that students learn these skills by oral practice with sequencing the sounds in spoken words.

Connecting phonemic awareness to letters in the spelling and reading lesson strands

At this time, research does not indicate precisely when and how phonemic awareness should be linked to letter forms. Focused phoneme instruction with tokens supports working memory while avoiding the challenges mentioned in the bulleted list above.

Typically, linking letter knowledge and phonemes to read and spell words can begin by mid-kindergarten, depending on the students' incoming language skills and cognitive levels. When students can identify initial consonant phonemes in spoken words (e.g., the first sound in "mat") and know some letter-sound pairs, they are ready to apply these skills to read and spell simple CVC words that contain those letters. Educators can continue teaching phonemic awareness skills as a distinct strand of the literacy block until students can segment and delete sounds from words with beginning and ending consonant clusters. Students will progress at different rates through the different strands (phonemic awareness, word decoding, spelling), and that is fine. Skilled teachers move student learning forward within each strand, understanding that the strands should not be taught lockstep.

In K -1, phonemic awareness should be connected to letters in several ways that promote understanding of the alphabetic principle. Teachers can encourage typical readers to spell via sound by prompting them to say the word slowly (stretching out the sounds), move a chip for each sound as they say it, then write each letter. Students can be encouraged to also use tokens to segment sounds while writing sentences and stories. Vowel and consonant sounds with key pictures can be posted with information about their most common spellings. This provides a useful reference for students as they learn to spell what they say. Sound chain activities can be adapted to include letters when students are ready. For example, students might practice decoding and spelling words that only differ by one letter each time (*it, hit, lit, bit, bat, sat, sap*).

Most struggling readers develop phonemic awareness more efficiently when these tasks are introduced and practiced orally using tokens at first to support their memory for sounds. They can begin linking letters to sounds during spelling while continuing to develop phonemic awareness in a separate part of the lesson.

Using phonemic awareness to teach the alphabetic principle
Including a letter tile or two in your phonemic awareness items can make the alphabetic principle more explicit for children who are not yet understanding it. Those children include preschoolers, kindergarteners, students with speech/ language issues, children with intellectual disabilities, and ELLs whose first language is not written or not alphabetic (e.g., Chinese). Using a sprinkling of letters in your phonemic awareness items can help emphasize that the sound work involved in phonemic awareness practice is relevant to reading and spelling instruction. Giving K - 1 students the option to place one letter tile rather than a token can keep their focus on speech sounds while also illustrating the alphabetic principle. On a letter item, you would teach the same PA routine and provide a letter or two along with the tokens. During segmentation, the student could choose to place a letter down among the tokens as she says the sounds. Most of the NRP studies that taught phonemic awareness using letters (see Ball & Blachman, 1991) provided the option for students to place one letter tile down among the tokens in some of the phonemic awareness items.

4.3 Is phonics instruction alone sufficient to help all children become independent readers?
No, although phonics is a crucial part of reading instruction.

Students who struggle to learn phonics usually need explicit instruction in phonemic awareness to sharpen and clarify how they process the speech sounds in words.

At-risk and struggling readers often enter school with poor phonemic awareness, which indicates that their phonological processing is less developed than it is in children who are on track for typical reading development. Several factors can contribute to poor phonological awareness in children

such as a family history of reading difficulty, ADHD, chronic ear infections, and significant articulation difficulties.

Unfortunately, it is difficult to predict who will become a struggling reader with complete certainty. Present screeners can predict who will struggle in reading with about an 80% accuracy rate. This means that *1 in 5 students who will struggle with learning to read do not get identified early on.*

If instruction emphasizes phonemic awareness from the very start of elementary school, this will help all students build the phonemic awareness foundation needed to read at grade level and help to make learning to read and spell a more successful process for students who are at risk of literacy learning difficulties. This was the goal of the NRP's recommendation to provide focused phonemic awareness instruction to all students in K-1.

