

**Phonics**  
**and**  
**Spelling**  
*Through*  
**Phoneme-Grapheme**  
**Mapping**

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# Introduction

Educators, eager to implement current reading research outcomes when teaching young students to read, are finding themselves at a crossroads. Teachers have learned that phonemic awareness (the ability to isolate, manipulate, segment, and blend speech sounds) is a critical early skill and the foundation for developing decoding and spelling ability. A commonly employed phoneme awareness task is to ask students, using colored cubes or tiles, to isolate and touch one cube or tile for each sound in a word. However, teachers observe that even with this enhanced ability to segment the sounds in words, some students do not readily transfer this skill to their independent reading and writing. Educators ask, “How do we take students to the next level of connecting sounds with the letters that represent those sounds in written text, especially when there is not a one-to-one correspondence between the sounds and letters?” *Phonics and Spelling Through Phoneme-Grapheme Mapping* provides an accessible, trustworthy, and systematic process to help take students to successful levels of understanding and applying the sound/symbol relationships found in the English language.

## Research on Combined Phoneme and Symbol Instruction

*Phoneme-Grapheme Mapping* is based on research that supports the combined—not isolated—instruction of the phonemes in words with the letters used to represent them. We have learned through research on phoneme awareness that early instruction linking speech sounds to alphabetic symbols strengthens phonemic awareness, decoding skills, spelling, and word reading. Here are a few of the many supportive findings in the literature:

- Instructional models with explicit teaching of phonologic and orthographic relationships produced results wherein students demonstrated advanced knowledge of the internal structures of words (Blachman, Schatschneider, Fletcher, & Clonan, 2003).
- When students with deficit word level skills received small group, explicit instruction in phonemic awareness and phonemic decoding, they achieved scores solidly within the average range (Torgesen, Rashotte, Alexander, & MacPhee, 2003).

- When phoneme awareness activities are paired with the alphabetic symbols that represent the sounds, phonemic awareness abilities and decoding abilities improve more rapidly (Adams, 1990).
- The skills involved in phoneme segmenting and blending bear a strong relationship to word recognition skills (Perfetti, Beck, Bell, & Hughes, 1987).
- The effectiveness of phonological training is significantly improved when students are assisted to directly apply their phonemic knowledge to reading and spelling tasks (Bradley & Bryant, 1985).
- Students in programs that emphasize phonemic awareness and the alphabetic code outperform students who do not receive this instruction on measures of invented and standard spelling (Tangel & Blachman, 1995).

## English Isn't Crazy

A common misunderstanding among the general community of English spellers is that the English orthography is crazy, having unpredictable and unreliable sets of rules and exceptions that make it impossible to understand. This misconception has fueled a belief system among educators that our language has so many exceptions that rules shouldn't be taught at all. Yet the spelling patterns of English *are* predictable and logical, if one understands the layers of language represented in our English orthography. Spelling predictability, in fact, is based on these factors: sound/symbol correspondences, syllable patterns, orthographic rules, word meaning, word derivation, and word origin (Moats, 2000).

Table 1 is based on a 1966 study by Hanna, Hanna, Hodges, & Rudorf of the 17,000 most commonly used words. As you can see, approximately 96 percent of the words in our language can be accessed through explicit instruction in phonology, word patterns, structural analysis, and categories of syllable types. The lessons in *Phoneme-Grapheme Mapping* teach students to read and spell through a highly motivational, concrete, and carefully monitored format that helps students to become metacognitive about the rules and patterns of written English. Although the lessons are often used to teach spelling, teachers see an immediate transfer to independent decoding, including decoding of multisyllabic words.



Table 1 Spelling Pattern Predictability			
Characteristic	Description	Example	Portion of English Words
<b>Predictable and consistent</b>	<ul style="list-style-type: none"> <li>By sound-symbol correspondences alone</li> </ul>	<ul style="list-style-type: none"> <li>pan, must, that</li> </ul>	Approximately 50% of words in our language.
<b>Predictable and frequent—one error per word if only phoneme/grapheme mapping is used</b>	Determined by <ul style="list-style-type: none"> <li>Position of a phoneme in a word (initial, medial, or final)</li> <li>Syllable stress</li> <li>Phonemic environment (e.g., soft <i>c</i> and <i>g</i>)</li> </ul>	<ul style="list-style-type: none"> <li>rain vs. ray</li> <li>baby vs. bake</li> <li>con <i>TENT</i> vs. <i>CON</i> tent</li> <li>cent vs. cost</li> <li>gym vs. cage</li> <li>back vs. bank</li> <li>wrench vs. watch</li> </ul>	An additional 36% of the words in English are then “regular.”
<b>Predictable but infrequent</b>	<ul style="list-style-type: none"> <li>Word relatives/word families</li> </ul>	<ul style="list-style-type: none"> <li>kind, mind, blind</li> <li>old, fold, mold</li> </ul>	
<b>Morphologically complex</b>	<ul style="list-style-type: none"> <li>Compound words</li> <li>Affix-root structure</li> <li>Latin/Greek derivation</li> <li>Rule-based generalizations</li> <li>Foreign language spelling patterns</li> </ul>	<ul style="list-style-type: none"> <li>caretaker, playfellow</li> <li>undoing, refilled</li> <li>circle, circus, circular</li> <li>stuff, fill, pass, liked, happily, running</li> <li>chaise, buffet, beautiful</li> </ul>	Another 10% of so-called “irregular” words are explained.
<b>Odd, truly unpredictable spellings</b>	<ul style="list-style-type: none"> <li>Leftovers from our Anglo/Saxon heritage</li> </ul>	<ul style="list-style-type: none"> <li>of, aunt, does</li> </ul>	Approximately 4% of words in our language.

Source: Adapted from *Speech to Print: Language Essentials for Teachers* (2000) by Louisa Cook Moats, from a study by Hanna, Hanna, Hodges, & Rudorf (1966) of the 17,000 most commonly used words. Adapted by Kathryn Grace, 2001.

## Getting Started With Phoneme-Grapheme Mapping

*Phonics and Spelling Through Phoneme-Grapheme Mapping* provides lessons for a wide range of reading and spelling skill levels. It is organized by syllable type, with lessons that provide simple to more complex word items; therefore, any one lesson can be adapted for young to adult students through word item selection—simpler words for younger students and more complex words for more capable



students. The lessons can be taught in sequence as presented in the manual, or they can be presented randomly as needed to support learners in the acquisition or strengthening of a particular phoneme-grapheme relationship. Make sure that students know the syllable types represented by the lessons you choose. Each lesson follows an organized and consistent format:

- **Tutorial.** Most lessons begin with a teacher tutorial. Many of the presented concepts may be unfamiliar; a quick refresher may be in order. Take time to familiarize yourself with the lesson's sound/symbol concepts and unique mapping procedures. The tutorials are clearly written and simply referenced with bullets and highlighted points for your quick reference.
- **Teach.** Some lessons provide explicit guidelines for teaching students the lesson concept.
- **Mapping Procedure.** Each lesson illustrates phoneme-grapheme mapping of the target spelling concept. Target concepts are highlighted in gray in each lesson. Sometimes syllable types are shaded, as in the case of concepts involving open syllables.
- **Word List.** Comprehensive word lists supply many word options for you to choose from when compiling word lists for students. If you are a primary teacher, select one-syllable words for use at the beginning of lessons and progress to multisyllabic word choices as each concept becomes solidified.

### **Prerequisite Skills for Students**

Students who have been exposed to a regular phonological awareness regimen and are beginning to make associations between sounds and their corresponding spellings are ready for phoneme-grapheme mapping. Students benefit from phoneme-grapheme mapping when they are able to:

1. Orally segment words containing up to three phonemes: "Tell me the sounds in *wave*."
2. Auditorily blend three phonemes: "/c/ /ü/ /p/. What word?"
3. Delete initial, final, and medial sounds in orally presented words: "Say *cat* without the /c/. Say *mate* without the /t/. Say *break* without the /r/."
4. Accurately recognize and produce letter sounds: (Students see flash cards.) "Tell me the sounds of these letters."
5. Distinguish between and among short vowel sounds: "*Cop. Cap.* Which word has /ö/? Which word has /ä/?"

## Phonics Expectations by Grade Level

Use these general guidelines (Grace, 1992) to plan appropriate phoneme-grapheme lessons for students in grades K–8. For example, most first grade students benefit from lessons that teach the bulleted items under “First Grade” below.

