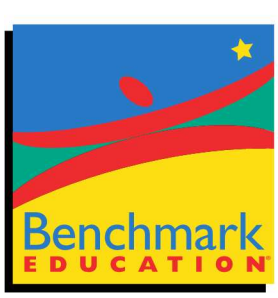


Benchmark EDUCATION®

*Building Literacy and Language for Life* ™

# Benchmark Advance ©2022 and Benchmark Adelante ©2023: Research Foundation

Benchmark EDUCATION
*Building Literacy and Language for Life ™*

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## Introduction

According to the World Economic Forum Report (2021), students must be allowed to develop 21st-century skills, such as creativity, problem-solving, innovation, and critical thinking, to be successful in the coming years and decades. Learning to read plays a big part in developing these skills. Seidenberg (2017) stated "reading is one of the few activities you do every day whether you want to or not. Street signs, menus, e-mails, Facebook posts, novels, ingredients in Chex Mix" (p. 3). Reading is required for work, for school, and for pleasure, and therefore we read because we must, because we want to, and because we cannot help but read the words around us. Most would certainly agree that literacy needs continue to reach higher levels each year, making it more difficult for people to participate successfully in society without strong reading skills (Shanahan & Lonigan, 2013). Higher levels of literacy skills will continue to be a common trend.

Peter Shilton, an English football (soccer) athlete, is quoted as saying "if you stand still there is only one way to go, and that's backwards"[1]. This can also be said for English and Spanish Language Arts core programs. New research study results provide new or reinforced instructional methods. Learning from the way programs are used or appear to work in classrooms can lead to ideas and changes that help students and teachers become more successful. Change, in this case, can be a good thing.

For the English Language Arts core program from Benchmark Education Company, *Benchmark Advance*, program development began in 2013 with information-gathering sessions with teachers and administrators. In 2014, prototypes were developed and discussions with educators continued. During 2015 and 2016, *Benchmark Advance* was developed, submitted, and accepted to the California Reading Adoption. That was not the end, but only the beginning.

*Benchmark Adelante*, a comprehensive Spanish Language Arts/Spanish Language Development program, was developed in tandem with *Benchmark Advance*. *Benchmark Adelante* is not a direct translation of *Benchmark Advance*; rather, it is a parallel program sharing a similar framework. At each grade level, authentic, engaging Spanish texts have been included that support the knowledge-building goals of the program. *Benchmark Adelante* provides Spanish language development resources to build Spanish language skills in a biliteracy or dual language learning environment.

Over time, *Benchmark Advance* and *Benchmark Adelante* have been updated with new or changed materials that added to or strengthened the instruction within these programs. With the 2022 version of *Benchmark Advance* and the 2023 version of *Benchmark Adelante* and the new research study results now available, it is time to revise the research foundation document that describes the research upon which these programs were developed. The essence or framework of these programs is still intact, enhanced with the changes that have been made. This will be elaborated upon in the Lesson Design section.

The structure of this research foundation is based on two well-recognized models of reading. This report uses a combination of the Simple View of Reading (Gough & Tunmer, 1986) and Scarborough's Rope

[1] Shilton quote can be found at https://www.brainyquote.com/authors/peter-shilton-quotes

(Scarborough, 2001) to form a familiar structure. This structure contains major topics, including word recognition and decoding and language comprehension, that have been shown to be critical for learning to read and expanding literacy and background knowledge. Speaking and listening as well as writing are included in this structure. Two topics, cross-linguistic transfer and assessment, have been added to the structure to help in presenting a complete picture.

This research foundation provides research for each major topic area. In most cases, this research applies to both *Benchmark Advance* and *Benchmark Adelante*. In a few cases, there are differences between how reading instruction in English and Spanish is best handled. In those cases, there will be a separate discussion about effective practices for Spanish and English literacy instruction, followed by the application of the topic to the *Benchmark Advance* or *Benchmark Adelante* programs.

## Lesson Design

Early in the development of any curriculum, the overall design of the curriculum, including lessons and unit structure, must be considered. Without this planning map, the creators would potentially lose their way during development, and the teachers who would use the curriculum would be lost and confused. Several sources were consulted to determine the design, framework, and content of *Benchmark Advance* and *Benchmark Adelante*, including *National Reading Panel Report* (NIH, 2000), *Understand by Design Framework* (McTighe & Wiggins, 2012), *Developing Literacy in Second-Language Learners: Report of the National Literacy Panel on Language-Minority Children and Youth* (August & Shanahan, 2006), and as mentioned earlier, the Simple View of Reading and Scarborough's Rope. Many other sources were also considered.

The overall curriculum plans for *Benchmark Advance* and *Benchmark Adelante* have three major pillars or supports: the framework, the structure, and the lesson design. The framework is a vertical alignment that includes focusing on topics within and across the grades. The spiral curriculum model (Bruner, 1960) allows this framework to build background knowledge and content vocabulary; supports equity; and allows integration of science, social studies, and literary topics to be explored and extended across each grade level.

Bruner (1960) visualized learning "as a spiral upwards from basic to advanced concepts, with topics being revisited at increasing levels of complexity as the spiral loops round" (Ireland & Mouthaan, 2020, p. 7). The process of spiral curriculum development has a key feature: reinforcement of learning. During each return visit, fresh learning opportunities and additional objectives are presented. Bruner began "with the hypothesis that any subject can be taught in some intellectually honest form to any child at any stage of development" (p. 33). In other words, with the use of the spiral curriculum design, complex material that is properly structured and presented can be understood by young children.

Harden and Stamper (1999, p. 142) describe the advantages to the use of a spiral model of curriculum.

1. *Reinforcement*: After the initial learning of a topic or subject, it is reinforced by the continuing exposure to it.
2. *A move from simple to complex*: Topics are introduced and then exploration of the same topics is done at deepening levels, allowing new knowledge to be built on prior knowledge.

3. *Integration*: The spiral method of curriculum development allows for the use of materials and topics that are not traditionally included in an English or Spanish Language course, such as science and social studies.
4. *Logical sequence*: The development of the scope and sequence is integral and brings some order to the increasingly complex topics.
5. *Higher-level objectives*: The nature of the spiraling curriculum encourages students to move beyond recall to application of knowledge.

After reviewing the literature on curriculum design, Ireland and Mouthaan (2020) state

> The spiral's structured approach to the scope and sequencing of learning objectives ensures knowledge outcomes are preplanned, while also enabling vertical integration within the curriculum as topics are revisited. Repeat visits of topics at increasing levels of complexity, a key feature of the spiral, also places importance on the learners' grasp of core concepts, whereby ideas are built on to achieve mastery. (p. 11)

The structure of the *Benchmark Advance* and *Benchmark Adelante* curricula include the units and the resources needed to meet the goals. Units are designed as a three-week event. Each unit, at each grade, is wrapped with an essential question and enduring understandings (McTighe & Wiggins, 2012, 2013; Wiggins & Wilbur, 2015), which serve as the most crucial linchpins of organizing a particular unit of study. The goals of essential questions are to stimulate thought, to provide inquiry, and to spark more questions, including thoughtful student questions. Enduring understandings summarize what students need to learn and revisit throughout a lesson, a unit, a course, or their schooling in general, as knowledge is systematically deepened.

Across the three-week units, interactive and conceptually coherent text sets (Cervetti, Wright, & Hwang, 2016; Fordham Institute, 2016) are used to build broad and topic-specific knowledge and vocabulary related to the essential question and enduring understandings. Students who read conceptually coherent text sets have been shown to have more knowledge of the concepts in their texts, more knowledge of the target words in their texts, and better recall of the texts, and those students are better prepared to read new texts about the same subject compared to students who read unrelated texts (Cervetti et al, 2016).

Knowledge Building texts in *Benchmark Advance* and *Benchmark Adelante* provide additional opportunities to read about the topic for each unit. These additional texts allow students to read multiple new unseen texts on the topic. Reading comprehension and vocabulary are best served by spending extended time on reading (and listening to) texts on the same topic and discussing the facts and ideas in them. This kind of immersion in a topic not only improves reading opportunities and develops vocabulary, but it also develops writing skills (Hirsch, 2003).

The lesson design for *Benchmark Advance* and *Benchmark Adelante* includes new learning with skill clusters (Cummins, Stewart, & Block, 2005), short and meaningful practice that is distributed in the lesson, in the unit, and across units, with review of learning from previous lessons and units that prevents learning decay and moves learning to long-term memory. Since "a single exposure is usually inadequate for good long-term retention" (Kang, 2016, p. 13), multiple exposures are better but they

are affected by the type and timing of practice. Using distributed practice, that involves implementing a schedule of practice spread out over activities and over time, with interleaved practice, mixes different kinds of problems within a single study session (Dunlosky, Rawson, Marsh, Nathan, & Willingham, 2013; Kang, 2016), leads to superior learning.

The mapping of the *Benchmark Advance* and *Benchmark Adelante* curricula was completed over a period of time and then monitored and adjusted as appropriate. The goals of teaching reading, building knowledge, and building content vocabulary enable readers to understand how to successfully approach a text and then understand what they are reading. The framework, structure of the units and resources, and lesson design, including the instruction and practice, were briefly discussed. More specific details and research supporting those details are presented throughout this document.

## Research Supporting Cross-Linguistic Transfer

Cross-linguistic transfer is relevant to the discussion of parallel programs that teach reading in English and in Spanish. Cross-linguistic transfer is based on the idea that learning a primary language (L1) can facilitate the learning of a second language (L2) (Fumero & Tibi, 2020; Kuo, Uchikoshi, Kim, & Yang, 2016). According to Chung, Chen, and Geva (2019), there are several useful frameworks in the research literature on the concept of cross-linguistic transfer: 1) the contrastive or typological hypothesis (Lado, 1957); 2) linguistic interdependence hypothesis (Cummins, 1981, 2012); 3) common underlying cognitive processes theory (Geva & Ryan, 1993); and 4) transfer facilitation model (Koda, 2008). Collectively, these researchers propose an interactive framework to capture the complex linguistic and cognitive processes involved in cross-linguistic transfer.

The contrastive/typological perspective framework involves "comparing and contrasting two or more languages to determine similarities and differences of *specific* components of spoken language … and features of the writing system or orthography" (Geva, Xi, Massey-Garrison, & Mak, 2019, p. 121). The contrastive/typological perspective framework attempts to explain challenges that might be encountered by L2 learners. It may be challenging for an L2 learner to differentiate two English phonemes when one of the phonemes does not exist in his/her native language. On the other hand, speakers of Cantonese have an enhanced ability to distinguish vowel sounds in English because their language has not only phonemic distinctions between vowel sound, but tonal differences as well (Cheng, 1991). This framework is "useful for understanding which specific elements in the spoken or written language are easier or harder to acquire in the L2" (Geva et al., 2019, p. 122)

The linguistic interdependence hypothesis emphasized the transfer of higher-level metacognitive strategies. According to Cummins (1981, 2012), skills from a student's home language (L1) can be transferred, enhancing the learning in the L2, as long as the student has had quality instruction in L1 and has sufficient language proficiency in L2. Metalinguistic knowledge and metacognitive strategies and skills, such as monitoring comprehension, accessing and using prior knowledge, noticing the author's point of view, using knowledge of text genre conventions, and inferencing, can be transferred across languages, even languages that have very different writing systems or did not share cognates (Abu-Rabia, Shakkour, & Siegel, 2013; Li, McBride-Chang, Wong, & Shu, 2012; Mora, 2016).

The common underlying cognitive processes theory (Geva & Ryan, 1993) proposes that metacognitive strategies as well as shared cognitive processes, such as working memory, phonological awareness,

rapid automatized naming, and executive functioning, underlie performance in the L1 and L2 and explain observed associations between similar L1-L2 tasks. “The common underlying cognitive processes framework states that individual differences in reading skills in L1 and L2 can be predicted by a common set of underlying cognitive constructs” (Chung et al., 2019, p. 150).