End Notes

1. Ehri (2004); The Report of the National Reading Panel report (NRP, 2000, p. 2-32).
2. "The predominant core cognitive correlate of WLRD [word-level reading disability] involves phonological awareness, a *metacognitive* understanding that the words we hear and read share internal structures based upon sound" (Fletcher et al., 2019; p. 116 emphasis theirs). "[A]lthough some individuals with dyslexia have weaknesses in a variety of areas, impaired phonological processing appears to be a universal cause of dyslexia" (Ahmed, et al. 2012; p. 210).
3. Fletcher et al. (2019); Share, (2021); Vellutino et al. (2004).
4. NRP (2000; p. 2-5; 2-92); "[T]hese studies converge with others . . . in demonstrating that phoneme awareness and letter knowledge are critical foundations for the development of reading skills in children just entering school. Children who have some ability to manipulate phonemes in spoken words when they enter school and who have good knowledge of the sounds of letters make much better progress in learning to read than children for whom either of these skills is weak" (Hulme & Snowling, 2009, p. 45).
5. Ehri (2005; 2014).
6. Kilpatrick (2015; Chapter 11).
7. Fletcher et al. (2019); NRP (2000); Moats (2020).
8. Archer & Hughes (2011).
9. Washington & Seidenberg (2021).
10. Washington, Lee-James, & Stanford (2023).
11. Fletcher et al. (2019); Melby-Lervåg et al. (2012).
12. National Center on Improving Literacy. Ask an Expert, with Dr. Louisa Moats https://improvingliteracy.org/ask-an-expert/must-children-master-rhyming-being-taught-recognize-segment-blend-and-manipulate.
13. Rosner Test of Auditory Analysis Skills or the Phonological Awareness Screening Test (PAST). Available at: https://drive.google.com/file/d/1uUEi_3Hmnoe-DcY8H3tQatyiw4cNEm63/view?usp=sharing
14. Ehri, 1998, 2005; Kilpatrick, 2015, 2020.
15. Torgesen et al. (2001;2010).
16. Lovett et al. (1994); Rashotte et al. (2001).
17. Rosner Test of Auditory Analysis Skills or the Phonological Awareness Screening Test (PAST). Available at: https://drive.google.com/file/d/1uUEi_3Hmnoe-DcY8H3tQatyiw4cNEm63/view?usp=sharing

    www.thepasttest.com
18. Geva & Ramirez (2015), Cárdenas-Hagan (2020), p. 49; Paradis et al. (2021), p. 279; Lindsey et al. (2003), p. 483.
19. Farrall (2012), p. 53; Paradis et al. (2021), p. 279.

20. Cárdenas-Hagan (2020), p. 49; Farrall (2012), p. 53; Lindsey et al. (2003), p. 483; Paradis et al. (2021), p. 279.

21. Kormos (2017), p. 33; Paradis et al. (2021), p. 357.

22. Paradis et al. (2021), p. 385.

23. Cárdenas-Hagan (2020), p. 50.

24. Jones et al. (2012).

25. Foorman et al. (2016).

26. Torgesen et al. (2001); Wise et al. (1999).

27. NRP (2000; Appendix C, Table 3, p. 2-64).

28. Hohn & Ehri (1983).

29. Ball & Blachman (1991); Bradley & Bryant (1983); Byrne & Fielding-Barnsley (1991).

References

Adams, M. J., Foorman, B. R., Lundberg, I., & Beeler, T. (1998). *Phonemic awareness in young children: A classroom curriculum*. Baltimore: Brookes.

Ahmed, Y., Wagner, R. K., & Kantor, P. T. (2012). How visual word recognition is affected by developmental dyslexia. In J. S. Adelman (Ed.), *Visual word recognition: Vol. 2. Meaning and context, individuals and development* (pp. 196–215). Psychology Press.

Archer, A., & Hughes, C. (2011). *Explicit Instruction: Effective and efficient teaching*. New York: Guilford Publications.

Ball, E. W., & Blachman, B. A. (1991). Does phoneme awareness training in kindergarten make a difference in early word recognition and developmental spelling? *Reading Research Quarterly, 26*(1), 49-66.

Blachman, B.A, Ball, E.W., Black, R., & Tangel, D.M. (2000). *Road to the code: A phonological awareness program for young children*. Paul H. Brooks Publishing Co.

Bradley, L., & Bryant, P. E. (1983). Categorizing sounds and learning to read—a causal connection. *Nature, 301*(5899), 419-421.

Byrne, B., & Fielding-Barnsley, R. (1991). Evaluation of a program to teach phonemic awareness to young children. *Journal of Educational Psychology, 83*(4), 451.

Cárdenas-Hagan, E. (2020). *Literacy foundations for English learners: A comprehensive guide to evidence-based instruction*. Paul H. Brookes.

Ehri, L. C. (1998). Grapheme-phoneme knowledge is essential for learning to read words in English. In J. Metsala & L. Ehri (Eds.), *Word recognition in beginning literacy* (pp. 3-40). Mahwah, NJ: Erlbaum.