### Kindergarten

- Attaining concepts of sentence, word, letter sound.
- Letter naming, sound correspondence, letter writing, hearing initial sounds in words.
- Writing one’s name; recognizing names of others.
- Beginning phonics instruction; initial and final consonants with two vowels (short *a* and *o*).

### First Grade

- All letter/sound correspondence for single consonants, blends, digraphs.
- Short vowels; consonant-vowel-consonant (CVC); closed, open, and silent -e syllables.
- Using syllables to sound out longer words.

### Second Grade

- Vowel teams, *r*-controlled vowels.
- Structural analysis skills (base words, common prefixes and suffixes).
- Vowel team, *r*-controlled syllables, consonant -*le*.

### Third Grade and Up

- Knowledge of all six syllable types.
- Multisyllabic word practice.
- Increased word item complexity and structural analysis.
- Relating syllabication skills to unfamiliar content and text.

### Adolescents

- Adolescents and adults who can’t read the newspaper continue to have difficulties with vowels and multisyllabic words.

### Matching Lessons to Student Skill Levels

This book provides lessons for a wide range of reading and spelling skill levels. It is organized by syllable type, with lessons that provide simple to more complex

word items. Therefore, it can be adapted for young to adult learners. Find your students' skill levels on Table 2 to help you plan the most appropriate lessons.

*Remember:* Oral segmentation skills and alphabetic knowledge are important precursors to using phoneme-grapheme mapping. Therefore, these skills are not included in Table 2.

Table 2 is organized by four skill level phases borrowed from the work of L. Ehri (1996), which includes approximate corresponding grade levels. An emergent, or logographic, phase is not included in this instructional blueprint because prerequisite skills for phoneme-grapheme mapping include accurate recognition and production of letter sounds and a readiness to distinguish between and among short vowel sounds.

Find your students' approximate skill levels using the descriptions of the four stages below and then refer to Table 2 for lesson planning. Units and lesson numbers are listed after each key concept in the table.

**Early Alphabetic.** Kindergarten and early first grade. Phonics instruction begins during this time. Students improve their knowledge of initial and final consonants and begin to include one or two vowels accurately in their decoding and spelling.

**Transitional/Late Alphabetic.** Grades one and two. Students are learning all letter/sound correspondences for single consonants, blends, and digraphs. They are ready to learn the short vowels, CVC patterns, the six syllable types, base words, and common prefixes and suffixes. These students begin to use syllables to sound out longer words before transitioning to the mature alphabetic phase.

**Mature Alphabetic.** Grades three and four. Students know the six syllable types and are introduced to the majority of phonics principles through these six basic syllable types. They are also introduced to "a few good spelling rules" (Unit 8) to help them manipulate more complex suffixes. The continuum provides direction for teaching students who are beginning to mix and match syllable types to read and spell accurately.

**Multisyllabic/Orthographic.** Grade four through adult. Students learn more complicated phonics principles, such as syllabic consonant *-m*, vowels as placeholders, more complex spelling rules, and common exceptions, as well as a variety of more complex affixes and word derivations. They become adept at recognizing and manipulating the six basic syllable types in multisyllabic words.

<b>Table 2 Word Analysis Stages</b>				
	<b>Early Alphabetic</b>	<b>Transitional/Late Alphabetic</b>	<b>Mature Alphabetic</b>	<b>Multisyllabic/Orthographic</b>
<b>Syllables</b>	Auditory Blending, Unit 1	Closed Syllables, Unit 1	The -ve Rule, 3:6	Closed Syllables in Multisyllabic Words, 1:29
		Open Syllables, 2:1	Consonant -le Syllable, Unit 5	Syllabic Consonant -m, 1:30
		The Silent -e Syllable, Unit 3	Vowel Team Syllables, Unit 6	Combined Syllable Types, 3:4
		Closed/Silent -e Syllables, 3:1	Vowel r Syllables, Unit 7	
<b>Vowels</b>	Short vowels 1:1	Short Vowels, 1:1	y as a Vowel, 1:2	Schwa, 1:3
		One-Syllable Silent e Words, 3:2	Vowels as Placeholders for Soft c and g, 1:18	Busy Silent -e and Past Tense -ed, 3:5
		Vowels Preceded by Consonant w, 1:4	Vowel r and Silent -e Patterns, 3:3	When Vowel y Replaces Vowel i, 3:7
				Versatile Vowel i, 2:2
		Long Vowel a, 6:1	Long Vowel u as /y/ /ōō/ 6:5	
		Long Vowel e, 6:2	Long Vowel u as /ōō/ 6:6	
		Long Vowel i, 6:3	Three Sounds of ea, 6:7	
		Long Vowel o, 6:4	Vowel Diphthongs, 6:8 oi/oy and ou/ow	
			Vowel Teams au and aw, 6:9	
			Two Sounds of oo, 6:10	
		r-Controlled ar, 7:1	r-Controlled er, 7:3	r-Controlled Vowels and Consonant w, 7:6
		r-Controlled or, 7:2	r-Controlled ir, 7:4	
			r-Controlled ur, 7:5	
<b>Consonants</b>	m, l, s, and t, 1:5	Initial y and z, 1:9	Soft c and g, 1:17	ch as /sh/, 1:13
	p, h, f, and c, 1:6	Consonant Oddities qu, 1:10	ch as /k/, 1:13	Double Consonants in the Middle of Words, 1:28
	n, b, r, and j, 1:7	Consonant Oddities x, 1:11	Silent Consonant Patterns, 1:31	
	v, w, k, Hard g, 1:8			
	Consonant d, 1:8			
<b>Consonant Blends</b>	Blending While Decoding, Unit 1	Initial Blends, 1:20	Consonant Three-Letter Blends, 1:22	The Syllabic Consonant -m, 1:29
		Final Blends, 1:21	Digraph Blends, 1:24	
		Blends That Appear at the Beginning and End of Syllables, 1:23	Blend Oddities, 1:25	
<b>Digraphs</b>		Digraphs (sh, ch, th, wh, ph), 1:11	ch or tch for /ch/, 1:14 k or ck for /k/, 1:16	ch as /ch/ and /sh/, 1:12
<b>Word Relatives</b>		-ild, -ind, -old, -olt, -ost, 1:26	-ald, -alk, -all, -alt, 1:26	
		-ald, -alk, -all, -alt, 1:27		
<b>Affixes</b>	Plural s, 4:2	Inflectional Suffixes, Unit 4	Common Affixes 4:1	Common Derivational Suffixes, 4:5
	Affixo, 4:1	Inflectional Suffix -ed, 4:4 Affixo, 4:1	Common Prefixes, Unit 4 Affixo, 4:1	Rebellious Suffixes, i.e., -tion, -sion, -ition, 4:10 Affixo, 4:7
<b>Spelling Rules</b>		-ff, -ll, -ss, and -zz, 1:15	ch or tch for /ch/, 1:14	
		The -ve Rule, 3:6	-ge or -dge for /j/, 1:19	Accent or Stress, 8:2
		Silent -e Rule, 8:4	Doubling Rule With Single-Syllable Base Words, 8:1	Doubling Rule for Words of Two or More Syllables, 8:3
			Change the y to i Rule, 8:5	

## Planning for Phoneme-Grapheme Lessons

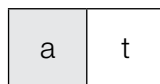
### Groups and Schedule

Phoneme-Grapheme mapping works best in small groups but can be used successfully in whole-class settings when enough time, practice, and immediate feedback are provided. Plan for three days of instruction per week with phoneme-grapheme mapping. The most time (25–30 minutes) is needed on the introductory day; less time (15–20 minutes) is needed on two additional days that week.

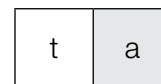
### Materials

**Phonics and Spelling Through Phoneme-Grapheme Mapping.** The lessons in this book are organized by phoneme-grapheme concept. The teacher tutorials (**TEACH** sections) offer teaching tips and lists of concept words accompany the lessons. Explicit mapping procedures are provided for each newly introduced phoneme-grapheme pair.

**Six to Ten Square Tiles for Each Student to Manipulate.** The number of tiles depends on the number of phonemes in the concept words because each tile stands for just one sound. Once students develop one-to-one correspondence between the tile and the sound the tile represents, they can use a separate but consistent color (e.g., red) to represent a vowel sound. This is especially useful when teaching the concept of a syllable because each syllable has just one vowel sound; therefore, it has just one vowel tile (e.g., red tile). Using a predetermined color to represent a vowel sound is also an excellent way of helping students differentiate between open and closed syllables as highlighted in the following examples, where the vowel sound is shown in the gray shading.