The transfer facilitation model proposed by Koda (2008) explains how metalinguistic skills, such as phonemic awareness, morphological awareness, and orthographic processing, that develop in one language contribute to the development of reading skills in a second language. The transfer of well-established L1 competencies is automatically activated by L2 input. For transfer to occur, the competencies to be transferred must be well rehearsed to the point of automaticity in L1 and will continuously mature through processing experience with L2 input.

The current conceptualization of transfer theory and research underscores the way the concept of transfer has evolved. The frameworks are useful for identifying factors that affect transfer and the extent to which these factors interact to enhance learning in cross-linguistic contexts (Chung et al., 2019). The review of the literature in Chung et al. (2019) “provides overwhelming evidence that transfer is a complex process that involves units of analyses varying in complexity and that is determined jointly by multiple factors” (p. 158), making the concept of transfer central to biliteracy reading development.

## Application of Cross-Linguistic Transfer Research in Benchmark Advance and Benchmark Adelante

*Benchmark Advance* and *Benchmark Adelante* take every opportunity to ensure that transfer of learning occurs for dual language learners. *Benchmark Advance* includes Language Transfer Support and Integrated English Language Development (iELD) with different support levels. *Benchmark Adelante* includes integrated Spanish Language Development (*Apoyo para el Desarrollo del idioma español*) in addition to explicit sound and articulation transfer instruction between Spanish and English *(Transferencia de sonido y articulación entre español e inglés*).

The Contrastive Analysis of English and Nine World Languages charts included in the Teacher’s Resource Systems (digital and print) provide support to students who are acquiring new sounds and spellings. The charts provide teachers with information about the extent to which the sounds and spellings are the same, are approximately the same, or have no equivalency.

In Grades K–2 there is emphasis on foundational skills for early literacy development. This includes phonological awareness and phonemic awareness as precursors to decoding skills. In Grades 3–6, cross-linguistic transfer instruction includes development of metalinguistic knowledge about the language subsystems of semantics, syntax, grammar, and pragmatics. Students are encouraged to consult reference materials, such as dictionaries and thesauruses, to determine or clarify the precise meaning of words and to identify alternate word choices. Students are also encouraged to seek meaning by collaborating with peers, rereading, and using strategies to unlock word meanings. After several weeks of anchoring foundational skills in L1, students connect, compare, and contrast linguistic forms across languages to develop metalinguistic knowledge to support biliteracy.

## Word Recognition and Decoding

In 2001, Scarborough presented a model that "illustrated the major 'strands' that are woven together during the course of becoming a skilled reader" (p. 97). This model helps visualize the parts that make up the Simple View of Reading model, where reading (R) is a product of decoding (D) and linguistic comprehension (C), or, as a formula, R = C x D (Gough & Tunmer, 1986).

In Scarborough's rope, the major strands of decoding or word recognition include phonological awareness (syllables, phonemes, etc.), decoding (alphabetic principle, spelling-sound correspondences), and sight recognition (of familiar words). The linguistic or language comprehension major strands include background knowledge, vocabulary, language structures, verbal reasoning, and literacy knowledge.

Scarborough indicates that even though the strands in recognizing the printed word and the strands involved in comprehending a string of words can be considered separately, "those two processes operate (and develop) interactively rather than independently" (p. 97). In this document, the strands will be examined individually, with the understanding that these components are fluidly coordinated by skilled readers.

### Research Supporting Phonological and Phonemic Awareness – English

Phonological awareness is defined by Kilpatrick (2015) as "having an awareness of sounds in spoken words, whether syllables, onsets, rimes, or individual phonemes" (p. 363). Phonemic awareness is a subset of phonological awareness and is related to the distinct sounds or phonemes in words (Blevins, 2017). "Activities that teach phonological awareness cultivate a student's ability to think about the internal details of the spoken word" (Moats, 2010, p. 56). "Direct teaching of phonological skills … is necessary from when children begin school until they become proficient readers and writers" (Moats, 2010, p. 17).

Phonological awareness can be broken down into three levels of development:

- Early phonological awareness (Adams, 1990; Cassady, Smith, & Putman, 2008; Kilpatrick, 2015) usually developing in preschoolers includes rhyming, alliteration, segmenting words into syllables, and identifying the first sounds in words.
- Basic phonological awareness (Adams, 1990; Kilpatrick, 2012; Swank & Catts, 1994; Wagner, Torgesen, & Rashotte, 1994) develops through Grades K–1 and includes phoneme blending and segmenting.
- Advanced phonological awareness develops through Grades 2–4, appears to be needed for efficient sight vocabulary development (Caravolas, Volín, & Hulme, 2005; Vaessen & Blomert, 2010), and includes deleting, substituting, or reversing phonemes within words.

Many of the studies of phonological awareness for Tier 1 students used small-group instruction (National Early Literacy Panel, 2008). However, Shapiro and Solity (2008) used whole-group phonological awareness training, which resulted in a 75% reduction in the number of students who developed reading difficulties. Based on a number of studies of whole-group instruction of phonological awareness, Kilpatrick (2015) concluded "it would seem that implementing Tier 1 phonological awareness training as whole class instruction is a defensible option" (p. 260).

The National Reading Panel report (NIH, 2000) emphasized the importance of connecting phonological awareness instruction to reading. Some, according to Kilpatrick (2015), took this to mean that phonological awareness should be taught using letters as prompts. However, the intent was to indicate phonemic awareness training is best when not taught as an isolated skill; it is best when "integrated at some point with the learning of letters and written words" (Kilpatrick, 2015, p. 262; NELP, 2008). Blevins (2017) identified the most important aspects of teaching readiness (phonological and phonemic awareness) skills including the following.

- Activities from multiple activity types can be taught within the same instructional cycle, e.g., clapping syllables and identifying rhyming words.
- Most common types of support (e.g., picture cards or manipulatives) help with remembering, make activities concrete, and help engage students.
- Use strong instructional routines for oral blending and oral segmentation that use steps that introduce the skill, followed by modeling (I do) and then guided practice/practice (We do/You do), with corrective practice, as necessary.

### Application of Phonological and Phonemic Awareness Research in Benchmark Advance

In *Benchmark Advance*, phonological awareness is a separate skill in the daily lesson at Grades K–1, where the emphasis starts with early phonological skills (e.g., rhyming, alliteration, segmenting words into syllables, and identifying the first sounds in words) before moving to oral blending and oral segmenting, and continues with advanced skills of deleting, substituting, and reversing phonemes within words. In Grade 2 and beyond, the phonemic awareness skills are woven into the primary skill of the lesson as appropriate.

In *Benchmark Advance*, phonological and phonemic awareness skills are introduced in whole-group targeted mini-lessons and then reinforced during small-group instruction based on students' needs, providing differentiated, direct instruction. The phonological awareness skills are purposefully connected to the other activities in the lesson to show students the connection of these skills to reading. The phonological awareness activities involve multiple types of activities taught during the same lesson and include supports that aid in remembering and making the connections more concrete. Specific language for modeling the phonological awareness skills is provided in the daily lessons, along with best practices routines in the Additional Resources in each unit. Intervention and Reteaching Resources are available for every unit. Specific reteaching lessons and practice activities are identified, and teachers are pointed to the Quick Check Assessments for specific skills.

## Research Supporting Phonological and Phonemic Awareness – Spanish

In Spanish, phonological awareness encompasses more than awareness of phonemes. Phonological awareness in Spanish includes awareness of the syllable, syllabic stress or accentuation, and multisyllabic units in words. This knowledge is necessary early literacy development in Spanish (Jiménez González & Ortiz González, 2000). In Spanish, phonological awareness extends to accentuation, the awareness of the stressed syllable in a word. Instruction related to accentuation begins in Grade K with syllabication and the identification of syllabic stress. The acentuación component includes the categorization of words according to their stressed syllables and the correct use of the acento desinencial that requires attention to the meaning and function of words in sentences. In Grades 3–5,

students discern whether an accent is needed on any given word through the analysis of orthographic rules of Spanish (Mora, 2016).

A key difference between English and Spanish literacy instruction related to phonological awareness is the focus in English on the use of onset rime and initial sound isolation versus the focus on syllables and syllabic structure in Spanish (Pollard-Durodola & Simmons, 2009; Vernon & Ferreiro, 1999). Results of five experiments confirmed that "Spanish readers routinely use the syllable as an access unit during visual word recognition" (Carreiras, Alvarez, & de Vega, 1993, p. 776). While in English, rimes are an effective practice because they form the basis for recognizing sound chunks and patterns in words (facilitating word recognition and patterns in word families), in Spanish, it is the phonological awareness of the syllable and syllabic structure that facilitates orthographic patterns and word recognition. Denton, Hasbrouck, Weaver, and Riccio (2000) state that as "Spanish-speaking students are exposed to early instruction in the alphabetic code, most seem to develop a sensitivity first to syllables, then to onsets and rimes within words, and finally to individual phonemes" (p. 338).

### Application of Phonological and Phonemic Awareness Research in Benchmark Adelante

In *Benchmark Adelante* phonological awareness, or conciencia fonológica, is part of the daily lessons in Grades K–1, using an explicit, systematic scope and sequence that includes purposeful practice and a spiral review of taught skills. Phonological awareness is also reinforced through shared reading experiences. Without the ability to take words apart into sounds and syllables, students will not be able to access the print system, spell and recognize words, or understand how groups of letters represent spoken words. Intervention lessons for phonological awareness are available for Grades K–3. Accentuation is gradually taught from Grades 2–6 as phonological, phonetical, and morphological skills and concepts spiral to build understanding and application of accentuation constructs.

## Research Supporting Phonics

Kilpatrick (2015) defines phonics as "a system for approaching reading that focuses on the relationship between letters and sounds. Phonics helps with sounding out unfamiliar words" (p. 363). Blevins (2017) states "explicit phonics instruction, when done effectively (i.e., not rote, but active and thought-provoking, instruction), is a transitory phase of learning to read, and never keeps students from reading and engaging with high-quality trade books" (p. xvi). Castles, Rastle, and Nation (2018) state "systematic phonics refers to reading instruction programs that teach pupils the relationship between graphemes and phonemes in an alphabetic writing system" (p. 12).

"Systematic phonics instruction should be viewed as a natural and logical consequence of the manner in which alphabetic writing systems represent spoken language" (Castles et al., 2018, p. 12). "Phonics programs are systematic when they teach grapheme-phoneme correspondences in an ordered manner" (Castles et al., 2018, p. 12). "It is better to teach the code system of written English systematically and explicitly than it is to teach it randomly, indirectly, or incidentally. The units of instruction (sound, syllable, morpheme, word) should vary according to students' reading and spelling skill" (Moats, 2010, p. 17).

Beck and McCaslin (1987) and Adams (1990) discuss how quickly phonics elements and skills are usually introduced in reading programs, about one a week. This does not provide students with enough practice of these new elements. Systematic not only refers to "the sequence of phonics skills progressing from

simplest to the most complex, but also to the internalized review and repetition built into that scope and sequence" (Blevins, 2017, p. 51). "When a new skill is introduced, it should be systematically and purposefully reviewed for the next four to six weeks. That means there should be significant instructional and practice opportunities for students" (Blevins, 2017, p. 203).

