Alphabet Knowledge and Handwriting

Alphabet Knowledge

Alphabet knowledge involves recognizing, naming, writing, and identifying the sounds of the letters in the English alphabet[1,2]. Although various activities support the development of alphabet knowledge (e.g., story books, toys, games, TV shows, apps), handwriting instruction can also help students develop their alphabet knowledge[3]. Students should learn to fluently (i.e., automatically and accurately) recognize, name, and write letters because reading, writing, and spelling are all highly connected[4]. Learning to fluently recognize, name, and write letters can help students become better readers and spellers, and knowing letter names can help students learn the sounds that some letters make[1].

In the Indiana Dyslexia Screening and Intervention Act (2018)[5], connecting the sounds of letters to their shapes and written forms is known as "sound-symbol recognition." Other synonymous terms include *letter-sound recognition*, *letter-sound correspondences*, *phoneme-grapheme correspondences*. The understanding that letters represent speech sounds and is also referred to as the *alphabetic principle*, and it is necessary for proficient word-reading and spelling to occur[6].

Key Elements of Alphabet Knowledge

There are several characteristics of letters that are important for teachers to know when teaching reading and spelling[1,3,7]:
1. Letter Names – each of the 26 English letters of the alphabet has its own name
   - 25 letter names consist of one syllable (e.g., d is pronounced /d/ /ē/), except for the letter name for w (3 syllables; pronounced /d/ /ə/ • /b/ /ə/ /l/ • /y<u>oo</u>/)
   - 24 English letter names include the phoneme (sound) that the letter represents (also known as iconicity):
     - The name for the letter d is /d/ /ē/ (the name for the letter d begins with the sound that d makes)
     - The name for the letter s is /ĕ/ /s/ (the sound for the letter s is at the end of the letter's name)
   - 2 letters are not iconic:
     - h (pronounced /ā/ /ch/)
     - w (pronounced /d/ /ə/ /b/ /ə/ /l/ /y<u>oo</u>/)
   - Many letter names are phonologically similar (i.e., they have the same phonemes in the same position)

- o b (/b/ /ē/) & c (/s/ /ē/); the /e/ phoneme is at the end of both letters' names
- o f (/e/ /f/) & s (/e/ /s/); the /e/ phoneme is at the beginning of both letters' names

2. Letter shapes – the visual form of the letter; each letter of the English alphabet has an uppercase and lowercase form
    - Students commonly confuse letters that look similar, such as B & D or b & p.
      - o Teachers should wait until students have mastered one of the visually similar letters, before introducing other similar letters.
      - o Teachers should space out explicitly introducing letters that look visually similar (e.g., do not teach B & D in the same lesson, do not introduce D in the lesson right after introducing B).
    - Uppercase and lowercase letter pairs that look similar should be taught together, such as K & k, S & s, V & v.
    - For a list of visually similar letters and identical upper and lowercase letters, see the following 2 resources:
      - o [Strategy for Students who Confuse Letter Shapes](#)
      - o *Teaching Reading Sourcebook* (3rd edition) by Bill Honig, Linda Diamond, and Linda Gutlohn (2018)
    - Students are more likely to confuse letters when their shapes <u>and</u> names are similar
      - o B (/b/ /e/) & P (/p/ /e/)
      - o d (/d/ /e/) & g (/g/ /e/)

3. Letter sounds – the sounds (phonemes) that each letter or letter combination (grapheme) represents;
    - Grapheme – a letter (e.g., a, b, k, m, n, p) or letter combination (e.g, ch, th, ck) used to represent a sound (phoneme)
    - Teach the most common/predictable sound for the letter first.
      - o Example: When teaching the letter *s,* teach /s/ before teaching /z/.
    - [Click here to access a list of common letter-sound correspondences and their predictability.](#)
    - Additional information about the sounds/phonemes is located in the [Phonological Awareness section](#) of this toolkit.

Scope and Sequence for Alphabet Knowledge

There is no one agreed upon scope and sequence for teaching students to recognize, name, and write letters; however, there are several important ideas that should guide instruction[3]:

1. Alphabet knowledge instruction should always include the names and sounds of letters.
2. Once students know several consonants and vowel sounds, they can begin using this knowledge to decode regular words. All letter-sound associations do not need to be mastered before students begin reading words.
3. When the visual form is similar for an uppercase and lowercase letter, teach them together (Cc, Kk, Oo, Pp, Ss, Uu, Vv, Ww, Zz)
4. When two letters are visually similar (e.g., B & D, E & F, b & q, g & y), make sure students can consistently recognize, name, and produce one letter in the pair before introducing the other visually similar letter.
5. Explicitly teach alphabet knowledge and handwriting together. Incorporating handwriting helps students learn the shapes and names of letters.
   o Remember: Writing letters takes students longer to learn than identifying the letter's name, shape, and sound[8].

