



Each series will be curated by a Vermont expert on the subject, with editing support from Dorinne Dorfman, Ed. S., Ed. D., and The Reading League Vermont. If you are interested in writing an article, please contact Dr. Dorfman at dorinnedorfman@gmail.com.

The three-part series features:

1. **Phonemic awareness** in September 2024 - January 2025, with lead editor Cara Arduengo, MS, CCC-SLP, M. Ed.
2. **Phoneme-grapheme mapping** in February - April 2025, with lead editor Kathryn Grace, M. Ed, CAGS
3. **Orthography and morphology** in April - June 2025, with lead editor Peggy Price, M. Ed., Fellow/OGA

During the 2025-26 school year, we will continue with the themes of **fluency, vocabulary, and comprehension**. We look forward to sharing the teaching expertise of your colleagues across Vermont and moving toward the goal of reading equity!

Curious Question: Curious Question: Which words are **heteronyms** (two words spelled identically with different sounds and meanings)? (Check the last page for the answer!)

When to Stress about Syllable Stress and Schwa

By Cara Arduengo, M.S., CCC-SLP, M.Ed. and Dorinne Dorfman, Ed.S., Ed.D., OG/A

In this final article in the phonology series, the following questions are answered:

- What are syllable stress and schwa?
- What do these have to do with teaching reading, and what does the teacher teach?
- How do you assess student reading and spelling of multisyllabic words?
- What does intervention look like?
- When do you call a speech-language pathologist?

There is still one sound that hasn't been discussed in this series, and it's the most prevalent sound in the English language: the schwa. This sound is the easiest to produce but the hardest to spell. The schwa appears in multisyllabic words and unstressed words in sentences, so it becomes increasingly relevant while teaching reading for 2nd and 3rd grade. This final article in the phonemic awareness series will provide guidance for teaching more complex skills in longer words to older students.

TEACHING READING IN BRIEF: DEVELOPING PHONEMIC AWARENESS

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Term	Definition
<p>syllable</p>	<p>A push of breath; one beat; a unit of a word containing a vowel</p> <p>Syllables are often marked with scoops ◡ underneath and/or slashes be/tween</p>
<p>stress</p>	<p>Emphasis, accent, or strength of oral production by louder volume, higher pitch, and longer rate (<u>mon</u>ster or comm<u>it</u>)</p> <p>More important words, such as nouns and verbs, are stressed, while function words like articles (<i>the</i>) and helping verbs (<i>was</i>) are unstressed.</p> <p>Stressed syllables are often marked with this diacritic ' or an underline (syll' able, <u>syll</u>able)</p>
<p>schwa</p>	<p>The schwa sound is produced with a relaxed tongue and jaw, quietly and quickly. It can sound similar to a short u or short i and is unstressed.</p> <p>Schwa can substitute for any vowel or vowel team sound and is sometimes even omitted while speaking, such as the missing middle syllable in chocolate and preference. Schwa is often represented with the symbol ə (an upside-down e).</p>

Stress in Multisyllabic Words

The schwa sound mostly appears in multisyllabic words or within the context of a sentence. Sometimes schwa is first taught in simple sight words, such as the articles **the** and **a**. Articles are unstressed at the sentence level because they lead to a stressed noun (**the puppy**) or adjective and noun (**the brick house**). Teachers of reading (elementary and English Language Arts teachers, special educators, reading specialists, and teachers of English Learners/Emergent Bilingual students) primarily teach schwa directly when teaching two- and three-syllable words. Although the first multisyllabic words to teach are usually compound words with two stressed syllables (**backpack**), teachers do encounter schwa as they teach other types of multisyllabic words. For example, when open syllables are combined with other syllable types, the open syllable is usually unstressed, and the schwa shows up (**support**, **alike**).

While schwa can be represented by any vowel sound grapheme, including *y*, students often start to practice reading schwa when *a* is the first syllable (**ago**, **away**, **alone**, **about**, **Alaska**). In these words with *a* in an open syllable, the schwa sounds like “uh,” the short *u* sound /ŭ/. Schwa can also sound like “ih”, the short *i* sound /ĩ/, especially in short second syllables such as **salad**, **taken**, and **cotton**.

