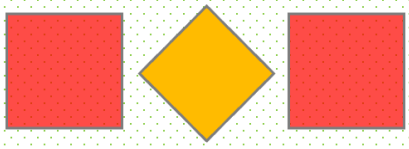


Teaching Phoneme Awareness in 2023:

A Guide for Educators

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Welcome Educators,

We hope that you find this guide helpful in furthering your expertise with phonemic awareness instruction. Adopting these practices will help K-1 students, English language learners, and older struggling readers develop this essential foundation for learning to read. Although we know that phonemic awareness is important for learning to read and spell, there is little research that compares the effectiveness of different approaches for teaching phonemic awareness to struggling readers in Grade 2 and beyond. This guide addresses some of these issues by using what we currently know from scientific research, teacher experiences, and observations in clinical teaching settings with struggling readers.

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, or 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 was written as a resource that can enhance children’s learning when you use any 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 three 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)

For a phonological awareness curriculum for students in Grade 2 and beyond, you might try Equipped for Reading Success (Kilpatrick, 2016). Full disclosure, the Equipped manual was written by one of the authors of this document. We mention it because many teachers find it useful.

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

- The Rosner *Test of Auditory Analysis Skills* (TAAS) http://courses.washington.edu/sop/Test%20of%20Auditory%20Analysis%20Skills.pdf
- 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, Marion, Shira, Ellen, Lucy, Dave, and Louisa

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

1.1 When should reading research influence instructional practices?

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. Until there is ample new data to confirm that a change in practice will support more effective learning, instruction should continue to align with existing scientific research on reading. We agree that 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 are proposing that phonemic awareness instruction should not be a universal component of reading instruction in K-1 and that extensive phonemic awareness is *not* essential for older struggling readers. There is little scientific basis for such ideas at this time. When children receive effective phonemic awareness instruction in small daily doses, it improves their ability to read and spell familiar and unfamiliar words.[1]

We encourage educators to choose their classroom practices based on the extensive research evidence that is available now. 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. 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 poor phonemic awareness, relatively easy to provide explicit instruction, and this instruction supports gains in reading.

- Based on more than 50 peer-reviewed papers, the Report of the National Reading Panel (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 perceive the sound sequences in words accurately, 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.

1.2 What is Phonological Awareness? Why is it 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 speech. A precise awareness of speech sounds helps students to read words independently by sounding them out and to remember those words when they appear again.

> 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. Even older struggling readers may perform poorly on one or more of these phonological tasks: rhyming, repeating a short vowel sound, blending three sounds (/f/ / ĭ / /t/) to make a word ("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 (using tokens to anchor the memory of each sound) 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:

- supports an understanding of the alphabetic principle (sound/symbol correspondences),
- helps with mapping sounds onto letters to decode and spell words,
- helps students recognize decoded words faster when they are seen again,
- sharpens awareness of word pronunciation for vocabulary learning, and
- facilitates reading accuracy.

Section 2. The Who, When, What, and How of Teaching Phonemic Awareness

2.1 Who needs to be taught phoneme awareness?

Emergent readers, English language learners, and struggling readers of all ages benefit from phonological awareness instruction.

Emergent readers enter school knowing that words have meanings, and phonological awareness instruction focuses their attention on the sounds that make up spoken words.

Some children need more carefully designed instruction than others 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 impair the phonemic awareness in English language learners. There is no evidence that low intelligence, trauma, or poverty restrict the development of phonological awareness.

Determining whether older students in Grades 2 and up need phonemic awareness instruction can be decided according to diagnostic assessments of phonemic awareness skills, spelling, and word reading. Teacher-friendly phonological awareness assessments, such as Rosner's *Test of Auditory Analysis Skills* (TAAS) or the *Phonological Awareness Screening Test* (PAST)[8], indicate where student performance falls in the skill sequence. 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 writes *fog* for "frog" or *jup* for "jump" is not perceiving the second sound in the beginning consonant blend /fr/ or the second to last 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.

Precise pronunciation is key to effective phonemic awareness instruction (see Section 2.8, #1).

