

**'Tools for Improving Reading' Series**

# **HOW CHILDREN LEARN TO READ:**

***Toward Evidence-Aligned  
Lesson Planning***

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1818 H Street NW  
Washington DC 20433  
Telephone: 202-473-1000

[www.worldbank.org](http://www.worldbank.org)

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Illustration: Margaret Flatley



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## Glossary

### **academic language**

Written or spoken language that is more stylistically formal than spoken, conversational language; language that is most often used in academic discourse and text.

### **alphabetic principle**

The principle that letters are used to represent individual phonemes in the spoken word; insight into this principle is critical for learning to read and spell

### **code switching**

The conscious effort to write and/or speak in a certain way, depending on the social context and/or whether the language is spoken or written

### **consonant**

A phoneme (speech sound) that is not a vowel and that is formed by obstructing the flow of air with the teeth, lips, or tongue; English has 25 consonant phonemes.

### **decoding**

The ability to translate a word from print to speech, usually by employing knowledge of sound-symbol correspondences

### **decodable text**

Reading material made up of words with patterns that have already been taught in phonics lessons; created to provide practice applying decoding skills and building fluency with known patterns and words

### **dialect**

An intelligible version of a language with systematic differences in phonology, word, use, and/or grammatical rules

### **digraph**

A two-letter combination (e.g., th, ph) that stands for a single phoneme in which neither letter represents its usual sound

### **diphthongs**

Single vowel phonemes that glide in the middle; the mouth position shifts during the production of the single vowel phoneme, especially the vowels spelled ou and oi

### **discourse**

Written or spoken communication or exchange of information and ideas, usually longer than a sentence, between individuals or between writer and reader

### **discourse structure**

Organizational conventions in longer segments of oral and written language

### **morpheme**

The smallest meaningful unit of language; it may be a word or a part of a word; it may be a single sound (plural /s/), one syllable (suffix -ful) or more syllables (prefix inter-)

### **morphology**

The study of meaningful units in a language and how the units are combined in word formation

### **onset-rime**

The natural division of a syllable into two parts; the onset coming before the vowel and the rime including the vowel and what follows after it, e.g., pl-an

### **orthography**

A writing system for representing language

### **phoneme**

A speech sound that combines with others in a language system to make words; English has 40 to 44 phonemes, according to various linguists

**phonemic awareness**

The conscious awareness that words are made up of segments of our own speech that are represented with letters in an alphabetic orthography

**phoneme-grapheme mapping**

The matching of letters or letter groups (graphemes) with the individual sounds (phonemes) of the spoken word that they represent. A critical step in learning to read and spell an alphabetic writing system.

**phonetics**

The study of the sounds of human speech; articulatory phonetics refers to the way the sounds are physically produced in the human vocal tract

**phonics**

The study of the relationships between letters and letter sequences and the sounds they represent; also used as a descriptor for code-based instruction

**phonological awareness**

The conscious awareness of *all* levels of the speech sound system, including word boundaries, stress patterns, syllables, onset-rime units, and phonemes

**phonological processing**

Multiple functions of speech and language perception and production, such as perceiving, interpreting, storing (remembering), recalling or retrieving, and generating the speech sound system of a language

**phonological working memory**

The “online” memory system that remembers speech long enough to extract meaning from it, or that holds onto words during writing; a function of the phonological processor

**phonology**

The rule system within a language by which phonemes can be sequenced, combined, and pronounced to make words

**schwa**

The empty vowel in an unaccented syllable, such as the last syllable in *wagon* or *rebus*

**semantics**

The study of word and phrase meanings and relationships

**sight vocabulary**

A student’s pool of words that are instantly and effortlessly recognized; includes both regularly spelled and irregularly spelled words

**syllable**

The unit of pronunciation that is organized around a vowel; it may or may not have a consonant after the vowel.

**syntax**

The system of rules governing permissible word order in sentences

**trigraph**

a three-letter combination that represents one phoneme, e.g., -tch in *ditch* and -dge in *dodge*

**vowel**

One of a set of 15 vowel phonemes in English, not including vowel-r combinations; an open phoneme that is the heart of every spoken syllable; classified by tongue position and height (e.g., high to low, and front to back)







## Preamble

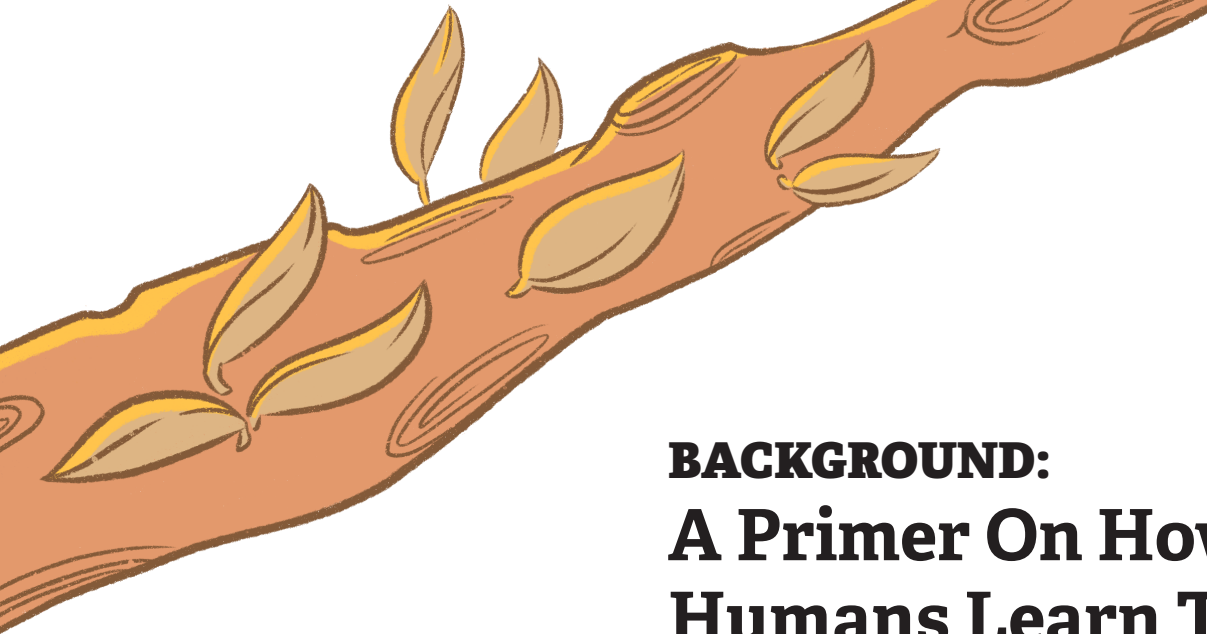
Literacy is necessary for education, and education is the primary driver of human economic, social, physical, and civic well-being. Learning to read, in today's world, should be a human right. Reduction of poverty and many other aspirational goals of the World Bank depend on raising levels of literacy in the developing world.

Although much progress has occurred worldwide with regard to school attendance, enrollment alone has not ensured that students learn to read. Raising literacy levels is challenging; according to the *2018 World Development Report*, 53% of all children in low- and middle-income countries cannot read and understand a short story by the time they are 10 years old. Furthermore, if students are not reading by the end of their third year in school, they are highly unlikely to succeed thereafter, and achievement gaps will only widen. Unless the proportion of 10-year-olds who can read basic material with understanding increases, all other goals of education and sustainable development will be threatened.

That said, achieving substantial progress in childhood literacy will be more likely if teaching practices are informed by the large body of current, scientifically grounded research. Learning to read is one of the most studied of all human intellectual activities, and we now understand much about how the human brain learns to read, the relationships between language and reading, and what's involved in teaching students who do not learn easily or naturally by virtue of their neurological make-up, language background, or position in society. Teaching reading is a challenging endeavor that requires knowledgeable teachers, good materials, and carefully sequenced and paced learning experiences for students. Most critically, those experiences require careful orchestration of two major skill domains—recognition of printed words and comprehension of oral language.

An action plan for addressing learning poverty can be supported by considerable evidence, much of which has been accumulating for decades. The time has come for the adoption of research-based practices likely to bolster literacy for all children – not just those at the higher rungs of society. Although any rationale and instructional framework will require adjustment to accommodate various languages and cultures, we can sketch a solid architectural blueprint for planning beginning reading instruction. The primary goals of this effort are to:

- increase the proportion of children in developing countries who successfully learn to speak, read, and write in their first language and in the dominant language,
- assist policy makers and educational leaders to understand and lead literacy initiatives that are consistent with current research and evidence,
- identify major components of early reading instruction that are important in all languages,
- using English as an example, outline the content of instruction, the order of instruction, and examples of how each critical aspect can be taught, when, and why, and
- set the stage for comparison of optimal reading instruction in English with optimal reading instruction in other languages.



## **BACKGROUND:**

# **A Primer On How Humans Learn To Read**

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### **The Simple View of Reading: A Framework for Understanding How We Read**

**Reading comprehension is the product of multiple skills.** Fluent reading with understanding results from the rather miraculous convergence of multiple language and cognitive skills, developed incrementally over years. These can be grouped under two major skill domains: translation of the print into recognizable words, and translation of the identified words into meaning. Referred to by researchers as The Simple View of Reading (SVR) (Gough & Tunmer, 1986; Hoover & Tunmer, 2020; Kim, 2019), the formula states that reading comprehension is the product of decoding (word recognition) and linguistic comprehension ( $R = D \times C$ ). Reading comprehension is not possible if one or both of these domains is underdeveloped. Each component is necessary but not sufficient. Students must be able to effortlessly and accurately recognize thousands of printed words, and know the meanings of most of those words in context.

**Instructional emphasis will vary with language and level of development.** The Simple View of Reading emphasizes that both foundational reading skills and language comprehension are necessary for learning to read and both must be taught. The framework implies, correctly, that students may vary in their relative mastery of each major domain. In addition, it implies that the amount of time spent on each domain may vary according to where students are in reading development (Catts, Hogan, & Adlof, 2005) and what language

they are learning to read (Seidenberg, 2011). More time may be required to learn to read the words in a complex writing system like English than might be needed in a writing system such as Spanish. Spanish, Finnish, and Serbo-Croatian, among others, use symbols that quite directly represent the language's sounds. As students become more skilled at reading the words, greater emphasis can be placed on expanding vocabulary, background knowledge, and text comprehension during reading lessons (Foorman & Schatschneider, 2003; Petscher et al., 2020). The transition from learning to read to reading to learn should occur gradually over the first three years of schooling.

**Language comprehension depends on many skills.** The language comprehension component of the Simple View encompasses many aspects of oral language development. They include knowledge of word meanings (vocabulary), understanding of syntax or sentence structure, familiarity with academic language features such as figures of speech, knowledge of background concepts and information pertaining to the topic of a passage, and the ability to reason abstractly and make inferences (Scarborough, 2001; Oakhill, Cain, & Elbro, 2019). As reading develops, each of these subskills interacts with and influences the others.

**Good instruction will teach word recognition in parallel with language comprehension.** Word recogni-

tion, the skill that must be directly taught as students begin to read, depends on the development of three distinct underlying skills: phoneme awareness, phonic decoding or matching symbols to speech, and automatic recognition of word parts and whole words that become “banked” in memory. These subskills influence one another and interact with language comprehension in many ways. Good instruction will deliberately address all of these aspects of reading, but instructional emphasis should be determined by the student’s phase of reading development, familiarity with the language being learned for reading, and relative strengths or weaknesses on each side of the Simple View equation. Language comprehension or understanding and use of oral language for meaningful communication, must be nurtured in parallel with the skills of recognizing printed words. If students have no idea what the written words mean in the language of instruction, and they cannot put words together to express ideas in that target language, they are unlikely

to make sense of and remember much about the written language.