Blevins (2017), Moats (2010, 2019), and Stuart and Stainthorp (2016) provide summaries of research related to learning phonics, including:

- Teaching the names of letters and their sounds simultaneously tends to be more effective.
- The scope and sequence should be built from simplest to the most complex skills in ways that take advantage of previous learning so many words can be formed as early as possible.
- After initial modeling of blending and the inclusion of blending examples in a small portion of the phonics lesson, decoding should take place in connected text (decodable text, book, or story) rather than in isolation.
- In skilled reading, visual word recognition is usually achieved through lexical processing, so students need to develop orthographic representations linked to phonology and word meaning. The two best types of exploration exercises for increasing word recognition are word building (including blending and word awareness) and word sorts (including open, closed, and timed sorts).
- Dictation (guided spelling practice) allows students to transfer phonics skills from reading to writing, can accelerate students' use of taught phonics skills in their writing, and provides the opportunity to model and practice how to write letters and words.
- Start working with multisyllabic words toward the end of Grade 1 into Grade 2 by modifying the blending instruction to directly teach the syllable types: Closed, Open, Consonant + *le* (Final stable syllable), Vowel Team, *r*-Controlled, and Final *e* (vowel-silent *e*).
- Direct instruction about base words, inflections, and compounds can begin in Grade 1. Students in Grades 2–3 should continue to learn base words, prefixes, suffixes, and suffix ending rules.
- Instruction must be sufficiently intensive. Effective instruction of foundational reading and spelling skills will require about 30 to 40 minutes per day in Grade 1, with time decreasing as proficiency increases.

A phonics scope and sequence should be tightly linked to the reading students do as follow-up work (Blevins, 2017). "Students make progress at a much faster rate in phonics when the bulk of instructional time is spent on applying the skills to authentic reading and writing experiences rather than isolated skill-and-drill work" (Blevins, 2017, p. 211). The connection between what is taught and what we have students read has a powerful effect on their word-identification strategies (Juel & Roper-Schneider, 1985), as well as on their phonics and spelling skills (Blevins, 2006). Blevins (2017) states the type of text that is ideal for practicing a new target skill is decodable text. "This text is controlled based on the phonics skills taught up to that point in the scope and sequence, with an emphasis on the new target skill for that instructional cycle (e.g., week of instruction)" (Blevins, 2017, p. 215).

"Decodable books are texts written for children that consist primarily of words that they can read correctly using the grapheme-phoneme correspondences that they have learned" (Castles et al., 2018, p. 15). These books provide students with concentrated practice based on the instruction they have

received (Moats, 2010). Hatcher, Hulme, and Ellis (1994) indicate phonics instruction is more effective when students are provided with immediate practice opportunities, making the decodable books a valuable tool during the early stages of learning to read. Castles et al. (2018) conclude "once children move beyond the very early stages of reading, the benefits of decodable readers are likely to be outweighed by their limitations" (p. 16), such as not maintaining children's interest in reading and not building vocabularies and knowledge (Solity & Vousden, 2009).

"Orthographic mapping is the mental process we use to permanently store words for immediate, effortless retrieval. Orthographic mapping is the process minds use to take an unfamiliar printed word and turn it into an immediately recognizable sight word" (Kilpatrick, 2016, p. 31). Growth of the sight vocabulary, due to improvement of a student's orthographic mapping, leads to improvements in reading fluency and reading comprehension (Kilpatrick, 2016). "Meaningful strings of letters (i.e., written words) can be anchored in permanent memory *if the reader is able to recognize why those letter strings are meaningful*" (Kilpatrick, 2016, p. 34).

Teaching sight words or high-frequency words at the same time as phonics is being taught does not interfere with phonics learning (Castles et al., 2018). The teaching of sight words, high-frequency words, and word parts (e.g., prefixes, suffixes, word families) is known as word study, which is the process of matching the oral phonemes to the letters as a memory aid for future retrieval (Kilpatrick, 2016). Word study is the third part of orthographic mapping; the conscious or unconscious part is the connection-making process used to remember words (Kilpatrick, 2016).

Writing activities not only reinforce writing skills, but they also provide opportunities for students to practice spelling. Orthographic recall is necessary to correctly spell words (Kilpatrick, 2015). Spelling reinforces the phonics skills while improving spelling, phonological awareness, and reading (Graham & Santangelo, 2014; Kilpatrick, 2015).

Effective instruction, for phonics and other areas of instruction, is based on the gradual release model (Blevins, 2017; Moats, 2010; Pearson & Gallagher, 1983). The gradual release model is based on three steps or stages based on how well students are picking up on what is being taught. First, the teacher provides a brief introduction to the skill (I Do). Next, the teacher models again while the students join in during guided practice. When students demonstrate that they understand, the teacher slowly turns over the responsibility of practice to the students (We Do). Finally, students practice collaboratively with a partner or on their own (You Do).

Castles et al. (2018) summarize that "explicit teaching of phonics assists all children to access text material relatively early in reading instruction" (p. 13). Additionally, Snow and Juel (2005) add that explicit phonics instruction is particularly vital for some children (e.g., students who have a high probability of starting school as struggling readers due to being nonnative speakers of English or students who are economically disadvantaged). "Studies of successful interventions typically call for 80–120 hours of instruction if students are to gain in relative standing" (Moats, 2019, p. 58). With intensive phonics instruction, the reading gap for older students can be ameliorated (Calhoon & Petscher, 2013; Torgesen et al., 2001; Vaughn, Roberts, Miciak, Taylor, & Fletcher, 2019; Wanzek et al., 2013).

## Application of Phonics Research in Benchmark Advance

In *Benchmark Advance*, phonics skills and elements are systematically and explicitly taught across Grades K–2 and reinforced by a spiral review where skills are systematically and purposefully reviewed for the next four to six weeks. A substantial review-and-repetition cycle has been added to *Benchmark Advance* lessons to aid students in achieving mastery. Starting in Grade 3, instruction in word study begins and includes syllable types, morphemes, and word analysis for multisyllabic words. For students who are significantly below level, the small-group lessons provide additional opportunities to teach and reteach the foundational skills, including phonics skills and elements. Intervention and Reteaching Resources are provided and include reteaching lessons and practice activities and point to appropriate Quick Check Assessments.

The lessons in *Benchmark Advance* weave together the phonics skills needed by students in order to become skilled readers. With strong phonemic awareness and letter-sound skills, students naturally associate printed strings of words with the sounds in spoken words and remember the words they encounter while reading with ease and efficiency (orthographic mapping), increasing the size of their sight word vocabulary.

*Benchmark Advance* lessons not only include phonics elements, but they also include practice for those elements and the previously taught skills through reading, writing, and spelling. The weekly lessons are similar across the school year, leading to a familiarity that allows students to be comfortable and to know what follows. Each unit of *Benchmark Advance* comes with a student book, called *My Reading and Writing* in Grades K–1 and *Texts for Close Reading* in Grade 2 and beyond, that belongs to the student, will be used by students during the lessons, and follows the gradual release model.

Decodable Lap Books are available in Grades K–1 for each unit; the lap books support the phonics elements taught each week. After each section of each lesson, the “Check to See” provides an if/then statement to help teachers understand what should occur if students are having difficulties. Additionally, lessons contain iELD instructions and activities that support nonnative speakers of English to ensure understanding and fill in gaps that might exist in foundational skills. Beginning about the middle of Grade 1, word families and syllable types are incorporated into the phonics instruction.

## Application of Phonics Research in Benchmark Adelante

*Benchmark Adelante* is based on Spanish literacy research from Spanish-speaking countries (Spain and Latin America) as well as research into bilingual learners in the United States. The scope and sequence of instruction for Spanish phonics follows a research-based progression. Vowels are taught first and are then blended with a consonant to form syllables. Syllables can then be blended to make words. Open syllables are taught first, followed by closed syllables and more complex spelling patterns. The explicit and systematic scope and sequence moves students in a progression of skills with spiral review to reinforce previously learned concepts and skills. The phonics and word study instruction moves students from exposure to mastery and then to transfer of skills into reading and writing opportunities.

In Grade K, vowels are taught starting at the beginning of the year. Since the vowels are associated with one sound, the vowels are all taught the first week and then reviewed each week thereafter as each consonant, also with one sound each, is introduced. Vowels are combined and blended with consonants

to form syllables, which are combined to make words. Linguistic elements specific to Spanish (e.g., the letter ñ, digraphs ch, ll, rr, and the dieresis) are explicitly taught and reinforced through Grade 2.

The Sound-Spelling Cards that come with *Benchmark Adelante* were designed to facilitate cross-linguistic transfer. When the sound-spelling relationship is transferable, both the English and the Spanish cards have a green inside border and share the image of a cognate. When the sound-spelling does not transfer to English, the Spanish card does not have the green inside border and the image associated with the sound-spelling is specific to Spanish. The green border and the cognate image serve as memory tools (mnemonic devices) for learners as they learn about the similarities and differences between Spanish and English.

## Research Supporting Sight Recognition of Words and Fluency

Hudson, Lane, and Pullen (2005) state "reading fluency is one of the defining characteristics of good readers, and a lack of fluency is a common characteristic of poor readers" (p. 702). Kilpatrick (2015) states "fluency refers to reading words quickly and accurately, but also with proper intonation or prosody … Just as songs vary their pitch, so do readers vary their intonation as they read. Such prosody suggests that the reader comprehends the passage *as she reads it*, otherwise she would not likely know when to inflect her voice" (p. 121). Blevins (2017) states "as readers begin to recognize larger and larger numbers of words automatically, their reading fluency (the speed and accuracy with which they read) improves" (p. 154). Additionally, Blevins (2017) makes the point that "the more times a student encounters a word in text, the more likely the student will recognize it by sight and avoid making reading errors. Reading fluency is linked to reading comprehension. Improvements in reading fluency improve understanding of text" (p. 154).

Hudson, Pullen, Lane, and Torgesen (2009) state "reading fluency is a complex, multifaceted construct" (p. 5). Hudson et al. (2009) conclude that a good definition of fluency would include all the important parts of proficient reading: "it is accurate and efficient, it occurs with reasonable speed that varies with the text, and it involves good comprehension of the meaning of the text" (p. 5). Hudson et al. (2009) summarize that effortless, fluent reading is the result of a large number of subprocesses and

> without automatic access to letter-sound relationships, quick and accurate operation of phonemic analysis and blending processes, automatic access to knowledge of phonograms, a large number of words that can be recognized "by sight," quick access to vocabulary knowledge, and efficient operation of basic information processes, reading fluency (at least the component of fluency involving reading rate) in reading text will suffer. (p. 18)

Hudson et al. (2009) suggest subprocess areas of importance when examining fluency:

- Sight words: Especially for struggling readers, it is important to be able to recognize relatively common words fluently.
- Phonogram identification: Recognizing the letter groups within a word that share a pattern across words allows readers to move to more advanced, efficient decoding using chunks, rimes, or syllables instead of phonemes.

- Phonemic decoding: To determine phonemic decoding, or the understanding of the alphabetic principle, it is best to use novel combinations of letters that students are unlikely to have encountered before (e.g., pseudowords, nonwords, or nonsense words).
- Letter knowledge: Both letter names (uppercase and lowercase) and the corresponding sound for a grapheme should be quickly and accurately identified.
- Phonemic awareness: Linked to later fluency outcomes, the phonemic awareness skills of blending and segmentation should be the focus of examination due to the close link to decoding.

"The most effective [reading] programs include daily exposure to a variety of texts and incentives for children to read independently and with others" (Moats, 2010, p. 17). "Practices that build reading fluency include short practice drills in component skills, repeated readings of text, alternate reading with a partner, simultaneous oral reading of easy material, and daily independent reading" (Moats, 2010, p. 17). In a synthesis of research from 2001 to 2014, Stevens, Walker, and Vaughn (2017) found 19 studies examining reading fluency and comprehension outcomes for students with learning disabilities in Grades K–5. Findings suggest that all readers show improvement in reading fluency (reading rate and accuracy) and comprehension with oral repeated reading practice with teacher or peer feedback.