2.2 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.[9]

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.[10] 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.[11]

Most students who struggle with phonemic awareness in their first language will also struggle with it in the other languages that they are learning.[12] 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.

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 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.[13]

> 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.

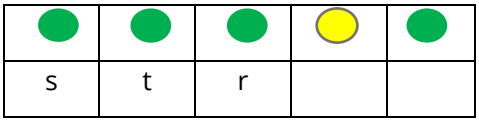
- Constraints on which sounds can appear in a spoken syllable might differ between the L1 and English. In English, consonant clusters (*st, sp, sl, sm, sn,* etc.) within a syllable are more frequent than in other languages. For example, consonant clusters within a syllable are rare in Spanish. Spanish phonology places a vowel before the "s," 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/ /it/ instead of /stop/ /it/.

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) with 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. Once a student can segment the sounds when viewing the letters, then segmentation can be practiced with just tokens until mastery is achieved. Oral-only practice without tokens will develop the automaticity that is important for orthographic mapping.

"stripe"



Knowledgeable educators also check for inconsistencies in letter-sound relationships between English and the L1. 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.[14]

Whatever the setting, English learners' spoken and written communication skills will benefit from systematic phonemic awareness instruction. 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.

2.3 When should phonological awareness instruction begin?

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. By the beginning of kindergarten, most children can rhyme words and identify words that have the same first sound. In preschool and early kindergarten, syllable counting, wordplay, and rhyming activities have a role in preparing young students to attend to and think about spoken language.

Most children pick up syllable awareness quite easily. Teaching syllable-level and onset-level phonological awareness after preschool may benefit some children who are at-risk for reading difficulties. Teachers who begin teaching phonological awareness with syllables often use familiar two-syllable words to introduce the procedures involved in the tasks as well as the concepts of blending and segmenting. In addition, teachers find that older, struggling readers (Grade 3 and up) benefit from a few lessons of syllable-level phonological awareness. For example, syllable-level phonological activities provide an opportunity to build accuracy with segmenting and deleting two- and three-syllable words. These activities may also lay a conceptual foundation for syllables that is helpful when reading multi-syllabic words.

The point of phonological awareness activities with syllables is to prepare students for success with phonemic awareness tasks that focus on perceiving individual speech sounds. It is these phoneme-level awareness skills that are crucial in learning to read. The best research indicates that engaging in phonemic awareness instruction in addition to phonics in K-1 helps more children learn to read and spell better than phonics without phonemic awareness.[15] Teachers note that students learn phonics and morphology more easily when they can first identify the individual sounds and sound sequences that make up spoken words, recognize letters, and understand that sounds can be written with letters.

2.4 What phonemic awareness skills should be taught?

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

Many educators and researchers think that instruction should track the typical developmental sequence of skills. Phonological awareness programs that follow this developmental sequence 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, CCVC words, and CVCC words. Phonemic awareness performance that includes the accurate identification and sequencing of phonemes is one of the best predictors of reading skill in Grade 1.[16]

> **Must rhyming be mastered before instruction moves to individual phonemes?**
> No, and here's why. The tasks associated with early phonological awareness, 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 what really counts. 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 mid-kindergarten onward.[17]

A note about scripted phonological awareness programs for K-1. 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. Be aware, however, that some scripted programs skip around in the phonological awareness sequence. Although this is not ideal, it may work well enough for some typically developing readers. More importantly, teachers can use such a curriculum to identify which children are successful and which children are not. Young students, who do not learn to perform phoneme awareness tasks accurately using a scripted program that jumps around in the developmental sequence, may learn quite well in a more carefully sequenced program (see curricula 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), if each concept is taught for accuracy first and then practiced for automaticity. See Section 2.8 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 cannot. Learning to identify and segment the initial consonant 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.

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 single, most important predictor of reading skill at the end of Grade 1.

2.5 How should phonological awareness instruction begin?
At the start of kindergarten, teachers begin systematic phonological awareness instruction by saying compound words and showing corresponding picture cards for each syllable.