**The Simple View of Reading is an orienting framework for reading in all languages.** In sum, the Simple View of Reading is a high-level, orienting concept that encompasses numerous complexities of reading development. It is called “simple,” but it is not simplistic. Both language comprehension and printed word recognition result from successful development of identifiable and teachable language and cognitive skills. This explanatory framework can be applied to understanding reading in all languages (Hoover & Tunmer, 2020). The word recognition component will be more or less difficult depending on the relationship between the sound system and its written symbols. As we reflect on all that goes into becoming a reader, it is easy to understand why attainment of literacy is a significant challenge for many individuals.

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## Learning to Read is Not Natural or Easy for Most Students

**The human brain is not naturally hard-wired to read.** Reading is an acquired skill for which the human brain is not fully adapted (Dehaene, 2009). Although the brain is wired to acquire spoken language, given sufficient exposure to other speakers, there is no established network in the human brain ready to support the amazing feat of translating print into speech. Learning to read entails considerable reorganization of brain systems and construction of new neural pathways—the result of years of experience and instruction. The relative difficulty of learning to read—in any language—is evident in the large numbers of people world-wide who are illiterate. Even in a resourced country such as the United States, most students who attend school regularly need three to four years of instruction and practice to achieve sufficient fluency to support independent reading with comprehension in their first language. Unfortunately, a substantial proportion of those students—about a third—have not learned to read by fourth grade (National Center for Education Statistics, 2019). For many reasons, economically disadvantaged students and racial minorities are over-represented in the population of unskilled readers.

**But with good instruction, most students can learn to read.** The good news is that informed, explicit instruction can work for most students. With good teaching that begins in year one, about 95% of first year students can learn how to read (Torgesen, 2002). The remaining 5% will be those with serious reading disabilities, which can occur across cultures and languages (Joshi & Aaron, 2006).

**Some languages take longer to learn than others.** Once again, the transparency of the writing system that students are learning affects the typical rate at which they learn to read the words (Seymour, 2006). English, which does not use one symbol for each sound, takes longer to learn than French, and French takes longer to learn than Spanish, Italian, or other alphabetic systems in which each speech sound is consistently represented by a letter. Chinese characters take longer to learn than most alphabetic writing systems. Even transparent systems in which one letter represents one sound require time to learn, because other aspects of language and meaning conveyed by print must still be mastered.

**What if the student is not familiar with the language in which reading is being taught?** What if the student has not heard and does not know the meanings of the words he or she is being asked to decode? Even if the student is deliberately taught a sound for each symbol, decoding alone will not result in learning to read. Decoded words will not be readily stored in the brain's dictionary without mental "hooks" that connect the words' sound patterns, meanings and use. Instant recognition of words necessary for fluent reading depends on both code knowledge and familiarity with the language.

Let's briefly contemplate why learning to read, across all languages, is challenging, even under advantageous circumstances.

### **Brain Systems Recruited for Reading**

**Insights from neuroscience shed light on learning processes in the brain.** Over the past few decades, neuroscientists have investigated in some detail how the brain learns to read (Dehaene, 2009; Fletcher, Lyon, Fuchs, & Barnes, 2017; Sand & Bolger, 2019). Findings from sophisticated neuroimaging studies allow us to see the child's brain at work while reading. Insights from neuroscience are pertinent for education in that they shed light on many mental processes that are hidden from consciousness.

**Different regions of the brain work together in the process of reading.** Several regions of the brain, mainly in the half that is specialized for language (left hemisphere), are activated when we look at a written word we already know. Messages come from the eyes through the optic nerve to an area that has been dubbed the "brain's letter box" (Dehaene, 2009) or visual word form area. If the letters and letter combinations are familiar, seeing them automatically triggers associations to both the pronunciation of the spoken word and to the word's meanings (Ashby, 2010; Seidenberg, 2017). These three brain systems—the visual word form area, the systems that analyze and recognize speech sounds, and the areas in which word meanings are stored—are anatomically separated and must be linked through the construction of connecting pathways that do not exist before we have learned to read. Those neuronal highways, once developed, allow speech to be associated with print and with meaning.

**Brain systems are repurposed to recognize printed words.** Humans are not born with a word form area ready to be populated with word images. The specialized system that stores images of written words is created when the brain co-opts neurons designed for other visual tasks such as recognizing faces and objects and retrains them for recognition of print. Populating the brain's letter box with word images requires continual interaction among the regions specialized for analyzing speech, matching sounds and symbols, storing images of printed words, and linking words to meaning.

**Words are mapped into memory by connecting speech sounds with alphabetic symbols.** Insights from neuroscience reinforce several critical ideas that explain related findings from reading instruction research. One is that words with an alphabetic system are not learned as whole strings of letters but are mapped into memory by the connections between speech sounds and alphabetic symbols that represent those sounds (Miles & Ehri, 2019). In other words, explicit teaching of speech sounds (phonemes) and their representations in alphabetic writing (phonics!) is much more helpful to students than methods emphasizing whole word recognition (Brady, 2020; Miles & Ehri, 2019; Kilpatrick, 2015; Petscher et al., 2020; Rayner et al., 2001). Furthermore, novice readers must begin with letter-by-letter processing of written words, and only gradually build up a memory bank of words that can be recognized without slow, serial analysis. This is why learning to read, even in one's first language, is of necessity a protracted process for most children, and why accuracy in word reading must precede any expectation for development of reading fluency.

**Where and how does meaning come in to play?** If the student is learning to read in their first language and the meaning of the word is known, once a written word is associated with sound, or named, association with its meaning is automatic. It cannot be prevented. Moreover, of course, meanings of words depend on the contexts in which they are used, and the brain quickly selects the right meaning for a word as it processes a sentence. If an unknown word is encountered, a good reader will attempt to decode and pronounce it, even if no match to meaning is instantly found in the mental dictionary. A decoded word will be quickly forgotten, however, unless the learner can make some sense of it. That is why development of oral language compre-

hension should stay well ahead of instruction in how to read printed words.

You can “read” this although  
it will make no sense:  
*A tix of pertollic asquees zoled the  
fordendent muttle.*

**Do these fundamental neural pathways differ for reading in different languages?** The answer is emphatically “no” (Seymour, 2006; Seidenberg, 2011) although the pace at which an alphabetic system is learned will vary with its transparency. Even Chinese reading depends on the same neural architecture as alphabetic reading, although learning thousands of characters requires more activation of visual-spatial brain networks than other writing systems do and requires more years of study (Seidenberg, 2011).

### Reading is Only Incidentally Visual

**Reading is not driven by visual memorization.** It is an illusion that alphabetic reading is primarily learned and driven by visual perception and visual memorization. Prominent researchers (Ehri, 2014; Share, 2011; Seidenberg, 2017) agree that there is no such thing as a “sight” word; we do not learn letter strings by rote memory and we do not learn to recognize printed words by their shape or configuration. The human brain’s capacity for memorizing letter strings unconnected to spoken language is very, very limited and unable to support learning 50,000 or more printed words that look very much alike. Moreover, vision and visual-spatial reasoning problems have very little to do with reading: People who are partially sighted, who have problems coordinating the eyes, or whose visual-motor and visual-spatial skills are poor, can still learn to read.

**Language abilities are better predictors of learning to read than visual-spatial skills.** By far the best predictors of learning to read are various language abilities (Catts, Herrera, Nielsen, & Bridges, 2015). When students enter school, the most valid predictors of later reading are the ability to take individual speech sounds apart and blend them back together; to name letters accurately and quickly; to associate symbols with sounds; and to identify common word meanings (vocabulary). Visual-spatial skills, such as reproducing designs and completing puzzles, are only minimally associated with learning to read an alphabetic writing system. That is why people can be adept with mechanics, design, and artistic pursuits, and still have trouble remembering written words.

**Unfortunately, these principles have not been fully embraced in our education systems.** These basic facts of reading psychology, unfortunately, are still not appreciated widely enough. In our classrooms there is too much emphasis on reading through osmosis or exposure to books and print alone and practicing word recognition by rote methods such as flash card drills. Many countries have embraced counterproductive practices such as directing students to guess at unknown words through context, instead of sounding them out. Although these poor practices are being replaced with more informed teaching in some states and countries, embrace of reading science has yet to be widespread (Castles, Rastle, & Nation, 2018). One of the primary reasons why myths and misunderstandings persist is the slow rate of change in teacher preparation programs that have been reluctant to embrace evidence-based reading practices (Moats, 2014).

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## Language Systems And Their Representation In Writing

From the 1970s, researchers have documented that reading is “bootstrapped onto oral language” (Liberman, Shankweiler & Liberman, 1989) and that written words are processed through the language systems of the brain. Language, in turn, is composed of several major subsystems that each play a unique and important role in learning to read and write. Below

we define and explore the most important functions of each subsystem of language on which literacy rests.

### Jobs of Language Systems

- Phonological: recognize and produce the sounds of spoken language

- Orthographic: learn and remember the symbols of written language
- Morphological/semantic: process meanings of words and word parts
- Syntactic: understand and order the words in sentences

## Phonology and Phoneme Awareness

**Phoneme awareness allows us to identify individual sounds in spoken words.** The term phoneme awareness refers to the conscious insight that words are made up of small segments of sound in our own speech. A phoneme is a speech bit with both sound and articulatory properties that can distinguish the meaning of words. A phoneme is something we hear and say. We perceive phonemes by ear and by mouth. The English word *sheep* has three phonemes, /sh/ / ee/ /p/. The word *sling* has four phonemes, /s/ /l/ /i/ / ng/. Phonemes in English are not necessarily represented by single letters. In fact, some phonemes in English have no unique letter representations, like the /zh/ in *vision* or the /ng/ at the end of *sling*. Counting or identifying phonemes in spoken words requires us to turn our attention away from print and to focus on speech itself. This, for many individuals, is not easy and must be learned through instruction and practice.

**Word reading and spelling depend on phoneme awareness.** Phoneme awareness (see Table 1 below) is required for counting speech sounds in words, blending sounds into words, segmenting or taking sounds apart, changing or substituting sounds to make new words (*beet, bait, boot; seat, seed, seem*), or reordering and recombining sounds in words (e.g., say flier without /l/ (*fire*)). Phoneme awareness is essential for learning to read and spell with any alphabet (Kilpatrick, 2015; Miles & Ehri, 2019; Treiman, 2017) and also plays a significant role in reading across writing systems (Seymour, 2006). Without phoneme awareness, letters have no reference point. Without phoneme awareness, students must try to memorize letter strings that have no correspondence to speech. In reading research, underdeveloped phoneme awareness is consistently associated with poor reading and spelling (Fletcher, Lyon, Fuchs, & Barnes, 2019).

**Phoneme awareness is one aspect of phonological processing.** More generally, phonological processing includes perceiving, interpreting, storing (remembering), recalling or retrieving, and producing the speech sounds of a language. Thus, phonological memory is required for everyday tasks such as recalling phone numbers, following verbal directions, pronouncing new words (as in a new language), or searching one's memory for a word to use in a sentence. Confusable "phon" terms are explained in Table 1. The relationships among these entities are shown in Figure 1.

**Table 1: Key definitions of the "phon" words**

The root *phon* is derived from the Greek root meaning "vocal sound."