Ehri, L. C. (2004). Teaching phonemic awareness and phonics: An explanation of the National Reading Panel meta-analyses. In P. McCardle & V. Chhabra (Eds.), *The voice of evidence in reading research* (pp. 153–186). Paul H. Brookes.

Ehri, L. C. (2005). Development of sight word reading: Phases and findings. In M. Snowling & C. Hulme (Eds.), *The science of reading: A handbook* (pp. 135–154). Malden, MA: Blackwell.

Ehri, L. C. (2014). Orthographic mapping in the acquisition of sight word reading, spelling memory, and vocabulary learning. *Scientific Studies of Reading*, *18*(1), 5-21.

Farrall, M. L. (2012). *Reading assessment: Linking language, literacy, and cognition*. John Wiley and Sons.

Fletcher, J. M., Lyon, G. R., Fuchs, L. S., & Barnes, M. A. (2019). *Learning disabilities: From identification to intervention*. Guilford.

Foorman, B., Beyler, N., Borradaile, K., Coyne, M., Denton, C. A., Dimino, J., ... & Wissel, S. (2016). Foundational skills to support reading for understanding in Kindergarten through 3rd grade. Educator's Practice Guide. NCEE 2016-4008. *What Works Clearinghouse*.

Geva, E., & Ramirez, R. (2015). *Focus on reading* (Oxford key concepts for the language classroom). Oxford University Press.

Hohn, W. E., & Ehri, L. C. (1983). Do alphabet letters help pre-readers acquire phonemic segmentation skill? *Journal of Educational Psychology*, *75*(5), 752–762

Hulme, C., & Snowling, M. J. (2009). *Developmental disorders of language learning and cognition*. Wiley-Blackwell.

Jones, C. D., Clark, S. K. & Reutzel, D. R. (2012). Enhancing alphabet knowledge instruction: Research implications and practical strategies for early childhood educators. *Early Childhood Education Journal*, DOI 10.1007/s10643-012-0534-9.

Kilpatrick, D. A. (2015). *Essentials of assessing, preventing, and overcoming reading difficulties.* Wiley & Sons.

Kilpatrick, D. A. (2016). *Equipped for reading success: A comprehensive, step by step program for developing phoneme awareness and fluent word recognition*. Casey & Kirsch Publishers.

Kilpatrick, D. A. (2020). How the phonology of speech is foundational for instant word recognition. *Perspectives on Language and Literacy, 46*(3), 11-15.

Kormos, J. (2017). The effects of specific learning difficulties on processes of multilingual language development. *Annual Review of Applied Linguistics*, *37*, 30–44.

Lindsey, K. A., Manis, F. R., & Bailey, C. E. (2003). Prediction of first-grade reading in Spanish-speaking English-language learners. *Journal of Educational Psychology*, *95*(3), 482–494.

Lovett, M. W., Borden, S. L., DeLuca, T., Lacerenza, L., Benson, N. J., & Brackstone, D. (1994). Treating the core deficits of developmental dyslexia: Evidence of transfer of learning after phonologically- and strategy-based reading training programs. *Developmental Psychology*, *30*(6), 805–822.

Melby-Lervåg, M., Lyster, S. A., Hulme, C. (2012). Phonological skills and their role in learning to read: A meta-analytic review. *Psychological Bulletin,138*(2), pp. 322-352.

Moats, L. C. (2020). *Speech to print: Language essentials for teachers (3rd ed.).* Brookes.

National Center on Improving Literacy. Ask an Expert, with Dr. Louisa Moats. (n.d.) https://improvingliteracy.org/ask-an-expert/must-children-master-rhyming-being-taught-recognize-segment-blend-and-manipulate.

Paradis, J., Genesee, F., & Crago, M. B. (2021). *Dual language development & disorders: A handbook on bilingualism and second language learning (3rd ed.)*. Brookes.

National Reading Panel (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the sub- groups* (NIH Publication No. 00-4754). U.S. Government Printing Office (pp. 2-5; 2-92).

Rashotte, C. A., MacPhee, K., & Torgesen, J. K. (2001). Effectiveness of a group reading instruction program with poor readers in multiple grades. *Learning Disabilities Quarterly*, *24*, 119–134.

Rosner, J. (1993). *Helping children overcome learning difficulties*, 3rd Ed. Walker & Company: NY.