For example, a picture of a cup and a picture of a cake would be presented for 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 ("monkey"). 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 phonemes should begin as soon as possible. In early kindergarten, teachers may use words that have two phonemes, as in the word "see," then move to identifying the first sound (/s/ /it/), then 3-sounds in words like "sat." Most children in Grade 1 and above can begin with 3-phoneme words like "mat," focusing on the first sound, then move to building awareness of the last sound in 3-phoneme words. Later, students will learn how to segment words with initial blends, then words with final blends. (An example sequence chart is on page 21.)

When teaching first sound blending and segmentation, begin with continuant consonants 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. Once the student can accurately blend stop sounds into simple syllables, then phonemic awareness activities can use words with any of the speech sounds in English that the child can articulate. Due to variations in pronunciation, teachers should check that students echo the word the same way that the teacher pronounced it. Avoid using words that contain sound clusters with variable pronunciations, such as "ask" (often pronounced "aks").

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 allows teachers to move forward in the phoneme awareness sequence while reviewing the previously taught concept until students demonstrate at least 90% accuracy two days in a row. An example instructional routine for teaching a new phonemic awareness skill appears in the Additional Resources (p. 21).

Begin segmentation and deletion activities with a spoken word. For each item, the teacher says the word (as it is normally pronounced) and the students repeat it aloud. After the teacher hears the correct repetition of the word, then they describe what change the students should make. For example, "say bat without the /b/." Then the students think about how to make this change and eventually produces 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 2.9). 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).

Focus students' attention on how sounds are produced

- Avoid segmenting the word for the student. Instead, prompt them to say the word slowly and stretch it out.
- To focus on a particular speech sound, the teacher can prompt students to notice how they produce that sound. For example, "What is working, your tongue or your lips?"
- During phonemic awareness instruction, the teacher may draw student attention to how the sounds feel as they are produced in the mouth. For example, "When you say */b/,* do your lips start together or apart"?
- Error correction during phoneme awareness tasks should also draw attention to how sounds are produced. For example, "Say the word slowly. Feel what your mouth is doing as you say the word."

2.6 How much phonological awareness time should involve phonemic awareness activities?
Most of the phonological awareness time should focus on phonemic awareness.

Research demonstrates that phonemic awareness is relatively easy to teach, and most children make progress with just a few minutes of daily instruction at the start of the language arts lesson. In Pre-K, activities can be embedded into everyday routines by using a range of word play activities focusing on words that rhyme, syllable awareness, and initial phoneme awareness. The goal is for all children to develop first sound awareness before entering kindergarten.

In K-1, syllable awareness activities may not be necessary for some children. As soon as possible, instruction should focus on developing phoneme awareness beginning with identifying and segmenting the initial consonant sound from the rest of a one-syllable word, then continue with the sequence described in Section 2.4. Small group phonemic awareness activities can take less than 5 minutes in kindergarten and about 5 minutes in Grade 1 and beyond.

Students in Grade 2 and beyond who perform poorly on a phonological awareness assessment or who are struggling readers should receive daily phonemic awareness instruction in a sequenced program that is multi-modality. Multi-modality instruction integrates visual, auditory, and articulatory pathways for learning (see Section 2.9 for a description). Students who do not advance their phonemic awareness skills with these programs may require a more intensive approach to strengthen phonological processing.

2.7 Is there any value in beginning phonological awareness instruction with larger units, such as syllables?
The research is not clear. In practice, many children cannot perform phonemic awareness tasks when they are first presented. Syllable-level tasks can pave the way for phoneme-level activities by introducing instructional routines and providing practice with 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.

Some assessments include three-syllable items that provide helpful diagnostic information for older, struggling readers who have good working memories. However, many children under 7 have difficulty performing phonological awareness tasks with three syllables, as do older students who

struggle with reading. If a student can segment two-syllable words, he can move on to identifying the first sound in one-syllable words, then identifying the final sound, then segmenting three sounds.

2.8 Do onset-rime 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 first consonant sound in spoken CVC words (*map*).

Segmenting the first consonant sound, such as separating /l/ from "lip" (/l/ /ĭp/) or /f/ from "fan" (/f/ /ăn/), can help emergent readers and struggling readers in two ways.