**Phonological processing:** Many aspects of speech and language perception and production, such as perceiving, interpreting, storing (remembering), recalling or retrieving, and generating the speech sound system of a language

**Phonological awareness:** Conscious awareness of all levels of the speech sound system, including word boundaries, stress patterns, syllables, parts of syllables, and phonemes

**Phoneme:** The smallest unit of sound in any language used to build words; the smallest unit that changes the meaning of a word within a language system

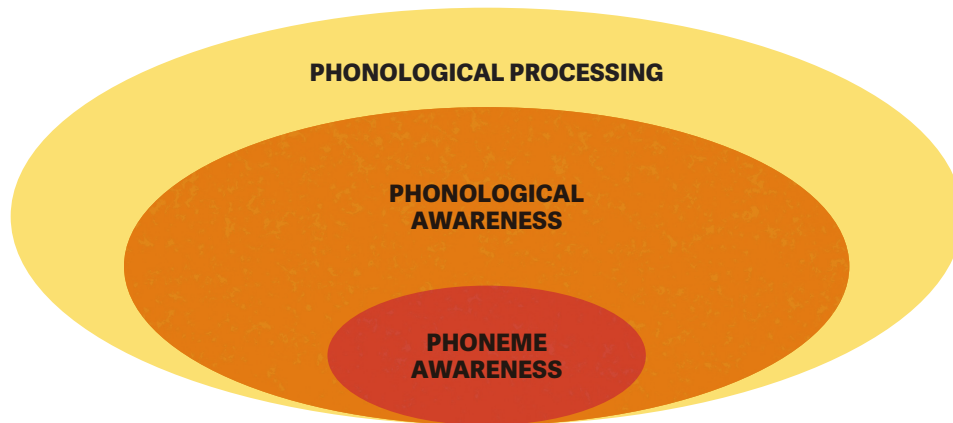
**Phoneme awareness:** Conscious awareness that words are made up of segments of our own speech that are represented with letters in an alphabetic writing system

**Phonological system:** The rule system in a language by which phonemes can be sequenced, combined, and pronounced to make words

**Phonetics:** The study of the sounds of human speech; articulatory phonetics refers to the way the sounds are physically produced in the human vocal tract

**Phonics:** The study of the relationships between written symbols and the sounds they represent

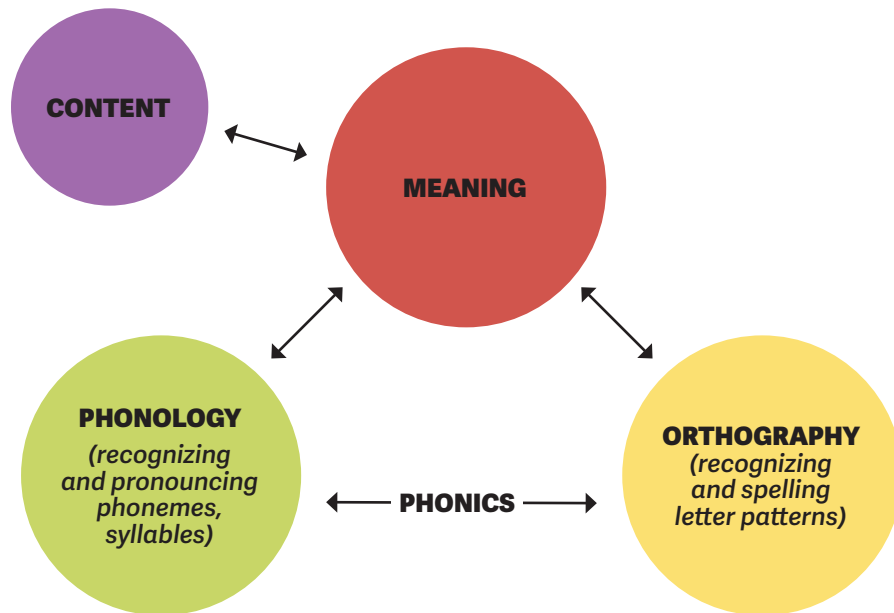
Figure 1: Phonological processing, phonological awareness and phoneme awareness



The role of phonological processing, especially phoneme awareness, in learning to read and write is depicted in Figure 2. Seidenberg’s (2011; 2017) writings refer often to this model, used by cognitive scientists to generate and test the strength of connections among these processing systems. The model shows that teaching and learning phonics is the deliberate act of matching up these two modes of language—speech and print. Reading words solely by using phonics in

a known language system is possible, as in reading nonsense words (*plip, qual, boive*), but knowing meaning is necessary to read and write words automatically or with fluency. Knowing meanings is especially vital for reading and spelling words that sound the same and are spelled differently (*hour, our; coarse, course; to, too, two; straight, strait*) and to learn words whose spellings show meaningful parts such as *independence* and *independents*, and *past* and *passed*.

Figure 2: The “Triangle Model” of Word Recognition



Source: Based on Seidenberg, 2017.

## The Complexity of English Orthography

- **Phoneme-grapheme (sound-symbol) correspondences.** Written alphabetic symbols were invented, fairly recently in human history, to represent segments of speech. English has 26 letters, about 44 phonemes (depending on the source), and about 80-120 teachable spellings for the phonemes (Moats, 2020). A teachable spelling, or **grapheme**, is a letter or letter combination that represents a phoneme often enough to constitute a pattern of correspondence. For example, *ea* is a grapheme that can represent long e (*beat, seat, wheat*), short e (*bread, head, dead*), or long a (*great, break, steak*). The *ea* in *heart*, however, is an oddity and would be taught as an exception, not part of a pattern. While English seems irregular, its regularities greatly exceed its exceptions (Ziegler, Stone, & Jacobs, 1997), especially when the position of a sound in a word is considered, and when the influence of word origin and word meaning on spelling are taken into account. Because the relationship between letters and speech sounds is not straightforward in English, letters must do more than one job, and sometimes, like letter e, have many roles to play in the system. A grapheme may be one, two (*ea, oi*), three (*igh, eau, dge*), or four letters (*ough, eigh, aigh*), and many phonemes are represented by more than one grapheme, especially vowels. Therefore, English differs from more transparent writing systems like Serbo-Croatian and Finnish, and teaching students “the sound of each letter” does not go very far in explaining how English orthography works.

To add complexity, the probability of using a grapheme for any given speech sound is often constrained by the position of the phoneme in a word or syllable. For example, the *ai* spelling for long a is never used at the end of a syllable, whereas the *ay* option is usually found in syllable-final or word-final position (*sail, maid, ay, maybe*). This pattern generally holds for *oi* and *oy* (*boil, boy*) and *au* and *aw* (*laud, law*). Patterns of correspondence between phonemes and graphemes are very teachable, but the English system will take longer to teach and learn than others such as Italian, Romanian, Hebrew, or Spanish (Ellis et al., 2004).

- **Orthographic patterns and constraints on the use of letters.** Letter sequences in printed English include many redundant patterns, conventions for letter use, and constraints on the placement of adjacent graphemes. For example, no English word ends in the letters *v* or *j* – a convention established by type-setters centuries ago to avoid visual confusion with the letters *u* and *i*. Words such as *love, have, and give* follow these constraints. Certain letters such as *i, h, x, and y* are never doubled. The letter combinations *ng, ck, ll, ff, ss, and dge* occur right after single vowel letters that usually represent short vowels; we can explain to children that short vowels seek extra consonant guards at the ends of syllables.

English has a number of word “families” that share a pattern or recurring sequence of letters. For example, the final blend *-nk* almost always occurs after a short vowel, so that *-ink, -ank, -unk, and -onk* can be taught as chunks in words such as *pink, bank, junk, and honk*. The letter *w* precedes, and changes vowel sounds that follow it in ways that are atypical, but groups of words follow the same pattern: *word, worst, world, worm, worth; war, warn, warm, ward, wart*. Familiarity with such patterns will help a student decipher a new word such as *warble*.

- **Syllables.** A **syllable** is a unit of speech organized around a vowel sound. Every written syllable in English must have a written vowel grapheme (exceptions are *rhythm* and *-ism*). About half the syllables in English, in contrast to Romance languages that share a historical connection with Latin, have short vowels in syllables that end in one or more consonant phonemes (*sack, wedge, rift, lull*). Long vowel sounds in English are represented in several ways – with single letters in open syllables (*me, so, hi*), with the Vowel-Consonant-Silent e (VCe) pattern (*lake, theme, rife*), and with vowel teams (*pail, boat, weed, chew*). Other syllable types include vowel-r combinations (*letter, ordain, argue*) and the final consonant-le syllable (*wiggle, title, paddle*). These syllable spelling patterns are more consistent in two-syllable words than longer, morphologically complex words.

To read bigger words, students can break them into syllables and meaningful parts (mor-



phemes such as prefixes, roots and suffixes). Pronunciation can be “flexed” or tried different ways to make a recognizable word, but familiarity with common syllable patterns can be helpful. Words of several syllables often reduce unaccented vowel sounds to schwa, or the indistinct and unstressed vowel, “uh,” as in wagon, effect, and definition. Teaching students the existence of schwa is important, because they will not be able to spell unstressed vowels simply by pronouncing a word and listening for the sounds. They will need other strategies, such as thinking of the meaningful parts of the word.

- **Morphology and etymology.** The smallest units of meaning in language are called **morphemes**. Words may be composed of one or many morphemes. A single morpheme may be one syllable (*bat*), or more than one (*tiger, banana*). Some morphemes are single phonemes, not pronounceable syllables, such as plural *s, /s/ (cats) or /z/ (dogs)*, and two forms of the past tense – *ed, /t/ (wished) or /d/ (hummed)*.

Written forms of words often reveal their underlying morphemes. English spelling, more than some other alphabetic languages, represents both sound and meaning, and quite often, representation of meaningful parts of words overrides representation of the sounds of the spoken word (Carlisle & Goodwin, 2014). For example, *stepparent* has *pp* because it is a compound word. *Attract* has *tt* because it has a Latin prefix *at* (a variation of *ad*, “to” or “toward”) and a Latin root *tract*. *Mnemonic* begins with *mne* because that was the base of the Greek word for memory. We learn such words by linking sound, spelling, and meaning.

Instruction in morphology is richer if it is linked to word origin or **etymology**. Modern English words are primarily of Anglo-Saxon, Latin, and/or Greek origin and to a lesser extent derived from French, German, Italian, and Spanish (see Henry, 2010, or Moats, 2020). Each of these languages contributed spelling conventions to English that within the language of origin were predictable. For example, *ch* is used to spell /ch/ in Anglo-Saxon words such as *church*, is used to spell /k/ in Greek-derived words such as *scholar* and *character* and represents /sh/ in French-de-

rived words such as *chalet* and *brochure*.

Many high frequency words, although not fully transparent in their phonic correspondences, can be understood better with reference to their morphological structure and etymology. For example, consider the parallel patterns in the Anglo-Saxon verbs *do, does, done and go, goes, gone*, or the parallels between *pay, paid* and *say, said*.

## Semantics and Syntax: Necessary for Comprehension

**Students should learn to recognize that many words have multiple meanings.** The meanings that we want students to derive from written language reside in single words, phrases or groups of words, sentences, and both intra- and inter-sentence connections. Connections within and between sentences cause a text to cohere or hang together. Many single words in English, as well as in other languages, have more than one meaning. Therefore, it is very important to give students practice listening to and reading sentences that use new vocabulary, and to recognize that many words have multiple meanings depending on context. Consider, for example, that a simple word like *bat* can mean a flying rodent, a stick used for hitting a ball, the act of fluttering one’s eyes, or the act of hitting something with a stick.

**In addition, deeper word learning occurs when students learn how a word is related to other words.** When we know a word well, we not only can use it accurately, but we know words that mean almost the same thing, words that mean the opposite, the word’s multiple meanings and uses, and typical uses of the word in given social situations. We have built an elaborated semantic network of associations around the word (Perfetti & Stafura, 2014). Construction of elaborated networks around a known word results from many experiences with that word in context. Therefore, vocabulary enrichment depends on many opportunities to hear, speak, read, and write the language being learned.

**Sentence structure must be understood.** To comprehend written text and to write, students must become familiar with the grammatical structures of the language system they are using. These include funda-

mentals of sentence structure (syntax), the difference between phrases and clauses, the components of a complete sentence, and the distinction between dependent and independent clauses. Awareness of sentence structure is related to and supports both reading comprehension and written expression (Scott & Koonce, 2014). Not every language, however, follows the subject-verb-object pattern of English sentence structure, or places adjectives before nouns, or expresses verb tenses with so many auxiliary verbs. Such differences between a home language and English may require comparative analysis and explanation for students to fully understand any written text, whether it be written in an L1 or L2.

### **Back to the “Simple View,” A Framework for Reading in Any Language System**

**The SVR framework explains reading in all languages, with some caveats.** The Simple View of Reading explains reading in all languages (Hoover & Tunmer, 2020), although the timing and emphasis on each major domain of instruction (word recognition and language comprehension) may vary according to the language being taught and the students’ command of that language. How much of a difference does the language system itself make to the relative ease of learning to read?