A vowel is followed by a consonant in a closed syllable.  
The vowel sound is short.



A vowel is found at the end of an open syllable. The vowel sound is long.

**Phoneme-Grapheme Mapping Paper.** One sheet for each student in the group (see Appendix B).

**Pencils.** Provide plain and colored pencils.

**Overhead Projector.**

**Overhead Transparencies.** Copy phoneme-grapheme mapping paper onto transparencies and create transparent tiles for demonstration on the overhead.

## Step-by-Step Process

Each phoneme-grapheme mapping lesson follows a step-by-step process over three days. Read through the following steps to develop familiarity with the phoneme-grapheme lesson. Then read through the scripted lesson that follows for a more comprehensive picture of an entire phoneme-grapheme lesson. The lesson procedure is synthesized in Appendix A. You can duplicate and laminate the list of steps in Appendix A for use while teaching until the lesson process becomes automatic.

**Day One: Teach Concept and Segment Sounds.** Compile lesson word list. Choose words appropriate to students' reading levels. Provide students with colored tiles.

1. **TEACH:** Teach the new sound, spelling concept, and pattern.
2. **SEGMENT:** Instruct students to use colored tiles to segment dictated words into phonemes, or sounds. Tell students the tiles always represent sounds—*not* letters—in these lessons.
3. **CHECK:** Check each word immediately by having students touch and say each sound. Circulate among the group to ensure that the students are matching the appropriate sound to each tile.

**Day Two: Read Words; Find, Circle, and Say Target Sound.** Provide each student a list of the words used on Day One.

1. **READ:** Instruct students to independently read the list silently. Then lead the group to read the words chorally.
2. **FIND AND CIRCLE THE SOUND:**
  - a. Instruct students to find, point to, and say the target sound or phoneme. "Say the sound."
  - b. Instruct students to find, circle, and say the letter(s) for the target grapheme in each word. "Say the letter(s)." Instruct younger students to say the *sounds* when circling the letters.

**Day Three: Introduce Phoneme-Grapheme Mapping.** Provide tiles and phoneme-grapheme mapping paper. Prepare Day One word list for dictation.

1. **SEGMENT:** Dictate word. Students say each sound and position one tile in each grid square for each sound, or phoneme, that is heard. (Be sure students understand that the number of grid squares covered by the tiles equals the number of sounds in a word, *not* the number of letters.)
2. **SAY SOUND AND GRAPHEME:**
  - a. Point to the first tile. Say, “What do you hear?” Students say the sound, *not the letter*.
  - b. Ask, “What do you write?” Students say grapheme, move the tile up, and write the grapheme in the square.
  - c. Repeat a and b for each sound/spelling until the whole word is written. When the word is completely written, students should have the exact spelling of the word on the paper, with the letters distributed across the boxes based on their phoneme-grapheme correspondences.
3. **REPEAT:** Repeat the process with the remainder of the lesson’s words.
4. **REVIEW:** Instruct students to restate in their own words the sound/spelling relationship from the lesson. Ask them if they can think of any other words not on their list that might have this special relationship, and have them try to list some on a separate piece of paper. This will enable you to see to what degree students are making connections to their own vocabulary.  
  
(A step-by-step guide for you to laminate and use in daily instruction can be found in Appendix A.)

## Sample Lesson

The following dialogue between students and their teacher illustrates the four steps of the phoneme-grapheme lesson. Each new lesson begins with explicit teaching about a target sound and its associated spelling or a spelling concept.

### Day One: Teach Concept and Segment Sounds.

**TEACH**

Teach the new sound, spelling concept, and pattern.

**Teacher:** Today we are going to learn about digraphs. A digraph is two letters that spell one sound. *Di-* at the beginning of *digraph* means *two*, and *-graph* in the second syllable of *digraph* means *written down*. The one sound represented by a



digraph is a unique sound to the letters used in the digraph. For example, today we will learn about the digraph **sh** (*says letter names and writes digraph on the board*). This digraph is spelled with **s** and **h**, but when we say the sound we don't hear /s/ or /h/. Instead, we hear a completely new sound that is unlike /s/ or /h/. Remember, there is one sound for these two letters together: /sh/. Say it with me.

**Teacher and students:** /sh/

**Teacher:** (*Hands out six to ten colored tiles to each student.*) Get ready to segment the sounds in some dictated words that have digraphs. Line up your tiles on the table in front of you like this (*lines up transparent tiles on the overhead*).

**SEGMENT:** Instruct students to use colored tiles to segment dictated words into phonemes, or sounds. Tell students the tiles always represent sounds—*not* letters—in these lessons.

**Teacher:** Listen while I say a word and you segment the word into its phonemes. *Shop*.

**Students:** (*pull down one tile for each sound*) /sh/ /ō/ /p/.

**CHECK:** Check each word immediately by having students touch and say each sound. Circulate among the group to ensure that the students are matching the appropriate sound to each tile.

**Teacher:** Touch each tile and say the sounds with me.

**Teacher and students:** /sh/ /ō/ /p/.

**Teacher:** Push your tiles up. Here's the next word: *crash*. Pull down one tile for each sound you hear. Good. Touch each tile and say the sounds with me (*circulates to check each individual's phoneme segmentation*).

**Teacher and students:** /c/ /r/ /ă/ /sh/. (*Teacher reads the remainder of the digraph words; students segment the sounds independently and then check immediately as a group with the teacher.*)

## **Day Two: Read Words; Find, Circle, and Say Target Sound**

*Teacher provides each student a list of the words used on Day One.*

**READ:** Instruct students to independently read the list silently. Then lead the group to read the words chorally.

**Teacher:** Here is a list of the words that we just segmented with our tiles. Please read them to yourselves. Raise your hand if you need help reading any of the words (*provides time for students to read the words*). Now let's read them together one at a time and find the digraphs. Put your finger on the first word; say the word.

**Teacher and students:** *Shop*.

**FIND AND CIRCLE THE SOUND:**

- a. Instruct students to find, point to, and say the target sound or phoneme.  
“Say the sound.”

**Teacher:** Find /sh/. Point to it. Say the sound. (*Teacher models the procedure on the overhead.*)

**Students:** (*Point to sh*) /sh/.

- b. Instruct students to find, circle, and say the letter(s) for the target grapheme in each word. “Say the letter(s).” Instruct younger students to say the *sounds* when circling the letters.

**Teacher:** Circle the letters that spell /sh/. Say the letter names. (*Teacher models this on the overhead.*)

**Students:** *Point to sh in shop, and circle the letters sh.*

**Teacher:** (*Leads students through the Find and Circle process for each word.*)

**Day Three: Introduce Phoneme/Grapheme Mapping**

**Teacher:** (*Provides phoneme-grapheme mapping paper and tiles.*) We have spent some time moving tiles to show the number of sounds in our words. We have also read the words as a group. We are now ready to see how the sounds in these words match up to the letters we use to represent those sounds. What do you notice about this grid paper I have given you?

**Students:** There are little squares on the paper.

**Teacher:** Yes, and read the title at the top.

**Students:** Phoneme-Grapheme Mapping (or Sound/Spelling Boxes—Primary Paper).

**Teacher:** Listen: *phoneme, telephone*. Do you hear a similar word part in these words?

**Students:** *Phone*.

**Teacher:** Yes. What do you think that word part, *phon(e)*, means?

**Students:** Something you hear?

**Teacher:** Yes, *phon(e)* means *sound*. There are lots of words that have this word part *phon(e)*: *phonics, microphone, megaphone, and symphony*. What same word part do you hear in the two words *grapheme* and *autograph*?

**Students:** *Graph*.

**Teacher:** Right. What do you think *graph* means? (*Students contribute their ideas.*) *Graph* means something that is recorded in print. *Graph* is in the words *graphics, biography, telegraph, and photograph*. These words are used to de-

scribe something that is recorded visually—like your autograph, or your written name, that is recorded on paper for others to see. Today, we are going to work with the sounds (phonemes) and letter combinations (graphemes) in words using this phoneme-grapheme paper to record what you hear *and* see!

**SEGMENT:** Dictate word. Students say each sound and position one tile in each grid square for each sound, or phoneme, that is heard. (Be sure students understand that the number of grid squares covered by the tiles equals the number of sounds in a word, *not* the number of letters.)