- 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 onset (/l/) of the first word can be substituted with the onset (/r/) to form the second word. Once children can recognize and produce 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 can reduce the burden on children's working memory and, thus, may improve phonological awareness performance.

- 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. For example, in "sat" the /s/ is easier to detect than the /t/. When developing phoneme awareness with sequenced instruction, first-sound segmentation activities provide a first step for identifying other individual phonemes in spoken words.

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

1. Your precise pronunciation of the sounds is key to effective phoneme awareness instruction. Check that you are pronouncing every sound correctly in isolation. "Clip" all consonant sounds, saying /k/ rather than /kuh/, for example. Practice with a knowledgeable partner.

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. 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."

4. After Pre-K, avoid words that begin with vowels, such as "at," in first-sound activities. Vowel sounds are generally easy to detect. Most children need practice identifying and segmenting first *consonant* sounds.

2.9 What are manipulatives and how can I use them when teaching phoneme awareness?
Manipulatives are small items that students touch and move to help them perceive sounds and remember sound sequences in a phonological task.

Spoken words can be difficult to remember. Many students learn new phonemic awareness tasks more quickly, and are more accurate, when they use manipulatives to support their memory for the spoken sounds. For example, a kindergartener might use two small blocks or chips for first sound segmentation of the word “map.” 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.”

In Grade 1 and beyond, students can use different color chips to represent consonant and vowel sounds. Consonant sounds are obstructed by the lips, teeth, and tongue and are "closed" sounds. Vowels are "open" or unobstructed sounds that are the essential part of any syllable. Calling children's attention to the feel, look, and sound of a phoneme can be helpful. For example, students can feel the vowel by placing their hand under their chin and feeling their jaw drop with the vowel production. Using two colors of manipulatives makes it is easy for teachers to check if words with 3 to 6 sounds are segmented correctly. For struggling readers, manipulatives are a vital part of the multi-modality instruction that helps them focus on and sequence sounds during phoneme awareness tasks.

Simple tokens (blocks, blank tiles, discs, felts) 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).
- Students can focus on the sounds in the spoken words more easily.
- 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.

Teachers should use tokens to demonstrate a new phonemic awareness task. Students can use tokens to practice the phonemic awareness task to the point of mastery. Then practice that skill orally, without tokens, until the student performs it accurately and easily.

If a student makes an error, encourage them to try again. The first step is to repeat the word and ask 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 attention on how the sounds are produced differently. For example, 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.

An example PA sequence, instructional routine, and scaffolded error correction appear in the Additional Resources (p. 21).

2.10 Is it important to teach phoneme awareness with tasks like phoneme deletion and substitution?

Yes, it is important to use these types of tasks with struggling readers in Grade 2 and beyond.

Not all students will need explicit instruction in phoneme manipulation. When we teach K-1 readers phonemic awareness, the goal is to improve their ability to segment sounds in single-syllable words to help with learning sound-letter mappings. Typical readers usually develop 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, however, have phonological processing weaknesses and manipulation tasks help to get their phonological processing more accurate and more automatic. Manipulation tasks that involve sound deletion or substitution are helpful once struggling readers can blend and segment phonemes. At that time, they benefit from more challenging activities that demonstrate how changing one sound can form different words. Studies that used phoneme deletion and substitution activities for intervention with struggling readers[18] yielded substantially higher word-reading results than studies that relied primarily on phonemic segmentation activities.[19] When students struggle with reading and/or spelling, phonemic awareness activities that include phoneme manipulation can be an important part of a code-based lesson.

Struggling readers need explicit instruction to perform more rigorous phoneme tasks like phoneme deletion ("Say: *bat*." Student repeats "bat." "Now say *bat* without /b/") and substitution ("Say: *fish*." Student repeats "fish." "Now change /f/ to /d/"). More intensive phonemic awareness instruction enables students to attend to and manipulate phonemes in any position in a word. Practice with these tasks further strengthens phonological processing, which facilitates mapping sounds to letters and, thus, supports the memory for written words that is needed for instant word recognition. Using manipulatives initially will help students track how the sound sequence is changing and bolster their understanding of the task (see Section 2.8). When accuracy with tokens is above 90% on two consecutive days, begin practicing first-sound chains orally to further mastery.