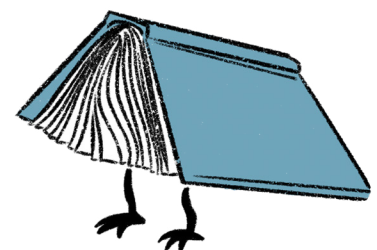
**Language comprehension relies on the same components no matter which language is being learned.** One must have background knowledge, be able to make inferences, know the meanings of individual words, have command of grammar and sentence structure, and know the social conventions of language use to comprehend both oral and written language. We can lay the foundations for language comprehension by asking novices to hear, repeat, and produce sentences in conversation, and to identify the meanings of words before or as they are being read. We can be sure to stimulate oral language growth at every opportunity, not only during literacy instruction.

**The process of word recognition also follows similar patterns.** Word recognition, in all writing systems, progresses from regular and highly consistent patterns to less common and irregular correspondences, from single elements to patterns of elements, from identification of words out of context to their use

in context, and so forth. The particulars will vary, for example, by the number of symbols to be learned and the directness of their representation of phonemes, syllables, and/or morphemes. The amount of practice necessary to learn the symbol system may differ. But any written language system will best be taught with a systematic, cumulative, explicit, and step-by-step progression, with sufficient practice to result in independent reading with understanding.

**Hence, the principles of good teaching apply across languages.** To summarize, each of the world’s systems for mapping print and speech may have a unique set of symbols, a unique set of phonemes and/or spoken syllables, a unique mapping of written symbols to spoken units, and unique grammatical structures. In spite of these differences, successful reading will rest on developing skill in both aspects of the Simple View equation. If the instructor has identified the main features of the language being taught (e.g., phonology, grammar, usage, and symbol system), reading in a first language can facilitate reading in a second language. The principles of good teaching can be generalized across languages.

Now let us consider the phases that a novice reader goes through as they learn to read and spell in an alphabetic system. These phases can be observed across cultures and languages, although the degree to which a language transparently represents the sounds of speech will affect how easily students move through each of these phases.





# PHASES OF READING DEVELOPMENT: What The Learner Knows and Where Teaching Should Aim

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## Oral Language is the Foundation for Literacy

The domains of word recognition and language comprehension are interdependent and mutually reinforcing. Learning to read, for a typical learner in a well-equipped classroom, takes three to four years, beginning at age five or later. That timeline assumes that the student speaks the language and is familiar with its sounds, sentence patterns, and several thousand meanings for words. But what about students who come into school not knowing the language being taught for reading? Should explicit reading instruction be delayed until they have started to hear and speak the new language? One guiding principle we can use to address this question is that the domains of word recognition and language comprehension, while distinct, are interdependent and mutually reinforcing. Each supports growth in the other. If students are directly taught the alphabet letter names and the identity of the individual phonemes or speech sounds in the language of instruction, they will have an easier time learning to decode print, learning the identity of separate words (e.g., “once upon a time” is four words, not one!), and learning to discriminate spoken words that are similar such as (in English) *did*, *Dad*, *bad*, and *bat*. Seeing the words in print can aid spoken language learning in general (Roberts, 2009).

**At the same time, classrooms must nurture development of oral language.** Oral language

development should be promoted in the classroom in every way feasible, both directly and indirectly, throughout the day. Common methods for stimulating language, with younger children, include reading from story books, structuring student-to-student conversations, asking for choral responses to questions, and group recitation of songs, poems, and plays.

**Oral language competence underlies each phase of early literacy.** As we consider the phases of word recognition and spelling development (Miles & Ehri, 2019; Moats, 2020) described below (Table 2), keep in mind that ideally, these phases unfold within the context of oral vocabulary and language acquisition. In general, the process of learning to read and spell progresses from global awareness of words as unanalyzed wholes to detailed processing of the internal structures of both spoken and written words. The end result of this protracted learning process is knowledge of the print system and the ability to map print to speech efficiently without undue mental effort – a prerequisite for comprehension.

**Table 2: Ehri's Phases of Word Reading Development (based on Ehri, 1995, 2014)**

<b>Prealphabetic</b>	<b>Early (Partial) Alphabetic</b>	<b>Later (Full) Alphabetic</b>	<b>Consolidated</b>
Recognizes incidental features of print	Realizes that alphabet letters represent sounds	Begins to recognize some words automatically	Grows "sight" vocabulary to several thousand words
Does not have phoneme awareness	Has partial phoneme awareness; can identify beginning sounds in words	Can segment the sounds in words with 3-4 sounds	Demonstrates more advanced phoneme awareness
Does not know letter-sound correspondences	Knows some letter-sound correspondences	Knows major graphemes for most consonant and vowel phonemes	Recognizes words by "mapping" graphemes, word families, syllables, morphemes

## **Prealphabetic Phase Learners: What They Know and Need to Learn**

In the prealphabetic phase, children do not have **letter-sound awareness**. Prealphabetic learners may try to recognize words by superficial features such as their outline or shape. They may understand that print is speech written down and is read in a specific direction. They may know some alphabet letter names but not understand what the letters are for. Children at this stage, when asked, "What is the first sound in *cat*?" may say, "Meow." They often do not understand that individual speech sounds in words can be separated and that sounds correspond to letters and letter patterns.

**What do children in the prealphabetic stage need to learn?** The first aim of instruction is to establish knowledge of all letter names, to practice basic phoneme awareness, to write the letters, and to build

knowledge of a few single letter-sound correspondences to blend into simple words. Lessons also build knowledge of the meanings of words – even the "little" words – that the students are beginning to read. Formation of the letters (writing lower case especially) will reinforce knowledge of letter shapes and names. If students have limited vocabularies, should direct teaching of phoneme awareness be delayed until oral language improves? Research suggests that after age 5, there is no advantage to waiting; direct teaching about speech sounds and letters still lowers the risk of reading delays, as long as that instruction is accompanied by activities that foster oral language comprehension and use. Table 3 outlines what a prealphabetic learner knows and can do and links these behaviors with examples of appropriate instruction goals and activities.

## **Partial Alphabetic Phase: Learners' Characteristics and Instructional Needs**

**Understanding sound-symbol correspondences is one of the foundations of learning to read.** The path to reading proficiency begins with accurate decoding of words using sound-symbol and symbol-sound correspondences. A mental map of this correspondence system is the foundation on which reading is

constructed. In the early alphabetic phase, students have grasped the idea that symbols represent speech (the alphabetic principle), but their approach to words is slow and deliberate because they do not yet have enough information about the system and how it works. With ample instruction and practice they will

**Table 3: Prealphabetic learners' characteristics and instructional needs**

<b>What the Student Knows/ Can Do</b>	<b>Goals of Instruction</b>	<b>Sample Teaching Activities</b>
A few alphabet letter names	All alphabet names, first uppercase, then lowercase	Movable letters; matching letter shapes to models; naming, sequencing movable letters
Recognize rhyme, clap syllables	Isolation and matching of initial and end consonant sounds; blending 2–3 phonemes	Isolation and production of single phonemes; matching words that begin and end with the same sound; blending 2-3 phonemes
Trace/copy letters in name	Make basic pencil strokes used to form letters; learn to write lower case letters in groups by their component pencil strokes	Practice on rough surface for tactile feedback; use clearly lined paper for beginning writing; use numbered templates for letter formation; write simple words
Pretend reading of a book, left to right, front to back, top to bottom	Match words to voice in finger-point reading	Track print as it is being read, using finger or pointer
Few to no letter–sound correspondences	About 15-20 of the most regular sound-letter associations	Sound-spelling cards for phoneme identification and word building; changing the first sound to make a new word; slow blending of two or three sounds
Zero to five words seen in a familiar context	Automatically recognize 10-20 most common words	Build words with movable letters; say and write. Collect “sight” words on a key ring and use for practice.
Pretend reading	Read simple decodable text, with pattern words that have been taught	Reread very basic decodable texts to increase automatic word reading of words and patterns already taught
Limited oral vocabulary or familiarity with books	Several new word meanings every day, preferably related to a topic or theme of interest	Interactive read-alouds; story boards; retelling

sort out the relationships among letter names, letter sounds, and letter forms. Their decoding and spelling efforts look like rough approximations of some of the sounds in words.

**Word analysis and decoding, not guessing from context, is most effective.** Most students learn from a combination of explicit teaching of phonics and implicit learning that takes place with a lot of exposure to printed material. The teacher explains each of the major correspondences, step by step, and then reinforces and builds decoding skill by encouraging students to try sounding out words during

reading – NOT to guess at words based on a picture or other non-print information. Decoding is hard work for novice learners so lessons must be well paced and limited to what students have been taught and can comfortably handle. Appeals to pictures and to meaning can confirm decoding efforts but should not substitute for the most important cue, which is “look closely at all the letters and sound the word out.” An ever-growing bank of instantly recognized words in the brain’s word form area results from accurate reading practice, not from pressure to read faster at this stage. Table 4 summarizes the characteristics and instructional needs of students in this phase.

**Table 4: Partial alphabetic phase learners and their instructional needs**

What the Student Knows/ Can Do	Goals of Instruction	Sample Teaching Activities
Most upper and lowercase alphabet letter names	Effortless letter naming; alphabet sequence; letter formation in writing	Writing graphemes to dictation; alphabetizing by first letter
Blending and segmenting phonemes in 2- to 3-phoneme words (basic phoneme awareness)	Blending, segmentation, deletion, substitution of phonemes in simple syllables, progressing to words with blends	Building word chains as words differing in only one sound are dictated
About 20 consonant sound-spellings and most short vowels	Blending 4-phoneme words; knowing at least one grapheme for each phoneme, including long vowels	Word list, phrase, sentence, and text reading using known words and patterns
Phonetically accurate spelling, using some preconventional spelling strategies (letter names, etc.)	Phonetic spelling using standard graphemes; accurate spelling of pattern words already taught	Writing words, phrases, simple sentences, applying what has been taught
Reads a few pattern-based words, with known correspondences.	Facility with recognition of known patterns in the context of running text. Include some position-based patterns such as <i>-ck</i> and the <i>f, l, s</i> doubling rule in English.	Daily reading from decodable text; daily practice with known words, using a variety of exercises.
Reads a few high frequency, less regular words; spells some of those words	Learns approximately one to three new irregular words per week	Increases automatic recognition of learned words through reading practice
Expects reading to make sense; reacts if it does not.	Text reading habits, such as browsing the text, asking for clarification, and summarizing the meaning.	Partner reading: the “coach” asks the “reader” to tell what each page was about.
Knows at least 2,000 word meanings in the first language, and several hundred in the second	Learns 10-15 new word meanings each week, related to themes and topics being studied	Responsive reading aloud; question-answer routines; sentence generation; retelling and illustrating

## Full Alphabetic Phase: Learners’ Characteristics and Instructional Needs

**Sounding out leads to automatic word reading.** Novice learners may be slow, word-by-word readers because they are still learning to sound out words. Being slow is a good and necessary step toward consolidation of skills that will enable accurate and fluent reading for meaning later on. During this

phase, recognition of words as wholes occurs gradually after students have decoded them at least several times. The number of times that students must decode a word slowly in order to recognize it “by sight” will vary widely, from one to many. But recognition of whole words in print develops in

tandem with proficiency in phoneme awareness, phonic decoding, and knowledge of word meanings.

**Practicing spelling and writing also helps develop word recognition.** In addition to learning phonics, students who practice spelling and writing are likely to make better progress in word recognition (Ouelette, Martin-Chang, & Rossi, 2017; Weiser & Mathes, 2005) because spelling requires that mental word images be

detailed and accurate. After the phoneme-grapheme mapping system is well established, the brain can learn a new word quite easily when it is encountered during reading. Thus, a “sight” vocabulary of instantly recognized or instantly recalled words accumulates over time. Table 5 summarizes the characteristics and instructional needs of students who are in this phase of literacy learning.

