Reading Foundational Skills

The following supplements the Reading Standards: Foundational Skills (K–5) in the main document (pp. 15–17). See page 37 in the bibliography of this appendix for sources used in helping construct the foundational skills and the material below.

Phoneme-Grapheme Correspondences

Consonants

Common graphemes (spellings) are listed in the following table for each of the consonant sounds. Note that the term *grapheme* refers to a letter or letter combination that corresponds to one speech sound.

Figure 8: Consonant Phoneme-Grapheme Correspondences in English

Phoneme	Word Examples	Common Graphemes (Spellings) for the Phoneme[*]
/p/	pit, spider, stop	p
/b/	bit, brat, bubble	b
/m/	mitt, comb, hymn	m, mb, mn
/t/	tickle, mitt, sipped	t, tt, ed
/d/	die, loved	d, ed
/n/	nice, knight, gnat	n, kn, gn
/k/	cup, kite, duck, chorus, folk, quiet	k, c, ck, ch, lk, q
/g/	girl, Pittsburgh	g, gh
/ng/	sing, bank	ng, n
/f/	fluff, sphere, tough, calf	f, ff, gh, ph, lf
/v/	van, dove	v, ve
/s/	sit, pass, science, psychic	s, ss, sc, ps
/z/	zoo, jazz, nose, as, xylophone	z, zz, se, s, x
/th/	thin, breath, ether	th
/<u>th</u>/	this, breathe, either	th
/sh/	shoe, mission, sure, charade, precious, notion, mission, special	sh, ss, s, ch, sc, ti, si, ci
/zh/	measure, azure	s, z
/ch/	cheap, future, etch	ch, tch
/j/	judge, wage	j, dge, ge
/l/	lamb, call, single	l, ll, le
/r/	reach, wrap, her, fur, stir	r, wr, er/ur/ir
/y/	you, use, feud, onion	y, (u, eu), i
/w/	witch, queen	w, (q)u
/wh/	where	wh
/h/	house, whole	h, wh

[*]Graphemes in the word list are among the most common spellings, but the list does not include all possible graphemes for a given consonant. Most graphemes are more than one letter.

Vowels

Common graphemes (spellings) are listed in the following table for each of the vowel sounds. Note that the term *grapheme* refers to a letter or letter combination that corresponds to one speech sound.

Figure 9: Vowel Phoneme-Grapheme Correspondences in English

Phoneme	Word Examples	Common Graphemes (Spellings) for the Phoneme[*]
/ē/	see, these, me, eat, key, happy, chief, either	ee, e_e, -e, ea, ey, -y, ie, ei
/ĭ/	sit, gym	i, y
/ā/	make, rain, play, great, baby, eight, vein, they	a_e, ai, ay, ea, -y, eigh, ei, ey
/ĕ/	bed, breath	e, ea
/ă/	cat	a
/ī/	time, pie, cry, right, rifle	i_e, ie, -y, igh, -i
/ŏ/	fox, swap, palm	o, wa, al
/ŭ/	cup, cover, flood, tough	u, o, oo, ou
/aw/	saw, pause, call, water, bought	aw, au, all, wa, ough
/ō.	vote, boat, toe, snow, open	o_e, oa, oe, ow, o-,
/ŏŏ/	took, put, could	oo, u, ou
/ū/ [o͞o]	moo, tube, blue, chew, suit, soup	oo, u_e, ue, ew, ui, ou
/y//ū/	use, few, cute	u, ew, u_e
/oi/	boil, boy	oi, oy
/ow/	out, cow	ou, ow
er	her, fur, sir	er, ur, ir
ar	cart	ar
or	sport	or

[*] Graphemes in the word list are among the most common spellings, but the list does not include all possible graphemes for a given vowel. Many graphemes are more than one letter.

Phonological Awareness

General Progression of Phonological Awareness Skills (PreK–1)

Word Awareness (Spoken Language)

Move a chip or marker to stand for each word in a spoken sentence.

> The dog barks. (3)
> The brown dog barks. (4)
> The brown dog barks loudly. (5)

Rhyme Recognition during Word Play

Say "yes" if the words have the same last sounds (rhyme):

> clock/dock (y)
> red/said (y)
> down/boy (n)

Repetition and Creation of Alliteration during Word Play

> Nice, neat Nathan
> Chewy, chunky chocolate

Syllable Counting or Identification (Spoken Language)

A spoken syllable is a unit of speech organized around a vowel sound.

