

AMERICAN
READING COMPANY

ARC Core and the Science of Reading

— 2020 —



Our Approach

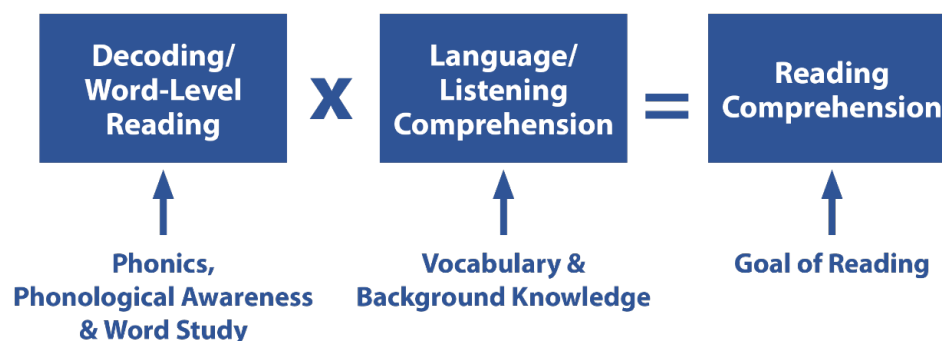
Built and run by educators, American Reading Company® (ARC) is a leader in the field of high-quality instructional materials and is a trusted partner of more than 13,000 schools and 1,200 districts across the country. As a company, ARC is informed by evolving research, work in the field, and expert practitioners. Working alongside district and school leaders, ARC follows a science of improvement model¹ to develop a culture of continuous improvement both in schools and in our materials, ultimately advancing literacy growth and outcomes for all students. The high quality of ARC's offerings is evidenced by top reviews from EdReports, the Texas Resource Review (TRR), Massachusetts' Curriculum Ratings by Teachers (CURATE), and the Louisiana Department of Education (LADOE)-Louisiana Believes.

Based on recent research, ARC has made adjustments to ensure that our approach to the teaching of reading is aligned to the science of reading and grounded in the following essential elements students need to become proficient readers:

1. Oral Language

In order to read unfamiliar words, beginning readers must recognize them from their everyday speech. The larger a student's spoken vocabulary, the more words they will be able to decode and understand. Rich content studies, extensive dialogic Read-Alouds, daily independent reading, and coordinated home reading relationships ensure that students develop extensive academic and domain-specific vocabulary, background knowledge, and competent learner identities as part of a successful academic literacy community.

Simple View of Reading (Gough and Tunmer, 1986)

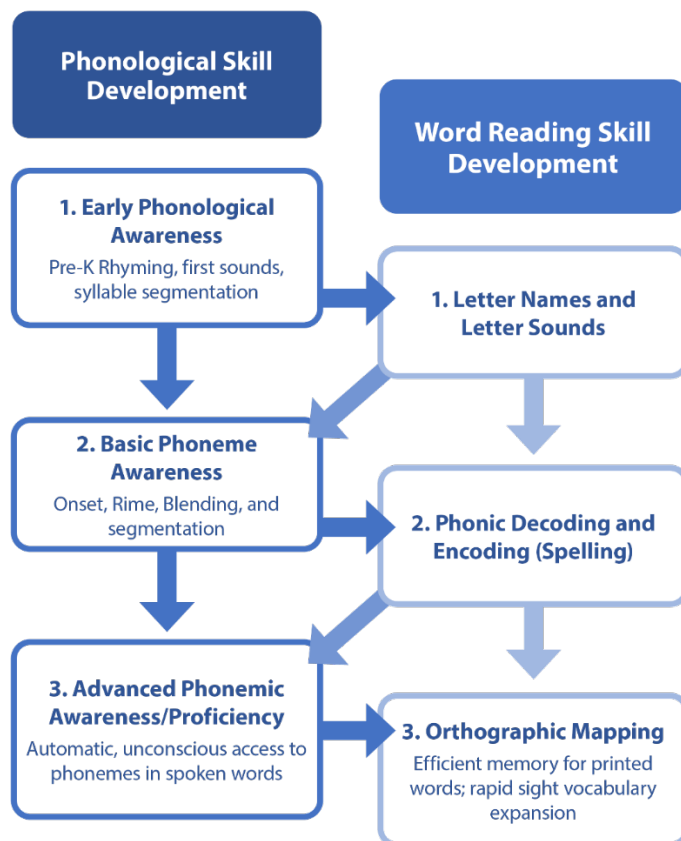


¹ Bryk, Gomez, Grunow, & LeMahieu (2015)

