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Project 5.2.4: Evidence-Based Practices for Teaching Phonological and Phonemic Awareness

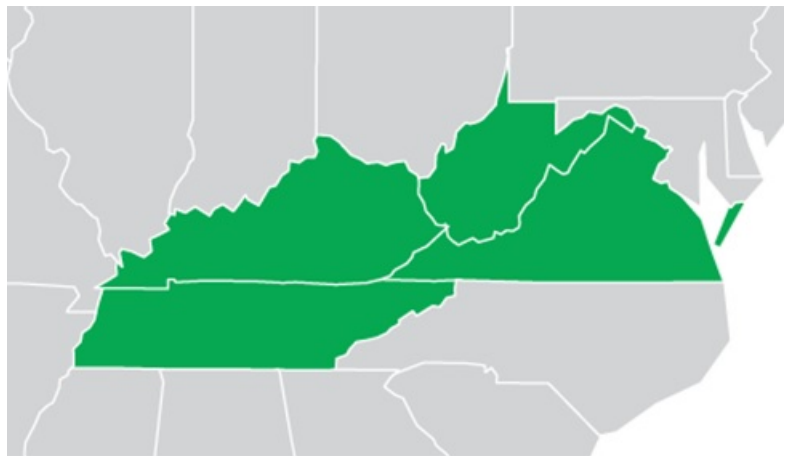
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Evidence-Based Practices for Teaching Phonological and Phonemic Awareness

Overview

During the 2018/19 school year the Goochland County Public Schools (GCPS) technical staff analyzed grade 3 students' reading proficiency with the support of Regional Educational Laboratory – Appalachia (REL AP) researchers. One set of these analyses showed associations between students' phonological awareness in grade 1 and their grade 3 reading proficiency. Specifically, students who had higher scores on a measure of phonological awareness in grade 1 (a score of 11 or higher on PALS-1 Spelling) were more likely to pass the grade 3 Standards of Learning reading assessment (71 percent pass). These results prompted GCPS instructional coaches to seek additional information from REL AP researchers about phonological and phonemic awareness to inform their ongoing professional development for K–3 teachers. To support the request, this memo describes the importance of these skills and evidence-based instructional approaches in supporting students' development of phonological and phonemic awareness. GCPS can use this information in professional development planning, workshop delivery, and follow-up coaching for K–3 teachers.

Given the results of the analyses of GCPS student data, it is appropriate for kindergarten teachers to start at the beginning of the developmental trajectory using the instructional approaches described in this memo with all students. For grades 1, 2, and 3, it is appropriate for teachers to use this instructional approach with students who have PALS-1-3 Spelling scores below the publisher's [grade-level benchmarks](#), including students who begin grade 1 with PALS-1 Spelling scores below 11. Where teachers of grades 1–3 begin in the trajectory and which instructional activities they emphasize will depend on their students' skills and identified needs.

The importance of phonological and phonemic awareness

Phonological awareness is a global awareness of the sound structures of speech and the ability to manipulate those structures. Phonological awareness is an umbrella term that encompasses both basic levels of awareness of speech sounds, such as rhyming, alliteration, the number of words in a sentence, and the syllables within words, as well as more advanced levels of awareness such as onset-rime awareness, the beginning and ending sounds within words. Phonemic awareness is the most advanced level of phonological awareness. It refers to a child's awareness of the individual phonemes in spoken words and the ability to manipulate those sounds (Gillon, 2017).

The National Reading Panel report (National Institute of Child Health and Human Development, 2000) states that explicit phonological awareness instruction is highly effective. Recent evidence reviewed in the Institute of Education Sciences (IES) practice guide *Foundational Skills to Support Reading for Understanding in Kindergarten Through 3rd Grade* (Foorman et al., 2016) and other subsequent research (for example, Stuebing, Barth, Cirino, Francis, & Fletcher, 2018) support the report's conclusion. Foorman and colleagues specifically found strong evidence in support of explicit phonological awareness instruction to prepare students to read words and comprehend text. The ability to isolate sounds and then link those sounds to letters is a significant step for students becoming proficient readers. Students who struggle with reading often have lower phonological and phonemic awareness than their classmates (Anthony & Francis, 2005; Hogan, Catts, & Little, 2005; Rack, 2017).