Repeat the word, say each syllable loudly, and feel the jaw drop on the vowel sound:

> chair (1)   table (2)   gymnasium (4)

Onset and Rime Manipulation (Spoken Language)

Within a single syllable, *onset* is the consonant sound or sounds that may precede the vowel; *rime* is the vowel and all other consonant sounds that may follow the vowel.

Say the two parts slowly and then blend into a whole word:

school	onset - /sch/; rime - /ool/
star	onset - /st/; rime - /ar/
place	onset - /pl/; rime - /ace/
all	onset (none); rime - /all/

General Progression of Phoneme Awareness Skills (K–2)

Phonemes are individual speech sounds that are combined to create words in a language system. Phoneme aware-ness requires progressive differentiation of sounds in spoken words and the ability to think about and manipulate those sounds. Activities should lead to the pairing of phonemes (speech sounds) with *graphemes* (letters and letter combinations that represent those sounds) for the purposes of word recognition and spelling.

Phoneme Identity

Say the sound that begins these words. What is your mouth doing when you make that sound?

> milk, mouth, monster /m/ — The lips are together, and the sound goes through the nose.
> thick, thimble, thank /th/ — The tongue is between the teeth, and a hissy sound is produced.
> octopus, otter, opposite /o/ — The mouth is wide open, and we can sing that sound.

Phoneme Isolation

What is the first speech sound in this word?

ship	/sh/
van	/v/
king	/k/
echo	/e/

What is the last speech sound in this word?

comb	/m/
sink	/k/
rag	/g/
go	/o/

Phoneme Blending (Spoken Language)

Blend the sounds to make a word:

(Provide these sounds slowly.)

/s/ /ay/	say
/ou/ /t/	out
/sh/ /ar/ /k/	shark
/p/ /o/ /s/ /t/	post

Phoneme Segmentation (Spoken Language)

Say each sound as you move a chip onto a line or sound box:

no	/n/ /o/
rag	/r/ /a/ /g/
socks	/s/ /o/ /k/ /s/
float	/f/ /l/ /oa/ /t/

Phoneme Addition (Spoken Language)

What word would you have if you added /th/ to the beginning of "ink"? (think)

What word would you have if you added /d/ to the end of the word "fine"? (find)

What word would you have if you added /z/ to the end of the word "frog"? (frogs)

Phoneme Substitution (Spoken Language)

Say "rope." Change /r/ to /m/. What word would you get? (mope)

Say "chum." Change /u/ to /ar/. What word would you get? (charm)

Say "sing." Change /ng/ to /t/. What word would you get? (sit)

Phoneme Deletion (Spoken Language)

Say "park." Now say "park" without /p/. (ark)

Say "four." Now say "four" without /f/. (or)

Orthography

Categories of Phoneme-Grapheme Correspondences

Figure 10: Consonant Graphemes with Definitions and Examples

Grapheme Type	Definition	Examples
Single letters	A single consonant letter can represent a consonant phoneme.	b, d, f, g, h, j, k, l, m, n, p, r, s, t, v, w, y, z
Doublets	A doublet uses two of the same letter to spell one consonant phoneme.	ff, ll, ss, zz
Digraphs	A digraph is a two- (di-) letter combination that stands for one phoneme; neither letter acts alone to represent the sound.	th, sh, ch, wh ph, ng (sing) gh (cough) [ck is a guest in this category]
Trigraphs	A trigraph is a three- (tri-) letter combination that stands for one phoneme; none of the letters acts alone to represent the sound.	-tch -dge
Consonants in blends	A blend contains two or three graphemes because the consonant sounds are separate and identifiable. A blend is not "one sound."	s-c-r (scrape) th-r (thrush) c-l (clean) f-t (sift) l-k (milk) s-t (most) and many more
Silent letter combinations	Silent letter combinations use two letters: one represents the phoneme, and the other is silent. Most of these are from Anglo-Saxon or Greek.	kn (knock), wr (wrestle), gn (gnarl), ps (psychology), rh (rhythm), -mb (crumb), -lk (folk), -mn (hymn), -st (listen)
Combination qu	These two letters, always together, usually stand for two sounds, /k/ /w/.	quickly