Below are several sample scope and sequence documents for teaching letter-sound correspondences:
- [University of Florida Literacy Institute: Suggested Scope & Sequence for Teaching Phoneme-Grapheme Correspondences](#)
- [Keys to Literacy: Systematic Phonics Scope and Sequence](#)
- [University of Oregon: Letter-Sound Correspondence Sequence](#)

Handwriting Instruction to Support the Development of Alphabet Knowledge

Handwriting includes transcribing sounds, letters, words, sentences, and paragraphs into print[9,10]. It requires individuals to remember the visual shapes of letters and use appropriate motor skills to form those letters[11]. Handwriting instruction is important for several reasons:
1. Handwriting can help strengthen students' alphabet knowledge[3].
2. Students with learning disabilities (LD) such as dyslexia have greater difficulty than their peers without LD with handwriting and spelling[12].
   o Dysfluent handwriting can lead to difficulties with spelling and higher-level writing skills such as planning compositions and generating content[10,13,14].
3. Handwriting instruction can improve students' ability to write legibly and fluently, in addition to increasing the length and quality of their compositions[15].

Connecting Assessment to Instruction/Intervention

Students should be able to automatically and accurately name uppercase and lowercase letters out of sequence (in other words, not in the order of the ABC song). Letter-naming assessments can be timed or untimed. Timed tests measure students' knowledge of the letter names in addition to how quickly they can accurately name the

letters, while untimed tests only measure automaticity, not accuracy. An example of a timed assessment is the *DIBELS Letter Naming Fluency subtest*[16] and an example of an untimed assessment is the *CORE Phonics Survey Part A: Letter Names – Uppercase and Part B: Letter Names – Lowercase*[17]. Teachers can also develop informal assessments on their own or with tools such as Intervention Central's [Letter Name Fluency Generator]. Letter-sound correspondences can also be assessed through timed and untimed assessments. An example of a timed assessment of letter-sound correspondences is *AIMSweb Plus Letter Sound Fluency* subtest[18]. An example of an untimed assessment is the *CORE Phonics Survey Part C: Consonant Sounds and Part D: Vowel Sounds*[17].

The information gathered during assessments of alphabet knowledge can be used to determine which letter-names and letter-sounds students already know and which letters students need to learn. When students know a letter's name or sound, but do not say it automatically (within one second) then this may indicate that they still need additional practice with the letter.

Explicit Instruction in Alphabet Knowledge

This section provides a routine/approach that teachers can use to explicitly and systematically teach alphabet knowledge and handwriting without a pre-existing program or curriculum. It also addresses how to incorporate adequate practice, cumulative review, and multisensory approaches to maximize student engagement during alphabet knowledge instruction. The explicit instructional routine in *Table 1* can be used to teach students to recognize, name, pronounce, and write new letters of the alphabet.

Table 1. Sample Explicit Alphabet Knowledge Lesson Segment for New Letter

Alphabet Knowledge Lesson Segment: New Skill Introduction and Practice	
Skill	new letter: name, visual form, written form, sound
Prerequisite Skills	● correct pencil grip
Materials	● letter tiles (one for each student) ● lined tracing paper or individual whiteboards with tracing lines ● teacher whiteboard (one side blank, one side lined)
Introduction & Purpose	*Today, we're going to be learning about a new letter, A. We will see this new letter when reading and spelling so it is important that we learn its name, shape, sound, and how to write it.*

Explicit Instruction	**Step 1: Modeling (I Do) for Letter Name & Shape**	*Everyone, look at this letter I have written on my whiteboard. The name of this is A.* The teacher points to the letter A. *What name?* The students repeat, "A." *This is an uppercase or capital letter A. Is this an uppercase or lowercase letter A?* Students say, "uppercase." *This letter makes the sound /ă/ like in apple. What sound?* Students say, "/ă/." *It has a slant, another slant, and then a line across.* The teacher traces his/her finger on the letter while describing it. *Slant. Slant. Line Across.* How is it made? Students repeat, "Slant, Slant, Line Across."
	Step 2: Guided Practice (We Do) for Letter Name & Shape	*Everyone, look at your letter tile. Let's say this letter's name together. What letter?* Students say, "A." *Yes. This letter is A.* *Is this an uppercase or lowercase letter A?* Teacher and students say, "uppercase." *What sound does the letter A make?* Teacher and students say, "/ă/." *Yes. This is an uppercase letter A. Letter A has a slant, another slant, and then a line across. Slant. Slant. Line Across. Can you all say that with me?* Teacher and students say, "Slant. Slant. Line Across." *Now, with our fingers, let's trace the letter A. Slant.* Teacher and students trace the first slant. *Slant.* Teacher and students trace the second slant. *Line across.* Teacher and students trace the line across.
	Step 3: Independent Practice	*Your turn. What letter is this?* Teacher points to the letter "A." The students say, "A." *Is this an uppercase or lowercase A?* Students say, "uppercase."