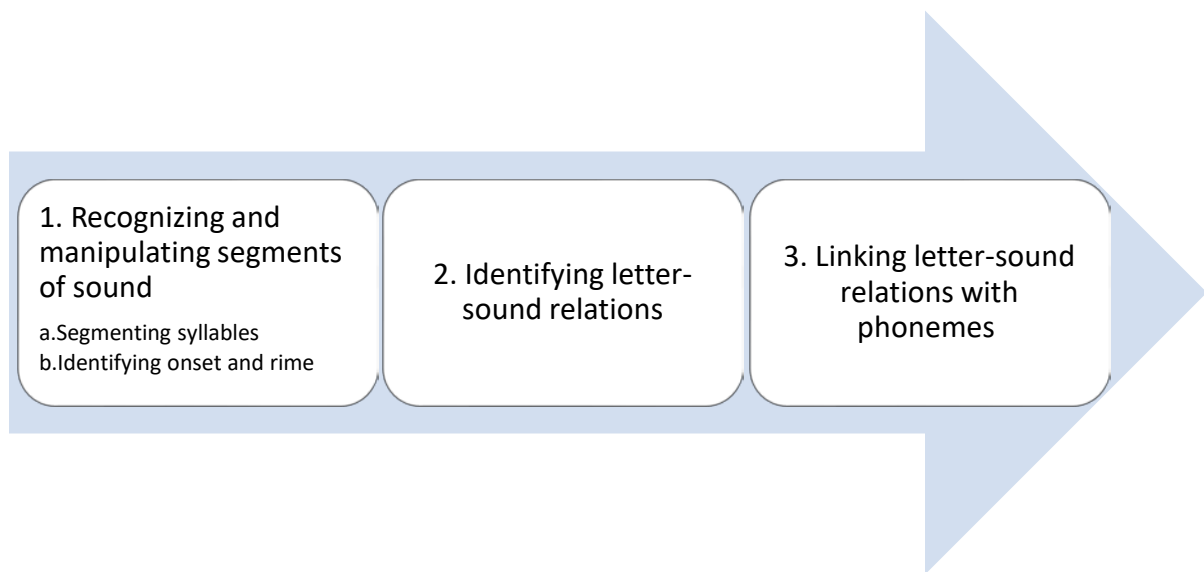
There are three main aspects of phonological and phonemic awareness that students rely on to read proficiently. To effectively decode (convert from print to speech) and encode (convert from speech to print) all words, students must be able to

- identify the individual sounds, or phonemes, that make up the words they hear in speech;
- name the letters of the alphabet as they appear in print; and
- identify each letter's corresponding sound(s).

Instruction on phonological and phonemic awareness supports students in breaking down the sounds in spoken language and then mapping individual sounds to printed letters (Foorman et al., 2016; Gillon, 2017). Once students know a few consonant and vowel sounds and their corresponding letters, they can start to sound out and blend those letters into simple words, progressing to more advanced words (Al Otaiba, Allor, Werfel, & Clemens, 2016).

Teaching and supporting phonological and phonemic awareness

Research supporting the importance of phonological awareness for students' decoding and later comprehension also informs a systematic approach for teaching these skills. In the IES Practice Guide on early reading, Foorman and colleagues (2016) lay out a developmental trajectory for beginning phonological awareness instruction and building students' phonological and phonemic awareness:



The sections below describe this trajectory in further detail and include suggestions from other researchers and practitioners as noted. In their practice guide, Foorman and colleagues (2016) highlight prior research that demonstrates that explicit instruction that supports students through these sequential components of phonological and phonemic awareness has consistently been linked with improved reading outcomes for all learners. As teachers introduce these concepts and activities, they can use imbedded progress monitoring measures, such as [PALS 1-3 Quick Checks](#) (as often as every two weeks), and other formative assessment practices

to decide when students have mastered a particular skill and are ready for more advanced practice or new skills.