2. Phonological Awareness

ARC Core®, including the lessons in the Instructional Frameworks and the IRLA®/ENIL® toolkits, now reflects an explicit and systematic sequence of phonological awareness instruction that begins with rhyming and alliteration and extends to basic and advanced phonemic awareness across the foundational levels. Phonological awareness activities and games are a core element of every lesson of Kindergarten and first-grade ARC Core. Also, additional resources for phonological awareness instruction, including Marilyn Jager Adams' book *Phonemic Awareness in Young Children*² (in Kindergarten modules) and David Kilpatrick's *Equipped for Reading Success* (in Grade 1 modules) provide a wealth of phonological/phonemic awareness activities to use as needed. From the first day of Kindergarten, students manipulate speech, moving from sentences and words to onset and rime and then individual phonemes as quickly as possible.³ As a continuous-improvement organization, ARC updates our Instructional Frameworks every year based on new learning and feedback from the field.

Phonological Skills and Word Level Reading



“Phoneme awareness should not be trained as an isolated skill. Unless students are able to apply their phoneme awareness skills to the process of mapping sounds to letters, you will not see the benefits of phoneme awareness training.”

—Kilpatrick, 2016, p. 45

² Adams, Foorman, Lundberg, & Beeler (1998)

³ Baker, Beattie, Nelson, & Turtura (2018)

3. Phonics

ARC Core provides systematic phonics instruction with the end goal of ensuring all students are fluent readers, writers, and spellers who are able to tackle any text. ARC Core has been recognized as one of only four systematic phonics programs that “get it right” by Student Achievement Partners⁴ because of its (a) intentional scope and sequence, (b) explicit instruction/guided practice, and (c) application to appropriate texts that students are able to decode using the specific set of phonics skills taught at that level.

a. Scope and Sequence

Phonics instruction in ARC Core follows a specific Developmental Reading Taxonomy[®] (the IRLA levels) that matches Ehri’s Four Phases of Development⁵ (see chart). The IRLA system starts with an onset-rime approach before progressing to phoneme-level phonics. In early Kindergarten, this analytic approach begins with letter names and sounds. Next, students use their emerging phonemic awareness and “partial-alphabetic” skills to learn to read and spell a controlled set of high-leverage words (mostly rimes, such as *-at* and *-it* as well as essential words, such as *the* and *is*). As soon as students are ready, usually by the end of Kindergarten/beginning of first grade, they learn to manipulate these known letter sounds, rimes, and words to read and spell words in the same word families—the heart of the analytic approach. By middle to late first grade, the rime units are segmented, leading to a more fine-grained letter-sound reading/spelling process.⁶

A Note on Analytic vs. Synthetic Phonics

Some educators, when first encountering ARC’s approach to teaching reading, worry that this is “not phonics” because it does not look like the synthetic approach they know best. This is not the case. The report of the National Reading Panel (2000) emphasized that phonics should be taught systematically and clarified that synthetic and analytic approaches are both helpful for beginning readers. Shanahan (2018) emphasized that “across 38 studies there was no clear difference in effectiveness between synthetic and analytic phonics.” Researchers, including Castles, Rastle, and Nation (2018), (citing meta-analyses done by Ehri, Nunes, Stahl, & Willows, 2001, and Torgerson, Books, & Hall, 2006), Paige et al. (2018), and Liben and Paige (2017), concurred. As educators in ARC Core classrooms discover, the analytic approach to phonics instruction provides an efficient and developmentally appropriate on-ramp to reading.