Shanahan (2005) stated "the National Reading Panel examined 51 studies of oral-reading fluency instruction and found a substantial pattern of evidence supporting the idea that teaching oral fluency improves reading achievement" (p. 18). Shanahan concludes the different types of instruction to increase oral reading fluency that have been studied share three essential features: 1) the instruction must include oral reading rather than silent reading; 2) there must be repetition, allowing students to practice reading texts repeatedly so that improvement occurs in accuracy, speed, and expression; and 3) guidance or feedback is beneficial, making it important to have a listener who can provide help.

### Application of Sight Recognition of Words and Fluency Research in Benchmark Advance and Benchmark Adelante

Fluency is not only about the speed at which students read, but it is also about accuracy and prosody. Prosody has become more important over time as the complex, multifaceted nature of fluency and its connection to comprehension have been explored. As the subprocess areas of fluency continue to be explored, teachers have additional information available to determine at which points fluency breaks down, pointing to possible areas of intervention to explore. Teaching reading fluency has a positive effect on reading achievement and should, therefore, be part of the reading instruction.

*Benchmark Advance* and *Benchmark Adelante* include explicit fluency instruction during the Interactive Read-Aloud and during whole-group Shared Reading using a variety of genres of texts. During this instruction, teachers model different aspects of fluency and invite students in rereading to build fluency. Decodable texts are used to build fluency based on previously taught skills and identified student need. In small groups, the teacher and students read the decodable text chorally (together) to build accuracy and automaticity. Students use repeated reading procedures to reread the text (echo, choral, or buddy reading). Word-level fluency practice occurs during small-group activities.

In *Benchmark Advance* and *Benchmark Adelante*, Shared Reading and Poetry Big Books allow students to participate in repeated readings during Shared Reading and engage with rhyme, rhythm, and repetition.

This instruction includes authentic connections to previously taught phonics skills in context. This provides opportunities for fluency development and matches the student books. Additional fluency reteaching lessons and practice activities can be found in the Intervention and Reteaching Resources, along with Fluency Quick Checks. The Fluency Quick Checks use the nationally normed and validated Oral Reading Fluency Norms (Hasbrouck & Tindal, 2017) to provide an indication of grade-level expectations related to students' reading rate. Spanish fluency rates are calibrated according to the scales validated in research on fluency rates on student populations in primary school for representative Hispanic countries and the United States (González-Trujillo, Calet, Defior, & Gutiérrez-Palma, 2014; Ramírez & Larrea-Garcia 2015).

## Language Comprehension

"In the simple view of reading, linguistic comprehension is the ability to take lexical information (i.e., semantic information at the word level) and derive sentence and discourse interpretations" (Hoover & Gough, 1990, p. 131). It follows that "reading comprehension involves the same ability, but one that relies on graphic-based information arriving through the eye" (Hoover & Gough, 1990, p. 131). An assessment of linguistic comprehension would involve assessing the ability to answer questions about a narrative that was listened to by the student. A measure of reading skill would ask questions about the contents of a read narrative.

Scarborough (2001) states that if students do not know the words being read in their spoken form, they cannot determine the syntactic and semantic relationship between the words read, or if they lack the background knowledge or inferential skills needed to interpret the text, then comprehension will not occur. Further, Scarborough states "reading comprehension deficits are essentially *oral* language limitations" (p. 98). Scarborough identifies five areas of language comprehension in his model that are necessary for reading comprehension: background knowledge, vocabulary, knowledge of language structures, verbal reasoning, and literacy knowledge of genres. These areas are addressed below.

### Research Supporting Background Knowledge

Kaefer (2020) states "background knowledge is essential for reading comprehension and learning from stories" (p. S173). Early development of content knowledge increases exponentially the amount of background knowledge children will develop, and background knowledge development is key to academic success for all students (Neuman, Kaefer & Pinkham, 2014; Pinkham, Kaefer, & Neuman, 2012). Among other things, sufficient background knowledge, allowing students to draw appropriate inferences about a text, is needed to successfully comprehend that text (Kaefer, 2020). In a study of background knowledge, Kaefer found that "students with higher levels of knowledge on a topic, including the vocabulary specific to that topic, that was activated through prereading activities attended more to the relevant illustrations and made more appropriate inferences than did students who acquired new knowledge from prereading activities" (p. S180).

According to Kaefer (2020), read-alouds are a popular way to convey content knowledge and build literacy skills. To be most effective, read-alouds should be interactive (Barnes & Dickinson, 2017) and involve multiple genres (Duke, Halvorsen, & Knight, 2012). Additionally, Kaefer suggests the usage of diversified books provides students a chance to hear books that address knowledge they have already

developed. Simple comprehension can be achieved by providing knowledge in prereading activities. Prereading activities may be the first step toward developing rich background information on a topic.

Cervetti et al. (2016) provide additional information about diverse books and knowledge. Cervetti et al. report on the building of knowledge, while simultaneously developing students' literacy, through the use of conceptually coherent text sets. According to the Fordham Institute (2016), "text sets are collections of texts tightly focused on a specific topic" (para. 2). When studying groups of students in Grade 4, Cervetti et al. found that students who read the conceptually coherent text set related to the topic of birds "demonstrated more knowledge of the concepts in their texts, had more knowledge of the target words in their texts, and had better recall of the novel text" (p. 761) than the comparison group who read unrelated texts. Cervetti et al. suggest "there is potential for knowledge and vocabulary to be built during English language arts through a focus on conceptual coherence in the design of reading experiences" (p. 761).

Wasik, Hindman, and Snell (2016) report on book reading practices as they relate to increases in vocabulary. Findings show six strategies that are consistently used in studies. These include reading and rereading texts, explicitly defining words, encouraging dialogue about book-related vocabulary through questions and discussion, retelling, using props to illustrate word meanings, and encouraging students in post-reading activities that promote the exploration and discussion of vocabulary. A clear theme from the review of the literature showed that adult-child interaction during book reading is critical for vocabulary learning to occur. These strategies allowed the deeper exploration of vocabulary opportunities, supporting growth in background knowledge.

If there is not enough background information to enable complex comprehension using read-alouds, different strategies for building background knowledge could be used. Knowledge is best built when it can be processed in-depth (Beck & McKeown, 2007; Coyne, McCoach, Loftus, Zipoli, & Kapp, 2009), when it is repeated over time (Pinkham, Neuman, & Lillard, 2011), and when it can be connected to information that students already know (Shing & Brod, 2016). Fisher and Frey (2009) suggest the use of essential questions that do not have a single concrete answer, foster inquiry, create opportunities for discussion, and build background knowledge. Additionally, building core knowledge (the main concepts of a topic) allows students to learn and understand new concepts. It may be advantageous to use knowledge-building activities in subject areas in addition to read-aloud activities.

### Application of Background Knowledge Research in Benchmark Advance and Benchmark Adelante

In *Benchmark Advance* and *Benchmark Adelante*, knowledge strands are common across grade levels by unit. Each year, the knowledge strands stay consistent, but the topic and knowledge-building focus changes, building on the previous knowledge learned and introducing new grade-appropriate concepts and information to build on the content knowledge. Building knowledge over time through vertically aligned units requires students to engage deeply with the topic.

Materials for interactive read-alouds are provided for each unit. The read-alouds serve to extend the content knowledge, build upon background knowledge, and build students' vocabulary. The Anchor Texts that are part of each unit extend the content knowledge. These texts are read multiple times for different reasons, allowing for the extension of the content knowledge.

The vertical progression of knowledge-building unit topics, Enduring Understandings, and Essential Questions in *Benchmark Advance* and *Benchmark Adelante* provide opportunities for continuous building of background knowledge and expansion of vocabulary in support of reading, writing, and constructive conversation. The conceptually coherent text sets, including the Unit Content Big Books (Grades K–1), *Texts for Close Reading* (Grades 2–6) student books, Read-Alouds, and Unit Knowledge Building Texts, are all tied to the Essential Question and Enduring Understandings for each unit. Through the read-alouds, rereading of complex texts, and vocabulary development, the ten knowledge strands (both informational and literary topics) are developed within and across Grades K–6.

## Research Supporting Vocabulary

Stuart and Stainthorp (2016) describe two types of vocabulary: receptive and expressive (or productive). The receptive vocabulary is the set of words that are understood but not necessarily used daily. Having a large receptive vocabulary means understanding a wide range of spoken and written communications. The expressive vocabulary contains the words we use; if we have a large expressive vocabulary, we can better convey our meaning. Vocabulary size grows with age as more words are encountered and added.

Kilpatrick (2015) indicates vocabulary belongs primarily on the language comprehension side of the simple view of reading; however, "oral familiarity with a word plays the primary role in sight-word development, and any benefits of the semantic properties appear to be secondary" (p. 90). Stuart and Stainthorp (2016) state "the more extensive the breadth and depth of one's vocabulary, the better one's comprehension of texts is likely to be. The larger the vocabulary, the greater the chance that meanings of words in texts are already known" (p. 130).

Stuart and Stainthorp (2016) indicate that reading to students has a long tradition, supports implicit vocabulary learning, and is supported by evidence (e.g., Robbins & Ehri, 1994). In the Flack, Field, and Horst (2018) meta-analysis of research on storybook reading, the authors identified what influenced the new word learning during shared storybook reading, including reading style; use of dialogic techniques such as pointing, providing definitions, or asking students questions during reading; and increasing the number of times students hear words during reading through repeated readings and asking questions about targeted words.

Beck and McKeown (2001) investigated the kinds of text and the kinds of talk that were most beneficial for read-aloud experiences. They developed a technique call "Text Talk" (p. 13). There were multiple areas of this technique: the texts themselves, initial questions, follow-up questions, the pictures in the texts, students' background knowledge, and vocabulary. The vocabulary instruction included the following steps and activities.

> The instructional activities for each word began by bringing to mind the use of the word from the story and explaining its meaning. Then students were involved with using or responding to use of the word. Each activity also included having children repeat the word so they had a phonological representation of what they were learning. (Beck & McKeown, 2001, p. 18)

Beck and McKeown (2007) extended the investigation of the Text Talk vocabulary instruction, called "Rich Instruction" (p. 254). Rich Instruction included "explaining word meanings in student-friendly

language, providing multiple examples and multiple contexts, and requiring student to process words deeply by identifying and explaining appropriate and inappropriate uses and situations and creating multiple contexts" (p. 254). In the first of two studies, students in Grades K–1 received the Rich Instruction. The students who received the vocabulary instruction showed significantly more vocabulary learning than the group that received no instruction.

The second study by Beck and McKeown (2007) was carried out in a different school setting. There were two treatment conditions: Rich Instruction for three of the six words and More Rich Instruction for the other three words. All words were treated to Rich Instruction, but three of the words also had additional instruction presented across several days in two additional review cycles. In both grades, the additional review cycles made a statistically significant higher number of words learned during the study.

McKeown and Beck (2014) examined two approaches to vocabulary instruction: a repetition condition and an interactive condition. The repetition condition, based on Biemiller and Boote (2006), used repeated reading of a storybook and practice with definitions of identified words. The interactive condition was based on a cognitive process approach (Beck, Perfetti, &McKeown, 1982; Coyne et al., 2010). In addition to reading a story one time, "the cognitive processing-based instruction offers additional contexts for the words and engages students in responding to the contexts and generating their own contexts" (McKeown & Beck, 2014, p. 522).

Results from the McKeown and Beck (2014) study of 131 Grade K students showed that both treatment methods enabled recognition of word meanings when compared to a control group that only read stories. Between the two treatment groups, the cognitive processing-based instruction was superior on the higher-order processing, particularly context integration and production. An implication of this study is that "instruction that prompts active processing allowed children as young as Grade K to have more success in tasks that tapped high-order language processing relative to instruction that offered repeated reading and word meaning practice or story reading only" (McKeown & Beck, 2014, p. 528).