**Table 5: Full alphabetic phase learners and their instructional needs**

<b>What the Student Knows/ Can Do</b>	<b>Goals of Instruction</b>	<b>Sample Teaching Activities</b>
At least one major spelling (grapheme) for each consonant phoneme, and several position-based patterns (such as when to use -ck in English)	Learn more position-based consonant correspondences, such as hard and soft c and g in English	Sort words to find recurring patterns, such as hard and soft c and g; combine two words to form a compound
Short vowel correspondences and the sounds of long vowels	Learn the VCe pattern, some common vowel teams, and vowel-r combinations	Sort, read, and write words with various vowel correspondences
Reads common inflections (-ing, -ed, -s) but spells them phonetically	Analyze what is happening when past tense and plural inflections are added to words	Decompose, sort, and combine base words and suffixes
Basic phonics but not syllable patterns or combinations	Decode longer (2-3 syllable, regular) words accurately; combine syllables and break words into syllables	Use word cards to build longer words; use a “big word” routine for identifying and blending syllable chunks
Reads 20-30 high frequency, less regular words; spells some of those words	Learn approximately one to three new irregular words per week	Increase automatic recognition of learned words through reading practice
Reads at about 20-40 words correctly per minute in controlled text	Improve oral reading fluency to 40-60 words correctly per minute or better	Practice phrase and sentence reading; read passages several times; read with a partner; self-graph reading rate
Limited stamina for sustaining reading	Improve comfort with reading so that attention can be sustained for 20 minutes	Teacher guided, small group shared reading of high-quality texts, with attention to language and topic detail
Limited independent reading	Read beginner books independently and monitor comprehension	Partner reading, book groups, listen and then read again for another purpose, such as retelling
Writes only a few words in structured or dictated sentences	Write several sentences with some phonetic spelling and use of known words.	Explicit instruction in sentence formulation, word choice, text organization

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## Consolidation of Reading Accuracy, Fluency, and Comprehension

**Students slowly progress to spending more time on language comprehension, building vocabulary, and writing.** As students accumulate a bank of known words in their mental dictionaries, the proportion of instructional time devoted to word recognition and spelling can be gradually reduced, and the proportion devoted to language comprehension, text reading, and writing can be increased (Petscher et al., 2020). In word recognition, the continuing challenge, in English especially, is reading less common vowel spellings and decoding words with two or more syllables. The word recognition component of lessons at this stage is better described as a word study component, in which the relationships among word meaning, word structure, word use, and word origin can all be explored. A coherent progression for *word study* and spelling that begins with letter recognition and phoneme awareness training will extend into study of Latin and Greek-based morphemes that are so prevalent in the math and science vocabulary of English.

While still including instruction in word recognition, lessons will spend more time on building vocabulary, understanding complex sentence structures, building background knowledge, and learning strategies such as previewing a text or summarizing it. Reading fluency and text comprehension will increasingly depend upon a combination of time spent actually reading from various texts, and explicit guidance about how to pull meanings from written words.

**This phase model of early reading development is generally applicable to all alphabetic languages.** However, the difficulty of each task within a phase will vary according to the language of instruction. Languages with complex diacritical marking systems for tonal vowels, for example, may differ from languages with a few “pure” vowels like Hawaiian. But the achievement of consolidated, fluent reading of an alphabet will follow this universal sequence.

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## Building Language Comprehension in the Classroom

**Students cannot understand a written text unless they understand the meanings of most of the words as they are used in a given context.** Oral language comprehension – what students understand if a text is read to them – puts a natural limit on reading comprehension. Therefore, language comprehension and use must be continually nurtured so once students can read the words, they will understand what they are reading. How can this be done? Here are some helpful approaches.

1. Maintain a balance between the teacher talking and the students talking. Students need to practice producing language, not just listening to it.
2. Mix up choral responses (where the whole class responds in unison) with individual responses. If students hesitate or won't/can't respond, give them the words and ask them to repeat.
3. Include memorization and recitation of poems, rhymes, prayers (if allowed), and songs in the daily routines.
4. Pair students up and ask them to tell each other a response to a question or to share an idea about something they have learned. This is called, “Think, Pair, Share.”
5. When reading aloud or reading together, pause frequently and ask students to a) tell what is happening, b) predict what might happen, c) explain what something means, or d) ask questions about the text.
6. Even when the emphasis is on decoding and word reading, make sure the meanings of most “little words” are known or talked about. Introduce the meanings of words that will be read and include a meaning-focused task in the phonics lesson.
7. Build background knowledge of a topic being read about or discussed, and if possible, include more than one reading or learning experience focused on that topic. Comprehension is better when students already know something about the topic they are reading about.

Of course, the study and learning of a first or second language should include formal instruction in how the language works. But studying grammar and usage by itself will not lead to better comprehension or writing without opportunities to hear and use language in social settings.





# **TEACHING FOUNDATIONAL READING SKILLS: Frameworks, Principles, Content, and Routines**

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## **A Basic Lesson Framework for Teaching Foundational Skills**

### **A template for a foundational reading skill lesson.**

This lesson structure, one of several that are possible, will enable most students to grasp the elements of decoding and to apply skills and strategies as they learn to read. The template can be both a lesson planning guide and a way to judge the quality of published materials. Ideally most parts of a single lesson are taught within a one- or a two-day time span. The pace of teaching must be lively, with many exchanges between teacher and students and many opportunities for students to say, read, and write words with the pattern being taught. Table 6 summarizes the lesson components and gives examples of the activities that may occur during each segment.

The lesson framework incorporates explicit, systematic teaching and many opportunities for practice. The lesson format includes review of previously taught material and gradual introduction of new concepts so that one skill is built on another, like layering bricks into an imaginary wall. The reference point for each learned grapheme or spelling pattern is oral language – the sound(s) that the letters represent. Thus, the new lesson begins with phoneme awareness so that students can break words apart and put them together, and so that they understand what the letters are for. Guided practice and independent practice activities give students many opportunities to use new patterns

and words. Every lesson includes spelling some of the new words and writing words in dictated phrases and sentences. Every lesson concludes with at least 10 minutes of supported reading practice in decodable text – that is, sentences and passages containing a high proportion of words whose patterns have been previously taught. The main purpose of decodable text is to provide practice for students to apply the phonics skills they know.

Many aspects of the lesson can be supported with short instructional routines. A routine, for example, can be a procedure for introducing a new sound, a series of movements to support blending or segmenting sounds, a series of cues for decoding an unfamiliar word, or a standard format for writing sounds, words, and sentences to dictation. The more routines are used, the more comfortable students will be, and the more smoothly the lesson will go.

**Table 6: Typical parts of a foundational reading skill lessons**

Lesson segment	Approximate time required	Typical instructional activities
State the goal of the lesson		(Brief and direct statement) "Today we will learn ____."
Review previously learned material	5 minutes	<ul style="list-style-type: none"> <li>• Complete a one-minute, fluency-building drill on letters or words</li> <li>• Reread a familiar text</li> <li>• Review words with known patterns</li> <li>• Practice sound-symbol association and symbol-sound associations</li> </ul>
Phoneme awareness: listening to and analyzing phonemes in spoken words	3-5 minutes	<ul style="list-style-type: none"> <li>• Call attention to the way a sound is formed or produced, have students look in mirrors or at each other as they form the sound</li> <li>• Take phonemes apart, blend phonemes together</li> <li>• Put a new sound into a word to make a different word</li> </ul>
Introduce, explain new reading/spelling pattern	3-5 minutes	<ul style="list-style-type: none"> <li>• Define and illustrate the concept or pattern</li> <li>• Look at a grapheme, produce the phoneme; hear a phoneme, pick out or write the grapheme</li> <li>• Clear up any confusions with similar phonemes or graphemes</li> </ul>
Give guided practice	5 minutes	<ul style="list-style-type: none"> <li>• Build words with letter tiles or cards</li> <li>• Map the letters in words to their sounds</li> <li>• Chorally read aloud 20+ words that have the pattern</li> </ul>
Provide monitored, independent practice opportunities	5 minutes	<ul style="list-style-type: none"> <li>• Practice with partners; one is "coach" and the other "reader." Reverse roles. Students read words, phrases, and sentences with patterns that have been taught.</li> <li>• Scan a list of pattern words that are associated by meaning, or find a word that means X</li> </ul>
Spell and write	10 minutes	<ul style="list-style-type: none"> <li>• Write letters, words, phrases, and sentences that use patterns already taught.</li> <li>• Formulate sentences using known words</li> </ul>
Decodable text reading	5-10 minutes	<ul style="list-style-type: none"> <li>• Practice high frequency words and read simple texts with a high percentage of pattern words already taught</li> <li>• Read text aloud with 95-98% accuracy</li> </ul>

## Teaching Alphabet Letter Names and Upper and Lowercase Forms

Letter recognition, naming and formation are important goals of early reading instruction. Learning to read and spell depend on knowing the alphabet letter names and forms, which in English are 26. Letter naming, with phoneme awareness, is the strongest single predictor of reading success in Year 1 (Connor,

Morrison, & Slominski, 2006; Petscher et al., 2020). Many students will come to reading in English or other language knowing only a few letters, if any, and that is where the instruction must begin. Letter recognition, naming, and formation (writing) should all be firm goals of early instruction. Knowledge of most

letter names and familiarity with upper and lower case forms should be consolidated before instruction shifts to emphasize phoneme-grapheme correspondences and word reading. Students need the names for several reasons: a) names help students distinguish letter forms, some of which are quite confusable; b) a letter name often contains the phoneme that the letter typically represents and thus provides a stepping stone into phonics; c) sound-symbol association, for reading and spelling, will be shaky unless students are confident in which letter is which; and d) securing the alphabet letters in memory facilitates word recognition and spelling in general (Adams, 2013).

Instruction on the alphabet should be explicit and intensive to ensure mastery. In spite of its value and importance, letter name and letter-sound knowledge may still elude students through Year 2 and beyond. Piasta and Wagner (2010), after documenting how many students in the United States continue to lack mastery of the English alphabet through Years 1 and 2 of schooling, inferred that instruction is often not explicit or intensive enough to ensure solid learning. Explicit instruction, for best results, should devote extra time and attention to ensuring that confusable letters are distinguished from one another. Letters may be confused because they look too much alike (v, y; b, d; l, t, f), because their names sound alike (c, z; f, s; m, n; g, j), or because their names and the sounds they represent overlap in odd ways (see Table 7). Confusable letters should be taught separately during initial instruction.

There should be ample opportunities for review and practice of letter names, forms and sounds. The letters can be introduced and practiced during the first six weeks of Year 1, but review and practice should occur

**Table 7: English letters whose names and sounds are easily confused or hard to remember**

Letter	Name	Sound
y	[wai]	/y/
u	[yu]	/u/
w	[dbl yu]	/w/
x	[eks]	[ks] [gz]
h	[aich]	/h/

for as long as necessary if students remain insecure with automatic letter naming. Programs at preschool often teach the uppercase forms first, and then add the lower-case letters. However, in Year 1 formal reading instruction, a faster pace is important. Both upper and lowercase letter names can be taught together, at a rate of approximately one new letter per day (Jones, Clark, & Reutzel, 2012). A routine for teaching each letter can include naming the upper and lowercase forms and tracing/writing the letter forms as they are named. Once basic familiarity with most of the letter forms is established, the routine can include naming the letters, giving a primary sound represented by each letter, and writing the letter forms.