⁴ Liben & Paige (2017)

⁵ Ehri (2014)

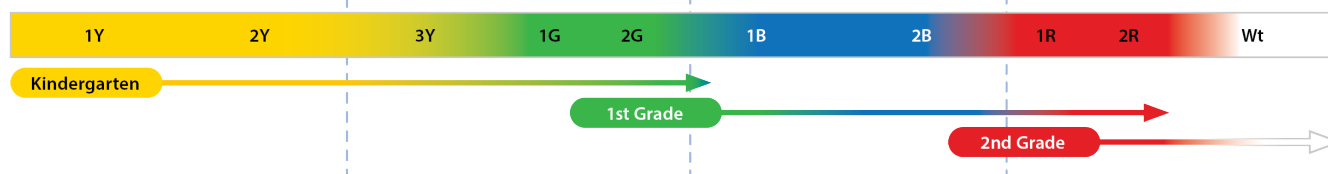
⁶ Ziegler & Goswami (2005)



Summary of Word Reading and Spelling Abilities That Characterize Ehri's (2005) Four Phases of Development

Prealphabetic	Partial Alphabetic	Full Alphabetic	Consolidated Alphabetic
May or may not know letters	Most letter shapes and names known; incomplete knowledge of GPs	Major GPs or writing system known	Grapho-syllabic spelling units known
Lack of phoneme awareness	Limited phonemic awareness; benefit of articulatory awareness instruction	Full phonemic awareness: segmentation and blending	
No GP connections between spellings and pronunciations	Partial GP connections formed	Complete GP connections formed	Grapho-syllabic connections predominate
Sight words learned by remembering salient visual or context cues	Sight words learned by remembering partial GP connections	Sight words learned by remembering complete GP connections	Sight words learned primarily by grapho-syllabic connections
Sight word memory: unreliable, semantic errors, reading the environment	Sight word memory: confusion of similarly spelled words	Sight word memory: accurate, automatic, unitized, growing, limited mainly to shorter words	Sight word memory: accurate, automatic, unitized, expanding rapidly; multisyllabic words easier to learn
No non-word decoding ability	Little or no non-word decoding ability	Growing ability to decode unfamiliar words and non-words	Can decode unfamiliar words and non-words proficiently
Cannot analogize	Analogizing precluded by partial memory for word spellings	Some use of analogizing but limited by smaller sight vocabulary	Greater use of analogizing as sight words accumulate
Unfamiliar words predicted from context	Unfamiliar words predicted using initial letters and context	Unfamiliar words in context read by decoding; context used to confirm or disconfirm words read	Unfamiliar words in context read by decoding or analogy; context used to confirm or disconfirm words read
Words spelled nonphonetically	Partial phonetic spellings invented; weak memory for correct spellings	Phonetically accurate GP spellings invented; growing memory for correct spellings	Graphic-syllabic and GP units to invent spellings; proficient memory for correct spellings

Note: Grapho-syllabic spelling units include subsyllabic units such as rime spellings, spellings of syllables, and spellings of morphemes including root words and affixes. GP = grapheme-phoneme connections



"Summary of Word Reading and Spelling Abilities That Characterize Ehri's (2005) Four Phases of Development" from Linnea C. Ehri (2014) Orthographic Mapping in the Acquisition of Sight Word Reading, Spelling Memory, and Vocabulary Learning, *Scientific Studies of Reading*, 18:1, 8.

b. Explicit Instruction/Guided Practice

Phonics instruction in ARC Core is twofold. In K–1, all students receive whole-group phonics instruction two to three times daily, first through Morning Message, again in Readers’ Workshop, and finally in Writers’ Workshop. In each case, teachers use a variety of instructional models (direct instruction, modeling, guided practice, etc.) based on the needs of the students in front of them, with each session ending with students working to transfer the skill to independent work in reading or writing.