Oakhill, Cain, and Elbro (2015) identify two purposes for teaching vocabulary: helping students learn the meaning of specific words, and helping students learn how to best figure out the meaning of new words through independent reading. When teaching the meanings of specific words, it is helpful to explain key words and link those words to topic knowledge before students read a text. It is also helpful to provide instruction on Tier 2 words (Beck, McKeown, & Kucan, 2005). Repetition of new vocabulary words is also helpful.

Oakhill et al. (2015) identify two ways to help students learn how to best figure out the meanings of new words. These methods are not mutually exclusive. Teaching students how to derive meanings from context is one way to figure out the meanings of new words. Oakhill et al. (2015) state "children can be taught to search the context for clues about the unknown word's category (what sort of thing is it?), for defining characteristic (how can you describe it?), and for likes and opposites (do you know of something similar or the opposite?)" (p. 66).

The other method to help students learn how to best figure out the meanings of new words is to teach word knowledge through morphology. Morphemes are the smallest meaningful units of language (Moats, 2010). Morphology is the study and description of the meaning components of words (Oakhill et

al., 2015). Moats (2010) states “knowing morphemes enhances reading, vocabulary and spelling. Awareness of morphemes is one aspect of a verbally proficient person’s word knowledge” (p. 118). Moats (2010) continues by stating “with morphological knowledge, a good reader can guess at a definition for a word first encountered in text” (p. 118), and concludes by stating “the ability to use words well depends on levels of linguistic knowledge that are gained slowly with much exposure to text–knowledge of words’ sound structures, grammatical categories, meanings, and spellings” (p. 119).

Moats (2010) states “direct instruction about base words, inflections, and compounds can be started in first grade. Second- and third-grade students should continue to learn base words, prefixes, suffixes, and suffix ending rules” (p. 143). Suggested activities include listening for specific parts of words (e.g., suffixes, prefixes, or base words); combining words to make compound words; removing inflections and simple suffixes from base words; sorting past tense or plural words by the sounds of their endings; and categorizing words by meaning (words for things or words that describe) or by form (compound words or contractions).

Derivational morphology occurs when a new word is derived from an old word by the addition of affixes (Stuart & Stainthorp, 2016). Some affixes are prefixes and must come before the root, and some are suffixes and must come after the root. “Using affixation to support vocabulary extension in school can be very productive and fun and has the benefit of supporting spelling skills as well” (Stuart & Stainthorp, 2016, p. 108).

### Application of Vocabulary Research in Benchmark Advance and Benchmark Adelante

In *Benchmark Advance* and *Benchmark Adelante*, improvement of students’ expressive and receptive vocabularies, both oral and reading, occurs through vocabulary instruction integrated into the Interactive Read-Alouds, Reading Mini-Lessons, Small-Group Reading, and Independent Reading. Explicit vocabulary instruction is based on the work of Beck and McKeown (e.g., Beck & McKeown, 2001, 2007; McKeown & Beck, 2014) where 1) words are defined in a student-friendly way; 2) appropriate examples of the use of the vocabulary words, that students can relate to, are provided; and 3) students are asked a question that allows the use of the vocabulary words in their answers. Teachers are encouraged to review new and previously taught words using the Define/Example/Ask routine.

In addition to information about the individual vocabulary words, students learn about root or base words, affixes, inflections, compounds, and building new words to increase their morphological knowledge. An explicit list of all academic vocabulary, domain-specific vocabulary, and vocabulary to support instructional objectives in the unit (including Tier 2 and Tier 3 vocabulary words) can be found in the Vocabulary Development section in the Teacher’s Resource System (TRS) in Unit Resources.

In *Benchmark Advance* and *Benchmark Adelante*, vocabulary instruction is tightly integrated with the comprehension instruction and practice because vocabulary knowledge is strongly related to reading comprehension. Vocabulary instruction starts with the Interactive Read-Alouds where teachers share rich and high-quality fiction, poetry, and informational texts.

In Grades K–1 during the whole-group activities, vocabulary activities include directly defining words, using context to determine the definition of unknown words, and exploring the different parts of words. In Grade 2 and beyond during the whole-group activities, words are also directly defined, and context is

used to define unknown words. Additionally, teachers teach and review morphological concepts and conventions. The BuildReflectWrite E-Notebook provides multiple opportunities for students to build vocabulary by practicing in context.

During the Reading Mini-Lessons, Vocabulary and Word Solving skills are directly taught and reviewed. These are directly linked to the reading activity to provide additional review of new vocabulary words. Based on informal observations of students' understanding of the instruction, for students who are in need of additional instruction of the vocabulary and word-solving skills or any other vocabulary-related activities, the small-group reading provides time for that instruction. For the specific vocabulary strategies and skills, there are reteaching lessons, practice activities, and Quick Check Assessments available in Intervention and Reteaching Resources in the Unit Resources.

### Research Supporting Knowledge of Language Structures – English

Language structure refers to the relationships between words and sentences in texts, including knowledge of syntax (often called grammar) and semantics (Oakhill et al., 2015). The comprehension of texts is enabled by understanding the syntax and semantics of sentences and phrases. Moats (2010) defines syntax as "the rule system that governs how words are combined into phrases, clauses, and sentences" (p. 3). This is important to reading, writing, speaking, and listening because interpreting syntax is essential for reading and oral comprehension, producing grammatical syntax is essential for written expression and speaking, and punctuation marks are syntactic structures.

Semantics is defined by Moats (2010) as "the aspect of language that concerns the meanings of words, phrases, and sentences and the relationships among word meanings" (p. 3). This is important to reading, writing, speaking, and listening because semantic processing is recognizing, constructing, storing, and retrieving meaning represented by language and the language in texts. There is a strong relationship between oral language skills and reading comprehension. There is also evidence that interventions that improve oral language skills support improved reading comprehension (Fricke, Bowyer-Crane, Haley, Hulme, & Snowling, 2013).

Early emergent language problems can include "weak vocabulary knowledge, difficulties in processing grammatical information in spoken language, and poor performance on general measures of language comprehension" (Hulme & Snowling, 2011, p. 141). Clarke, Snowling, Truelove, and Hulme (2010) used vocabulary instruction, listening comprehension exercises, and narrative skills in an intervention with students who had weak oral language skills at school entry. Results showed the program was effective in boosting vocabulary and grammatical skills.

### Application of Knowledge of Language Structures Research in Benchmark Advance

In *Benchmark Advance*, many opportunities are woven into the reading and writing instruction that allow for constructive conversation practice, leading to better understanding of students' oral language. The Conversation Blueprint models of constructive conversations help teachers scaffold students' conversations. The Think-Speak-Listen Bookmarks in Grades K–1 and the Think-Speak-Listen Flip Book in Grades 2–6 provide tools such as sentence stems, stems for expressing and eliciting general ideas, and stems for clarifying, supporting, and discussing the choice of one idea over others.

Grammar and language conventions are integrated in the daily reading and writing mini-lessons and are related to the topic and texts. The skills and strategies are introduced, follow-up instruction comes next, and then spiral review ensures students have sufficient practice. In Grades K–2, grammar and language conventions are taught daily during writing. In Grades 2–6, grammar and language conventions are taught during the reading lessons, helping students make meaning of what is being read. In writing lessons, grammar and language conventions are reinforced as students have the opportunity to experiment with the structures encountered during reading texts. The BuildReflectWrite E-Notebook provides additional practice to solidify students' understanding of grammar and language structures.

In *Benchmark Advance*, the Integrated English Language Development Support (iELD) in each mini-lesson helps address objectives that include vocabulary, language forms and functions, academic language skills, and grammar. Cognitive function is maintained regardless of language acquisition level, while language demand is differentiated at appropriate levels of support. Across the grade levels of *Benchmark Advance*, there is a clearly articulated scope and sequence for grammar and language skills, by unit and week.

### Research Supporting Knowledge of Language Structures – Spanish

In teaching Spanish language structures, it is notable that Spanish has a more complex system of verb forms and verb tenses than English. Verbs have not only tense but also mood. This makes the study of Spanish grammar more nuanced in teaching students grammatical and syntactic rules for comprehending complex text. Explicit grammar instruction in Spanish language arts follows a progression from simple to compound complex sentences (Mora 2016).

Language is viewed as a meaning-making resource, which varies according to academic discipline, topic, audience, task, and purpose. Academic language functions include describing, entertaining, informing, interpreting, analyzing, recounting, explaining, persuading, negotiating, justifying, and evaluating. This principle is consistent with state-of-the-art Spanish language acquisition research on communicative competence and the use of tasks that require students to "negotiate for meaning" in language acquisition (Collentine, 2004; Howard et al., 2018).

There is an expanded notion of grammar as encompassing discourse, text structure, syntax, and vocabulary as it functions to convey meaning. Grammar is inseparable from meaning, communicating for interpersonal and academic purposes through oral language and literary and informational text (Lindholm-Leary, 2001; VanPatten & Leeser, 2006).

### Application of Knowledge of Language Structures Research in Benchmark Adelante

Every effort has been made to maintain a parallel, aligned, and equitable architecture between *Benchmark Advance* and *Benchmark Adelante*. The application of grammar and language conventions in *Benchmark Adelante* includes the linguistic augmentation specific and unique to the Spanish language. Instruction in *Benchmark Adelante* is systematic and explicit, and it has immediate application in meaningful contexts, including a variety of literary and information texts, and collaborative conversations. Grammar instruction spirals throughout the year as students need time, multiple learning opportunities, and multiple exposures to master the conventions of the Spanish language. Grammar and syntax knowledge are extended through the writing, revising, and editing processes.

## Research Supporting Verbal Reasoning

Snow, Burns, and Griffin (1998) identified that verbal reasoning ability "permits inferences to be made by reading between the lines" (p. 322). Elleman (2017) states inference generation is "the process by which a reader integrates information within or across texts using his or her background knowledge to fill in information not explicitly stated" (p. 761). Oakhill, Cain, and Elbro (2019) state "most texts are far from explicit, and, indeed, they would be very long and tedious if they were. Inferences are licensed by the text, but they go beyond the information that is stated explicitly" (p. 92), and "inference making is important for understanding the world, not just for text comprehension" (p. 93).

According to Oakhill et al. (2015), there are two types of inference that are both of central importance to text comprehension: local cohesion inferences and global coherence inferences. A local cohesion inference occurs when a reader "clarifies the meaning of words and phrases by linking them to other words and phrases in the text" (p. 40). This could be a lexical inference (linking one word to another word in a different sentence) or a pronominal inference (linking a pronoun to a content word). The global coherence inference is one that makes the text cohere as a whole. Global coherence inferences "connect different parts of the text by linking them within the mental model of the text" (Oakhill et al., 2015, p. 40).

Oakhill et al. (2015) identify three things about the factors that influence inference-making ability in students. First, students are more likely to make inferences from a shorter text, rather than from a longer and more naturalistic text, and this might overestimate inferencing skill if only shorter texts are being used. Second, a lack of being able to make an inference could be due to students forgetting critical explicit information in the text, so it is a good idea to make sure students remember relevant facts necessary to making inferences. And "third, inference and memory for explicit details are related: children who are good at making inferences are also good at remembering other facts from the text" (p. 44), probably because these children construct a more accurate mental model of the text.

Oakhill et al. (2019) identify three main factors that seem to be important when students with reading comprehension difficulties do not make as many inferences as their peers. Students with poor comprehension tend to have lower working memory capacity than students with good comprehension (Cain, 2006; Nation, Adams, Bowyer-Crane, & Snowling, 1999; Oakhill, Yuill, & Parkin, 1986). Vocabulary and background knowledge are important for inference making (Oakhill et al., 2019). Poor comprehenders could lack the background knowledge or it could be difficulty with activation of the knowledge. Finally, a student's standard for coherence or the active attempts to make text cohere by setting goals based on the reading task could be problematic. While students with good comprehension are sensitive to different task goals (e.g., slowing down when reading when told they will be tested on the content), poor comprehenders do not adjust reading in response to different goals (Cain, 1999).