**SAY SOUND AND GRAPHEME:**

- a. Point to the first tile. Say, “What do you hear?” Students say the sound, *not the letter*.
- b. Ask, “What do you write?” Students say grapheme, move the tile up, and write the grapheme in the square.

**Teacher:** Line up your sound tiles above the first row of boxes like this (*models the process on the overhead*). I’ll say a word and you segment all of the sounds in the word. Use your tiles. Each box on the grid represents one sound. Place each tile in its own square. One sound. One tile. One square. First word: *shut*.

**Students:** /sh/ /ü/ /t/ (*touch and move tiles into the sound boxes, one sound per box in the first row on the grid*).

**Teacher:** (*points to the first square/tile on the overhead*) What do you hear?

**Students:** /sh/.

**Teacher:** What do you write?

**Students:** s, h (*say letter names*).

**Teacher:** Move the tile up and write the grapheme *sh* in the square.

- c. Repeat a and b for each sound/spelling until the whole word is written. When the word is completely written, students should have the exact spelling of the word on the paper, with the letters distributed across the boxes based on their phoneme-grapheme correspondences.

**Teacher:** (*points to the second square*) What sound?

**Students:** /ü/.

**Teacher:** What do you write?

**Students:** *u* (*say letter name*).

**Teacher:** Move the tile up and write the grapheme *u* in the square. (*Points to the third square.*) What sound (phoneme)?

**Students:** /t/.

**Teacher:** What do you write?

sh	u	t
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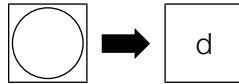
**Students:** *t* (say letter name).

**Teacher:** Move the tile up and write the grapheme *t* in the square.

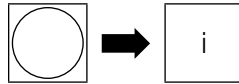
**REPEAT:** Repeat the process with the remainder of the lesson's words.

**Teacher:** *Dish*.

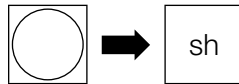
**Students:** (place one tile in each square on the next row) /d/ /i/ /sh/.



**Teacher:** (points to the first square) What do you hear? /d/. What do you write? *d*.



**Teacher:** (points to the second square) What do you hear? /i/.  
What do you write? *i*.



**Teacher:** (points to the third square) What do you hear? /sh/.  
What do you write? *s*, *h*.

### PHONEME-GRAPHEME MAPPING

Following is a completed phoneme-grapheme mapping grid for this lesson. Notice that words are selected to demonstrate both initial and final positions of the sound/spelling concept /sh/. Blends are represented as separate speech sounds. This process provides the opportunity for students to strengthen the basic phoneme-grapheme skill—one sound per box, one grapheme per box, even though some sounds are spelled with more than one letter.

sh	u	t	
d	i	sh	
c	r	a	sh
b	l	u	sh

**REVIEW:** Instruct students to restate in their own words the sound/spelling relationship from the lesson.

**Teacher:** Great job segmenting words with digraphs and writing the graphemes for those sounds! Look at all of the words you spelled and can read! Now, tell me in your own words about the special sound and spelling you have learned.

**Students:** We learned that /sh/ is one sound but we use two letters to spell that one sound. That's why we only use three sound boxes on the phoneme-grapheme mapping paper. Even though *shut* has four letters, *s* and *h* go together in one sound box. It's a digraph. One sound, but two letters spell that sound.

**Teacher:** Can you think of any other words that have the digraph /sh/?

**Students:** *brush, shin, dishpan.*

**Teacher:** You are brilliant students!

## Teaching Syllables

As students begin to learn about sounds and blending, they should also start to learn about syllables. Research has established that orally segmenting words into syllables generally precedes oral segmentation of words into sounds. The latter is a well-known precursor to decoding and encoding and is the primary focus of this text.

Good readers are often defined as those who can read multisyllabic words with relative ease and comprehension; therefore, it is imperative to teach students about syllables as a component of early reading instruction. First grade is not too soon to begin this instruction. Understanding of closed and open syllables as well as silent-*e* syllables is easily attainable for most students by the end of first grade. (Closed and open syllables together make up almost 75 percent of English syllables; Stonback 1992.) Access to these syllable types allows students to read more than 50 percent of the words they encounter.

### Early Instruction

Clapping syllables is an effective way to reinforce the parts of spoken words. However, young students often do not clearly understand that the *written* word can be segmented and that segmentation can be used as an aid to pronunciation. Students need explicit instruction in *listening* for, *clapping* out, and *visually segmenting* words into syllables for both reading and writing. These practice routines need to be used on an ongoing basis during reading and spelling lessons.

## Auditory Blending

Phoneme-grapheme mapping requires that students are able to auditorily blend. This means that when given the auditory (not visual) information /l/ /ee/ /f/, students are able to blend the sounds together and say the word *leaf*. Teaching auditory blending initially takes place at the syllable level (*pic-nic = picnic*), and then at the onset rime level (*b-ird = bird*), and finally at the complete phoneme segmentation level (/m/ /oo/ /n/ = *moon*). Include auditory blending exercises at the syllable and onset rime levels in daily word work routines with young students. Once students are capable at this level, move to the complete phoneme segmentation level for practice.

## Blending While Decoding

When students know the sounds for at least one vowel and two or three consonants, you can begin teaching them how to blend sounds into simple words *while decoding*. This can be a really exciting time!

Here's one way to begin instruction in blending while decoding:

- Call the vowels (*a, e, i, o, u*) **singers** because they make a sound that keeps on going, like a musical note. Start with the sound of the letter *a* as it sounds in the word *apple*.
- Start with continuing consonants like *m, s, or n* that make sounds that can be prolonged and that can be combined with *a* to make the sound of recognizable words.
- Teach students to blend the vowel and the consonant together to make a word, as in *at*. Then build on that blending skill by adding a consonant at the beginning of the word, as in *bat, rat, fat, sat*.
- If the student meets with frustration at this point, let him/her know you will both try again at a later time. You will probably need to back up on the phonological awareness continuum to phoneme segmentation and/or deletion before you try again to blend letter sounds into words.

Knowing syllable patterns enables students to read and spell longer words in chunks rather than letter by letter, and it helps them decide whether or not suffixes have been added to the base word. Identifying syllable types allows readers to know whether a vowel is short, long, *r*-controlled, a schwa, or a diphthong. Syllable types provide clues to the vowel sounds in words so that we pronounce the vowels correctly in visually similar words such as these:

slop

slope

sloped

slopped

This book is arranged according to the six syllable types common in English spelling. Each unit is developed around one of the syllable types:

closed	open	silent -e
vowel team	r-controlled	consonant -le

Unit 1 covers closed syllables. Before you present the first lesson on short vowels, teach students about syllables.

Present each of the syllable tips below. Accompany instruction with word samples that illustrate the concepts.

- A **syllable** is a part of a word with a vowel sound that makes a beat or a clap when you say the word. The number of syllables in a word is generally equal to the number of *vowel sounds* (not vowel letters) in a word:

<i>ran</i>	one vowel letter, one vowel sound, one syllable
<i>rain</i>	two vowel letters, one vowel sound ( <i>ai</i> represents /ā/), one syllable
<i>concrete</i>	three vowel letters, two vowel sounds (the <i>e</i> is silent), two syllables

- A syllable can sometimes be just one letter, as in *q-go*, *o-pen*, *e-go*, etc.
- A word can sometimes be a syllable itself, as with *in*, *at*, *pin*, *sit*.
- A syllable may be part of a longer word (*At-lan-tic*).
- When *u* appears after a *q* in a word, do not count the *u* as a vowel (e.g., *quit*). (*qu* is a letter team corresponding to two phonemes: /k//w/.)

## Syllable Sorts

Syllable sorts are an effective way to ascertain whether your students have internalized how syllables work. Because the vowel sound is the key component of any syllable, it makes sense to teach students to pay particular attention to the vowel pattern in specific syllables and, ultimately, in whole words.

The Syllable Writing Grid and Syllable Sorting Grid (see Appendix B) are effective tools for instruction, practice, and review of syllable concepts. Students segment their words into syllables and determine the syllable types and vowel sounds using these forms. Through application of these segmentation and sorting procedures, students quickly see if they have segmented a syllable or not, because they see that a syllable has to have at least one vowel to create a vowel sound.