Recognizing and manipulating segments of sound

Research has shown that student learning outcomes are strongest when teachers begin instruction by introducing familiar words and gradually draw students' attention to smaller and smaller sound segments within these words (Foorman et al., 2016; Gillon, 2017; Ouellete & Senechal, 2008). This prepares students to learn about the individual sounds that letters represent and then to recognize those sounds and letters as they are used in words.

To begin this process, teachers can demonstrate that sentences can be broken into words and then that some words can be broken into smaller words. Students practice identifying the unique words in sentences or compound words. Next, teachers can define syllables, demonstrate how words can be broken into syllables, and model how to identify syllables. Then students practice identifying and manipulating syllables within familiar words. Once students can break words into syllables, teachers can define and model the smaller units within a syllable, called onsets and rimes (Gillon, 2017; Ouellete & Senechal, 2008).

After teachers introduce breaking down syllables into onsets and rimes, students can segment familiar one-syllable words into onset and rime and manipulate them to make new words (Gillon, 2017). Teachers can best demonstrate how to isolate individual phonemes in words and segment words into their component sounds using modeling and guided practice, working with the whole class and then small groups or individuals to support students as needed (Al Otaiba et al., 2016; Ouellette & Senechal, 2008).

Below, we provide sample instructional activities and links to videos that feature instructional models focused on syllables, onset, and rime.

Segmenting Syllables: Instructional Activities and Models

- ***Sample instructional activity for introducing syllables.***¹ Introduce the concept of syllables by asking students to clap the syllables in each student's name as you say it. At first, pronounce the first name of one of the students in the classroom—syllable by syllable—while clapping it out before inviting the students to say and clap the name along with you. Model this process a few times, using several names of contrasting lengths. Then invite the students to join you in saying the names while clapping the syllables. After each name has been clapped, ask, "How many syllables did you hear?" Once the students have caught on, ask each one to clap and count the syllables in his or her own name. As an extension activity, ask the students to clap and count the syllables in their last names.
- ***Video.*** In this [REL Southeast video](#), a teacher uses simple manipulatives (pieces of paper) to model segmenting and blending syllables. The teacher redefines syllables for the students and then demonstrates how to segment a word into syllables and how to blend the syllables back together to form a word. The students then practice using the manipulatives to segment and blend two-syllable words.
- ***Sample instructional activity for more advanced syllable work.***² Review that words can be separated into syllables and that each syllable contains a vowel. Give examples by orally separating a few words into syllables. Then, using one of the example words, direct the students to identify the syllables in that word and then to move one of the syllables to a different part of the word. For example, in the word *pencil*, the students would move *pen* to the end of the word, making the word *cilpen*. Explain to the students that by making the syllables "jump" to different places in the word, they are making a new silly word that has no meaning. Give the students another word, have them identify the syllables, and orally move one syllable to another place in the word. Ask them to say the new silly word. Continue giving the students different words and directing them to move a syllable to make new silly words.

¹ Adapted from Honig, Diamond, & Gutlohn, 2018

² Adapted from Honig, Diamond, & Gutlohn, 2018

Identifying Onset and Rime: Instructional Activities and Models

- ***Sample instructional activity.*** Introduce the students to onset and rime using segmenting and sorting activities with picture cards. Tell the students that they will be learning about sounds and looking for parts of words that sound the same. Model how to segment the word shown on a picture card and then sort the picture card into the appropriate rime group (illustrated in [this sample](#) as a house). Place the six-rime house pages out in front of the students and turn the onset and rime picture cards face down in a stack. Taking turns, the students name each picture header card and segment the onset and rime (for example, “cat, /k//at/”). Then the students place the picture on the matching rime group. Have the students continue until all the rime cards have been sorted onto the corresponding rime group, providing ongoing feedback and support as needed.
- ***Video.*** In this [REL Southeast video](#), the narrator defines onset and rime and provides a simple picture card activity to model identifying the onset and rime of one-syllable consonant-vowel-consonant (CVC) words.