Elleman (2017) found in a study of inference instruction that "inference instruction implemented with less skilled readers improved not only inferential understanding, but also literal comprehension of text" (p. 771). An important instructional factor that stood out as important to inference outcomes was providing instruction in small groups. Many of the students in Elleman's study received explicit instruction in finding pertinent information in a text and integrating it with prior knowledge to answer inferential questions. An unexpected side effect for less skilled readers was that this type of instruction

aided them in making inferences and required them to attend to important details that would usually go unnoticed.

### Application of Verbal Reasoning Research in Benchmark Advance and Benchmark Adelante

When teaching inferencing with *Benchmark Advance* or *Benchmark Adelante*, suggestions on modeling inferencing and metacognitive strategies are provided in the Teacher's Resource System. Multiple models are provided for the teacher that also break down the process of making inferences, providing additional context for students.

In *Benchmark Advance* and *Benchmark Adelante*, inferencing is taught explicitly using text in whole group initially and then during guided practice with partners. There is also the opportunity for reteaching and reinforcing how to make inferences during the small-group instruction. When additional reteaching and practice are required, the Intervention and Reteaching Resources, found in the Unit Resources, point to specific locations for the unit strategies and skills being taught. This resource also includes Quick Check Assessments for all the unit strategies and skills being taught.

## Research Supporting Literacy Knowledge of Genres

There are two broad text genres: narrative (typically stories) and informational (expository) texts (Oakhill et al., 2015). "Text genres are conventional types of texts that are used for specific purposes of communication. For example, fairy tales, news articles, timetables, blogs, and emails are all different genres" (Oakhill et al., 2015, p. 82). When readers are familiar with the structure of a genre, they have several advantages: "they know what to expect from different parts of the text, where to search for particular types of information, and how the different parts of the text are linked together" (Oakhill et al., 2015, p. 82).

Children come to school understanding the typical structure and common themes of narratives. Kendeou, van den Broek, White, and Lynch (2009) found that 6-year-olds' ability to recall key events in stories read aloud and televised cartoons predicted their reading comprehension 2 years later. Oakhill and Cain (2012) found when children aged 7 to 8 were able to sequence sentences to tell a good story, this ability predicts their reading comprehension 3 years later. Understanding the typical structure and common themes of narratives is important.

Even though young children often have more exposure to narrative texts, they do recognize and understand the differences between narrative and informational texts (Pappas, 1993). Informational texts typically contain new facts and information, making background knowledge of a topic a principal predictor of comprehension of informational texts (Best, Floyd, & McNamara, 2008). Williams, Stafford, Lauer, Hall, and Pollini (2009) showed that for building background knowledge in primary classrooms, informational texts are excellent.

Paris and Paris (2007) found that instruction that is specific to different genres is important. Instruction on informational text structures does not have to take place only during the literacy block, but can be extended into the history, science, or geography lessons, allowing the text structure instruction to be embedded in learning. For narrative texts, helping students remember the key narrative elements, strategies to support inference making, and instruction on retelling narratives are effective teaching methods (Paris & Paris, 2007).

Opitz (1998) described text sets as "collections of books related to a common element or topic" (p. 622), giving readers "many ways of looking at a given topic" (Camp, 2000, p. 400). Giorgis and Johnson (2002) indicate that text sets should include texts of various genres, readability, and content, and the texts should provide a variety of perspectives to students. The variety of texts allows connections to be made across the text set, encouraging students to delve deeply into a topic or theme.

### Application of Literacy Knowledge of Genres Research in Benchmark Advance and Benchmark Adelante

*Benchmark Advance* and *Benchmark Adelante* have about a 50/50 split between narrative and informational texts in all grades. In Grades K–1, there are slightly more narrative texts than informational texts, and that changes to slightly more informational texts than narrative texts in the upper grades. All the texts within a unit support the knowledge-building unit topics and essential question related to the topic.

In *Benchmark Advance* and *Benchmark Adelante*, both informational and narrative texts are part of the instruction and are used in multiple ways. Anchor charts and graphic organizers are used to organize students' understanding of the features of each genre. The reuse of these texts during instruction reinforces the features of the different genres and provides additional opportunities for building background knowledge and vocabulary, as well as increasing comprehension of the texts. *Benchmark Adelante* utilizes authentic, award-winning texts authored by Spanish and Latin American authors in the United States and abroad. These texts offer an affirmation of culture that embraces multicultural perspectives.

## Research Supporting Reading Comprehension

Castles et al. (2018) state "reading comprehension is not a single entity that can be explained by a unified cognitive model" (p. 28). Rather, "it is the orchestrated product of a set of linguistic and cognitive processes operating on text and interacting with background knowledge, features of the text, and the purpose and goals of the reading situation" (p. 28). Stated slightly differently, "comprehension comes about through the interaction of knowledge (e.g., vocabulary, background knowledge), processes that operate on text (e.g., meaning activation, inference generation), and general cognitive factors (e.g., working memory)" (Castles et al., 2018, p. 34).

Kilpatrick (2015) states that once word recognition skills are removed from consideration, "reading comprehension difficulties most commonly involve language comprehension difficulties" (p. 323). Language comprehension skills include "vocabulary, syntax, general background knowledge, specific topical knowledge, listening comprehension, knowledge of idioms and expressions, working memory, and attention" (Kilpatrick, 2015, p. 323).

Willingham (2017) states "comprehension includes not only understanding the text moment by moment as you read it, but also the development of some overall sense of what the text is about. And that's what sticks with you" (p. 107). In discussing how comprehension works, Willingham discusses extracting ideas from sentences; connecting those ideas; the situational model created from connecting those ideas (keeping track of what the main character is doing, the timing of events, the spatial relations among the elements of the story, causal relations among events in the text, and whether events are relevant to the main character's goals); bridging meaning across sentences; making inferences when necessary; and having broad knowledge across many topics. Willingham acknowledges that "teaching

reading is not just a matter of teaching reading. The whole curriculum matters, because good readers have broad knowledge in civics, drama, history, geography, science, the visual arts, and so on" (p. 127).

Stuart and Stainthorp (2016) state that the important predictors of students' reading comprehension are the ability to draw inferences, an understanding of story structure, comprehension-monitoring ability (Oakhill, Cain, & Bryant, 2003), vocabulary knowledge, and grammatical skills (Muter, Hulme, Snowling, & Stevenson, 2004). Stuart and Stainthorp state "all these abilities are essential for understanding texts" (p. 119). Further, "without good language skills and extensive experience of print, they [students] may not understand what they are reading" (p. 119).

Moats (2010, p. 17) identifies effective teaching strategies, supported by research (e.g., NIH, 2000; Snow et al., 1998), where teachers draw on many resources and skill instruction is balanced with daily reading and writing that is purposeful and engaging for students at all levels. Key reading comprehension teaching strategies include:

- Daily exposure to a variety of texts and incentives for students to read independently and with others
- Key comprehension strategies including summarizing, clarifying, questioning, and visualizing (modeled explicitly by the teacher and practiced overtly if students are not comprehending well or if they approach reading comprehension passively)
- Close reading of text for topic-specific content (the most important activity for building comprehension)
- Encouraging frequent prose writing to enable deeper understand of what is read

Castles et al. (2018) identify reading comprehension as "complex and multifaceted" (p. 34). Reading comprehension's "foundation is in language more generally, but written language presents additional challenges for the reader, including but not limited to the need to identify and recognize printed words" (p. 34). Implications for teaching reading comprehension in the classroom include the following:

- Benefits are derived from explicitly teaching comprehension strategies to prompt active engagement with text, including discussing text with peers and teachers using methods such as clarification, summarization, prediction, and question generation. Additionally, strategy instruction benefits appear to emerge after relatively little instruction.
- Vocabulary instruction that might lead to greater transfer, in support of comprehension, includes instruction that teaches multiple and flexible strategies for establishing word meaning (e.g., using contextual clues, synonyms, syntactic constraints) and focusing on specific types of words (e.g., those words not yet known, like Tier 2 words or those specific to curricular topics).
- Inference instruction was shown to benefit reading comprehension (Elleman, 2017).
- Before children can read, interventions/instruction that target oral language leads to improvements in reading comprehension (Fricke et al., 2013). Castles et al. suggest extending this type of instruction to students who are focused on learning the alphabetic principle and reading words also.

Stuart and Stainthorp (2016) identify seven topics, besides vocabulary, when discussing teaching comprehension. These include:

- Teaching comprehension strategies: “Teaching comprehension strategies gives children tools to enable them to understand the texts they are reading and so use reading for the purposes of learning and studying more effectively” (Stuart & Stainthorp, 2016, pp. 137–138). Guiding principles of teaching comprehension strategies include teachers actively modeling the strategies, making what is going on in their heads visible to students, and making the strategies explicit before practicing, with an end goal of internalization of the strategies so students can use them as needed.
- Monitoring comprehension: “Monitoring one’s own comprehension of what one is reading is a useful cognitive strategy for ensuring that comprehension proceeds smoothly. This involves recognizing when the mental model one is constructing does not make sense, when comprehension has failed” (Stuart & Stainthorp, 2016, p. 138). With teacher modeling, students can be taught to monitor their own comprehension using techniques such as rereading the section, going back in the text, reading on to see if meaning becomes clear, identifying words that may be causing the problem, showing where inferences had to be made from earlier parts of the text, or asking for help.
- Graphic organizer instruction: This instruction is “where children are taught to use some form of external diagrammatic representation of the text … These techniques require readers to externalize concepts, themes, events, causal links, etc., in texts and to begin to see how they relate to each other” (Stuart & Stainthorp, 2016, p. 140).
- Questioning: “Questioning as an effective comprehension strategy includes both the generation of and response to questions … asking oneself questions for clarification, interpretation and prediction improved comprehension and supported comprehension monitoring strategies” (Stuart & Stainthorp, 2016, p. 142).
- Summarization: “The central aim of most summarization instruction is to teach the reader how to identify the main or central ideas of a paragraph or a series of paragraphs” (Stuart & Stainthorp, 2016, p. 142). “Summarization training has the effect of making readers more aware of how the text is structured and has the added benefit of incidentally teaching note-taking skills” (Stuart & Stainthorp, 2016, p. 142).
- Multiple strategy use and classroom organization: The National Reading Panel report (NIH, 2000) suggested that learning multiple strategies is desirable. Stuart and Stainthorp (2016) state “for young learners, it may be easier for them to practise [*sic*] one strategy at a time and gradually learn to integrate their skills for optimum success” (p. 143). Teacher modeling is not essential as a starting point, and learning how to use multiple strategies can be taught during whole-group and small-group instruction.
- Story structure: Students who come to school with extensive experience with listening to stories and handling books benefit from explicit instruction about story structure, but for students who have not had this experience, explicit instruction about story structure is a must. Stuart and Stainthorp (2016) identify five questions that characterize teaching about story structure: Who is the main character? Where and when does the story occur? What do the main characters do? How does the story end? How do the main character feel? (pp. 143–144)

### Application of Reading Comprehension Research in Benchmark Advance and Benchmark Adelante

In *Benchmark Advance* and *Benchmark Adelante*, the overall goal is to provide instruction that enables students to understand the meaning of the texts they are reading and will read in school and outside of school. Fundamentally, being able to comprehend text, in multiple genres, is dependent upon students' abilities in the areas of phonological awareness, phonics, vocabulary, fluency, and comprehension. However, comprehending text also requires more skills, such as background knowledge and language comprehension, that allow students to interact and to want to interact with texts. Not only does the instruction need to follow a comprehensive scope and sequence with sufficient review and practice and include the skills and strategies necessary to learn how to read, but the instruction, topics, and texts also need to be interesting, enriching, and motivating to keep the attention of students who may need a great deal of practice to become skilled readers.

