

Table 1
Useful Words, With Phoneme Segmentation, for Making Sound Boxes

Level of difficulty	Words with phoneme segmentation
Level 1	f-a-n, f-i-sh, f-ee-d, f-ee-t, f-i-le, f-i-ve, j-o-g, l-a-mb, l-ea-f, l-i-d, l-o-ck, m-a-p, m-ea-t, m-e-ss, m-i-ce, m-oo-n, m-o-p, n-ai-l, n-e-t, n-o-se, n-u-t, r-a-t, r-ai-n, r-a-ke, r-ea-d, r-i-de, r-oa-d, r-o-ck, r-o-pe, r-u-g, s-a-ck, s-ea-l, s-ea-t, sh-ee-p, sh-i-p, s-i-ck, s-oa-p, s-u-n, wri-te
Level 2	b-a-ke, b-a-g, b-a-t, b-e-d, b-i-ke, b-oo-k, b-u-g, b-u-s, c-a-p, c-a-ke, c-a-ge, c-a-n, c-a-ve, ch-i-ck, c-oa-t, c-o-mb, c-o-t, c-u-p, c-u-t, d-o-g, d-ee-r, d-u-ck, g-a-me, g-a-te, g-oa-t, g-u-m, h-a-m, h-a-t, h-i-t, h-o-se, h-o-t, j-a-ck, j-a-m, j-ee-p, j-e-t, j-ui-ce, k-i-ck, k-i-te, p-i-g, p-a-n, p-a-th, p-ea-k, p-o-t, t-o-p, t-ea-m, t-a-pe, t-i-re, t-u-b, t-u-be, w-a-sh, w-a-ve, w-e-b, w-i-g, w-i-pe
Level 3	
Three phonemes	b-l-ow, c-r-y, f-l-y, g-l-ue, s-k-i, s-t-ew, t-r-ee
Four phonemes	b-l-a-ck, b-l-o-ck, b-r-i-de, b-r-oo-m, b-r-u-sh, b-r-i-ck, c-r-a-ck, d-r-o-p, d-r-e-ss, d-r-i-ve, f-l-a-g, f-r-o-g, f-l-oa-t, f-l-u-te, f-r-uit, g-l-a-ss, g-r-a-ss, g-r-i-ll, g-r-oo-m, h-a-n-d, p-l-u-g, p-l-u-m, p-r-e-ss, p-l-a-ne, p-r-i-ze, s-k-a-te, s-k-i-p, s-l-ee-ve, s-l-i-ce, s-l-e-d, s-l-i-p, s-m-i-le, s-n-i-p, s-p-i-ll, s-p-oo-n, s-p-o-t, s-t-o-p, s-t-ea-m, s-w-ee-p, s-w-i-m, t-r-ai-n, t-r-u-ck

useful words, with phoneme segmentation, for creating sound boxes.)

Teaching How to Hear Sounds in Words

To use a gradual release of responsibility model (Pearson & Gallagher, 1983), you should teach the process of detecting and segmenting phonemes in the following four steps:

1. Model how to stretch the word out into its phonemes. Then have the student repeat the slow, phoneme-by-phoneme articulation. By practicing a smooth pronunciation of the word, the student will learn how to hear each phoneme within a natural speech flow. Make sure that the student can stretch the word back, articulating each phoneme, before moving on to the next step. Occasionally, there will be a student for whom the slow articulation of words is very difficult. One way to help him or her is to use a large mirror showing both the instructor's and the student's mouths so that they can observe each other and match mouth positions as the word is segmented.
2. Demonstrate how the boxes are incorporated into the process. As each sound within the word is articulated, push a marker into one of the drawn boxes. For example, if the word is *mug*, which has three phonemes and a continuous beginning consonant sound, verbalize each phoneme slowly and smoothly (/m/.../u/.../g/) while simultaneously pushing a marker into the corresponding first, second, and third boxes.
3. Teach students how to use the sound boxes to detect and segment phonemes. At first, divide the responsibility for stretching and pushing with the students. Continuing with the example of *mug*, first stretch the word slowly, articulating each of the three phonemes while directing students to simultaneously push each marker into its appropriate box. Then reverse the tasks. Now push the markers into each box to match students' slow articulation of each sound in the word. If students have difficulty with either part, stretching or pushing, continue to have each student practice the action with additional attempts and sound box cards until the student is successful at it.

4. When students have demonstrated that they can successfully stretch *and* push, help them put the actions together in the final step. Have them independently stretch the word and push the markers into the boxes to demonstrate both detection and segmentation of the word's phonemes.

Doing three cards per instructional session works well to give students practice without it becoming overwhelming or too time-consuming. Other than the introductory session when students are learning the sound box procedure, instruction generally takes less than five minutes per session, making it possible to incorporate this instructional technique into a daily classroom routine. As students become more proficient in the process, the four steps can be collapsed into two (the first and last step), gradually but completely releasing the responsibility for phoneme segmentation to the learner.

When a student can comfortably stretch and push a level of boxes, it is appropriate to introduce a card from the next level. Return to step 1, using full teacher modeling as described previously, to maximize student understanding and success in learning the more difficult task. Typically, at this stage a session could include one sound box card from a more difficult level with two from a level the student could do independently.

Transitioning to Sound-Letter Matching

After students have demonstrated proficiency at detecting and segmenting phonemes on the first two levels of difficulty, it is time to begin transitioning to what are often called letter boxes. The intent of

letter boxes is to help students move from hearing the sounds in words to matching those sounds with their appropriate letters. The same procedure is used as with sound boxes, but now, a second stretch is done. During this second segmentation of phonemes, students write into each box an appropriate letter representing the detected sound, with help from the teacher as needed. As students internalize their understanding of the alphabetic principle and become more sure of sound-letter matches and high-frequency rimes, their need for the support of the boxes will diminish and eventually extinguish.

References

- Clay, M.M. (2002). *An observation survey of early literacy achievement* (2nd ed.). Portsmouth, NH: Heinemann.
- Ehri, L.C., Nunes, S.R., Willows, D.M., Schuster, B., Yaghoub-Zadeh, Z., & Shanahan, T. (2001). Phonemic awareness instruction helps children learn to read: Evidence from the National Reading Panel's meta-analysis. *Reading Research Quarterly, 36*(3), 250-287. doi:10.1598/RRQ.36.3.2
- Ehri, L.C., & Roberts, T. (2006). The roots of learning to read and write: Acquisition of letters and phonemic awareness. In D.K. Dickinson & S.B. Neuman (Eds.), *Handbook of early literacy research* (Vol. 2, pp. 113-131). New York: Guilford.
- Elkonin, D.B. (1973). U.S.S.R. In J. Downing (Ed.), *Comparative reading: Cross-national studies of behavior and processes in reading and writing* (pp. 551-579). New York: Macmillan.
- Lonigan, C.J. (2006). Conceptualizing phonological processing skills in prereaders. In D.K. Dickinson & S.B. Neuman (Eds.), *Handbook of early literacy research* (Vol. 2, pp. 77-89). New York: Guilford.
- McCarthy, P.A. (1999). *The effects of balanced literacy instructional training: A longitudinal study of reading performance in the primary grades*. Unpublished doctoral dissertation, Marquette University, Wisconsin.
- Pearson, P.D., & Gallagher, M.C. (1983). The instruction of reading comprehension. *Contemporary Educational Psychology, 8*(3), 317-344. doi:10.1016/0361-476X(83)90019-X

McCarthy teaches at Towson University, Maryland, USA; e-mail pmccarthy@towson.edu.