Identifying letter-sound relations

Once students have mastered recognizing and manipulating segments of sounds, learning to isolate phonemes in speech (for example, /b/ /a/ /t/ says *bat*), the next step in the developmental progression is to introduce letter sounds through modeling and concrete examples. When teachers introduce letter-sound relations through explicit, systematic instruction, it increases the automaticity of students’ alphabetic knowledge and provides a strong foundation for further instruction in decoding and reading comprehension (Scanlon, Vellutino, Small, Fanuele, & Sweeney, 2005; Torgesen, Wagner, Rashotte, Herron, & Lindamood, 2010).

To begin letter-sound instruction, teachers can introduce and/or review with students each letter of the alphabet and its corresponding sounds, working with a few phonemes at a time. When introducing phonemes and making connections between sounds and letters, teachers can present consonants and short vowel sounds represented by single letters first, since these

appear frequently in words students will encounter in the early stages of reading. Teachers can introduce consonant blends (for example, fl, sm, st) and common two-letter consonant digraphs (for example, sh, th, ch) next. After blends and digraphs, teachers can introduce long vowels with silent e and finally two-letter vowel teams or digraphs (for example, ea and ou). Letters or letter combinations may correspond to multiple sounds; teachers can start with the most common sound each letter represents and introduce each letter sound one at a time.

For each phoneme, teachers can begin by naming the letter or letters that represent the phoneme (for example, p for /p/ or s and h for /sh/) and then introduce the letters in both uppercase and lowercase. It is helpful to show a memorable picture of a familiar regular word containing that phoneme, say the sound that the phoneme makes in isolation, and have the students repeat that sound (Scanlon, Vellutino, Small, Fanuele, & Sweeney, 2005). Importantly, continued individual practice with letter sound relationships can improve proficiency and fluency for all learners. In addition, teachers can review the new letter sound together with a small group of previously learned letter sounds and have students write the letters in meaningful contexts, such as writing about a character or book (Torgesen, Wagner, Rashotte, Herron, & Lindamood, 2010).

Below, we provide sample instructional activities and links to videos that feature instructional models focused on letter-sound relations.

Identifying Letter-Sound Relations: Instructional Activities and Models

- ***Sample instructional activity.*** Present students with an alphabet chart and [picture cards](#). Point to a few letters on the chart and ask the students to think of words that begin with each letter. Introduce one of the alphabet picture cards and ask the students to say the name of the picture and then to identify the beginning letter and letter sound.
- ***Video.*** In this [REL Southeast video](#), the teacher introduces a picture card of a pig with an upper and lowercase letter p. The teacher asks the students to make the /p/ sound. Then the teacher reviews letter sounds the students learned previously using an

alphabet chart. The students practice independently writing the letters on individual white boards and saying their sounds.

Linking letter-sound relationships with phonemic awareness

The final step in supporting students' phonological and phonemic awareness is connecting their awareness of how words are segmented into sounds with their knowledge of different letter-sound relationships. This enables students to begin spelling and decoding words in isolation and in text. Providing explicit, systematic instruction to link these two skill sets supports all learners to become efficient decoders, which can in turn support improved reading comprehension (Hecht & Close, 2002; Lane, Fletcher, Carter, Dejud, & DeLorenzo, 2007; Lane, Pullen, Hudson, & Konold, 2009; Scanlon et al., 2005; Torgesen et al., 2010).

To introduce and reinforce this skill, teachers can use [Elkonin sound boxes](#)³ with letter tiles and word-building activities. Teachers can introduce this activity as soon as students have learned their first few letter sounds and then increase the complexity of the practice through word-building exercises (Hecht & Close, 2002; Lane, Fletcher, Carter, Dejud, & DeLorenzo, 2007; Lane, Pullen, Hudson, & Konold, 2009; Scanlon et al., 2005; Torgesen et al., 2010).