In *Benchmark Advance* and *Benchmark Adelante*, comprehending text, and the skills necessary to comprehend text, is central to instruction. During all the parts of the lessons, comprehension strategies and skills are taught, modeled, practiced, reviewed, and informally assessed by teachers. The Guide to Text Complexity for each unit provides quantitative (Lexile) and qualitative measures of text complexity for the texts used in the unit. The qualitative measure is a combination of four dimensions of complexity applied to each text.

During whole group (read-aloud and shared reading), teachers build and strengthen comprehension; model fluent, expressive reading; and reinforce understanding of grammar and language conventions. The whole-group mini-lessons address skills and strategies (e.g., metacognition, comprehension, vocabulary, and phonics/foundational skills) based on grade-level standards. In each unit, the reading mini-lessons follow a gradual release model that includes engaging thinking; model, guide, practice; and share and reflect.

The small-group reading is designed to meet the needs of the students in the classroom. This instruction allows for the opportunity to revisit previously taught skills that need reinforcement, support for English or Spanish language development, and extension of concepts for students who are ready to move ahead. Decodable texts can be used based on previously taught skills and student data. Teachers and students can read decodable texts chorally (together) to build accuracy and automaticity. Students can use the decodable texts for repeated reading procedures to reread the text (echo, choral, or buddy reading). The Intervention and Reteaching Resources for each unit provide reteaching lessons and practice activities as well as Quick Check Assessments for students who need additional learning opportunities.

## Writing

Writing is a fundamental part of engaging in professional, social, community, and civic activities. Later in life, "writing is a 'threshold skill' for both employment and promotion, particularly for salaried employees" (National Commission on Writing, 2004). "Students should develop an early foundation in writing in order to communicate their ideas effectively and efficiently—yet many American students are not strong writers" (Graham, Bollinger et al., 2018, p. 6). Graham, Bollinger et al. (2018) "believe that students who develop strong writing skills at an early age acquire a valuable tool for learning,

communicating, and self-expression" (p. 6). The Writing section contains information about handwriting, spelling, and composition.

## Research Supporting Handwriting

McCarroll and Fletcher (2017) compared standards-based report card grades in reading, writing, and math to scores on a screener of handwriting proficiency. Results indicated a significant positive relationship between the quality of handwriting and academic success in writing and reading. James (2017) found "handwriting experience can have significant effects on the ability of young children to recognize letters" (p. 1).

A small number of studies (e.g., Li & James, 2016) show that children "learn symbols better if they write them by hand during learning than through other forms of practice, including visual, auditory, and even typing" (James, 2017, p. 2). James and Engelhardt (2012) compared learning letters through the see-and-say method, printing, typing on a keyboard, or tracing. Results show that only after the printing training did the brains of the children in the study recruit the letter recognition network in the brain, similar to what is observed in adults.

Ose Askvik, van der Weel, and van der Meer (2020) studied the brain electrical activity of 12 young adults and 12 children who were 12 years old. Both adults and children were asked to write in cursive, by hand, keyboarding, or drawing to visually presented words that were varying in difficulty. Results for the adults and children were similar with the same activation patterns, but for the children, the patterns were not as strong. The activation patterns for cursive writing by hand and drawing occur in particular brain areas important for memory and for the encoding of new information and, therefore, provide the brain with optimal conditions for learning. An implication of this research is that "children, from an early age, must be exposed to handwriting and drawing activities in school to establish the neuronal oscillation patterns that are beneficial to learning" (Ose Askvik et al., 2020, p. 1).

Santangelo and Graham (2016) posit that because handwriting can influence teachers' evaluation of students' written products and may constrain writing development, it was important to determine if teaching handwriting resulted in better writing. Their study showed that "explicitly teaching HW [handwriting] not only improves students' HW legibility and fluency, but also enhances their writing" (Santangelo & Graham, 2016, p. 251). Instruction in fine motor skills did not produce better handwriting. Individualized handwriting instruction and teaching handwriting via technology resulted in significant improvements in legibility. Additionally, handwriting instruction produced gains in the quality, length, and fluency of students' writing.

## Application of Handwriting Research in Benchmark Advance and Benchmark Adelante

In *Benchmark Advance* and *Benchmark Adelante*, writing is integrated into most of the instruction in one way or another. Handwriting (in Grades K–2) and Cursive (in Grades 2–3) Instruction and Practice include instruction on proper grip and body posture, instruction on the formation of letters, and practice pages of letters on lined paper. When students are expected to write, there is appropriate lined paper upon which to write. Handwriting is integrated into phonics instruction, the Shared Reading and Complex Text reading activities, grammar and language lessons, and writing instruction itself. During writing tasks, learning targets include the development of handwriting and cursive writing skills.

## Research Supporting Spelling

Kilpatrick (2015) states "in reading research, *orthography* is used to refer to the correct spelling of words" (p. 82). There are two levels of orthography: recall and recognition. Orthographic recognition "is the essence of word recognition—a particular orthographic sequence is instantly recognized as a familiar word" (pp. 82–83). In reading, word recognition requires sufficient detail to distinguish between the many look-alike words in English. Orthographic recall is necessary to correctly spell words. Words that are or can be easily recognized (e.g., tongue, bouquet, colonel, rendezvous, or licorice) are not easy to spell. "Spelling is an index of orthographic knowledge. It demonstrates that a student knows the correct orthographic representation of a given word" (Kilpatrick, 2015, p. 186). "Spelling can sometimes be a window into a student's phonological and orthographic skills" (Kilpatrick, 2015, p. 187).

Berninger et al. (2002) studied 96 Grade 3 students in an urban setting with, among other criteria, verbal IQ in the normal range and compositional fluency in the below average range. Students were randomly assigned to spelling training only, composition training only, combined spelling and composition training, or a control condition. Results indicated that all the treatments increased compositional fluency. Spelling and combined spelling and composition training were most effective for word-specific spelling. The teaching of alternations, the alternative ways of representing the same phoneme in English orthography, improved phonological decoding, and transferred to spelling in composing. Only combined spelling plus composing increased both spelling and composing.

Pérez Cañado (2004) conducted a pre-test/post-test/delayed post-test control group design study to determine differences in providing systematic, explicit spelling instruction compared with a group that did not receive spelling instruction. Participants included Spanish students in Grade 5 learning to spell in English. Results of this study show that students who received the explicit spelling instruction achieved a statistically significant difference when compared to the students who were supposed to implicitly learning how to spell.

Graham and Santangelo (2014) conducted a meta-analytic review of 53 studies on 6,037 students in Grades K–12. The research questions centered around the impact of formally teaching spelling. Results of the meta-analytic review provided strong and consistent support for teaching spelling. Directly teaching spelling improved spelling when compared to a no/unrelated or informal/incidental approach to spelling. Increasing the amount of formal spelling instruction from the amount of instruction before the study also improved spelling performance. Gains in spelling were maintained over time and generalized to spelling when writing.

Simmons, Darch, Hinton, and Padgett (2017) compared explicit rule-based spelling instruction with a traditional instructional approach. The daily explicit instruction included orally identifying sounds; reviewing previously taught phonemic generalizations (rules or sounds); writing sentences from dictation using words previously taught; working with commonly confused words (e.g., where and were); dictation containing 5 to 8 previously taught words; and writing based on a picture, allowing for transfer of words from practice into sentence writing. Daily instruction in the traditional approach varied. Students were given words for the week and the responsibility for learning was on the students. Within the everyday activities, spelling skills were integrated (e.g., rhyming words, puzzles, finding the misspelled word, vocabulary builders).

The students participating in the Simmons et al. study were in Grades 3–5 and were identified as being at risk (scoring in the intensive or strategic categories on the DIBELS measures), qualified for Title I services, and were identified as students with special needs. Forty-one students were randomly assigned to explicit or traditional instruction for three weeks. Results showed that students who received the explicit instruction had higher scores on all three weekly unit tests and the post-test. Also, students who received the explicit instruction made fewer total errors. This led to the conclusion that the explicit rule-based spelling instruction was more successful.

Treiman (2018) reminds us of spelling instruction in schools involving asking students to memorize a list of words for a test, even though this is not especially effective. Phonics instruction improved spelling in typically developing students in Grades K–1. Older students who struggle with reading benefit from phonics instruction also. Treiman states "for children to understand how the writing system works, studying words can become a content area, like studying animals or arithmetic" (p. 237). What is commonly referred to as Word Study usually starts around Grade 2 and continues from there. Treiman indicates that "since English spellings reflect morphology, spelling instruction can be integrated with vocabulary instruction" (p. 237), with benefits to both spelling and vocabulary development.

### Application of Spelling Research in Benchmark Advance and Benchmark Adelante

In *Benchmark Advance* and *Benchmark Adelante*, each week in Grades K–1, students will build additional vocabulary based on phonics lessons. Over the course of the unit (3 weeks total), students will be reading and spelling words with the patterns being taught in the phonics lessons. In Grade 2, each week students will build vocabulary based on phonics and word study lessons, reading and spelling words with the weekly patterns. In Grade 3 and above, in each week's word study lessons, students develop and apply knowledge of phonics, context clues, and structural analysis of word parts to determine the meaning and pronunciation of multisyllabic words, with grade-appropriate spelling words reinforcing the focus skill(s).

Additional unit resources include a Spelling-Sound Correspondences Routine that helps teachers prepare for the introduction and practice of targeted spelling-sound correspondences. Teacher Tips provide suggestions for additional activities to reinforce targeted spelling-sound correspondences. On Fridays of each week during the Review and Assess (also referred to as Review and Monitor Progress) mini-lesson, spelling patterns using dictation are assessed. Mastery of the week's spelling patterns is not immediately expected, and therefore, the patterns are reviewed in successive units.

## Research Supporting Composition

Schmoker (2018) states "decades of research attest to writing's unrivaled ability to facilitate understanding and help people to evaluate, reconstitute, and synthesize knowledge" (p. 22). Writing, or composition, is the other part of literacy that, by definition, includes both reading and writing (Graham & Perin, 2007b). Graham, Liu et al. (2018) state "Writing is one of the most essential skills that students must master if they are to be successful at school, work, and in everyday life" (p. 244).

Graham and Sandmel (2011) indicate that the best writing instructional model to be implemented in schools is the process writing approach. The process writing approach is somewhat fluid in its definition, but Graham and Sandmel identify common underlying principles synthesized from several studies (e.g., Graham & Perin, 2007a, Nagin, 2006; Pritchard & Honeycutt, 2006) to include the following:

> Students engage in cycles of planning (setting goals, generating ideas, organizing ideas), translating (putting a writing plan into action), and reviewing (evaluating, editing, revising). They write for real purposes and audiences, with some of their writing projects occurring over an extended period of time. Students' ownership of their writing is stressed, as is self-reflection and evaluation. Students work together collaboratively, and teachers create a supportive and nonthreatening writing environment. Personalized and individualized writing instruction is provided through minilessons, writing conferences, and teachable moments (Graham & Sandmel, 2011, pp. 396–397).

In 2012, the Institute of Education Sciences (IES) Practice Guide *Teaching Elementary School Students to Be Effective Writers* (Graham et al., 2012) was published. This practice guide was revised in 2018 and "includes both national and international studies of strategies for teaching writing to students in kindergarten through 6th grade" (Graham, Bollinger et al., 2018, p. 8). This publication not only reinforced the importance of learning to write for all students, but it also offered recommendations and suggestions on how to carry out the recommendations. Each recommendation is ascribed with the level of evidence based on the high-quality experimental and quasi-experimental design studies that met What Works Clearinghouse (WWC) standards. For this practice guide, 34 studies were relevant to the panel's recommendations. Below are the recommendations, with the level of evidence.