Teaching schwa syllables in groups that are spelled similarly helps students learn the hardest skill of schwa: how to spell it. Some common schwa endings to teach in groups are: **-al**, **-et**, **-en**, **-on**, **-om**, and **-op**. The consonant-le (**Cle**) syllable contains a schwa (**table** = /t ā b ə l/). Schwa spellings can also be learned while learning many suffixes. Moats (2020) recommends first teaching neutral suffixes that don’t change pronunciation (**-able**, **-ly**, **-ful**), then teaching suffixes with typical patterns that do cause shifts in pronunciation due to different syllables getting the stress (**-ion**, **-ent**, **-ous**, **-al**, **-ence** with the connectors **ti**, **ci**, or **si**, such as **fusion**, **junction**, **ancient**, **conscious**, **special**, and **science**).

To make schwa especially tricky, even though schwa can be pronounced as short *i* (/ĩ/), the letter *i* can be pronounced as a schwa “uh” (short *u* = /ŭ/) when it is a

middle syllable connecting two other closed syllables, such as **president** or **animal**. These three-syllable words with *i* in the middle should also be taught as a group so that students learn the pattern to spell that middle schwa with an *i*.

A very common inflectional suffix is **-ed**, used for past tense. It is pronounced three ways depending on the last sound (not necessarily the letter) in the word. As shown in the chart below, none of these three sounds say /ěd/. The suffix **-ed** is either a schwa or has no separate syllable and the phoneme /d/ or /t/ is attached to the preceding syllable (**applied**, **baked**).



Image: Kuster (2023)

pronunciation of <i>-ed</i>	usage	examples
/ɪd/ separate syllable	words that end in the phonemes /t/ and /d/	<i>guided, knitted, haunted, rested</i>
/d/ no separate syllable	words that end in a voiced sound except /d/ This includes vowel sounds, which are all voiced.	<i>combed, played, tried, buzzed</i>
/t/ no separate syllable	words that end in an unvoiced sound except /t/	<i>liked, laughed, hopped, missed</i>

Instructing schwa continues throughout a curriculum sequence, from elementary through middle and high school. Across the content areas, teachers instruct subject-specific morphology (**demo-**, **bio-**, **phys**, **pol**, **-ology**, **-cracy**) for students to learn new words. Multisyllabic words with several prefixes and/or suffixes typically include at least one schwa sound (such as **unbelievably** and **indeterminate**). The common schwa suffix to indicate a noun, **-tion** /shən/ (**nation**), and its variations, **-cian** (**musician**), **-sion** (**concession**), **-cion** (**suspicion**), include thousands of words. In addition, these suffixes for creating a noun have a schwa: **-ance**, **-ary**, **-ent**, and **-ment**.

Some common suffixes with schwa to denote adjectives include **-able**, **-al**, **-age**, **-ate**, **-ive**, and **-ous**. When students learn to recognize the Latin root **fin** (“end”) in **define** and **definite**, they will not only distinguish the long vowel /ī/ from the schwa, they more easily read and comprehend more sophisticated variations, such as **infinite** and **indefinitely**. Teaching morphology along with teaching schwa can deepen students’ lexical quality (Perfetti, 2007) or the extent of a reader’s word knowledge.

To practice syllable stress and identify schwa sounds in common prefixes, suffixes, and roots, see McEwan's spelling and [word study article](#) in Reading Rockets based on her book, *The Reading Puzzle: Word Analysis* (2008).

Teaching stress in multisyllabic words adds another challenge because the stressed syllable can vary depending on the context. The unstressed syllable has the schwa. Teachers can embrace the uncertainty and variability of stress by playing around with word production alongside their students, and develop the skill known in reading research as "set for variability" (Steady et al, 2023). Students can try to produce words with emphasis on different syllables and describe the differences when the schwa sound moves (*capable* (ca'pəble) and *capacity* (cəpac'ity) or disappears, as in the heteronym *commune* (cəmmune' and com'mune'). In our experience, this encourages students to pay close attention, especially if their teacher is experimenting along with them. Teachers can challenge students to find words that have different meanings if the stress and schwa is changed, such as in the heteronym *content* con'tent and cəntent'.