### Using the Syllable Writing Grid

1. Provide students with words that are representative of the syllable types and spellings to which they have been previously introduced.
2. Provide each student a copy of the Syllable Writing Grid form (from Appendix B).
3. Demonstrate how to segment and write each syllable of a word in the boxes. First, second, third, and other syllables are written in order on the grid across a row. See the following examples of student work.

**Syllable Writing Grid**

Scott	Clark				
Az	tecs				
Ham	mock				
Sung	Dynasty	nas	ty		
John	Sab	ot			
Baf	fin	Isl	and		
In	ca				
Cape	Ver	de			
Dar	ce	lo	na		
Aud	son	Riv	er		
gar	lic				
Per	u				
Rob	ert	Scott			
Her	nan	do	de	So	to
Green	land				
foot	hold				
silk	roads				
Red	Sea				
Spain					
Gi	brat	tar	Strait		
Meri	Wether	Lew	is		

### Using the Syllable Sorting Grid

1. Provide each student a copy of the Syllable Sorting Grid (from Appendix B).
2. Provide words for students to sort. Compile a list that is representative of the syllable types and spellings that have been taught and may need review.
3. Read the words together. Segment them into syllables and instruct the students to color the vowel within each syllable orange. The orange vowels serve as a focal point for deciding which vowel pattern is represented in the word. For example, a vowel team is usually signaled by two vowels together. If there is a syllable with a vowel before the consonant with a final orange e, a silent -e syllable is visible (with some exceptions: *house*, *mouse*, *cause*, etc.).
4. The words can then be cut apart into their component syllables and sorted onto the Syllable Sorting Grid. See an example of a student's work on the following page.

The explicit guidance students receive through this sorting and classification process helps bring their knowledge of syllables to a more automatic level that is useful when reading and spelling multisyllabic words.

Syllable Sorting Grid

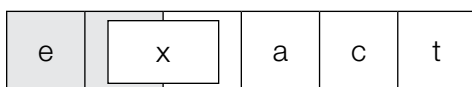
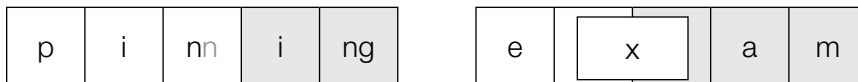
Name: \_\_\_\_\_ Date: \_\_\_\_\_

<p><b>Closed syllables</b>                  These syllables have a vowel followed by one or more consonants. The vowel sound is short and spelled with one letter.</p> <p>scott Az tecs hold                  Rob Red                  ham Scott Sung Dynasty                  John eral Cabot FN                  Bat fin land lic is                  Hud nan land son</p> <p>Schwa Closed Syllables:                  mock</p>	<p><b>Open syllables</b>                  These syllables end in a single vowel. The vowel sound is long, or sounds like the vowel's name.</p> <p>bo na do so to                  Gi ca de ce</p> <p>Schwa Open Syllables:                  u de</p>	<p><b>Silent -e syllables</b>                  These syllables have one vowel, followed by one consonant and a final e. The first vowel is long. The e is silent.</p> <p>cape                  isle</p> <p>Schwa Silent -e Syllables:</p>
<p><b>Vowel team syllables</b>                  These syllables contain teams of letters that come together to make a distinct vowel sound (ou as in out, oi as in oil, eigh as in eight.) Sometimes they can be a vowel team pair, as in team and boat.</p> <p>Sea Spain Strait                  Green foot roads</p> <p>Schwa Vowel Team Syllables:</p>	<p><b>r-controlled syllables</b>                  These syllables contain a vowel followed by an r. The r controls the sound of the vowel.</p> <p>ar or er ir ur</p> <p>Clark Ver Bar                  River gar Per bert                  Meri wether</p> <p>Schwa r-Controlled Syllables:</p>	<p><b>Consonant -le syllables</b>                  These syllables end in a consonant followed by -le, as in the -ble in table. The le sounds like /ul/.</p> <p>All consonants -le syllables have a schwa vowel, so they are placed in the main syllable box above.</p>

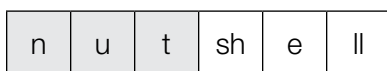
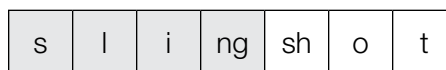
## Periodic Review of Previously Taught Concepts Is Very Important!

Periodically review skills that you have taught via mapping of multisyllabic words. Follow these guidelines to plan review lessons:

- Plan to include review words in every lesson. For example, when planning the word list for the week’s lesson, add a few words to map from previous lessons. Choose words that will provide the most review (i.e., multisyllable words).
- Plan for review. Every three to four weeks, compile word lists from several lessons for review. Follow the lesson steps. Ask students to state the spelling concept after they map a word.
- Choose words that do not have a one-to-one correspondence between sounds and letters. In other words, include words that contain digraphs, consonant oddities, silent e, and the soft c and g principles. This will let you know if students’ thinking has become metacognitive when working with more complex spelling patterns.
- Instruct students to color the blends in their words green and the digraphs blue to assess understanding and application of the phonics vocabulary.
- When students map multisyllabic words, do not have them skip a sound box between syllables. As words become more complex, they will not always break evenly between boxes. In fact, syllables may even share boxes, as in the following two examples:



- For this reason, instruct students to draw dotted lines between the syllable breaks or to color each syllable within a word a different color as above and below:

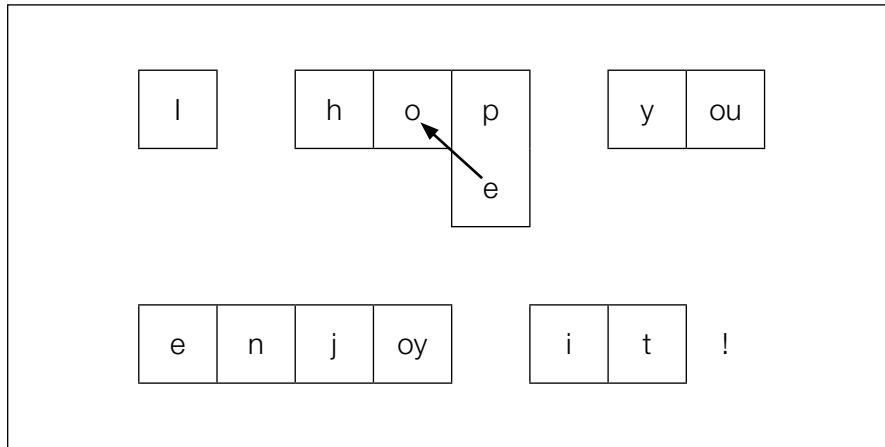


## A Note From the Author

The basic principle of teaching *Phonics and Spelling Through Phoneme-Grapheme Mapping* is:

**The number of sounds in a word is not always equal to the number of letters needed to spell the word.**

Throughout this program, this principle is demonstrated by showing students how to map the intricate relationships between sounds and print. Some sound mappings have their own particular rules that will require explicit modeling. If students receive explicit instruction and practice, phoneme-grapheme mapping can make a difference in their independent reading and writing skills. Concrete manipulatives linked to graphic mapping strategies can help your students build a bridge between their understanding of the sounds they hear and the letters they write. Only then will this process become truly automatic and internalized.



— Unit 1 —

# Closed Syllables

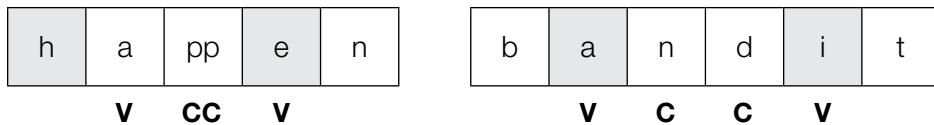
## Introduction to Short Vowel Syllables

A **closed syllable** is a syllable that ends with one or more consonants and has only one vowel that is almost always short (*at, bit*). The consonants serve as a gate that closes off the end of the syllable and keeps its short vowel sound intact. It is important that students be exposed to two-, four-, and five-letter closed syllables and not just regular CVC words (as is often taught in the primary grades). Otherwise, students might assume that a closed syllable always comprises three letters. The following examples demonstrate otherwise.



Two or more consonant letters can follow the short vowel in a closed syllable (*latch, sack, stiff, ball, ledge*). This spelling convention provides extra protection for the short vowel in these single-syllable words. Thus, if a vowel suffix (*-ed, -ing, -er*) is added to these words, the short vowel remains sheltered and the base word does not look like it has a long vowel.