Figure 11: Vowel Graphemes with Definitions and Examples

Grapheme Type	Definition	Examples
Single letters	A single vowel letter stands for a vowel sound.	(short vowels) cap, hit, gem, clod, muss (long vowels) m<u>e</u>, n<u>o</u>, m<u>u</u>sic
Vowel teams	A combination of two, three, or four letters stands for a vowel.	(short vowels) head, hook (long vowels) b<u>oa</u>t, s<u>igh</u>, w<u>eigh</u> (diphthongs) t<u>oil</u>, b<u>out</u>
Vowel-r combinations	A vowel, followed by r, works in combination with /r/ to make a unique vowel sound.	c<u>ar</u>, sp<u>or</u>t, h<u>er</u>, b<u>ur</u>n, f<u>ir</u>st
Vowel-consonant-e (VCe)	The vowel–consonant–silent e pattern is common for spelling a long vowel sound.	gate, eve, rude, hope, five

Figure 12: Six Types of Written Syllable Patterns

Syllable Type	Definition	Examples
Closed	A syllable with a short vowel spelled with a single vowel letter ending in one or more consonants	<u>dap</u>-ple <u>hos</u>-tel <u>bev</u>-erage
Vowel-C-e ("Magic e")	A syllable with a long vowel spelled with one vowel + one consonant + silent *e*	com<u>pete</u> des<u>pite</u>
Open	A syllable that ends with a long vowel sound, spelled with a single vowel letter	<u>pro</u>gram <u>ta</u>ble <u>re</u>cent
Vowel Team	Syllables that use two to four letters to spell the vowel	<u>beau</u>-<u>ti</u>-<u>ful</u> <u>train</u>-er con-<u>geal</u> <u>spoil</u>-age
Vowel-r (r-controlled)	A syllable with **er, ir, or, ar**, or **ur** Vowel pronunciation often changes before /r/.	in-<u>jur</u>-ious con-<u>sort</u> <u>char</u>-<u>ter</u>
Consonant-le	An unaccented final syllable containing a consonant before /l/ followed by a silent *e*	drib<u>ble</u> bea<u>gle</u> lit<u>tle</u>

Three Useful Principles for Chunking Longer Words into Syllables

1. VC-CV: Two or more consonants between two vowels
When syllables have two or more adjacent consonants between them, we divide between the consonants. The first syllable will be closed (with a short vowel).

    sub-let   nap-kin   pen-ny   emp-ty

2. V-CV and VC-V: One consonant between two vowels

a) First try dividing *before* the consonant. This makes the first syllable open and the vowel long. This strategy will work 75 percent of the time with VCV syllable division.

    e-ven   ra-bies   de-cent   ri-val

b) If the word is not recognized, try dividing *after* the consonant. This makes the first syllable closed and the vowel sound short. This strategy will work 25 percent of the time with VCV syllable division.

ev-er rab-id dec-ade riv-er

3. Consonant blends usually stick together. Do not separate digraphs when using the first two principles for decoding.

e-<u>th</u>er spec-<u>tr</u>um se-<u>qu</u>in

Morphemes Represented in English Orthography

Figure 13: Examples of Inflectional Suffixes in English

Inflection	Example
-s plural noun	I had two **eggs** for breakfast.
-s third person singular verb	She **gets** what she **wants**.
-ed past tense verb	We **posted** the notice.
-ing progressive tense verb	We will be **waiting** a long time.
-en past participle	He had **eaten** his lunch.
's possessive singular	The **frog's** spots were brown.
-er comparative adjective	He is **taller** than she is.
-est superlative adjective	Tom is the **tallest** of all.

Examples of Derivational Suffixes in English

Derivational suffixes, such as *-ful*, *-ation*, and *-ity*, are more numerous than inflections and work in ways that inflectional suffixes do not. Most derivational suffixes in English come from the Latin layer of language. Derivational suffixes mark or determine part of speech (verb, noun, adjective, adverb) of the suffixed word. Suffixes such as *-ment*, *-ity*, and *-tion* turn words into nouns; *-ful*, *-ous*, and *-al* turn words into adjectives; *-ly* turns words into adverbs.

nature (n. — from *nat*, birth)   permit (n. or v.)

natural (adj.)   permission (n.)

naturalize (v.)   permissive   (adj.)

naturalizing (v.)   permissible   (adj.)

naturalistic (adj.)   permissibly (adv.)