## Phoneme Awareness

### From words to phonemes

#### Acquiring phoneme awareness can be challenging.

Before children can learn to match phonemes to graphemes in alphabetic writing, they must learn not only the concept that letters represent speech, but also must identify and distinguish the individual

phonemes that, in reality, are embedded within the unbroken stream of spoken language. Gaining this insight is often challenging for students because a) speech is not delivered as a series of separate phonemes, but as groups of sounds that overlap and are smushed together in words, and b) phonemes embedded in words are often shaped or spoken in

**Table 8: Progression of phoneme awareness development, with sample tasks**

Phase of Learning	Phonological or Phonemic Skill	Sample Tasks
<b>Before formal reading instruction</b>	Responsiveness to rhyme and alliteration during word play	Playing with and reciting rhyme and alliteration (words beginning with the same sound)
	Rhyme recognition, odd word out; production of learned rhymes or recognition of changes that don't belong	Which two words rhyme? <i>pear, feel, chair</i> <i>Teddy bear, teddy bear, turn around,</i> <i>Teddy bear, teddy bear, touch the ____.</i>
	Clapping, counting syllables	<i>dog (1), tiger (2), elephant (3), hippopotamus (5)</i>
	Matching words with the same first sound	Do <i>mother</i> and <i>milk</i> start with the same sound? Yes or no?
<b>Beginning reading instruction</b>	Blending first sound with the rest of the word	What word? <i>th – umb; f – ist; sh – in; l – eg</i>
	Segmenting and pronouncing the first sound of a word	Say the first sound in <i>shoe (/sh/)</i> ; <i>smile (/s/)</i> ; <i>valentine (/v/)</i> .
	Segmenting and pronouncing the final sound in a one-syllable word	Say the last sound in <i>bus (/s/)</i> ; say the last sound in <i>wish (/sh/)</i>
	Syllable deletion	Say <i>turnip</i> . Say it again but don't say <i>tur</i> .
	Blending 2-3 phonemes	Listen, /m/ /ee/. What word? /v/ /a/ /n/. What word? /sh/ /o/ /p/. What word?
	Separating (segmenting ) 2–3 phonemes [no blends]	Say a word. Say each sound in the word as you move a chip for each sound: <i>sh – e, m – a – n, l – e – g</i> .
<b>Later in Year 1 reading and spelling instruction</b>	Phoneme segmentation up to 3–4 phonemes, including blends	Say the separate phonemes while you hold up a finger for each sound: b – a – ck ch – ee – se c – l – ou – d
	Phoneme substitution to build new words—simple syllables with no blends	Change the /j/ in <i>cage</i> to /n/. Change the /ā/ in <i>cane</i> to /ō/.
	Extract and pronounce beginning, final, and medial phonemes from one-syllable words	Say the last sound in <i>milk</i> . Say the vowel sound in <i>rope</i> .
<b>Year 2 and 3 of reading and spelling instruction (advanced skill)</b>	Sound deletion, initial and final position	Say <i>meat</i> . Say it again without the /m/. Say <i>safe</i> . Say it again without the /f/.
	Sound substitution in words with 5–6 phonemes	Listen. What sound have I changed? <i>Shrink, shrank; square, squire</i>
	Sound deletion, initial position, including blends	Say <i>prank</i> . Now say it again without the /p/
	Sound deletion, medial and final blend position.	Say <i>snail</i> . Say it again without /n/. Say <i>smoke</i> . Say it again without /m/. Say <i>fork</i> . Say it again without the /k/.
	Phoneme reversal	Say <i>safe</i> . Say the last sound first and the first sound last. (face) Say <i>slack</i> . Say the last sound first and the first sound last. (class)
	Phoneme chaining	In a series of words that change only one sound at a time, use colored blocks to show addition, deletion, substitution, and re-sequencing of sounds from one word to the next.

slightly different ways, depending on the sounds that surround them. For example, the /t/ in *train* is spoken in a somewhat different way than the /t/ in *tease* or the /t/ in *little*. The “short e” vowel is slightly different in the words *egg*, *etch*, *engine*, and *elephant*. A phoneme is really a category of slightly varying sounds that are perceived as being the same thing.

**Phoneme awareness develops in a predictable progression.** Students learn first to pay attention to and identify larger segments of speech – words, syllables, and parts of syllables – before they can mentally extract individual phonemes from the speech stream. The first sounds in words are easier to identify than the last sounds, and the middle sounds (usually vowels) are the most difficult to mentally separate from others. As students learn to read, seeing the letters in printed words helps to clarify and reinforce their awareness of the speech sounds. Researchers often report that after Year 1, phoneme awareness and reading/spelling develop in a reciprocal manner, one reinforcing the other (Brady, 2011, 2020).

**Phoneme awareness activities are meant to be done orally, without reference to print.** At the same time, the point of phoneme awareness is to facilitate learning the connections between sound and print, so in the lesson framework, print-based activities follow phoneme awareness activities. The general progression of speech sound awareness development, with

examples of tasks aimed at developing each skill level are depicted in Table 8 above (Brady, 2020; Paulson, 2004; Kilpatrick, 2015).

Knowing the inventory of phonemes is essential for teachers. To implement phoneme awareness activities with confidence and good pacing, teachers should be familiar with the phoneme inventory of the language they are teaching. Every language has its own speech sound inventory, and the sounds of the classroom language may not overlap very much with the phonemes in a student’s first language. A good program will gradually show the students what the consonant and vowel phonemes of the language system are, help the students learn to pronounce them, and link them with a key word and the most common spelling. Later, as students progress with the basics, more spellings for each of the sounds can be taught.

### Consonants of English

Table 9 contains the consonant phonemes of English, paired with a key word and the letters most often used to spell the sound. This template can be used for introductory sound-letter cards for Year 1 instruction. Table 10 includes the less common, but still teachable correspondences for each phoneme that can be taught in Years 2, 3 and beyond.

**Table 9: English letters whose names and sounds are easily confused or hard to remember**

/p/	/b/	/t/	/d/	/k/	/g/	/f/	/v/	/th/, /th/	/s/	/y/	/wh/
pot Pp	Bat Bb	tent Tt	desk Dd	cup kite pack Kk _ck Cc	goat Gg	fish Ff	vest Vv	thatch those TH th	sock Ss	yellow Yy	whistle WH wh

/z/	/sh/	/ch/	/j/	/m/	/n/	/ng/	/h/	/l/	/r/	/w/	[/zh/]
zipper Zz	shop SH sh	chair CH ch _tch	jump rope Jj _dge	man Mm	net Nn	song _NG _ng	hat Hh	lake Ll	rabbit Rr	window Ww	(not explicitly taught)

Note: A line before a grapheme means that it is used right after a short vowel.

Table 10: More and less common spellings for English consonants, with examples

Consonant Phoneme	Key Word	Most Common Spellings (Graphemes) for the Phoneme (Year 1)	Less Common Spellings for the Phoneme (Year 2-3)	Word Examples
/p/	pot	p		pay, ramp
/b/	bat	b		beet, job
/t/	tent	t	-ed	tail, kissed
/d/	desk	d	-ed	desk, hummed
/k/	cup, kite, pack	c, k, -ck, x	q(u), ch	cube, key, box (/k//s/), quack, school
/g/	goat	g	gh, gue	get, rig, ghost, vague
/m/	man	m	mb, mn	mud, lamb, autumn
/n/	net	n	kn, gn	nose, knight, sign
/ng/	song	ng		sing, sink
/f/	fish	f, ff	ph, gh	fun, stuff, phone, laugh
/v/	vest	v, -ve		van, love
/th/	thatch, thank	th		thing, bath
/th/	those	th		bathe, clothe
/s/	sock	s, ss	c(e), c(i), c(y), sc	sister, miss, cell, city, cyclone, science
/z/	zipper	z, zz, s	-se	zoo, buzz, dogs, rose
/sh/	shell	sh	ch, ci, ti, si	show, machine, special, action, mansion
/zh/	(not taught)		(g, si, z)	(genre, vision, azure, beige)
/h/	hat	h	wh	hole, whole, who
/ch/	chair	ch, -tch		chips, catch
/j/	jump rope	j, -dge	g(e), g(i), g(y)	judge, gentle, giant, gym
/wh/	whistle	wh		wheel, whale
/w/	window	w		wind, wish, west
/y/	yellow	y	(glided long u)	yo-yo, use
/r/	rabbit	r	wr	robot, wrist
/l/	lake	l, ll		lips, lamp, bell

## Vowels

Vowel phoneme identity in English is somewhat more problematic than consonant identification. Dialect and regional variations in vowel pronunciation can be rather extreme. An American might have trouble

understanding a colleague from New Zealand, South Africa, or Scotland, and vice versa, even though everyone reads printed English. The following table of the vowel phonemes of standard American English may need to be adapted for a given local context. Table 11 includes 18 vowel sounds.

**Table 11: Vowel phonemes of English with key words and common spellings**

<b>/ē/</b>	<b>/i/</b>	<b>/ā/</b>	<b>/ĕ/</b>	<b>/ă/</b>	<b>/ī/</b>
eagle Ee	itch i	apron Aa	echo, edge e	apple a	ice cream li
<b>/ō/</b>	<b>/ū/</b>	<b>/aw/</b>	<b>/ō/</b>	<b>/öö/</b>	<b>/ū/</b>
octopus o	up u	saw aw	open Oo	book oo	boot u
<b>/yū/</b>	<b>/oi/</b>	<b>/ou/</b>	<b>/er/</b>	<b>/ar/</b>	<b>/or/</b>
unicorn Uu	boy oy	owl ow	teacher er	star ar	fork or

Note: When a vowel is followed by /r/, its sound usually changes. It may become totally unified with /r/, as in /er/, which is one indivisible phoneme. It may be slightly separated from /r/ but changed by /r/, as in /ar/ and /or/. Or it may keep its original sound, as in /ā/ (fair), /ĕ/ (fear), and /ī/ (fire). The spellings of /er/ are variable and difficult for young students to learn. Furthermore, many students with speech problems or phonological processing weaknesses substitute phonemes for /r/, leave /r/ out of consonant blends such as the “cr” in crown, or have trouble pronouncing the sound.

**Table 12: More and less common spellings for English vowel phonemes, with key words and examples**

<b>Consonant Phoneme</b>	<b>Key Word</b>	<b>Spellings (Graphemes) Taught in Year 1</b>	<b>Spellings (Graphemes) Taught in Year 2 Or 3</b>	<b>Word Examples</b>
<b>/ē/</b>	eagle	e	e_e, ea, ee, ie, ey	be, theme, meat, seen
<b>/i/</b>	itch	i	y	in, image, gym
<b>/ā/</b>	apron	a	a_e, ai, ay, eigh, ey, ea	able, wave, bait, may
<b>/ĕ/</b>	echo, edge	e	ea	bed, bread, edge, eddy
<b>/ă/</b>	apple	a		astronaut, add, Africa
<b>/ī/</b>	ice cream	i	i_e, y, ie, igh	hi, idol, ice, cry, pie
<b>/ō/</b>	octopus	o	a, al	shop, father, calm
<b>/ū/</b>	up	u	o	shut, love, kingdom
<b>/aw/</b>	saw, audio	(all)	aw, au, al	saw, cause, call, talk
<b>/ō/</b>	open, over	o	o_e, oa, ow, oe, ough	no, vote, coal, snow, toe
<b>/öö/</b>	book	oo	oo, u, ou	shook, put, could
<b>/ū/</b>	moon	u	u, u_e, oo, ui, ue, ew, ou	ruby, rude, moon, suit
<b>/yū/</b>	unicorn	u	u, u_e, ew, eu	humid, cute, few, Europe
<b>/oi/</b>	boy	oy	oi, oy	oil, toy, oyster
<b>/ou/</b>	owl	ow	ou, ow	shout, down
<b>/er/</b>	her	er	er, ur, ir, or, ar, ear	teacher, fur, sir, world
<b>/ar/</b>	art, star	ar	ar, ear	car, heart, ardvaark
<b>/or/</b>	orca, fork	or	or, ore, our	for, fore, four

## Dialect and Language Variation

Dialect can slow the learning process. A dialect is a version of a language that is used by people in a specific region or who belong to a specific social group. People who share a dialect are usually separated socially or geographically from other groups or have been in the past. The speakers of different dialects within a language system understand each other because they share the same basic sound system, vocabulary, and sentence structures and can read the same writing system. However, their speech varies systematically or predictably in word pronunciation (phonology), word use, and often, grammar. Dialect interference in an educational setting occurs if the phonology or usage of a student's dialect differs substantially from the dialect spoken by the teacher. Dialect interference can also occur if the student's dialect is substantially different from the Standard English forms in written text. Consider these differences between British English and American English terms for the same thing:

lift – elevator  
petrol – gasoline  
public school – private school  
trousers – pants  
pint – mug of beer

Young students whose non-mainstream speech differs substantially from the words written in their reading material will benefit from systematic comparisons between their “home” and “school” languages (Gatlin-Nash, Johnson, & Lee-James, 2020). The goal of such comparisons is not necessarily to modify speaking behavior, especially informal language as locally spoken, but to help students become conscious of sounds and words and to choose words according to what the social situation calls for. Code-meshing of “home” and “school” language is a learned skill that can be encouraged in the classroom without denigrating how students speak.