If a closed syllable is connected to another syllable that begins with a consonant, two consonant letters will separate the syllables. This pattern is easy to spot in words with twin consonants such as *better, tennis, and follow*. However, the generalization is also true when the two consonants are different, as in *helmet* and *whisper*. The VCCV sandwich that is made in this relationship of unlike consonants is also a syllable generalization worth teaching to students early.



Closed syllables comprise just under 50 percent of the syllables in running text. Therefore, it is imperative that students learn to discriminate between and among short vowel sounds as early as possible, at least by the end of first grade. (Suggestions for teaching short vowels are included in this text.)

Often struggling high school and adult readers do not know their short vowel sounds but merely use the visual configuration or beginnings and ends of words along with context to predict a word's pronunciation. This inefficient method of word recognition generally takes its toll on fluency as the text becomes more complicated and lengthy. This results in an increased amount of time necessary to complete reading assignments as well as a growing sense of frustration on the part of the reader.



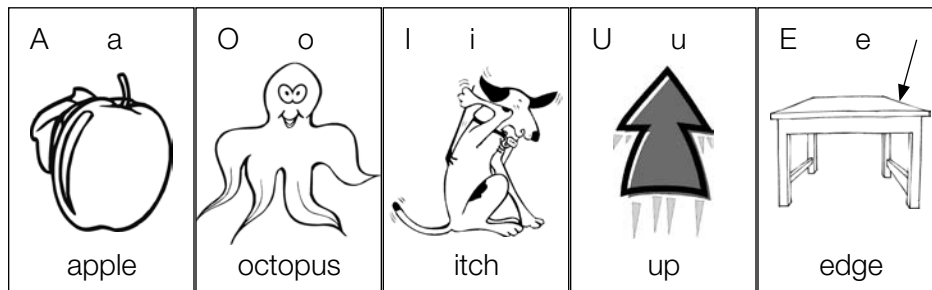
## Teaching Short Vowels

Prior to teaching Lesson 1:1, ensure that students are ready for the mapping procedure. They should be able to differentiate between and among the short vowel sounds. Provide multiple practice opportunities to determine when they are ready. This can be done using the short vowel key words in Table 3 and the activities that follow. Once students can differentiate the vowel sounds, they are ready for Lesson 1:1, Short Vowels. When using key words for short vowel phonemes, avoid nasalized sounds (*n*, *m*), *r*-controlled vowels (e.g., *ar*, *or*, *er*, *ir*, *ur*), and vowels distorted by the consonant that follows the vowel.

**Table 3 Key Words for Short Vowels**

Vowel	Key Word	Words to Avoid
short <i>a</i>	apple, at	ant, bag, air
short <i>e</i>	Ed, edge, echo	egg, elephant
short <i>i</i>	itch, it, icky	igloo, Indian, ink
short <i>o</i>	octopus, ox	on, off
short <i>u</i>	up, us	umbrella, uncle

It is particularly helpful to provide students with picture cue cards to help them discriminate between and among the five short vowel sounds. A blackline master of the short vowel cue cards is provided in Appendix B. Introduce the short vowel sounds one at a time in the following order: short *a*, short *o*, short *i*, short *u*, and finally short *e*.



Short Vowel Cue Cards.

To help students discriminate between and among these very important vowel sounds, play matching games with the vowel cue cards.

## Activities

### Learn the Cue Words

Have students practice segmenting the initial vowel sound from the remaining phonemes in the key word by dragging or pulling the initial sound to their mouth and swallowing (or whispering) the remaining phonemes behind their covered mouths. Doing so allows students to clearly articulate, isolate, and hear the initial short vowel sound. The students affectionately refer to this activity as pulling or stretching the short vowels.

If students have daily practice articulating vowels, first with the short vowel cue cards and then with their eyes closed to see if they can visualize the short vowel cues, it helps make the process of discriminating short vowels easier.

*apple* would become /ă/ ..... *pple* (swallowed)

*octopus* would become /ɒ/ ..... *ctopus* (swallowed)

*itch* would become /ɪ/ ..... *tch* (swallowed)

*up* would become /ʊ/ ..... *p* (swallowed)

*edge* would become /ɛ/ ..... *dge* (swallowed)

### Short Vowel Bingo

Once the students are able to articulate the five short vowel sounds, have them practice discriminating between and among them. Create a simple bingo game using the short vowel cue cards (Appendix B) on a bingo board and six to ten bingo chips or markers. Instruct students to listen for a given vowel sound in the words presented. When students hear the target sound, they cover the cue card representing that sound. Follow a sequential, cumulative path by adding another sound each day. This should be done over several days, depending on how successful your students are with each vowel sound that is added. The purpose of the activity is to build student awareness of the differences between these very important vowels.

**Short /a/ and /o/.** Each student begins with a vowel cue card. (See Appendix B.) The students only discriminate between short *a* and short *o* at first, so cover the pictures for short *e*, *i*, and *u* with small sticky-notes. Using the Short Vowel Word List (Table 4), dictate words that have the short vowel sound in the initial position, because it is more difficult for students to discriminate between short vowels when the vowels are found in the middle of words. Dictate the words randomly. Ask the students to put a bingo chip over the picture that represents the initial sound in the word you dictate. Once students show some proficiency with

the task, add nonsense words so that you are sure they are not doing the activity by merely using their visual memory to reconstruct the spellings.

**Add /i/.** After the students are discriminating between short *a* and short *o*, uncover the short *i* picture on the short vowel cue card. Now, randomly dictate short *a*, *o*, and *i* words (Table 4) to see if the students can accurately discriminate among these three sounds.

**Add /u/.** Uncover the short *u* picture cue and dictate short *u* words from Table 4, as well as words for the previous three vowels.

**Add /e/.** Lastly, uncover the short *e* picture cue and dictate short *e* words from Table 4 as well as words for the previous four short vowels.

This activity should be repeated daily until the students are able to isolate and say the five short vowel sounds when prompted with a short vowel word. Instruct students to visualize the short vowel cues in their head and retrieve the sounds on their own.

**Table 4 Short Vowel Word List for Bingo**

(Vowels are in the initial position.)

<b>Short a</b>	<b>Short o</b>	<b>Short i</b>	<b>Short u</b>	<b>Short e</b>
apple	ox	it	up	Ed
Adam	octopus	itch	us	Eddy
add	otter	Ichabod	<i>ug</i>	echo
Abby	ostrich	is	<i>uck</i>	edge
act	odd	if	<i>ush</i>	Evan
ask	octagon	icky	<i>udge</i>	<i>eck</i>
ash	<i>ob</i>	<i>ip</i>	<i>ub</i>	<i>ep</i>
at	<i>og</i>	<i>ix</i>	<i>ut</i>	<i>et</i>
<i>ack</i>	<i>ock</i>	<i>ick</i>	<i>uzz</i>	<i>eb</i>

More words can be created by simply deleting the initial consonant in basic CVC words (see italic “words” in Table 4). Remember, though, to avoid words with nasalized sounds after the vowel (*in* and *an*), as well as *r*-controlled vowels (*arm*) and those vowels distorted by consonants, such as *g*, *l*, and sometimes *f* (*egg*, *elf*).

### **Short Vowel Picture Sort**

This activity will help students associate short vowel phonemes in both the initial and medial positions. Therefore, phoneme deletion is an important prerequisite skill for this task. The basic premise of all sorting tasks is to help students

compare and contrast word elements by separating the picture examples that go with a particular stimulus sound from those that do not. It is important that you review the names of the pictures with the students before they begin the sort and ensure they are able to pronounce the picture cue names.






To prepare for this activity:

- Photocopy and laminate enough sets of the five short vowel picture mats (see Appendix B) for each student or pair of students.
- Cut the laminated pictures on each sheet apart and place them in envelopes according to their short vowel sound. On the outside of the envelope, glue a picture of the key word for each of the short vowels represented by the pictures in the envelope. For example, place the 12 short *a* pictures in an envelope with a picture of the apple cue glued to the front. Do the same for each of the remaining short vowels, always gluing on the front of the envelope the picture prompts that were introduced at the beginning of the short vowel unit in this book. Each student or pair of students should have five envelopes of short vowel pictures labeled with their corresponding short vowel cue on the outside of the envelope.