- Recommendation 1. Provide daily time for students to write. Level of Evidence = Minimal Evidence.
- Recommendation 2. Teach students to use the writing process for a variety of purposes. Level of Evidence = Strong Evidence.
    - Recommendation 2a. Teach students the writing process.
    - Recommendation 2b. Teach students to write for a variety of purposes.
- Recommendation 3. Teach students to become fluent with handwriting, spelling, sentence construction, typing, and word processing. Level of Evidence = Moderate Evidence.
- Recommendation 4. Create an engaged community of writers. Level of Evidence = Minimal Evidence.

Within the IES Practice Guide (Graham, Bollinger et al., 2018) there are definitions, strategies, activities, examples, models, tips, etc., that provide additional details about each of the recommendations found in the guide. Rather than duplicating that material in this research foundation, the reader is encouraged to download and read the original document[2].

Graham, Harris, and Santangelo (2015) conducted a meta-analysis to identify effective instructional practices for teaching writing. The included studies "examined the effect of a writing treatment on overall writing quality, content learning, or reading performance" (p. 504), thus focusing on writing practices that had an impact on more than just the skill being taught. Where appropriate (e.g., when

[2] The IES Practice Guide called *Teaching Elementary School Students to Be Effective Writers* can be found at https://ies.ed.gov/ncee/wwc/Docs/PracticeGuide/WWC_Elem_Writing_PG_Dec182018.pdf

there were three or more studies that tested a writing practice), effect sizes (ES)[3] were included. Table 1 presents the findings of this meta-analysis where effect sizes were calculated.

*Table 1. Graham et al. (2015) Meta-Analysis Recommendations*

| Recommendations | Average-Weighted Effect Size |
|---|---|
| Implement a process approach to writing. | Writing quality = 0.37 |
| Create routines that ensure students write frequently. | Writing quality = 0.37<br>Reading comprehension = 0.35 |
| Design instructional routines where students compose together. | Writing quality = 0.66 |
| Establish goals for students' writing. | Writing quality = 0.80 |
| Use 21st-century writing tools. | Writing quality = 0.47 |
| Teach handwriting, typing, and spelling. | Writing quality = 0.55 |
| Teach sentence-construction skills. | Writing quality = 0.56 |
| Have students gather ideas and information to write about. | Writing quality = 0.54 |
| Teach students the basic elements of different types of text. | Writing quality = 0.41 |
| Provide students with good models of written text. | Writing quality = 0.40 |
| Teach students vocabulary that will improve their text. | Writing quality = 0.78 |
| Teach students strategies for planning, drafting, revising, and editing. | Writing quality = 1.00 |
| Use writing as a tool to support students' learning. | Content learning = 0.22<br>Reading comprehension = 0.65 |

Based on the Graham et al. (2015) meta-analysis, the effect sizes range from small to large, with the recommendation to *Teach students strategies for planning, drafting, revising, and editing* having the largest effect on students, followed by *Establish goals for students' writing*, and finally, *Use writing as a tool to support students' learning*. All these recommendations would fit within the recommendations made in the IES Practice Guide (Graham, Bollinger et al., 2018).

*Table 2. Graham et al. (2015) Meta-Analysis Recommendations for Students with Disabilities*

| Recommendations for Students with Disabilities | Average-Weighted Effect Size |
|---|---|
| Teach students strategies for planning, drafting, revising, and editing. | Writing quality = 0.93 |
| Establish goals for students' writing. | Writing quality = 0.57 |
| Allow students to dictate some part of their composition (e.g., plan, draft) into a tape recorder. | Writing quality = 0.55 |
| Implement a process approach to writing. | Writing quality = 0.43 |
| Use 21st-century writing tools. | Writing quality = 0.35<br>Decreased errors = 0.42 |

There were enough research studies that included students with disabilities in the meta-analysis by Graham et al. (2015) to make five recommendations specifically for students with disabilities. Table 2 contains those recommendations and effect sizes for students with disabilities. Please note that four of the five recommendations are also effective with students in general. The new recommendation, using dictation, was an effective treatment specific to students with disabilities. The recommendation with

[3] The procedure to calculate ES was to "subtract the mean score of the writing treatment group at posttest from the mean score of the control group at posttest and divide this difference by the pooled standard of the two groups" (Graham et al., 2015, pp. 504–505). All effect sizes were adjusted for small-sample-size bias (Hedges, 1982). Often, the following are used to judge the size of the effect: 0.2 is small, 0.5 is medium, and 0.8 is large (Cohen, 1988).

the largest effect size for students with disabilities is the same as for the whole group: *Teach students strategies for planning, drafting, revising, and editing*.

One of the recommendations where an effect size could not be calculated from the Graham et al. (2015) meta-analysis is to provide feedback to students. Feedback is one of the influences, identified by John Hattie, related to learning outcomes with an effect size of 0.73, which is close to a large effect and is certainly a positive effect on learning outcomes (Waack, 2015). McGee (2017) suggests that feedback in writing matters as much (or more than!) the writing lessons taught in the classroom. McGee provides five research-supported essentials for creating classrooms where the complicated work of writing can take place while also having space for feedback. This best-practice writing classroom includes:

- Authentic audience-based writing experiences: Writers are invested and motivated when engaged with an immediate, compelling purpose.
- Goals that stretch each writer with support to reach those goals: Feedback is centered around reaching goals set by writers.
- Self-regulation in writing experiences with timely feedback: Writers own their process and are given, and give themselves, feedback on their choices.
- Routines and structures that promote writing and interactions with other writers.
- An environment that supports risk taking and reflection: When writers feel safe enough to take risks in the classroom, it deepens learning and makes transfer to other situations more likely. (McGee, 2017, pp. 22–23)

### Application of Composition Research in Benchmark Advance and Benchmark Adelante

In *Benchmark Advance* and *Benchmark Adelante*, Writing and Language Mini-Lessons are part of the daily instruction and are taught using a gradual release model. Generally, the parts of the writing process occur over several days to several weeks, depending on the grade level and types of writing. The writing process is based on process writing but could contain more steps, depending on the type of composition being written. Mentor texts that are part of the weekly lessons often serve as models for the types of composition students write. The grammar and language of the types of composition are taught and reinforced at the point of use. Language in Context and Grammar in Context mini-lessons are part of the weekly instruction.

Types of compositions taught in *Benchmark Advance* and *Benchmark Adelante* include narrative (both fiction and nonfiction), personal responses, informative/explanatory, procedural, opinion, multimedia presentation, and poetry. Other Text-Based Writing Tasks start at Grade 2 and include Daily Text Annotation in *Texts for Close Reading*, Apply Understand Tasks for Mini-Lessons, Build-Reflect-Write Activities in *Texts for Close Reading*, and Writing in Response to Small-Group Reading. The BuildReflectWrite E-Notebook provides an additional opportunity for students to build writing skills by practicing in context.

## Research Supporting Assessment

Kilpatrick (2015) states “the best reading assessment tool is the evaluator’s knowledge of research on reading acquisition and reading difficulties” (p. 151). The primary goal of assessment within a school environment should be using assessment results to inform instruction (Miciak & Fletcher, 2019). There is

evidence that using assessment data to differentiate instruction by intensity, group size, dosage, and content can improve student outcomes in reading (Gersten et al., 2009; Roberts, Vaughn, Fletcher, Stuebing, & Barth, 2013).

Reynolds and Livingston (2012) describe two types of evaluation used in classrooms: summative and formative. Summative evaluation is often used to communicate information about student progress, strengths, and weaknesses over time. Summative assessments are often assigned a letter grade that reflects academic progress. Formative evaluation usually includes feedback that facilitates and guides students' learning activities, letting them know what has and has not been mastered. Afflerbach, Cho, and Kim (2015) state the formative and summative assessments should be used in tandem, with "the formative providing regular, diagnostic information that provides markers on the path to students' complex higher-order thinking, and that informs instruction" (p. 212).

Dougherty Stahl, Flanigan, and McKenna (2020) describe two ways of bringing meaning to tests: comparing a student's results with results of other children (norm-referenced test) and comparing a student's results with a pre-established criterion or benchmark (criterion-referenced test). Stated in a slightly different way, norm-referenced interpretations are relative (i.e., based upon the performance of other students). Criterion-referenced interpretations are absolute (i.e., compared to an absolute standard). Both types of tests are useful, but Dougherty Stahl et al. state "a curriculum that consists of many specific skills to be learned is probably well served by a series of criterion-referenced tests" (p. 25).

### Application of Assessment Research in Benchmark Advance and Benchmark Adelante

In *Benchmark Advance* and *Benchmark Adelante*, several types of assessment keep teachers informed of the overall academic proficiency and progress of students in their classrooms. Assessments in *Benchmark Advance* and *Benchmark Adelante* are designed to identify and assess students' grasp of reading and writing standards and skills across the units. Below is a description of the assessments. The English and Spanish names of the assessments will be initially provided, and then the rest of the description will use only the English name of the assessment.

- *Interim Assessments/Evaluaciones periódicas*: Interim Assessments are given four times a year. Interim Assessment 1 is given twice: once at the beginning of the year as a pre-test and then again at the end of the year as a post-test. The Interim Assessments are based on the standards taught throughout the school year.
- *Weekly & Unit Assessments/Evaluaciones de la semana & Evaluaciones de la unidad*: Two Weekly Assessments and one Unit Assessment focus on the instructional content taught across each three-week unit.
- *Phonological Awareness Assessment/Conciencia fonológica Pruebas cortas*: All students in Grades K–3 should be formally assessed on their phonological awareness abilities. In Grades K–1, students should be assessed three times a year. In Grades 2–3, students should be assessed at least at the beginning of the year to determine the students who might need to receive intensive phonemic awareness training.
- *Foundational Skills Screeners/Evaluación de las destrezas fundamentales*: Gives teachers a quick way to assess any student's general proficiency and provide data to use in tackling challenging

and developing skill areas. Organized by level and by skill, the three levels correspond loosely to Grades K–2. Each screener contains five or six skill-specific mini-assessments. For instance, Level A contains Letter Recognition, Phonological Awareness, Letter Sounds, Word Recognition, and Print Concepts mini-assessments.

- *Skill-Area Specific Quick Checks/Pruebas cortas*: Gives teachers a short, skill-based assessment designed to evaluate individual student proficiency in key skill and knowledge areas. Student performance on the Quick Checks can be used to inform the decision about whether and when to implement intervention steps using the *Benchmark Advance* and *Benchmark Adelante* Intervention materials. The different Skill-Areas include Phonological Awareness, Comprehension, Phonics and Word Recognition, Print Concepts, and Fluency Quick Checks.

## Summary

This review of research establishes the empirical base that supports the English Language Arts/English Language Development core program *Benchmark Advance* ©2022, and the Spanish Language Arts/Spanish Language Development core program *Benchmark Adelante* ©2023. Theoretical and empirical research discussed in this review informs the means, ends, goals, and expected outcomes of effective program implementation. This research foundation also informs a logical and empirically validated progression of teaching and learning to support students in meeting the academic rigor of the program.

Twenty-first-century skill expectations and recent studies created the need for changes to literacy standards and related curricula. Public schools must respond to greater demands to prepare citizens for careers with knowledge and skills that have reshaped the conceptualization of what it means to be a literate individual in the global society. The changes to *Benchmark Advance* and *Benchmark Adelante* represent the continued movement as the result of these changes toward pedagogies and practices that foster students' engagement and learning.

Students interact with academically rigorous and complex informational and literary texts in meaningful ways for academic, discipline-specific, and interpersonal communication that is effective across multilingual and multimedia modes of expression. This research foundation documents and affirms how the programs reflect the integration of knowledge bases from many strands of research in language arts instruction and language acquisition and development into a coherent corpus of instructional practices and assessments for English and Spanish language arts, English and Spanish language development, and second language proficiency development to prepare students for college and careers in the 21st century.

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