Using sound chains to teach phoneme awareness

Sound chains begin with one word, then substitute one sound in that word to make a new word. This is a challenging activity that works well for children as early as the middle of first grade and for older students who are struggling readers. Start sound chains with simple spoken words after they can confidently delete phonemes in that position. Begin practicing chains that change out the first sound using tokens. When the student becomes about 90% 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 both positions. At each level, *students first use manipulatives to work for accuracy*. Then, in later lessons, they build automaticity with oral-only practice before moving on to the next step.

Example Sound-Chaining Routine for First Sounds

Say "dot." Now say the word slowly, stretching out the sounds. Place one chip down as you say each sound. Change the /d/ to /g/. Point to the sound that changes. What sound is leaving? What is the new sound? Blend the sounds to make the new word. Student says "got." Now change the /g/ to /l/. Point to the sound that changes. What sound is leaving? What is the new sound? Blend the sounds to make the new word. Student says "lot."

Once students can sound chain words with three-phoneme words confidently, sound chaining activities with four-sound words can help them perceive sound differences among similarly spoken words (e.g., *fright*, *flight*, and *fight*). These activities promote more accurate reading and spelling.

Notes:

Section 3. Questions about Teaching Phonemic Awareness and Letters

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

Early in kindergarten, some emergent readers are just learning to recognize their letters and play with syllables and beginning sounds in spoken words. *Letter identification and phonemic awareness are important for learning to read and write, and both should be part of early literacy lessons.*

It is effective to teach letter names and phonological awareness in parallel as two strands of the language arts block. In K-1, letter lessons that include learning the letter name, its most common sound, and how to write it are helpful preparation for later reading and writing development. At any age, a student can use tokens to represent sounds during phonemic awareness tasks. Using blank tokens allows phonemic awareness practice to continue even when phonics skills are inconsistent.

When teaching letters to small groups, consider grouping students based on their letter knowledge and then regrouping for phoneme awareness instruction 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. Then there are students who learn both their letters and phonemic awareness easily and those who won't learn either easily. These latter students will need explicit, sequential instruction that allows them to see, touch, produce, and hear phonological units as they segment them.

3.2 Should phonemic awareness instruction use letters?

We need more research to address this question for struggling readers. Phonemic awareness and letter knowledge both support learning to read and spell. Although these skills intertwine to support reading and spelling, there are several reasons why many teachers use blank tiles rather than letters in phonemic awareness instruction.

Teaching phonemic awareness separately from phonics and spelling seems to provide the best environment for drawing attention to the individual speech sounds and their sequence in spoken words. This fits the NRP's conclusion that both phonemic awareness instruction and phonics instruction are distinctly important for growing confident readers. 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.[21]

Teaching phoneme awareness usually begins without letters in order to focus children on the phoneme sequences in spoken words during tasks that build their ability to identify, separate, move, and blend those sounds. Using blank tokens helps all children remember the sounds that they are working with. Teachers observe that using blank tokens rather than letter tiles is especially effective for readers in Grade 2 and beyond who struggle with reading and spelling. Phonemic awareness activities that use tokens direct student attention to the phonemes while avoiding the complexity of letter identities and letter-sound mappings. This may be helpful for both emergent readers and older struggling readers. Drawing attention exclusively to the sound sequences in spoken words is necessary for some children to clarify their perception of speech sounds and strengthen phonological processing. Once students can easily segment spoken words with initial blends (e.g., "flop") teachers often see a decrease in reading errors like *frop* and *flip*.

When deciding whether to use letters to teach phonemic awareness, please consider the following.