c. Differentiated Instruction

From the first month of ARC Core, children also receive one-on-one or small-group instruction on the specific skills they need next in the developmental sequence. The Foundational Skills Toolkits provide explicit lessons on each skill, combining phonological and then phonemic awareness with phonics and using a gradual-release model. This model begins with explicit instruction from the teacher and ends with students applying the new skill to read connected “decodables” (texts in which students can decode/figure out all the words with the set of phonics skills they have acquired so far) and to write and spell.

d. Application to Texts

While every toolkit connects phonics instruction to specifically paired texts, this is only a tiny fraction of the text practice students receive in ARC Core. ARC uses the same developmental sequence of phonics skills to teach students and to level texts. This means that a text at a given IRLA level is entirely “decodable” by any student who has been assessed to have this level of phonics skills. ARC Core provides each classroom with hundreds of high-quality texts organized by these IRLA levels, ensuring that students spend massive amounts of time reading *and* practicing decoding, all at the appropriate levels of challenge.

Three Common Confusions

Picture Reading

Early in Kindergarten, students transition from PreK picture reading to word reading. In the Yellow levels, students use their picture reading skills to learn to map their speech to print. Students working in this pre-alphabetic phase are introduced to word reading and phonic decoding as quickly as possible, depending on each student’s developmental level. The use of context clues (including pictures), finger pointing, and reading aloud drop away as additional and more reliable phonics skills are learned.

Pre-alphabetic students (PreK and early K) predict unfamiliar words from context. Partial-alphabetic students, who have learned letter names or sounds, predict unfamiliar words using initial letters and context (Ehri, 2014).

Predicting (Guessing)

The behaviors that are characteristic of age-appropriate reading change over time. In the early phases of reading, Ehri uses “predict” and “anticipate” to describe the process readers use when encountering an unfamiliar word. As students become increasingly proficient and automatic in letter-sound association and phonological awareness, they continue to bring everything they know about print and world knowledge in order to learn and experience new things.

Partial-alphabetic readers use initial letters plus context cues in the sentence, the passage, or pictures to anticipate what the word might be. Once a word is predicted, then its pronunciation is matched to the spelling on the page to verify that the sounds fit the letters (Ehri, 2014).

Three Cueing Systems

ARC does not support the three cueing systems as a decoding strategy. When students have difficulty reading a word, they are taught to look for letter sounds, letter strings or syllables whose sounds they already know. Their attempts to use the letter sounds must result in a word that makes sense in the passage before they move on. In addition, they are taught to go back and analyze how the specific letter strings in that word signaled speech sounds, fixing the word into long-term memory.



4. Orthographic Mapping

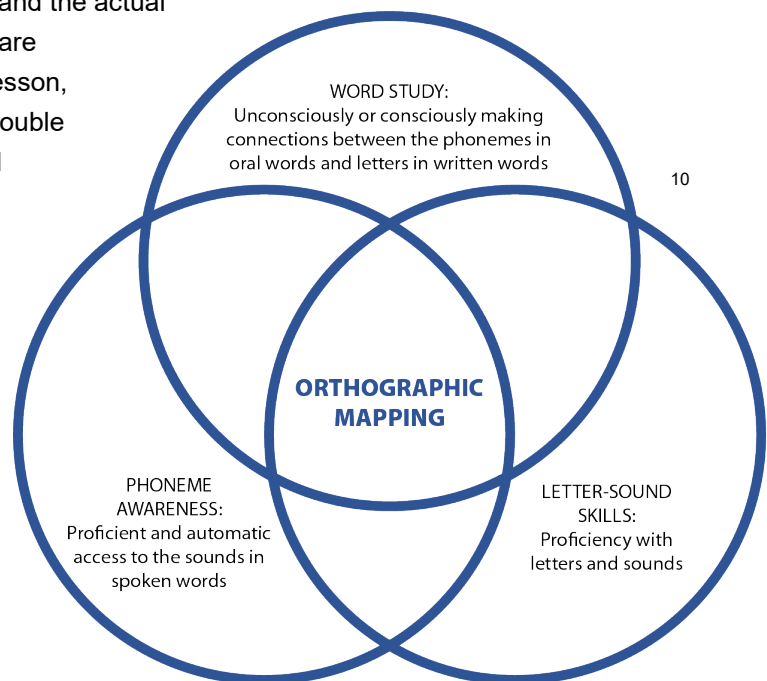
The process of moving from “decoding” to rapid reading involves “orthographic mapping,”⁷ attaching new words and word parts to the familiar speech sounds with which they are associated and thus storing them in long-term memory. ARC Core provides daily practice to support orthographic mapping in two key ways:

a. Word Study

In ARC Core, word study is a component of both whole-group work (Morning Message and reading mini-lessons) and the differentiated support provided by the Foundational Skills Toolkits. Across K–1 in a developmental sequence, students learn to use their phonological awareness and phonics skills to analyze the letter sequence within a word, mapping the letters to their speech sounds. ARC Core’s approach focuses not only on learning “the code” of letters and sounds but on moving students to the kind of effortless automaticity required for fluent reading.^{8 9}

b. Writing

In ARC Core, the focus of initial writing instruction is for students to establish the connection between their oral speech/sounds and writing/letters and therefore to accelerate their paths to reading. From the first day of Kindergarten, students are taught to attempt to represent their oral language on paper, drawing on their developing phonological awareness and phonics skills to do so. ARC Core explicitly teaches teachers how to support phonics-based or “invented” spelling, including how to use “underwriting” as the process by which they show students the connections between oral phonemes, the students’ spelling, and the actual spelling. Because these practices are embedded into every K/1 writing lesson, students in ARC Core receive a “double dose” of phonemic awareness and phonics instruction each day.



⁷ Ehri (2005a)

⁸ Ehri (2005b)

⁹ Kilpatrick (2015)

¹⁰ Kilpatrick (2016)

5. Building Knowledge & Vocabulary

As Natalie Wexler highlighted in *The Knowledge Gap*, while mastering word reading is essential, it alone is insufficient to develop proficient readers. She illustrated what cognitive scientists have known for years—that if students don’t have the knowledge and vocabulary to understand a text, no amount of skills or strategy practice will be of any use. ARC starts developing students’ deep knowledge about a few real-world topics through reading, writing, research, word work, and collaboration from the beginning of Kindergarten. By the time children in ARC schools reach third grade, they are already experts on animals, bugs, the ocean, ecosystems, and weather, among other topics, while also spending hundreds of hours in free-choice reading about anything and everything under the sun. From K–12, the combination of wide reading and the focused study of a few topics work together to systematically build students’ knowledge, Tier 2/3 vocabulary, and global perspective(s) through the twelfth-grade level.¹¹

6. Extensive Reading of Connected Text, Fiction & Nonfiction

ARC Core ensures that all students work with complex, connected texts and experience a high volume of independent reading, both of which are required to develop proficiency and build knowledge.¹²

a. Complex, Connected Text

In each unit of ARC Core, students experience a coherent sequence of connected texts that build content and vocabulary knowledge through reading, writing, listening, speaking, and language in a gradual-release process in which students listen to and discuss above-grade-level text, do shared reading of grade-level text, and read independently from a curated library of texts, all on the same science/social studies topic or in the same literary genre.^{13 14 15 16}

b. Volume of Reading/Home Connection

ARC Core also provides a volume of reading system of home engagement supports for families, reading-acquisition Skills Cards that teach students to drive their own reading growth, and rotating libraries leveled to the IRLA. These libraries, chosen from among the best books for children from over 250 publishers, provide schools with thousands of texts that are diverse in terms of perspective, culture, topic, genre, and time period and include both literature and informational titles, ensuring students are engrossed in reading every day, in school and at home.^{17 18 19 20}

¹¹ Hwang & Duke (2020)

¹² Nelson, Perfetti, Liben, & Liben (2012)

¹³ Connor et al. (2017)

¹⁴ Connor et al. (2010)

