

# Science of Reading

## Letter Knowledge



## Letter Knowledge Is a Complicated Set of Skills

Letter knowledge, or alphabets, is foundational among foundational skills because it lays the groundwork for, predicts, and is related to all future literacy development (Piasta & Wagner, 2010; Wagner, et al., 1994). Letter knowledge may sound simple, but letter knowledge is a complex set of knowledge and skills, including knowing the letter names, letter sounds, letter symbol (i.e., being able to repeatedly point out a letter in text), letter discrimination (i.e., telling one letter from another), and letter formation or writing (Piasta & Wagner, 2010).

Consider letter recognition and a related skill, letter discrimination. There are 26 letters, each of which has a lower case and capital form, resulting in 52 separate forms for young children to memorize, two to a set. Recognizing an *N* in isolation is a different skill from being able to distinguish or discriminate an *N* from an *M*, *W*, and *A*. Being able to discriminate between letters is a more difficult skill than recognizing letters in isolation, and discriminating between certain letters is easier than others (e.g., *L* from *O* vs. *M* from *W*) (Treiman, et al., 2006).

Letter sounds can also be conceptually complex. Some letters make more than one sound (e.g., vowels or consonants such as *C* and *G*), so the simplicity of “a is for apple” becomes “a is sometimes also for acorn.” But “b is always for banana,” and then “c is for cake and also for celery.” Learning all of these rules and beginning to apply them requires careful explicit, systematic instruction with opportunities for practice and review.

Learning to write letters is an additional component to letter knowledge. A student may recognize a letter, but being able to make it with a pencil on a line is a far more demanding task. Some letters are easy to write (e.g., lower case *l*, *o*), while others are much more demanding (e.g., *M*, *W*, *K*).

# Effective Letter Knowledge Introduction

The most effective way to teach letter knowledge is with an explicit, systematic, integrated approach in which students are practicing all the skills together with many opportunities for application and review. Introducing a letter, demonstrating proper articulation of its sound or sounds, and having students identify whether it comes before or after other letters in the alphabet are all good ways to introduce a new letter. If the exercise is done on a page, it is also a good way to practice recognizing letter symbols.

Students learn the letters in their names most easily, and teaching students how to write their names is good beginning practice for letter identification, sounds, and formation (Cunningham, 1988). Having students say each letter and its sound as they practice writing solidifies the letter knowledge. Practicing with alphabet letters or letter cards while saying letter names and sounds also helps students recognize and distinguish between the essential features of each letter, which prepares students for blending letters into words. Practicing phonemic awareness with print and looking at alphabet books also helps students build and retain letter knowledge (Mesmer, 2019).

Letter formation is an essential element of building students' letter knowledge because it is an active way for students to reinforce letter shapes and make connections to print concepts (Honig, et al., 2018). Learning correct letter formation also builds the foundation for fluent writing, which impacts everything from students' ability to encode words correctly to sentence writing to outcomes such as passage writing beyond the scope of Grades K–2 (Graham & Harris, 2005).

## What Makes a Good Letter Introduction Scope and Sequence?

A scope and sequence for letter introduction should be organized around multiple criteria and focus on utility and ease of acquisition. Early in a scope and sequence, letters should be ordered according to the highest utility, or letters that occur most commonly, so that students can begin using them to make CV and CVC words.

Some letters are easier for students to learn than others. For example, letter names that begin with the sound they make (e.g., *T, D*) are easier than letters that end with the sound they make (e.g., *M, S*) (Treiman & Kessler, 2003). Both types of letters that contain their sound are easier to learn and come earlier in a sequence than letters that do not contain their sound (e.g., *H, W*) (Treiman & Kessler, 2003). Other principles also apply, such as commonly confused letters should not be taught in the same week (e.g., *K* and *G* or *B* and *D*) (Treiman & Kessler, 2003; Treiman, et al., 2006).

## Letters Are a Cumulative Skill

Letters are a cumulative skill. That is, as students add to their letter knowledge base, they use and apply letter skills in completely new ways while having to remember conceptually challenging letter skills. Every CV word (e.g., *at, it, in*) changes the nature of how letters work for our youngest students. It may be tempting to think of kindergarten as simple and the alphabet as easy, but it is demanding cognitive work that prepares students for reading.

## Works Cited

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