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## Phonics and Decoding: A Scope and Sequence for Instruction

**Teaching should be explicit.** After stating the lesson goal, leading a review exercise, and leading phoneme awareness activities, teachers are ready to implement the main part of the lesson. The core instruction includes explicit teaching of a phonics or spelling concept or pattern. Explicit teaching follows an “I do,” “we do,” “you do” format, or model, lead, practice, and apply. The teacher explains the concept or correspondence and shows the students some examples of how the pattern or concept works (I do), leads the students through blending and reading more examples of the pattern words (we do), and then provides a lot of planned practice (you do). During practice exercises, the teacher circulates and gives students feedback on their work. Practice exercises can vary among different activities, such as partner reading of words and phrases, sorting words by their patterns, mapping the letters to the sounds in the words, building words with letter cards and writing them, inserting pattern words into sentences, or scanning a list of words to find those with specific meanings.

Teaching should be systematic and cumulative. Although there is long-standing consensus among experts that the most effective way to teach reading includes systematic, explicit instruction in phonics and decoding (Brady, 2020; Castles, Rastle, & Nation, 2018; National Institute of Child Health and Human Development, 2000), no one has proven that they have the best plan for teaching the match between sounds and symbols, at least in English. There are different paths to the same goal and many programs with slightly different approaches have worked well. Those programs, however, tend to have a similar structure and to follow a general progression. The progression is this:

- from simple syllables (without consonant blends) to more complex ones with consonant blends
- from single syllable words to multi-syllable words
- from words with inflectional suffixes (-ed, -ing, -s/es, -er/est) to more complex morpheme structures such as prefixes, roots, derivational suffixes (-ion, -ful, -ive, -less, etc.)



- from an emphasis on the most predictable correspondences to less predictable ones
- from an emphasis on single phoneme-grapheme correspondences to larger “chunks” or letter sequences that are common in the writing system
- from text with familiar vocabulary and short sentences to less familiar vocabulary and longer sentences.

The outline of a suggested scope and sequence presented here (Table 13) is formulated with those tenets in mind. It proposes that the basic code can and should be learned in three years of instruction. If students learn what is included here, they should be able to decipher new words encountered in print.

**Table 13: Sample Scope and Sequence for Teaching the Phonics Code of English**

<b>Year One, First Half of Year</b>	
<b>1st six weeks</b>	<ul style="list-style-type: none"> <li>• Name and match most upper and lowercase letters</li> <li>• Identify and pronounce vowel short /a/(apple) and consonants /m/, /n/, /s/, and /t/ and match the sounds to the letters that represent them</li> <li>• Use phonics to blend and read the words <i>at, an, am, man, mat, sat, Sam, Nan, mass, tan, tam</i></li> </ul>
<b>2nd six weeks</b>	<ul style="list-style-type: none"> <li>• Name and match all upper and lowercase letters</li> <li>• Identify and pronounce vowel short /i/ (itch) and short u /u/ (up) and consonants /f/, /r/ and match the sounds to the letters that represent them [r before vowels only]</li> <li>• Blend and read words (<i>in, it, is, rim, run, sun, Tim, rut, mutt, mum, rat, ran</i>)</li> </ul>
<b>3rd six weeks</b>	<ul style="list-style-type: none"> <li>• Identify and pronounce short vowel /o/(octopus) and consonants /h/, /d/, /k/, /b/ and recognize the letters that represent them, including three ways to represent /k/</li> <li>• Blend and read words with known letter-sounds (<i>dot, hot, Bob, cob, him, hit, has, his, hat, hid, ham, dam, bam, did, rid, kid; kiss, bad, cat, can, cab; bat, back, bat, kick, sick, sack, rack; rock, dock, hack</i>)</li> </ul>
<b>Year One, Second Half of Year</b>	
<b>4th six weeks</b>	<ul style="list-style-type: none"> <li>• Identify and pronounce short vowel /e/(echo) and consonants /p/, /g/, /l/, /w/ and recognize the letters that represent them</li> <li>• Blend and read words with known letter-sounds (<i>peg, get, let, lid, lip, win, wet, well, wed, web, led, gal, gap, gab, pal, pat, pad, pan, pass, sap, sag, bag, beg, egg, leg, luck, puck, pick, lick</i>)</li> </ul>
<b>5th six weeks</b>	<ul style="list-style-type: none"> <li>• Identify and produce short vowel sounds and the names of the vowel letters (long vowel sounds); say consonants /th/, /sh/, /v/, /ch/, and combination /k//s/ and match those sounds with TH, SH, V, CH, TCH, and X</li> <li>• Blend and read words with known letter-sound correspondences, such as <i>this, that, ship, shop, shed, shell, shut, mash, rash, wish, with; vet, van, vat, box, fix, wax, Max, fax; chop, chip, chuck, chin, itch, pitch, ditch, batch, witch, hatch, latch, catch</i></li> </ul>
<b>6th six weeks</b>	<ul style="list-style-type: none"> <li>• Identify and say the short vowel sounds and the long vowel sounds in the vowel letter names; say consonants /j/, /y/, /z/, /wh/, /ng/ and combination /k//w/; match to spellings J, __DGE, Y (before a vowel), Z, WH, NG and QU</li> <li>• Blend and read words with known letter-sound correspondences (<i>judge, jam, jet, job; edge, badge, lodge; yes, yet, yen, yap, yam, yell; zip, zap, buzz, jazz; when, which, whack; sing, king, wing, ring, rang, rung, lung, song, sung, thing; quit, quick, quell, quash</i>)</li> </ul>

### YEAR TWO: First Half of Year

<b>1st six weeks</b>	<ul style="list-style-type: none"> <li>Blend and read one-syllable words with single consonants (no blends), to review correspondences taught in Year 1</li> <li>Read words with “all” – <i>fall, call, mall, ball, wall, tall, hall</i></li> <li>Read words with plural inflection and tense marker -s (<i>mops, cans, pads, etc.</i>)</li> </ul>
<b>2nd six weeks</b>	<ul style="list-style-type: none"> <li>Review digraph (two letters that stand for one sound) spellings TH, SH, CH, WH, and NG; review letter combinations for /k/, /ch/, and /j/ that come right after short vowels: __CK, __TCH, and __DGE</li> <li>Review QU as the two-sound combination, /k/ /w/ in <i>quit, quack, quick, quell</i></li> <li>Read words with final consonant blends (-LK, -FT, -ST, -MP) and beginning consonant blends (ST, FL, SN, FR, PL, SM, SK, CL), such as <i>clan, milk, fast, jump, soft, stamp, fleck, smock, dust</i></li> </ul>
<b>3rd six weeks</b>	<ul style="list-style-type: none"> <li>Say a long vowel sound when reading words with the VCe long vowel spelling pattern: a_e, o_e, i_e, e_e, u_e; know that some “long u” sounds begin with a hidden glide sound, /y/ (<i>cute, cube, fume</i>), and others do not (<i>rude, prune, plume, tune</i>)</li> <li>Explain the concepts of plural (marked by -s and -es) and past tense (marked by -ed, but pronounced as /t/, /d/, or /ed/) and read words with those inflections attached to base words with no change in the base when endings are added (<i>wanted, planted; kissed, passed; smelled, buzzed</i>)</li> <li>Read and write regularly spelled words with the VCe pattern, consonant digraphs, and consonant blends, for example <i>take, like, shine, here, flute</i></li> </ul>

### YEAR TWO: Second Half of Year

<b>4th six weeks</b>	<ul style="list-style-type: none"> <li>Read short vowel and VCe (silent-e) words with inflection -s (<i>taps, beds, robs; makes, takes, likes, hopes, quakes</i>)</li> <li>Read VCe words that drop silent e when inflection -ed is added: <i>liked, smoked, hoped, tuned, used</i></li> <li>Read words with long e spelled EE or EA (e.g., <i>see, meet, sleep, street, feed, queen; read, bead, eat, mean, teach, year</i>)</li> </ul>
<b>5th six weeks</b>	<ul style="list-style-type: none"> <li>Make new spoken words by substituting one sound for another in a “sound chain” with emphasis on changing vowel sounds</li> <li>Increase accuracy with VCe words and EE, EA words</li> <li>Read words with long a spelled AI in the middle or AY at the end, such as <i>bait, mail, sail, aid, gain; bay, say, pay, pray, play, stay, stray</i></li> <li>Read words with long o spelled OA in the middle or OW in the middle or the end (<i>boat, coat, goat, groan, moan, road, roar; bow, snow, throw, grow, grown</i>)</li> <li>Read words with three spellings for /er/: IR, UR, ER (<i>bird, burn, her, third, fur, number, under, letter, teacher</i>)</li> <li>Read words with the AR spelling for /ar/: <i>car, bar, star, far, art, cart, part, smart</i> (note that <i>war, warn, wart, and warp</i> sound like /or/)</li> <li>Read words with the OR spelling for /or/: <i>for, born, worn, fort, sport, short, north</i></li> </ul>
<b>6th six weeks</b>	<ul style="list-style-type: none"> <li>Read one-syllable words spelling long i with Y (<i>cry, by, my, why, shy, fly, fry</i>) and words with more than one syllable ending in long e spelled with Y (<i>baby, crazy, lady, pony, study, happy</i>)</li> <li>Read words with diphthong /ou/ spelled with OU and OW: <i>our, loud, proud, about, ground, now, down, crown, crowd, owl, prowl</i></li> <li>Read words with diphthong /oi/ spelled with OI and OY: <i>oil, toil, soil, avoid, coin; toy, boy, joy, soy, enjoy</i></li> <li>Read words with /au/ spelled AU and AW: <i>pause, cause, saw, fawn, paw, crawl, draw, awful</i></li> </ul>

### YEAR THREE: First Half of Year

<b>1st six weeks</b>	<ul style="list-style-type: none"> <li>Combine closed and open syllables to make 2-syllable words, such as <i>catnap; basket, kitten, mittens, rabbit, sunset, problem, hilltop, zigzag, robot, secret, minus, bacon, music</i></li> <li>Identify unstressed syllables and reduction of a vowel to schwa</li> <li>Read words with plural inflection and tense marker -s (mops, cans, pads, etc.), and words with inflections -ing and -ed with no changes to the base word</li> </ul>
<b>2nd six weeks</b>	<ul style="list-style-type: none"> <li>Read words with PH for /f/ (phone, phantom, photo); review letter combinations for /k/, /ch/, and /j/ that come right after short vowels: __CK, __TCH, and __DGE</li> <li>Review QU as the two-sound combination, /k/ /w/ in <i>quit, quack, quick, quell, quote, queen, quest</i></li> <li>Read long u spelling patterns OO, EW, UE, UI (<i>moon, soon, chew, flew, grew, glue, blue, juice, suit</i>)</li> <li>Identify closed, open, and VCe syllables, and read words that combine those three syllable types such as <i>hopeless, combine, timeless, hateful; humid, robot, even, refuse, protect, aphid</i></li> <li>Identify words that drop silent e when a vowel suffix is added (<i>refined, deboned, amusing, supposing</i>)</li> </ul>
<b>3rd six weeks</b>	<ul style="list-style-type: none"> <li>Read three more patterns for the long l vowel sound: IGH, IE, Y (<i>high, sigh, sight, fight, pie, tie, fry, fly, cry</i>)</li> <li>Read inflections on final-y words, where y has been changed to i: <i>cry, cries, try, tried, study, studies, studied, party, parties, partied, baby, babies, babied, crazy, craziness, story, stories</i></li> <li>Read common words with silent letter patterns KN, WR, and GN (<i>know, knew, knee, knot; write, wrist, wrong, wring; gnarl, gnat</i>)</li> <li>Know the “soft c” pattern; read words with hard and soft c (<i>card, cut, cook vs. cent, city, cycle, cinch, ice, rice, ace, pace, juice</i>)</li> </ul>