¹⁵ Davidson (2019)

¹⁶ Liben & Pimentel (2018)

¹⁷ Anderson, Wilson, & Fielding (1988)

¹⁸ Paul (1996)

¹⁹ Schwanenflugel et al. (2006)

²⁰ Kuhn et al. (2006)

7. Diagnostic & Prescriptive Assessment

The Independent Reading Level Assessment (IRLA) equips educators to efficiently identify where each student is, why, and the sequence of skills/behaviors they need to learn next to accelerate their reading growth. This Standards-based developmental taxonomy works with all learners, across every proficiency level, K–12. The IRLA is an intervention-oriented assessment tool in that its purpose is “to determine *why* a child is struggling in order to identify the most effective approaches to intervention”²¹. Used as a formative assessment tool,²² the IRLA becomes the anchor and compass for a robust multi-tier system of supports (MTSS).

8. Progress Monitoring, Foundational Skill by Foundational Skill

The electronic version of the IRLA (SchoolPace®) gives educators the tools to capture, in real time, which skills each student has learned, on which skill they are currently working, and the rate at which they are acquiring new skills. This link between diagnostic assessment and data/progress monitoring gives educators the resources to make data-driven decision-making an efficient, effective daily practice. Through SchoolPace, teachers and administrators access dashboards on the pace of learning by student, classroom, subgroup, and school, as well as real-time reading proficiency levels by grade, school, and district that are predictive of state test score performance.

Mount Bradley School District Dashboard | SchoolPace

RTM 1Y 2Y 3Y 1G 2G 1B 2B 1R 2R Wt Ek Cr Pu 1Br 2Br Si Gl

19123 Gail L. Farrell Farrell | 1B 1.38 | Power Goal: Use Common Vowel Patterns | Student History: 2019 / 2020 | Notes: (0) | Overview: 0.00 points out of 0.00 | Entry Requirements: 0.00 points out of 0.00 | Foundational Skills: 0.08 points out of 0.20 | Literature Standards: 0.00 points out of 0.00 | Informational Text Standards: 0.00 points out of 0.00 | Transition to 2B: 0.00 points out of 0.00

1B : Foundational Skills | Toggle by Skill Value | Skills with Points

Phonics | 0.07 points out of 0.11

1-Syllable Word Families, Long and Short Vowels, Final Consonants

Cover parts of unfamiliar words with finger and look for familiar chunks inside. | Evidence (2) | Resources (6) | 2/24/2020 | Yes: 0.0 | 0.02 / 0.02 | **Skill Mastered**

Use familiar rhyming words to decode unfamiliar words. | Evidence | 2/24/2020 | Yes: 0.0 | 0.02 / 0.02 | **Skill Mastered**

Decode almost any one-syllable word that follows a regular vowel pattern (hid/hide) or is built from a familiar chunk (sit). | Evidence | Resources (2) | 2/24/2020 | Yes: 0.0 | 0.02 / 0.02 | **Skill Mastered**

Decode words containing -e and common vowel team conventions for representing long vowel sounds. | Evidence (1) | Resources (1) | Vowel Teams | 2/24/2020 | Yes: 0.01 | 0.01 / 0.02 | **Current Power Goal**

Decode words beginning with these sounds: | Evidence (1) | Select | - / 0.01

²¹ Kilpatrick (2015)

²² CCSSO (2018)

9. Supports for English Language Learners

The Simple View of Reading that underlies ARC's Foundational Skills program (decoding x language comprehension = reading comprehension),^{23 24} applies to monolingual and multilingual students alike. The skills necessary for word-level reading/decoding in English are virtually the same, regardless of the student's linguistic background. In other words, there is no significant difference on "what" needs to be systematically and explicitly taught and practiced in order for language learners to master English decoding. There are, however, differences in what each individual student needs based on:

- What the student already knows
- The student's language proficiency

To maximize student reading growth, a system of supports built into the ARC Core curriculum assists educators in making appropriate, high-impact accommodations for multilingual learners at the point of need. These supports include the *Guide to IRLA Coaching with Multilingual Learners*, a companion to the IRLA specifically designed to assist with reading coaching and practice.