Assessment and Intervention

This final article comes full circle, back to the phonological awareness umbrella (p. 3) over phonemic awareness.

Assessment of multisyllabic words involves syllables rather than only single sounds. Syllables like suffixes should be assessed directly after their instruction, with students reading and spelling the suffix alone, in taught words, and in new words, so teachers can check for understanding.

Student reading of multisyllabic words with taught suffixes and patterns can be assessed using nonwords as the roots. In our experience, this tests if the student can generalize the suffix pattern to new words, showing they thoroughly understand it. For example, using a made-up root "modeb," a word list of taught suffixes could include "modebize, modebal, modebance," and then suffixes that shift stress onto the middle syllable, such as "modebity or modebment."

Sometimes unstressed middle syllables are omitted in typical speech ("choc-late" instead of *chocolate*) and this shows up in typical phonetic spelling. This does not indicate a language disorder but a need for direct teaching in the unspoken schwa syllables for spelling. On the other hand, omission of stressed syllables and difficulty repeating long words after direct instruction may indicate a language disorder and need further assessment and instruction.

Students with language disorders and low speech intelligibility should be assessed and explicitly taught phonological awareness skills identified as an instructional need. All students can make progress in reading if instruction is adapted to their profile. School speech-language pathologists can help with assessment and intervention directly or by consultation.

Students with difficulty repeating multisyllabic words during instruction and assessment may have difficulty with phonological memory. Many assessment tasks of phonological memory use nonword repetition tasks. If a student struggles to produce the sounds in these nonwords, the [SRT: Syllable Repetition Task](#) (Shriberg et al., 2009) may be used to assess memory for multisyllabic nonwords using only the sounds /m/, /n/, /b/, and /d/ and the schwa vowel sound. For students with childhood apraxia of speech, targeted intervention in phonological awareness, speech sound production, and phoneme-grapheme correspondences enables progress in decoding (McNeill et al., 2009). Older students who struggle with reading multisyllabic words have been shown to benefit from explicit instruction in rules of when to accent, such as stress the base of the word, or the first syllable (Diliberto et al., 2008).

Students with developmental language disorder particularly benefit from receiving explicit instruction in strong and weak syllables, as they often don't perceive those suprasegmentals accurately on their own (Parvez et al., 2024). Recent research has shown it is particularly important to teach morphology and orthography to students who are Hard of Hearing, as it can be a relative strength above phonology (Wass et al., 2019), and orthographic knowledge was found to predict nonword reading ability in Hard of Hearing students (Farquharson et al., 2022).

Conclusion

Phonological awareness at this level of complexity can be fascinating. Bringing curiosity and playfulness to the teaching of reading longer words can spark student learning. Team members should remember to include each other's expertise and use student assessment data for designing instruction and teaching every student to proficiency.

Answer to this issue's Curious Question:

Most heteronyms are two-syllable words in which a different syllable is stressed (record and record or object and object).

One-syllable heteronyms include:
bass, bow, close, dove, lead, live, minute, row, tear, wind, and wound.

Meet the Writers



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Cara Arduengo loves collaborating with teachers in Vermont public schools. After earning her Bachelor of Arts at Middlebury College, she attended the Upper Valley Educators Institute and New England College and taught 7-12 English Language Arts. She graduated from the Massachusetts General Hospital - Institute of Health Professions where she pursued a certificate of advanced study in reading, recognized by the International Dyslexia Association. Her passion at work is analyzing the components and connections of written language. She is a speech-language pathologist (SLP) at The New School of Montpelier. Previously she worked at Barre Town Middle School and Milton Middle School. Cara also likes to tie in her other experiences as a tutor, violin teacher, and outdoor educator.

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Dorinne Dorfman has served as a teacher and principal for nearly 30 years in Vermont schools. After completing her undergraduate studies at Goddard College, she earned her Master's and Doctorate in Educational Leadership at the University of Vermont. As a postdoctoral Fulbright Scholar, she taught at the Technical University of Berlin and conducted research on democratic education in Germany. Since completing an Education Specialist Degree in Reading and Literacy Instruction at Bay Path University, Dr. Dorfman teaches evidence-based literacy at Barre Town Middle School.



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