To start this activity:

1. Have students compare and contrast only two of the short vowel sounds (short *a* and short *o*). Have them empty the short *a* and short *o* envelopes on to their desk and mix them up. Then have students turn their envelopes over displaying the short vowel picture cue for each vowel sound at the top of their desk. (These envelopes will serve as their sorting column headers for this entire activity.)
2. If this is the first time students have done a sorting activity, you may need to model the process for the entire class or a small group. Select one picture from the short *a* or *o* picture piles and name it for the students. Have students try to isolate the short vowel by deleting the initial consonant(s) if necessary. Help them to match the isolated sound to one of the vowel cue pictures on their envelopes. Repeat this procedure for six to eight of the 24 pictures in this two-vowel sort.
3. When you think students understand the procedure, have them select a picture from their pile and name it. They should then try to isolate its corresponding short vowel sound and place the picture under the correct header. For example, the picture of a bat will be placed under the short *a* envelope header, while the picture of an otter will be placed under the short *o* envelope header.

4. Once students are able to correctly discriminate between short *a* and *o*, add short *i* pictures to the sorting activity and help students to discriminate between and among short *a*, *o*, and *i*.
5. When students are able to differentiate between these three short vowel sounds, add short vowel *u* pictures to the sorting activity and help them to discriminate between and among 4/5 short vowel sounds presented thus far.
6. After several days or weeks (depending on the age and skill level of your students), you should be able to add the short *e* pictures to the vowel sort.
7. After students are able to successfully sort among the five short vowel sounds, you can extend this activity by having them find pictures in magazines that represent the five short vowel sounds and asking them to glue them on a large classroom wall chart (see the example below) that has the five short vowel cues as headers for the five columns.

A a	O o	I i	U u	E e
 apple	 octopus	 itch	 up	 edge

The following list will help you select additional pictures from other sources for this activity. In multisyllabic words, students match the vowel sound in the first syllable.

a

o

i

u

e

<u>a</u> stronaut	<u>o</u> ctopus	itch	up	edge
ax	ox	sick	tub	echo
alligator	<u>o</u> tter	pin	cub	Ed
<u>a</u> pple	mop	pig	sun	pet
rat	<u>s</u> occer	wig	cup	peg
mad	fox	six	pup	ten
sad	dog	lip	bus	jet
mat	rod	zip	tux	net
gas	<u>d</u> olphin	bib	mud	vet
fan	log	hip	jug	bed
cat	frog	rib	gum	<u>E</u> skimo
pan	<u>o</u> strich	fin	<u>u</u> mbrella	wet
hat	box	stick	<u>s</u> ubmarine	web
bag	clock	dig	mug	men
nap	blocks	kid	rut	hen
<u>s</u> axophone	golf	sit	bug	wren
clap	top	mix	hug	pen
trap	<u>l</u> obster	brick	rug	keg

# Short Vowels

**TUTORIAL** Vowels are a group of *speech sounds* that are found in all English syllables. (Some syllables are spelled with syllabic consonants, as in *chasm* and *rhythm*.) A vowel forms the nucleus of a syllable, and consonants are formed around that vowel sound. Vowels are made with an open mouth, and you can say them for as long as you can breathe—that is why they are called **continuants**. Opera singers often sing short vowels when practicing their scales. Short vowels comprise the majority of vowel sounds found in the early grades because they are found in closed syllables (VC and CVC) words. They are also frequent in multisyllabic words. Closed syllables (those containing short vowels) are the most commonly occurring syllable type in English.

## TEACH

“Vowels are a group of speech sounds that are found in all English syllables. Vowels are made with an open mouth, and you can say them for as long as you can breathe. Say *paaaaaaaaaaaaaat*.” Instruct students to say it with you. Do the same with *sock*, *bug*, and *jet*, holding the vowel as long as the breath lasts.

“Closed syllables have one vowel letter, and it makes the short sound like on our cue cards. When we look at the word, the vowel is closed in at the end of the word (or syllable) by one or more consonants.” Show and discuss with students *pat*, *sock*, *bug*, and *jet*. Instruct students to tell you the characteristics of a closed syllable.

On Day One, when segmenting the sounds of words with tiles, instruct students to place an orange tile where they think they hear a vowel sound, even if they are not yet able to discriminate the correct one. This activity establishes the principle early that each word contains a vowel sound.

*Note:* Depending on the students’ skill levels, phoneme-grapheme mapping lessons with the Short Vowel, Closed-Syllable Word List that follows may take several weeks—one week for each of the short vowel sounds and then a week or two working on words with a combination of the short vowel sounds. Start with short *a* words, then move on to those containing short *o*. Next, work on short *i* and short *u* words,

leaving short e until last. Short e is the most difficult short vowel to discriminate. Mapping procedures are presented for each short vowel in the word list.

Short Vowel, Closed-Syllable Word List													
Short a			Short o		Short i		Short u		Short e				
a	t		g	o	t	i	t	r	u	b	f	e	d
lap	hag	map	cot	mop	bib	Tim	cub	bun	web	jet			
yam	lag	nap	dot	pop	fib	fin	rub	fun	bed	let			
van	nag	yap	got	top	rib	pin	sub	gun	fed	met			
ran	sag	cab	hot	cod	bid	sin	tub	nun	led	net			
fan	tag	jab	jot	nod	did	tin	bud	run	red	pet			
pan	cat	wax	lot	rod	hid	win	mud	sun	Ted	set			
fat	hat	ax	not	pod	kid	dip	suds	cup	beg	vet			
tan	mat	fax	pot	sod	lid	hip	bug	hup	leg	wet			
pat	pat	lax	rot	bog	rid	lip	dug	pup	Meg	yet			
tap	rat	lap	tot	cog	Sid	nip	hug	bus	peg	den			
rap	sat	yap	cob	dog	big	rip	jug	tux	hem	hex			
at	bad	can	dob	fog	dig	sip	lug		hen	rex			
bat	dad	fan	fob	hog	fig	tip	mug		men	sex			
ham	had	man	lob	log	jig	yip	pug		pen				
pal	mad	pan	mob	tog	pig	zip	rut		ten				
map	pad	ran	rob	mom	rig	bit	tug		yen				
nap	sad	gas	sob	con	wig	fit	bum		pep				
zap	yak	tax	bop	don	dim	hit	gum		yes				
bag	cap	sax	cop	non	him	kit	hum		bet				
sap	rag	max	hop	box	rim	lit	sum		get				
tap	ham		fox	pox	quit	pit							
lap	yap		lox		sit	if							
					six	fix							
					mix	it							



**Phoneme-Grapheme Mapping**  
(A Method for Bridging Sound to Print)

Name: \_\_\_\_\_ Date: \_\_\_\_\_

j	o	b		g	o	ng			
g	o	t		b	l	o	tch		
j	o	t		p	o	n	d		
b	o	g							
p	o	d							
sh	o	p							
ch	o	p							
l	o	ck							
m	o	th							
wh	o	p							
s	l	o	p						
b	o	n	k						

**Note:** This sample demonstrates a student's mapping of short vowel o within single syllable words containing blends and digraphs (Grades 2 and 3).

**Phoneme-Grapheme Mapping**  
(A Method for Bridging Sound to Print)

Name: \_\_\_\_\_ Date: \_\_\_\_\_

i	f					g	i	f	t	
h	i	m				l	i	f	t	
m	i	ss				m	i	l	k	
m	i	X				m	i	n	k	
s	i	x				g	i	<del>v</del>		
f	i	x				l	i	<del>v</del>		
th	i	s			p	i	c	n	i	c
sh	i	f	t		l	i	t	t	l	e
sh	i	n			m	i	l	k	i	ng
i	s		sh	i	f	t	l	e	ss	
Wh	i	m			sh	i	n	p	a	d
ph	i	l			m	i	x	i	ng	

**Note:** This sample demonstrates a student's mapping of short vowel *i* within the context of reviewing the following concepts: consonant *x*, digraphs, blends, *f-l-s* rule, and the mapping of final consonant *v*. Note that when *x* represents two sounds (*/k/* and */s/*), it is mapped in two boxes. For more about mapping *x*, see Lesson 1:11. Also note that the mapping of "little" is incorrect; there is only one */t/* sound in the word.

# y as a Vowel

**TUTORIAL** The letter y is very versatile. It represents the consonant sound /y/ when it comes at the beginning of a word or syllable as in *yes* and *yo-yo*. It represents the vowel sounds /ī/, /ē/, and /ī/ as in *why*, *baby*, and *gym*.