	(You Do) for Letter Name & Shape	*What sound does the letter A make?* Students say, "/ă/."
		How is the letter A made? The students respond, "Slant. Slant. Line Across."
		Yes! Now, say slant, slant, line across while tracing your letter. Students say, "Slant. Slant. Line Across," while tracing the letter.
	Step 4: Modeling (I Do) for Handwriting	*Now, we're going to practice writing the letter A. Watch me. Slant. Slant. Line Across.* The teacher says these words while modeling on a lined whiteboard.
	Step 5: Guided Practice (We Do) for Handwriting	*Pick up your pencils. Let's write the letter A. How is the letter A made?* Students respond, "Slant. Slant. Line Across." *Excellent. Let's all write the letter A on our whiteboards.* Students and teacher write the letter A on their whiteboards. Teacher provides corrective feedback as necessary.
	Step 6: Independent Practice (You Do) for Handwriting	*Now, I want you to write an A on your own. Write an A on your whiteboard.* Students write the letter A. *What sound does the letter A make?* Students say, "/ă/."
	Step 7: Cumulative Review of Alphabet Knowledge and Handwriting	*Now, let's review all of the letters we've learned so far.* The teacher mixes up a set of previously learned letter tiles (or has them preprinted on the board or chart-paper).
		The teacher points to each letter while saying, *What letter? What sound?* Students say each letter's name and sound.
		Next, let's practice writing all of the letters we've learned so far. On your lined paper (or whiteboard with tracing lines), write the letter [insert review letter name here].
		Students write each previously learned letter.

Lesson Segment Notes	• During guided practice, independent practice, and cumulate review, provide immediate corrective feedback when students make an error. Return to modeling (step 1) and then have students practice again: ○ <u>Corrective feedback:</u> If students incorrectly say the letter's name, the teacher should say: *This letter is (letter name). What letter?* Students should repeat the letter's name. If students incorrectly say the letter's sound, the teacher should say: *The letter A makes /ă/. What sound?* /ă/. • Lessons can be adapted to include any kind of multisensory movement, such as magnet letter tiles, blocks, etc. Remember to clearly explain and demonstrate how to use the multisensory procedure before expecting students to use it independently. • Through the entire lesson segment, all students should have frequent and multiple opportunities to respond. Teachers should use procedures that engage all students, such as choral responses, and should limit calling on individual students.

Practice

Practice is an important component of all explicit, instructional approaches. Without appropriate guided practice, independent practice, and cumulative review, students will not be able to acquire skills to mastery-level and they will not be able to retain those skills over time[19]. Practice should be provided AFTER a skill has been modeled/demonstrated (I Do) and teachers should provide affirmative or corrective feedback during practice activities. Practice activities and materials are available in the Alphabet Knowledge and Handwriting Resources section of this toolkit.

Resources for Teaching Alphabet Knowledge and Handwriting

Additional resources for teaching Alphabet Knowledge and Handwriting are available in the Alphabet Knowledge and Handwriting Resources section of this toolkit.

Indiana English/Language Arts Standards that Correspond to Alphabet Knowledge and Handwriting

1. <u>Reading Foundations (RF)</u>
   • RF.2 Print Concepts: Demonstrate understanding of the organization and basic features of print, including that printed materials provide information and tell stories

2. Writing (W)
   - W.2 Handwriting: Demonstrate the ability to write legibly.

Grade	Standard	Description
K	K.RF.2.4	Identify and name all uppercase (capital) and lowercase letters of the alphabet.
K	K.W.2.1	Write most uppercase (capital) and lowercase letters of the alphabet, correctly shaping and spacing the letters of the words.
1	1.RF.2.4	Learn and apply knowledge of alphabetical order.
1	1.W.2.1	Write all uppercase (capital) and lowercase letters legibly, and space letters, words, and sentences appropriately.
2	2.W.2.1	Form letters correctly and space words and sentences properly so that writing can be read easily by another person.
3	3.W.2.1	Write legibly in print or cursive, leaving space between letters in a word, words, in a sentence, and words and the edges of the paper.
4	4.W.2.1	Write legibly in print or cursive, forming letters and words that can be read by others.