Below, we provide sample instructional activities and links to videos that feature instructional models focused on simple and more advanced word-building.

Word-Building: Instructional Activities and Models

- ***Introductory word-building exercises***⁴ begin to enhance students' awareness of how words are composed and how each letter or phoneme in a word contributes to its spelling and pronunciation. Provide students with a set of letter tiles or magnetic letters and have them add or remove letters to create words or to change one word into a different word. Begin by modeling the activity and working through a few examples with

³ Elkonin sound boxes are a graphic organizer that can support students in thinking about the sounds in words without letters. Teachers can use Elkonin sound boxes to scaffold students' understanding of letters and their connections to phonemes. The linked Reading Rockets page provides a comprehensive overview of Elkonin sound boxes and their application in phonics and phonemic awareness instruction.

⁴ Adapted from Honig, Diamond, & Gutlohn, 2018

the students as a group. Then have the students work independently to add single missing letters to build CVC words.

- **Video.** In this [REL Southeast video](#), the teacher uses Elkonin boxes, manipulatives, and letters to link phonemes with individual letter sounds.
- **Advanced word-building activities** combine sound addition and sound substitution. To introduce sound addition, model adding an /s/ at the end of a familiar CVC word. Ask students to practice adding an /s/ at the end of other CVC words. To introduce sound substitution, model replacing a phoneme in a familiar CVC word with a different phoneme. For example, say, “Let’s say the word *man*. Now let’s replace the /n/ with a /t/. *Mat*. Now it’s your turn.” Encourage the students to practice substituting a phoneme in different words. To extend this activity, gradually include more advanced words as the students become familiar with more advanced phonemic patterns, such as CVC words with a silent e (CVCe) or with two consonants for the initial or final sounds (for example, *thin* and *math*) (Torgesen et al., 2010).
- **Video.** In this [REL Southeast video](#), the teacher uses Elkonin boxes and letters for word-building activities. The teacher first models how to use the Elkonin boxes and letters to segment and blend a CVC word. The teacher then demonstrates sound substitution and sound addition and encourages the students to practice these advanced word-building activities.

Helping students who struggle

Students who struggle persistently with phonological awareness often benefit from smaller group (two to three students) or one-on-one intervention to help them isolate sounds in speech and link the sounds to letters (Foorman et al., 2016; Ryder, Tummer, Greaney, 2008). If teachers determine through ongoing progress monitoring measures, such as PALS 1-3 Quick Checks, or other formative assessment practices that a student is struggling to demonstrate phonological awareness after receiving instruction in whole and small group settings, it is important to provide differentiated instruction in an even smaller group or one on one. Ensure that the learning objective is explicitly stated and remind the students of previously discussed

terms and concepts (for example, syllables).

To support struggling students during these instructional activities, effective teachers provide additional modeling and guided practice before allowing students to move to independent practice (Webb, Massey, Goggans, & Flajole, 2018). In addition, evidence shows that it is important for students' fluency and automaticity that teachers provide students with additional opportunities for practice with their supervision, support, and continuous feedback (McKenna, Shin, & Ciullo, 2015). Students may also benefit from mini-lessons, where information is broken down into smaller chunks. For example, when introducing word-building exercises, teachers can present sound substitution and sound addition separately. Teachers can also consider using a narrowly focused activity when introducing and practicing a skill; for example, it is often helpful to use compound words when introducing syllables or to begin with two-syllable words before systematically increasing the syllable length. Using this technique to explicitly introduce smaller pieces of the skill can be an effective way to support struggling learners' mastery of these concepts (Wanzek et al., 2016).

Early intervention can provide necessary supports to students at-risk for reading failure. Students who have limited phonological awareness require explicit and systematic instruction, as well as repeated practice and many opportunities to apply their knowledge, to build up their skills (Foorman et al., 2016; Gillon, 2017; McKenna, Shin, & Ciullo, 2015).

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