## TEACH

Teach y as a vowel. Ask students to segment the sounds in *by*. Ask them to say the last sound, /ī/. Tell them that the long /ī/ is spelled with a y at the end of one-syllable words.

Ask students to segment the sounds in *baby*. Ask them to say the last sound, /ē/. When y follows a consonant at the end of a word with more than one syllable, it stands for the long sound of e.

Teach the two sound/spelling concepts that follow. Teach the more complex uses of y as a vowel if students are reading multisyllable words.

## MAPPING PROCEDURE

When y is used as a vowel, it makes a single vowel sound, so its letter is placed in one box (as demonstrated on the following page).

# 1.2 y as a Vowel

y as a Vowel Word List							
When y follows a consonant at the end of one-syllable words, it usually sounds like long <i>i</i> .	When y follows a consonant at the end of multisyllabic words, it stands for the long sound of e.						
	At the End of Nouns			At the End of Adjectives		At the End of Multisyllabic Verbs	
wh y	c i t y			sh ow y		t i d y	
fly by	baby	dandy	fifty	angry	grassy	bury	
why fry	forty	county	sixty	chewy	gloomy	tidy	
ply my	taffy	bunny	gravy	creamy	silly	tarry	
shy pry	city	puppy	dandy	grumpy	sticky	hurry	
sly sky	copy	thirty	dairy	silly	stormy	carry	
spy spry	body	dandy	family	bossy	needy	study	
thy sty	ivy	county	daddy	chilly	empty	worry	
wry guy	lady	library	puppy	hair			
	belly	derby	penny	showy			
	daisy	twenty	bully	sketchy			
	ferry	eighty	derby	lazy			
	ivory	enemy	army	dirty			
	candy	artery	county	dizzy			

More Complex Uses of y as a Vowel Word List												
<p><b>TEACH</b> When y comes at the end of a two-syllable word and the accent is on the last syllable, it makes the sound of long <i>i</i>.</p>	<p><b>TEACH</b> When used before another vowel, y makes the sound of long e.</p>											
<table border="1"> <tr> <td>a</td> <td>pp</td> <td>l</td> <td>ȳ</td> </tr> </table>	a	pp	l	ȳ	<table border="1"> <tr> <td>e</td> <td>m</td> <td>b</td> <td>r</td> <td>ȳ</td> <td>o</td> </tr> </table>	e	m	b	r	ȳ	o	
a	pp	l	ȳ									
e	m	b	r	ȳ	o							
apply          reply comply        deny imply          supply		embryo halcyon presbyopia										
<b>When used to make the suffix <i>-ify</i>, /ī/ becomes a schwa (ə) vowel.*</b>												
<table border="1"> <tr> <td>g</td> <td>l</td> <td>or</td> <td>ī</td> <td>f</td> <td>ȳ</td> </tr> </table>			g	l	or	ī	f	ȳ				
g	l	or	ī	f	ȳ							
dignify	specify	beautify										
glorify	amplify	certify										
lassify	dignify	diversify										
electrify	fortify	gratify										
horrify	identify	intensify										
justify	magnify	modify										
mortify	mystify	notify										
personify	qualify	ratify										
rectify	satisfy	signify										
simplify	solidify	testify										
unify	dehumidify	disqualify										

\* For more about the schwa, see Lesson 1:3.

# Schwa

**TUTORIAL** The schwa is an upper-level concept—students must be reading and spelling multisyllable words. The **schwa** (ə), which is sometimes called a neutral vowel or a murmur vowel, is an unstressed vowel sound, such as the first sound in *around* or the last vowel sound in *custom*. Any of the single vowel spellings may represent the schwa under specific circumstances. The schwa seems particularly common in unstressed syllables of the proper names for the fifty states, as in *Al-a-bam-a*, *Ok-la-ho-ma*, *Del-a-ware*, and in common first names, such as *San-dra*, *Don-na*, and *A-lex-a*.

Although some programs give generalizations for the schwa, they can be cumbersome and not very useful. For decoding a known word, the schwa is not necessary. Words that contain the schwa may usually be decoded successfully if the reader tries the short sound of the vowel. Since the schwa often appears in syllables after adding a suffix, understanding the schwa becomes more necessary when learning roots, prefixes, and suffixes for spelling.

Although *a* appears to be the most frequently used vowel to represent the schwa, any of the five vowel letters can spell a schwa. And the schwa can occur in any syllable type. However, the vowel sound heard in a consonant *-le* syllable type is always a schwa.

## TEACH

“The schwa vowel is found in an unaccented syllable.” Ask students to find the unaccented syllable in several words from the Schwa Word List that follows. Model how to hold the lips together and say the word inside of the mouth. The unaccented syllable is one in which the voice drops out, or falls down. Isolate and say the vowel sound in the unaccented syllables. Show students the word’s spelling. Explain that knowing which letter to use to spell the schwa takes a lot of practice, as we have to create a visual memory of the spelling of many words with schwa. Show students the schwa symbol (ə). Help them find words in the dictionary that contain a schwa. The pronunciation can be found beside the word entry (e.g., ago [ə • go]). Then demonstrate how to wrap text with it (procedure follows). This aspect of phoneme-grapheme mapping helps students recall the spelling of the schwa in words.

## MAPPING PROCEDURE

When mapping a schwa, half-wrap the schwa symbol, leaving the straight edge to lie under the vowel spelling, as with the word *totem*. Teach students how to do this on the second day of instruction. A student phoneme-grapheme mapping follows the Schwa Word List.

t	o	t	ə	m
---	---	---	---	---

Schwa Word List					
a as Schwa (ə)			e as Schwa (ə)		
In the initial position	In the medial position		In the final position		
ā g o	o v ā l	y ō g ā	t o t ə m		
ago	rival	local	umbrella	kitten	problem
awake	central	oval	vanilla	mitten	system
about	capital	nasal	comma	planet	puppet
alone	vocal	moral	quota	totem	locket
amaze	choral	naval	scuba	closet	angel
alive	coastal	mortal	Atlanta	comet	funnel
atomic	colossal	mental	Sandra	channel	jewel
amid	digital	vocal	delta	dozen	panel
Alaska	disloyal	pelican	vista	basket	pocket
awhile	dismal	available	gala	hyphen	rebel
along	federal	principal	yoga	panel	easel
acute	final	several	stanza	novel	colonel
amid	carnival	signal	harmonica	sentence	nickel
away	formal	skeletal	opera	siren	shovel
adrift	frugal	spinal	retina	warden	sequel
alike	general	spiral	extra	problem	squirrel
asleep	global	Mexican	formula	Salem	rocket
awoke	herbal	verbal	tuba	agency	silence
aside	identical	Roman	rotunda	science	towel
atop		universal		moment	

Schwa Word List (continued)											
<i>i</i> as Schwa				<i>o</i> as Schwa				<i>u</i> as Schwa			
ē v <u>i</u> l				a t <u>o</u> m				f <u>o</u> c <u>u</u> s			
animal		audible		button		capsule					
April		credible		cotton		chorus					
basil		horrible		carton		cactus					
devil		illegible		piston		callus					
evil		impossible		apron		campus					
fossil		incredible		method		circus					
pencil		responsible		beckon		fungus					
pupil		possible		carbon		census					
stencil		terrible		jargon		focus					
tonsil		visible		lemon		minus					
utensil		legibility		patron		mucus					
service		vanity		atom		sinus					
fertile		hesitate		custom		Uranus					
missile		compliment		random		Venus					
destiny		cabinet		ransom		focus					
dignity		apricot		seldom		lotus					
resident		domino		venom		litmus					
vanity		difficult		second		album					
multiply		cavity		freedom		forum					
obligate		continent		kingdom		minimum					
mobilize		gravity		Boston		bonus					
antidote		estimate		lesson		discuss					
president		indirect		person							
magnitude		sensitive		awesome							
flexibility		investigate		handsome							
eligibility											



**Phoneme-Grapheme Mapping**  
(A Method for Bridging Sound to Print)

Name: \_\_\_\_\_ Date: \_\_\_\_\_

g	g	o							
b	b	ou	t						
r	i	v	a	l					
c	e	n	t	r	a	l			
l	o	c	a	l					
m	e	n	t	a	l				
A	t	l	a	n	t	a			
v	i	s	t	a					
c	a	m	e	t					
d	a	z	e	n					
s	y	s	t	a	m				

**Note:** This sample demonstrates a student's understanding of schwa (ə) as found in the initial, medial, and final position of multisyllabic words.