Rosner, J. & Simon, D. (1971). The auditory analysis test: An initial report. *Journal of Learning Disabilities, 4*(7), 384-392.

Schuele, C. M., & Murphy, N. D. (2014). *The intensive phonological awareness (IPA) program*. Paul H. Brookes Publishing Company.

Share, D. L. (2021). Common misconceptions about the phonological deficit theory of dyslexia. *Brain Sciences, 11,* 1510.

Torgesen, J. K., Alexander, A. W., Wagner, R. K., Rashotte, C. A., Voeller, K. K., & Conway, T. (2001). Intensive remedial instruction for children with severe reading disabilities: Immediate and long-term outcomes from two instructional approaches. *Journal of Learning Disabilities*, *34*(1), 33-58.

Torgesen, J. K., Wagner, R. K., Rashotte, C. A., Herron, J., & Lindamood, P. (2010). Computer-assisted instruction to prevent early reading difficulties in students at risk for dyslexia: Outcomes from two instructional approaches. *Annals of Dyslexia*, *60*, 40-56.

Washington, J. A., Lee-James, R., & Stanford, C. B. (2023). Teaching phonemic and phonological awareness to children who speak African American English. *The Reading Teacher*, *76*(6), 765-774.

Washington, J. A., & Seidenberg, M. S. (2021). Teaching Reading to African American Children: When Home and School Language Differ. *American Educator*, *45*(2), 26.

Wise, B. W., Ring, J., & Olson, R. K. (1999). Training phonological awareness with and without explicit attention to articulation. *Journal of Experimental Child Psychology*, *72*(4), 271-304.

Vellutino, F. R., Fletcher, J. M., Snowling, M. J., & Scanlon, D. M. (2004). Specific reading disability (dyslexia): What have we learned in the past four decades? *Journal of Child Psychology and Psychiatry 45*(1), 2–40.

Supplemental Materials

A Quick Tour of Speech Sound Production

We speak words effortlessly, articulating sequences of speech sounds automatically. Yet learning how to say speech sounds in isolation can be tricky. Phonetics is the study of how speech sounds are produced. Each language contains a set of certain speech sounds. For example, English contains about 44 speech sounds, depending on geographic region. When talking with teachers, we refer to these itty-bitty speech sounds as phonemes.

It is not necessary to know English phonetics to begin teaching phonemic awareness in a classroom. However, understanding how speech sounds are produced will make your practice more effective. If you develop a better understanding of how speech sounds are articulated, you may become more accurate with your own phoneme awareness, which helps make your instruction more effective. Understanding how speech sounds are produced is beneficial for teaching phonemic awareness, phonics, and spelling. Knowing the articulatory features of each sound helps educators understand why sounds may be confusable, which sounds are more difficult to identify in the speech stream, and how to model key speech sounds in a lesson.

Note that there is no need to teach children how to pronounce the phonemes in English. There are standard pronunciations of these sounds and variations that may be based on dialect or result from articulatory issues. When students repeat a word in their own dialect during phonemic awareness instruction, they should focus on segmenting the word as they spoke it.

Each consonant phoneme has three major features that describe how it is produced in the mouth: *place* (where the sound is made), *manner* (how the sound is made), and *voicing* (voice on or off).

Consonant sounds are either voiced or voiceless. The voicing feature describes whether a consonant sound is produced by vibrating the vocal folds or not. You can feel voicing by placing a hand on your throat as you say the voiced consonants in the chart below. Students can check whether a sound is voiced by putting their fingers over their voice box and feeling the vibration they say “zzz.” In contrast, there is no vibration when saying “sss.”

Voiced and voiceless consonant sounds can be confusable for spelling

Voiceless	p	f	th	t	s	Sh	ch	k	wh	h
Voiced	b	v	th_v	d	z	Zh	j	g	w	y, l, r, m, n, ng

In spelling, some children confuse voiced and unvoiced consonants when they segment the sounds before writing. These voicing pairs are consonant sounds produced in the same place and in the same manner, but one sound in the pair is voiceless and the other sound is voiced. Children who are not attending to voicing may write *f* for /v/ or write *t* for /d/. The teacher can cue the student to place a hand on her throat to feel the voicing feature, then name the letter that spells that sound.

Understanding vowel sound articulation is also important for literacy teachers. You can read more about this topic in Chapter 2 of Moats (2020). *Speech to print* (3rd Edition).

Teaching Phonemic Awareness with Tokens