- Letter-sound correspondences add complexity to the phonemic awareness task. If a student has not yet automatized letter recognition and has difficulty learning letter-sound associations, then adding letters to even simple phoneme tasks can make them quite challenging. Using tokens instead of letters makes the task easier and reduces frustration for such students. By making phonemic awareness instruction more accessible to more students, you can support success in phonological activities while letter-based skills are still developing.
- When teaching phonemic awareness with letters, avoid spoken words with letter patterns that have yet to be taught. Each word must be spellable by all children in the group.
- 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 in place of tokens during phonemic awareness instruction, then phonemic awareness instruction becomes indistinguishable from letter-sound instruction.
- Using letters can muddy the interpretation of student errors. If a student responds correctly to a phonemic-awareness-style task that is using letters, it is difficult to know whether the child is demonstrating phoneme awareness (of the long A sound, for example) or letter-sound knowledge (the letter A spells the long A sound, for example) or both. 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.

At this time, research does not indicate precisely when and how phonemic awareness should be linked to letter forms. Typically, linking letter knowledge and phonemes to read and spell words can begin by mid-kindergarten, depending on the students’ incoming language and cognitive levels. When students can identify initial consonant phonemes in spoken words and know some letter-sound pairs, they are ready to apply these skills to read and spell simple CVC words that contain those letters. Future phonemic awareness skills can continue to be taught as a distinct strand of the lesson that parallels phonics instruction. Focused phoneme instruction with tokens provides crucial support for working memory while avoiding the challenges mentioned in the bulleted list above.

Some experts are recommending that educators use letters in their phonemic awareness activities rather than blank tiles. Often the NRP is cited as supporting this recommendation, based on a supplemental analysis that found that the effect size for the impact of phonemic awareness on reading growth was about twice as large in studies with PA activities that “used letters” as compared to studies with PA activities that did not “use letters.”[20] The recently popular interpretation of that difference in effect size is that phonemic awareness with letters is twice as effective as phonemic awareness with blank tokens. A more careful read of the Report reveals a couple of problems with this interpretation. First, this supplemental analysis only included readers in K-1. Because older, struggling readers were not included, we do not know if that conclusion applies to them. Second, most of the studies classified as teaching PA “with letters” did *not* use letters to teach phonemic awareness at first. “With letters” refers to studies that linked phonemic awareness activities to

letters *at some point*. Therefore, there is no basis for saying that students should see the letters associated with the sounds rather than blank tokens during phonemic awareness instruction.

Connecting phonemic awareness to letters for spelling and reading
Phonemic awareness should be connected to letters in several ways that promote understanding of the alphabetic principle. Teachers can encourage students to spell via sound by prompting them to say the word slowly (stretch it out), attend to each sound as they say it, then write each letter. Students can use the manipulatives from PA activities to help them segment sounds while writing sentences and stories. Vowel and consonant sounds 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*).

Struggling readers in Grade 2 and beyond develop phonemic awareness more efficiently when PA tasks are introduced and practiced using blank tiles or tokens to support their memory for sounds. They can begin linking letters to sounds in reading and spelling while continuing to develop phonemic awareness in separate activities that use tokens followed by oral practice.

3.3 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 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: a family history of reading difficulty, ADHD, chronic ear infections that require tubes, etc. Children who enter school with poor phonemic awareness are more likely to become poor readers.

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 non-identified students build the phonemic awareness foundation needed to read at grade level. 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. Available at: http://courses.washington.edu/sop/Test%20of%20Auditory%20Analysis%20Skills.pdf www.thepasttest.com.
9. Cárdenas-Hagan (2020), p. 49; Paradis et al. (2021), p. 279; Lindsey et al. (2003), p. 483.
10. Farrall (2012), p. 53; Paradis et al. (2021), p. 279.
11. Cárdenas-Hagan (2020), p. 49; Farrall (2012), p. 53; Lindsey et al. (2003), p. 483; Paradis et al. (2021), p. 279.
12. Kormos (2017), p. 33; Paradis et al. (2021), p. 357.
13. Paradis et al. (2021), p. 385.
14. Cárdenas-Hagan (2020), p. 50.
15. Ehri (2004); Kilpatrick (2015, Chapter 11).
16. Fletcher et al. (2019); Melby-Lervåg et al. (2012).
17. 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
18. Kilpatrick (2015, Chapter 11); Torgesen et al. (2001); Wise et al. (1999).
19. Lovett et al. (1994); Rashotte et al. (2001).
20. NRP (2000; Appendix C, Table 3, p. 2-64).
21. Torgesen et al. (2001); Wise et al. (1999).