### YEAR THREE: Second Half of Year

<b>4th six weeks</b>	<ul style="list-style-type: none"> <li>Identify and read more patterns for the long o sound: O, OW, OA, OE, OUGH</li> <li>Read and spell words and syllables with various spellings for /er/ - ir, ur, er, ar, or</li> <li>Recognize when /er/ is the comparative ending (prettier, hotter, colder) and when it means “someone who” as in <i>teacher, preacher, mender, babysitter, worker</i></li> <li>Combine open and closed syllables with final consonant-le (Cle) syllables (<i>title, little; cable, scrabble; rifle, riffle; ogle, goggle; beetle, kettle</i>) and words with silent “t” – <i>thistle, whistle, castle</i></li> <li>Review spelling rules for adding suffixes (doubling rule, drop silent e rule, change y to I rule)</li> </ul>
<b>5th six weeks</b>	<ul style="list-style-type: none"> <li>Identify and read words with more long a patterns: A, AY, AI, EIGH, EY, EA</li> <li>Read two and three-syllable words by identifying the vowels, their likely sounds, and then “flexing” as necessary to make a familiar word</li> <li>Read words and syllables with long vowels + r (<i>care, hair, cheer, fire, pure, our, sour, oar</i>)</li> <li>Recognize and build words with a few common prefixes and say how they change meaning (<i>re, un, mis, pre, non</i>)</li> </ul>
<b>6th six weeks</b>	<ul style="list-style-type: none"> <li>Identify and read words with long e patterns: E, EY, EI, IE, EE, EA</li> <li>Identify and read words with irregular plurals (<i>shelves, loaves, lives, thieves, knives, wolves; teeth, children, women, men, mice, geese, deer</i>)</li> <li>Pronounce and separate contractions into two words (<i>I’ll, can’t, he’d, I’ve, she’s</i>)</li> <li>Interpret and spell the difference between contractions, possessives, and plurals (<i>it’s/its; hope’s/hopes; chair’s/chairs</i>)</li> <li>Read words with common consonant suffixes (-less, -ness, -ment, -ful, -ly) and common vowel suffixes (-es, -ed, -y, -ing, -er, -est, -ous, -able, -ible)</li> </ul>

## High Frequency, Irregular or Odd Words

**Irregular words are among the most common.** Students must learn to recognize and remember some high frequency words that do not follow regular correspondence patterns in English (*was, are, of, come*) or that have regular patterns that have not yet been taught. A high frequency word is one that occurs most often in English writing. Most high frequency word lists for reading instruction draw from the 200 most often used words in the language. They include the grammatical “glue” that holds sentences together: articles, common nouns, pronouns, prepositions, conjunctions, and certain verb forms (*do, were, could*).

**The most often used words in English, however, usually follow regular spelling rules and correspondence patterns.** The most often used words in English have decodable spellings (*when, is, he, them, day, us, for, not, with*) or are members of word families that can be taught (*have, by, will, all, most, year, good*). Irregularly spelled words comprise no more than a quarter of the most frequent 300-500 words. Even the so-called irregular words usually have some recognizable sound-symbol correspondences and perhaps a vowel spelling that is an anomaly or unusual. Therefore, students can be taught the majority of high

frequency words by including them in a lesson on predictable correspondences and patterns (*he, she, we, be, the*), by using a spelling pronunciation to aid memory (said = say + ed), or by contrasting the letters with the word’s pronunciation (“was = /w/ /ă/ /s/ ... but we don’t say /w/ /ă/ /s/, we say /w/ /ü/ /z/”). Students learn these words by mapping the written code to speech, just as they do with regularly spelled words, but extra work is involved in remembering exceptions or oddities.

**Students need to review irregular words continually.** Irregular words should be introduced gradually, one or two per week, with continual ongoing review. Repeated exposure to these words may be necessary for some students to learn them, but, paradoxically, the more students learn the regular patterns, the easier it will be for them to remember the less predictable words. All words are processed as representations of language, not as arbitrary visual strings of letters (Miles & Ehri, 2019; Seidenberg, 2017), so the same guidance holds: call attention to sounds, map the sounds to the letters, explain why the word is spelled the way it is (if known), and use the word in speaking and writing.

Table 14: “Sight” word bank

Year 1	Year 2	Year 3
I, see, a, the, and, can, you, me, we, she, he, are, under, was, to, not, my, by, on, do, put, go, like, make, said, her, of, out, some, come, have, be, want, from, for, live, one	what, there, other, which, them, they, give, come, were, word, work, world, child, find, children, woman, write, been, water, people, many, any, very, over, know, because, would, could, should, who, your	there, their, where, do/does, shoe, young, build, built, often, eye, busy, one, once, only (colors, numbers, days of the week, months of the year)

## Building Automatic Word Recognition: A Necessary Path to Fluent Reading for Meaning

Students become fluent readers when they can recognize most words automatically. Fluency results from accumulating knowledge of words that can be read

“by sight” – that is, without having to sound them out. A mental dictionary of several thousand known words is gradually built up over a few years of reading experi-

ence and explicit instruction on the mapping of print to speech and speech to print (Moats, 2020). At this consolidated alphabetic reading stage (Ehri, 2014), the reader sees a familiar word and its pronunciation is automatically recalled. An unfamiliar word is quickly decoded with minimal effort and filed in the mental dictionary according to its sound and meaning. The reader is fluent enough to focus most of his or her attention on the meaning of the text.

Automatic word recognition is necessary but not sufficient to become a fluent reader. Students also need sufficient practice chunking those words together in phrases and sentences as they read for meaning. Therefore, every lesson should make time for students to read text that they can decipher without undue strain. Students will benefit from reading many examples of taught words and word patterns in the context of phrases, sentences, and stories. In addition, practice spelling and writing words with the patterns students are learning will reinforce memory for those words and speed of word recognition (Ouelette, Martin-Chang, & Rossi, 2017).

Teacher modeling, choral reading, rereading familiar texts, and silent reading are all ways to promote fluency development. When a new story or book is introduced, the teacher can model the sound of fluent reading by reading the text aloud while students follow along. Choral reading by a group is a better practice than calling on students one at a time to read part of the text. Choral reading enables everyone to practice and participate. Checking on individuals, however, is important so that students' accuracy is monitored. Rereading a familiar text aloud two or three times with guidance and feedback from a partner, teacher, other adult, or audio recording can support fluency development. So can silent reading, especially if the student's accuracy rate with a given text is monitored. If a book is too difficult (more than one in ten to fifteen words unknown), the student may not be reading it with comprehension.

It's basic: Students can't learn to read unless they actually practice reading and expect to have the words make sense.

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## Shifting to “Reading to Learn”

The needs of novice readers differ from those of proficient readers. As students change from novices to experts, the relationship between the two major domains of the Simple View of Reading changes over time. While instruction for beginning readers focus on how to read the words, language comprehension will have a greater and greater influence on overall reading success as students acquire foundational skills (Cain, Oakhill, & Elbro, 2020; Petscher et al., 2020). The goal of learning how to read is to understand written text, so instruction must build linguistic comprehension, first through oral language and then through the written word.

Unlike the word recognition component of the Simple View, however, comprehension cannot be taught as a set of skills and strategies with a definable scope and sequence that exists apart from what is being read. The demands of reading comprehension vary according to the subject matter at hand. The informa-

tion and thinking processes required to understand a traditional fable, for example, may vary substantially from what is required to understand an informational text, such as an argument for renewable energy. Furthermore, there is “no strong evidence that teaching single components of reading comprehension separately will lead to large and sustained gains” (Cain, Oakhill, & Elbro, 2020, p. 37). So how is comprehension instruction best approached?

Comprehension instruction can be guided by research. At least a few principles of teaching have support in the research literature (Shanahan et al., 2010; Oakhill, Cain, & Elbro, 2017). Effective comprehension instruction includes explicit teaching of word meanings important for understanding a given text, as well as practice of higher-level thinking skills such as making inferences, monitoring whether reading is making sense, and knowledge and use of text structure to extract meanings.

- **Vocabulary.** With regard to vocabulary, teachers can and should teach a few important word meanings in depth before reading a new text. Teaching words in depth means discussing multiple meanings, using the words in various contexts, finding and contrasting meanings of related terms, and/or constructing understandable definitions. In addition, since most new word meanings will be learned from incidental exposure, students need tools such as analysis of morphemes, use of dictionaries, and use of context to determine how a word is being used in a sentence.
- **Questioning.** As text becomes more challenging, students need help and support knowing how to navigate through unfamiliar verbal territory. Helpful strategies include the habit of asking the question, “Does this make sense?” When meanings are not clear, students can learn to ask a question, reread, look elsewhere for more information, or use a graphic organizer (chart, graph, illustration) to resolve the problem.
- **Background knowledge.** Inference-making, which occurs when we mentally tie the meanings of sentences together and when we connect what we are reading with prior knowledge, depends very much on what students already know and understand about the topic at hand. Therefore, before reading a text and during reading, a supportive teacher will provide background information necessary for understanding. Having prerequisite background knowledge may be a special challenge for students whose life experience is totally different from the settings, characters, events, or topics in material written for developed, English-speaking countries. Ideally, they will be able to practice reading about topics and ideas relevant for their culture and setting.
- **Genre.** Navigating texts with different organizational structures and text features can also be taught. Stories or narratives are organized around characters, a sequence of events (internal or external) that lead to solving a problem, and a resolution. Informational texts may include logical arguments, comparisons, cause-effect organization, or a sequence of procedures. Students who recognize and use these genre-related text features to construct meaning are of-

ten better at writing summaries and remembering what the texts are about.

- **Complex sentence structure.** Academic text also uses forms of language that may be unfamiliar, including complex and lengthy sentences, figures of speech, formalities of expression, and connecting words that indicate logical relationships between ideas and provide coherence. All of these forms and uses of language can be taught or explained. An especially powerful approach to teaching sentence comprehension emphasizes not only the grouping of words into phrases and clauses, but the role that words, phrases, and clauses play in answering the basic questions, *who, what, where, when, how, and why* (Hennessy, 2021; Moats, 2020).



# Becoming Readers



As with any complex skill, learning to read requires both systematic instruction and many hours of practice at a level at which the student can be successful. Those who learn early and well, whose word reading skills are accurate and automatic, and who can comprehend what they read, are more likely to read widely, to gain knowledge and vocabulary from reading, and to enjoy reading for pleasure. The gift of literacy is possible worldwide if educators follow the guidance and frameworks based on science. All students have a right to read and will do so if educators embrace and practice what works best.

## Summary of Teaching Principles

1. Deliberately develop both word recognition and language comprehension, in parallel.
2. When feasible, support first language development while teaching a second language; explicitly compare the sounds, writing systems, and grammars of the languages
3. Teach the foundational skill of phoneme awareness
4. Teach letter recognition, naming, and writing
5. Teach word decoding over several years by following a scope and sequence of phonics concepts
6. Teach the phonics system explicitly, using a structured lesson plan
7. Provide daily practice reading text with the words and patterns that have been taught
8. Write and spell words whose patterns have been taught
9. Build in-depth knowledge of specific vocabulary necessary to understand a text
10. Enable exposure to many new vocabulary words by reading aloud and by fostering discussion, recitation, and choral response
11. Give students experience with both stories and informational text
12. Teach features of written language, such as sentence structures and story structure
13. Provide as much background knowledge as necessary before and during reading, to support comprehension
14. Encourage students to ask questions and reread if they do not understand
15. Provide as much text material as possible, of any kind, with incentives for independent reading

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