ARC's theory of action for multilingual learners is that reading and language can and should develop simultaneously and be leveraged to support each other.^{25 26 27} ARC Core thematic units of inquiry in science, social studies, and literature are intentionally designed to accelerate English-language development through:

- Daily engagement with complex text
- Daily opportunities for structured oracy practice
- Daily rigorous writing
- Rigorous, relevant content

10. Job-Embedded, Curriculum-Specific Professional Learning

ARC's approach to professional development is designed to maximize teacher learning through the research of experts as well as generalizable best practices of literacy instruction, all in service of developing educators' expertise in the curriculum and tools they are using in their classrooms. ARC's professional learning is job-embedded, data-driven, and laser-focused on dramatically increasing reading/literacy achievement for *all* students.

²³ Gough & Hillinger (1980)

²⁴ Gough & Tunmer (1986)

²⁵ Fillmore & Fillmore (2012)

²⁶ Hopewell & Escamilla (2014)

²⁷ Cummins (2017)

a. Leadership Learning

The ARC Leadership Learning Series for instructional Leadership Teams is designed to build organizational capacity through an improvement science²⁸ model uniquely designed to improve student outcomes.

b. Teacher Learning

The bulk of ARC professional development happens in the classroom, with ARC Coaches working elbow to elbow with educators and students. The curriculum itself is professional learning in that it includes highly supportive lesson structures that articulate not only what to teach and how to teach it but also explains the theories and best practices underpinning the suggested moves. This hands-on approach blends theory and practice so that what teachers learn is immediately applicable to their daily work.

Additionally, ARC Coaches focus on nurturing continuous-improvement learning communities within and across schools with the end goal being that the Coach builds internal experts who then mentor their peers on specific aspects of the work (e.g., sight word instruction and practice, teaching decoding by analogy, etc.). This community of support gives educators the insight and feedback they need to fine-tune their practice, together becoming more effective teachers every day.

11. Restorative Instructional Practice & Social-Emotional Learning

Grounded in the work of Haberman, Csikszentmihalyi, Ericsson, Dweck, and others, ARC's approach embeds the science of reading within the larger research on the science of learning. Engagement, motivation, student agency, and culturally responsive practices are embedded in the daily structures of teaching reading. For example, the IRLA is used to determine the student's zone of proximal development in the developmental taxonomy, identifying exactly what they already know and what high-leverage skill they need to learn next. This process includes students as partners in a growth mindset, asset-based approach that accelerates the acquisition of reading skills and the development of reading identities. Reading practice occurs in diverse texts that provide all students with windows, mirrors, and sliding glass doors²⁹. Students become agents of their own reading success as they master Power Goals, research self-selected science topics, and engage in a supportive literacy community.

²⁸ Bryk, Gomez, Grunow, and LeMahieu (2015)

²⁹ Bishop, R. S. (1990)