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Additional Resources

Example Sequence for Phonemic Awareness Instruction

	Teacher	Student
First sound awareness	"SAY," "SIT," "SUN"	/s/
First sound segmentation	"SEED"	/s/ /ēd/
Final sound segmentation	"PAT"	/t/
Final sound awareness	"MAT" "BIT" "LATE"	/t/
Segmenting simple words	"PIG"	/p/ /ĭ/ /g/
Initial blends	/S/ and "TOP"	"stop"
Deleting part of initial blends	"SPIN without the /S/"	"pin"
Final blends	"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"

Example Instructional Routine for Teaching a New Phonemic Awareness Task

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 below.
- *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.

Blending and Segmenting (using fingers in K and beyond)

(1) Teacher: say "_____." Students echo.
(2) Teacher: Now say the word slowly, stretching out one finger for each sound. Students segment and extend a finger from their fist for each sound (moving left to right starting with the thumb). Right-handers use their writing hand palm down; left-handers turn their writing hand palm-up so the hand unfolds in a left-to-right sequence.
(3) Once the correct sounds are segmented, students repeat the sequence of sounds on the fingers.
(4) Now blend the sounds and say the word. Students say the word.

Phoneme Deletion (using chips in Grade 1 and beyond)

(1) Teacher: say "_____." Students echo.
(2) Student says the word slowly as they place one chip down for each sound that they say.
(3) Teacher: touch each chip and say its sound. Student touches each chip and says its sound.
(4) Teacher: Now, what would the word be without the /__/ (insert phoneme)?
(5) Teacher: Which chip moves out? Student moves the chip out.
(6) Teacher: which sounds are left? Student touches each chip and says its sound.
(7) Teacher: Now blend the sounds and say the new word. Students say the new word.

Examples of Scaffolded Error Correction for Phoneme Segmentation

Below is some language that you could use to respond when a student makes an error segmenting initial consonant blends. 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 provide 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 (as discussed in Section 2.8 and shown on the back cover).

Teacher: Say "spot." Student repeats.
Teacher: Mark out its sounds. Student places three chips down and sounds /sp/ /o/ /t/.

Error Correction 1

If the student repeated or segmented the wrong word. This provides the least scaffolding.

Teacher: Almost! The word is "spot." Say "spot" slowly and stretch out the sounds.
Student: "s-s-s-s-p-o-o-o-t."
Teacher: Place a chip down as you say each sound.
Student lays out a chip for each sound.
Teacher: Good. Say the sounds in "spot" again, pointing to each chip.
Student: "/s/ /p/ /o/ /t/ as he points to each chip.
Teacher: Correct, now blend the sounds together. The student says "spot."

Error Correction 2

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

Teacher: Almost. The word is "spot." Echo?
Student: "spot."
Teacher: Watch my lips as I say the word "spot." Now you say it. What your lips are doing?
Student says the word slowly and feels for the second sound.
Teacher: What are your lips doing to make this sound? (Teacher points to the second chip)
Student describes.
Teacher: And the sound is?
Student says the sound.
Teacher: Correct. Good. Say the sounds in "spot" again, pointing to each chip.
Student says each sound as he points to each chip.
Teacher: Correct, now blend the sounds together. The student says the word.

Error Correction 3

If the student had the wrong number of chips down. This provides the most scaffolding.

Teacher: Almost, let's try again. The word is "spot." Echo?
Student repeats correctly.
Teacher: I hear 4 sounds. Do you have the right number of chips?
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 with me as you say each sound.
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. Say the sounds in "spot" again, pointing to each chip.
Student says each sound as he points to each chip.
Teacher: Correct, now blend the sounds together. The student says the word.

Phonemic Awareness with Manipulatives

“sat”

/s/ /at/

First Sound

“my”

/m/ /i/

Two Sound

“match”

/m/ /a/ /ch/

Three Sound

“flight”

/f/ /l/ /i/ /t/

Initial Blend

“ghost”

/g/ /o/ /s/ /t/

Final Blend