References

1. Treiman, R. (2005). Knowledge about letters as a foundation for reading and spelling. In R. M. Joshi & P. G. Aaron (Eds.), *Handbook of orthography and literacy* (pp. 581-600). Routledge.

2. Ehri, L. (2005). Alphabetics instruction helps students learn to read. In R. M. Joshi & P. G. Aaron (Eds.), *Handbook of orthography and literacy* (pp. 649-678). Routledge.

3. Honig, B., Diamond, L., Gutlohn, L. (2018). *Teaching reading sourcebook* (3rd ed.). Consortium on Reading Excellence in Education. Arena.

4. Ehri, L. (2000). Learning to read and learning to spell: Two sides of a coin. *Topics in Language Disorders, 30*(3), 19-36.

5. Dyslexia Screening and Intervention Act, Ind. Code ¬ß 20-35.5-1-7 (2018). http://iga.in.gov/legislative/laws/2019/ic/titles/20/articles/35.5/pdf/IC%2020-35.5

6. Baker, S. K., Santiago, R. T., Masser, J., Nelson, N. J., & Turtura, J. (2018). The alphabetic principle: From phonological awareness to reading words [brief]. U.S. Department of Education, Office of Elementary and Secondary Education, Office of Special Education Programs, National Center for Improving Literacy. https://improvingliteracy.org/sites/improvingliteracy2.uoregon.edu/files/briefs/the-alphabetic-principle.pdf

7. Treiman, R., & Kessler, B. (2003). The role of letter names in the acquisition of literacy. In R. V. Kail (Ed.), *Advances in Child Development and Behavior* (Vol. 31, pp. 105-135). Academic Press.

8. Moats, L. C., & Tolman, C. A. (2019). *Language essentials for teachers of reading – 3rd edition*. Voyager Sopris.

9. Berninger, V. W. (2000). Development of language by hand and its connections with language by ear, mouth, and eye. *Topics in Language Disorders, 20*(4), 65-84.

10. Berninger, V. W., & Amtmann, D. (2003). Preventing written expression disabilities through early and continuing assessment and intervention for handwriting and/or spelling problems: Research into practice. In H. L. Swanson, K. R. Harris, & S. Graham (Eds.), *Handbook of Learning Disabilities* (pp. 345–363). The Guilford Press.

11. Mather, N., Wendling, B. J., & Roberts, R. (2009). *Writing assessment and instruction for students with learning disabilities* (2nd ed.). Jossey-Bass TEACHER.

12. Graham, S., Collins, A. A., & Rigby-Wills, H. (2017). Writing characteristics of students with learning disabilities and typically achieving peers: A meta-analysis. *Exceptional Children, 83*(2), 199-218. https://doi.org/10.1177/2F0014402916664070

13. Berninger, V. W., Vaughan, K., Abbott, R. D., Begay, K., Coleman, K. B., Curtin, G., Hawkins, J. M., & Graham, S. (2002). Teaching spelling and composition alone and together: Implications for the simple view of writing. *Journal of Educational Psychology,* 94(2), 291-304. https://doi.org/10.1037/0022-0663.94.2.291

14. Berninger, V. W., Nielsen, K. H., Abbott, R. D., Wijsman, E., & Raskind, W. (2008). Writing problems in developmental dyslexia: Under-recognized and under-treated. *Journal of School Psychology, 46*(1), 1-21. https://dx.doi.org/10.1016%2Fj.jsp.2006.11.008

15. Santangelo, T., & Graham, S. (2016). A comprehensive meta-analysis of handwriting instruction. *Educational Psychology Review, 28*, 225-265. https://doi.org/10.1007/s10648-015-9335-1

16. University of Oregon. (2018-2019). *8th Edition of Dynamic Indicators of Basic Early Literacy Skills (DIBELS-8th): Administration and scoring guide.* http://dibels.uoregon.edu

17. Diamond, L., & Thorsnes, B. J. (2018). *Assessing reading: Multiple measures (2nd ed. – revised).* Consortium on Reading Excellence in Education, Arena Press.

18. Pearson. (2012). *Aimsweb technical manual.*

19. Archer, A. L., & Hughes, C. A. (2011). *Explicit instruction: Effective and efficient teaching*. Guilford Press.