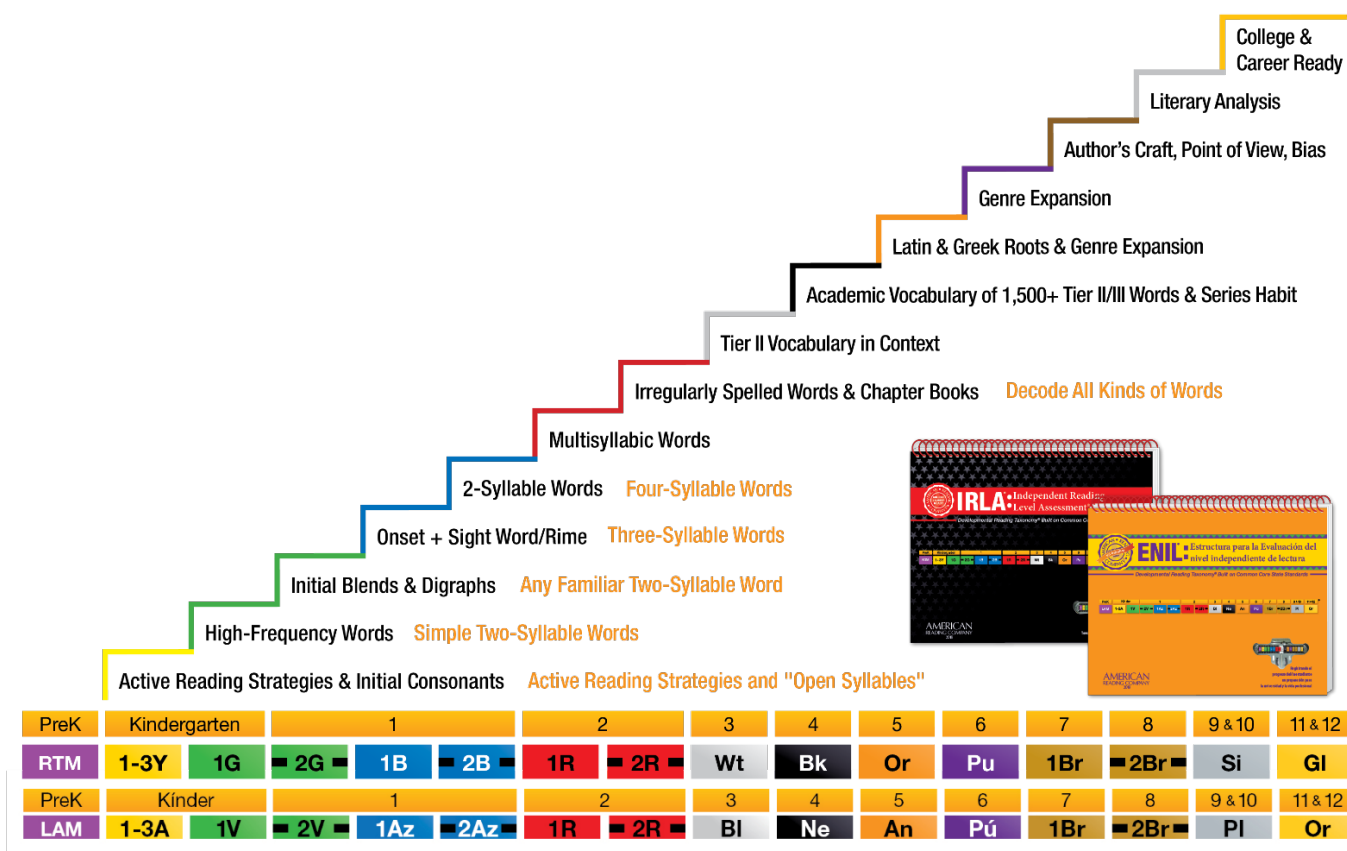


12. Spanish Parity

ARC Core answers the call for Spanish-English parity with a comprehensive Spanish Language Arts curriculum, ARC Core *en español*, for Grades K–5, and an authentic Spanish language formative assessment/reading system, *Evaluación del nivel independiente de lectura* (ENIL), for Grades K–12. ARC Core *en español* provides the same rigor and quality of instruction, phonics, knowledge building, and writing tasks as the English version of ARC Core but is built around beautiful collections of authentic Spanish texts and the ENIL Spanish reading taxonomy. Far from being a superficial adaptation of the IRLA reading taxonomy to the Spanish language, the ENIL is:

- Built on the linguistic features—phonological, morphosyntactic, and semantic—particular to Spanish
- Responsive to the way these features shape the acquisition of literacy skills in Spanish
- Suited for the assessment of both reader proficiency *and* text complexity in Spanish

ARC Core is the only EdReports green-rated curriculum that provides both a basal alternative with authentic texts and complete Spanish parity K–5 and is an ideal option for districts seeking to support students in achieving biliteracy.



*Orange text indicates where the development of reading skills in Spanish differs from English.

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